EX-78-5

1977 DRILLING AND GEOPHYSICAL RESULTS -- BROMIDE PROJECT BROMIDE DISTRICT, RIO ARRIBA CO., NEW MEXICO

Barry E. French February 8,1978

1977 DRILLING AND GEOPHYSICAL RESULTS -- BROMIDE PROJECT, BROMIDE DISTRICT, RIO ARRIBA COUNTY, NEW MEXICO

SUMMARY

The Bromide Project, a product of our 1975 massive sulfide reconnaissance, was tested last summer with two diamond drill holes having a combined footage of 2129 feet. The first hole, B-1 (inclined 55°, bearing N45°E), was started on May 8, 1977, and completed in 33 days to a total depth of 830 feet. The second hole, B-2 (inclined 50°, bearing N10°E), was started on June 9, 1977, and completed in 48 days to a total depth of 1299 feet. B-1 cost $18,064 or $21.76 per foot and B-2 cost $34,590 or $26.63 per foot. The total cost of both holes was $52,654 or $24.73 per foot.

The work was done by Connors Drilling Inc. Most of the drilling was done in two 10-hour shifts per day with a 2-man crew per shift. Aside from rather frequent (non-chargeable) mechanical breakdowns, no major drilling problems were encountered.

Detailed mapping during the summer of 1976 established the presence of weak, but stratabound, copper mineralization in a 1-½ to 2-mile belt of meta-andesitic schists. Last summer's drilling tested the southeastern end of this zone in the vicinity of the Pay Role and Sardine shafts.

Both holes show that oxidation has penetrated deeply along fractures, as only the last several hundred feet of B-2 was completely unoxidized. As expected, the rock in both B-1 and B-2 was primarily a soft, chloritic-sericitic schist representing andesites and agglomerates with minor intervals of ashflow and pelitic sediments. B-2 bottomed in granodioritic gneiss which probably intrudes the schist.

Strong chloritic and sericitic alteration along with blebs and streaks of carbonate occurred throughout B-1 and most of B-2. Epi-

dotization was encountered midway in B-2 and increased downward. In the last 200 feet of B-2, chlorite gave way to biotite and silification increased in the bottom 100 feet as the intrusive gneiss was approached.

The results of our ground magnetic survey were confirmed. Disseminated magnetite was abundant in B-1 and down to 950 feet in B-2. This coincided with a surface magnetic high bounded on the NW by a steep downward gradient. From 950 feet to the bottom, magnetite was practically nil.

Drilling showed a 1500 feet width of weakly disseminated copper mineralization from B-1 northwest to the contact of barren intrusive in the bottom of B-2. Although no ore intercepts were encountered, far more copper was visible in the core than is apparent on the surface. Chalcopyrite, (with minor pyrite and pyrrhotite) finely disseminated and locally in stratabound blebs and stringers, is the primary ore mineral. At least two cycles of erosion caused deep weathering which locally altered the original sulfides to bornite and to native copper in the oxidized zones. From 950 feet (where magnetite ceases) to the bottom of B-2 (350 feet) pyrrhotite becomes the dominant sulfide.

Both holes contain higher grade intervals of native copper. However, assays showed in every case that the "splashy" nature of native copper caused the visual copper content to be greatly overestimated. The highest copper value in B-1 was from chalcopyrite in a 1-foot interval at 788 to 789 feet. It ran 6000 ppm Cu, 0.05 ppm Au, and 0.8 ppm Ag. The native copper zones were all less than 1000 ppm Cu with no Au or Ag. In B-2 the highest copper assay was 1250 ppm with Au-Ag similar to B-1. Assays in both holes were uniformly low for lead and zinc and were generally nil for gold and silver.

One object of the drilling was to determine the all important "hangingwall-footwall" contact. Unfortunately, this is still

uncertain. So far, all the rocks drilled, except the intrusive gneiss, exhibit footwall disseminated mineralization. The gneiss, which does not crop out, probably does not represent the barren hangingwall, but rather is a sill-like body similar to that which crops out northwest along strike on the hill above the Whale shaft. Prior to drilling, the hangingwall was postulated to the NW in the direction of drilling. Evidence from the core for stratigraphic top and bottom is conflicting, and additional drilling will be needed for a positive determination.

Subsequent to drilling, a new EM system (MaxMin), especially designed to detect disseminated "massive" sulfides, became available. Results of this survey were encouraging. Several conductors were found and verified. One of the most intriguing occurs over the outcrop of altered meta-ashflow just north of the Ora patented claim. The number of conductors increases to the NW in the area of interest, but the most consistent conductive zone parallels the contact of the altered meta-ashflow with the meta-andesitic schists in the north part of Section 15.

In November, 1977, land previously held by the competition became available for staking. As a result, we were able to claim all the land we originally wanted. U.S.B. now has 56 unpatented claims and controls the entire 2-mile belt of favorable hunting ground.

The potential for economic volcanogenic mineralization is still very much alive at Bromide. Next summer we are planning for 5000 feet of new drilling with primary emphasis being placed on testing the best-looking EM conductors. The exact location of the new drill holes will be decided after the EM report is received and the data reviewed with the geophysicist.

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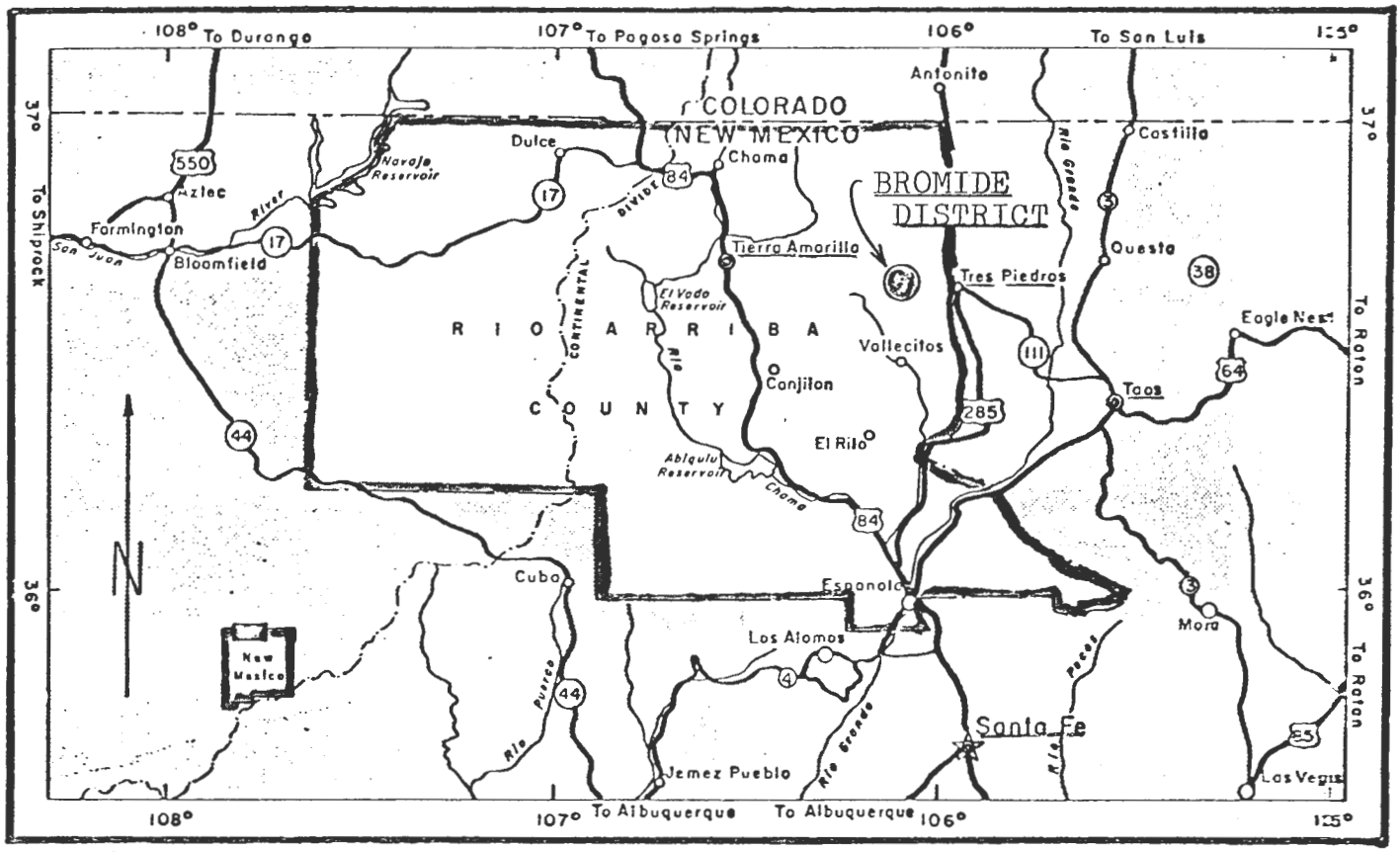


Map 1. Index of the Bromide District, Rio Arriba County, New Mexico

GENERAL

The Bromide Project, as shown on Map 1, is located about 55 miles northwest of Taos in northernmost New Mexico. It is situated on the main ridge of the Tusas mountains at an elevation just under 10,000 feet. Inspite of the elevation, the topography is open and rolling and relief is gentle.

Drilling was the outgrowth of our New Mexico massive sulfide reconnaissance in 1975 (USB report of Dec. 8, 1975) and of detailed mapping done in 1976 (USB report of Feb. 3, 1977). Work began under my supervision on May 8 and was completed in about 2½ months on July 26, 1977. A total of 2129 feet was drilled in two angle holes, B-1 and B-2. Both holes were located in the SW¼ of Section 14, T28N, R7E, as shown on Map 2.

Rather than commuting from Taos (the nearest motel accommodations), I lived at drill site B-1 in a mobile camper. The core was logged on site and sent to Tucson for splitting. Splitting and assaying was done during the fall from the end of September through most of December. Detailed alteration logs will be made this winter. The preliminary logs along with assays are appended.

LAND STATUS

Acquiring the land needed to cover the area of interest at Bromide has been a long, slow process. Starting in 1975 we acquired a lease on 4 patented claims in the heart of the area. Except for the Pay Role lode, all other land is part of the Carson National Forest and in 1975 was already covered with unpatented claims belonging to two other companies (See USB Report of Dec. 8, 1975).

In 1976 one company dropped their claims and we were able to enclose part of the patented claims with our Tusas 1-11 unpatented claims. Since both holes were located on Tusas claims and the group is contiguous, drilling last summer was more than adequate for the annual assessment work due on these claims in 1977.

Following drilling and EM results, 15 more unpatented claims were added in August and September 1977. Finally in November, all the ground we wanted became available and an additional 30 claims were staked. USB now has a total of 56 unpatented claims in the Tusas group covering an area of about 2 square miles.

The only other land needed is the Pay Role patented claim which is adjacent to our leased group. One last visit to the State Property Tax Department in Santa Fe proved fruitful and the owner was finally located. However, he also claimed ownership of two of our leased claims (the Whale group). This conflict was resolved by our land and legal staff in USB's favor and negotiations are underway for the Pay Role.

Memos and maps of the current land status are on file with the Land Department and in the Tucson office.

DRILLING

Drilling was done by Connors Drilling Inc. using a Wesdrill Model 60 diamond core rig (See Plates 1A, 2A, and 2B). Drill hole summary sheets providing a detailed breakdown of drilling operations and costs for B-1 and B-2 are appended. The cost totals are as follows:

Hole	Total Depth	Cost	Cost/Ft.
B-1	830'	$18,064	$21.76
B-2	1299'	$34,590	$26.63
TOTALS:	2129'	$52,654	$24.73

Connors' head driller for the job, Jerry Davis, did an excellent job inspite of some aggravating mechanical and personnel problems. Jerry's hard work greatly minimized those delays, and he should be requested on any future jobs by Connors. When the rig (and crew) were running smoothly, Connors worked 20 hours a day using two 10-hour shifts of two men per shift. Both holes were started with a low pressure, air hammer drill. This worked fine on each hole down to about 70 feet; at this point too much mud build-up from

Plate 1A. Drill hole B-1 with Connors Drilling Inc. Wesdrill Model 60 diamond core drill on location.

Plate 1B. B-1 drill site after completion of hole (ore body obviously lies further to the right-hand side of picture).

the soft schist stopped the hammer, and casing was set for core. Because of this, the hammer didn't save any money, and future drilling should be cored from surface.

Core recovery was generally excellent and drilling problems fairly minor. The nature of the schist caused the holes to eventually mud-up to the point where it was hard to get the core barrel to the bottom. The only thing that overcame this problem and kept the holes clean, was the use of soluble oil. This oil is sometimes hard to find, so on future jobs in the area, an adequate supply of soluble oil should be obtained prior to start-up. Lack of nearby water due to a severe drought caused some delay, and we finally had to buy water from Tres Piedras. In future drilling, a larger storage tank or two water trucks should be used. Weather went from one extreme to the other. Just before the Forest Service completely shut us down due to extreme fire danger in mid June, the rains came. Before the end of the job, there was so much rain that access on muddy roads became a real problem.

Considering the remoteness of the area, the problems could have been much worse and the drilling in general went pretty well. The estimated on-bottom penetration rate was about 60 feet per 10-hour shift or 120 feet per day. Delays, mostly non-chargeable, lowered the inclusive penetration rate to 32 feet per 10-hour shift for B-1 and 22.5 feet for B-2.

GEOLOGY AND MINERALIZATION

A detailed account of the geology, mineralization, and assays for each hole is appended in the Diamond Drill Log. Two sections, Figure 1 and 2, are also included in the map pocket.

During the summer of 1976 a 2-mile long, 2500-foot wide, zone of weak, but stratabound copper mineralization was deliniated in the Bromide District (See USB Report of Feb. 3, 1977). It strikes about N65^{o}W extending from the Cozart workings on the NW, several thousand feet past the Pay Role shaft on the SE. The zone is truncated at

Plate 2A. U.S.B. geologist making sure which way to drill at drill site B-2.

Plate 2B. Wesdrill Model 60 on location at drill site B-2.

both ends by NE-trending cross faults. The mineralization occurs in near vertical, Precambrian Moppin group schists, which have been intruded on the NE margin by a barren, granodioritic gneiss. Since metamorphism in the area was low grade, original textures in the schist are often recognizable. The schist represents an interlayered pile of andesitic flows and stretched pebble agglomerates, along with pelitic sediments and conglomerate. This sequence is capped? (up and down still not certain) by an altered, quartz-eye porphyry ashflow near the intrusive gneiss contact. These rocks represent a perfect host environment for volcanogenic massive sulfide mineralization.

Following mapping, an I.P.-Resistivity Survey was made and no anomalies were detected. EM was not used since, prior to this summer, there was no EM system available for disseminated conductors and especially conductors over 200 feet in depth. Since geophysics couldn't define a target, our first drill hole was located on the basis of mineralization. With the exception of the Cozart workings, which belonged to Nord Resources at that time, the strongest copper mineralization reportedly occurred at the 270-foot level in the Pay Role shaft.

B-1. Drill hole B-1 was located 320 feet SW of the Pay Role with an inclination of -55° on a bearing of $N45^{\circ}E$. It was designed to intersect any mineral present about 400 to 500 feet (depending on dip) below the shaft (See Figure 1). It was bottomed at 830 feet (about 700 feet, vertically), well on the NE side of the shaft.

The schist in B-1 generally dips steeply SW and consists mostly of interlayered andesitic agglomerates and several types of andesitic flows from dense, fine-grained to porphyritic. An agglomerate at 78 feet exhibits possible graded bedding which suggests that the beds are overturned and that stratigraphic up is to the NE or down the hole. Only two ashflows are present. One thin quartz-poor bed that might be a sediment occurs at 200 feet and the other,

33 feet thick with minor quartz eyes and definitely an ashflow, was encountered at 546 feet, exactly on the downward projection of the Pay Role shaft. Several thin, pelitic sedimentary units were also identified in field logging. A breccia, labeled "mill-rock" on the log and occurring at 207, 263, and 274 feet, was definitely identified as sedimentary following core splitting. In fact, detailed logging (this winter) will probably reveal far more sediments in B-1 than originally indicated by the field log.

Most of the schists in B-1 have been strongly chloritized and/or sericitized. Carbonate is quite common as streaks and blebs filling fractures and vugs. Disseminated magnetite is abundant and ubiquitous. Partial oxidation marked by iron-staining extends off and on to the bottom of the hole.

Most of the hole is very weakly mineralized. Two 3/4-inch wide "highgrade" seams of stratabound chalcopyrite and pyrrhotite occur at about 450 feet near an andesite-agglomerate contact. This could well represent the downward extension of the supposed Pay Role mineralization. If so, the Pay Role "orebody" must be very lenticular and no more than 150 feet in height. One 2-inch band of "ore-grade" chalcopyrite is present near the bottom of B-1 at 788 feet. The rocks on either side were practically barren, but a 1-foot interval including the 2-inch band gave the following assays (in PPM): 6000 Cu, 0.05 Au, and 0.8 Ag.

Most of the mineralization in B-1 consists of fine, weakly disseminated chalcopyrite with usually lessor amounts of pyrite and/or pyrrhotite. Some bornite is detectable near 700 feet and whereever the sulfides have been oxidized, chalcopyrite has been altered to native copper. It was noted that copper coats some magnetite crystals and is often associated with magnetite concentrations. Thus, magnetic highs could be significant.

Two zones of more abundant disseminated native copper were penetrated: one 3½-foot interval at 177 feet and a 4-foot interval (with

cuprite) at 629 feet. Visual estimates, especially for the second interval, would be on the order of 1% Cu. However, assays (verified by several different checks and prep methods) yielded surprisingly low values -- 145 and 305 ppm Cu, respectively. Gold and silver were nil, as they were in the rest of the hole, except for a slight increase with the 2-inch band of copper at 788 feet. Lead and zinc assays were uniformly low and well within background range.

It was concluded that B-1 was entirely within the disseminated footwall or root zone of our conceptual volcanogenic system. Since we were still in mineralization at the bottom and stratigraphic up was thought to be to the NE, the second hole was located further to the NE in about the same NW-SE position. It doesn't quite overlap the rocks penetrated by B-1, leaving an untested gap of about 450 feet.

B-2. Drill hole B-2 was located near the NE corner of the Pay Role patented claim with an inclination of -50° on a bearing of N10E. It was situated to intersect a magnetic high, the downward projection of the copper-bearing Sardine lode, and then a steeply descending magnetic gradient (See Figure 2). We also hoped that (besides hitting ore) it would pin down the critical footwall-hangingwall interface. This may have been accomplished, but probably not. B-2 was bottomed at a depth of 1299 feet (about 965 feet, vertically). Among other things, the hole completely confirmed the surface magnetic data.

The schists in B-2 generally dip steeply SW with only a few reversals to the NE. It consists again mostly of interlayered andesite flows and andesitic agglomerates. Several thin ashflows occur in the upper 250 feet and one 34-foot, possible ashflow occurs at the base. Only two sedimentary units were identified for sure in field logging. The upper one at 259 feet is 28.5 feet thick and is a gneissic, arkosic fragmental with a 6-inch chert band at 276 feet. The lower unit at 1112 feet is about 50 feet thick and is a dark,

fine-grained, biotitic rock with a possible conglomerate at the upper contact. Again, the position of this conglomerate suggests that "up" is down the hole to the NE. An 8-foot quartz dioritic sill intrudes the schists about midway in the hole, and at the bottom, the hole passes through a hybrid zone into 3 feet of barren granodioritic gneiss. Unfortunatley, as can be seen on Figure 2, this is not the hangingwall, but is probably a large sill-like offshoot from the main mass of granodiorite which crops out further to the NE. Although this basal sill(?) doesn't crop out above the drill hole, a very similar situation exists in outcrop on the hill above the Whale shaft to the NW. Even the epidote build-up in B-2 toward the sill(?) is similar to that at the Whale (See Map 2).

B-2 exhibits more alteration types than B-1. Down to about 950 feet it is quite similar with abundant chlorite, sericite, magnetite and carbonate. However, at about 600 feet, epidote begans flooding along some fractures, increasing downwards as veins and flooding. Wherever epidote floods magnetite-bearing rock, magnetite is absent in the epidotized zones. As mentioned, magnetite terminates abruptly at about 950 feet and this corresponds exactly to a sharp magnetic gradient on the surface. Chloritization diminishes from this point, and at 1112 feet it abruptly gives way to biotite. From 1227 feet to the intrusive gneiss the schist is well silicified. The silica and epidote are secondary to chlorite and magnetite and undoubtedly are related to the intrusive; thus representing post-volcanogenic alteration.

Like the first hole, B-2 revealed weakly disseminated copper mineralization (See Figure 2). Mostly native copper was encountered down to 300 feet. Chalcopyrite and bornite (probably after chalcopyrite) in unoxidized zones increase from 300 feet downwards and by 550 feet native copper and most oxidation ceased. Sporadic copper sulfide occurred to abcut 1000 feet, where it gave way to pyrrhotite. Pyrrhotite occurred on fractures, and disseminated, down to the intrusive gneiss contact. The apparent chalcopyrite in the

last 100 feet (See Figure 2) must have been mostly tarnish, since assays were generally less than 100 ppm from 1000 feet to the bottom. The pyrrhotite began ($\pm$950 feet) where magnetite generally ceased. The disseminated nature of the sulfides in B-2 indicates that we are still in volcanogenic footwall rocks. The hangingwall contact has yet to be found.

Assays in B-2 were all in the geochemical range (See drill log, appended). The highest copper values were on the order of 1200 ppm. Gold, lead and zinc, as in B-1, were generally nil or well within background values. Silver was slightly anomalous (geochemically) in zones of higher copper values.

The copper distribution in B-2 suggests several cyclic pulses of mineralization. From the bottom upwards, copper increases sporadically, but gradually, to a high of 1250 ppm at 573 to 571 feet. Above 571 feet it drops to 40 ppm and then builds up again to 1200 ppm at 479.4 to 476.5 feet. There is a slight build-up to the 300 ppm's at 340 to 330 feet and then a final increase up to 1000 ppm at 174.6 to 173 feet. Contrary to the stratigraphic evidence which indicates that "up" is down the hole to the NE, the cyclic copper build-ups in B-2 suggest that "up" is to the SW. Hopefully, detailed logging (or more drilling) will solve this conflict.

Bull quartz veins were more common in B-2. In both holes, they were generally barren with only rare blebs of copper. As also seen in the surface mapping, they appear to be associated with the gneissic intrusive and are post-volcanogenic copper in age.

GEOPHYSICS

I.P.-Resistivity. Because most massive sulfides in the southwest are electrically disseminated, we initially employed a limited I.P. survey over the SE half of the potential area. No anomalies were detected, but being optimistic, this could mean that our deposit exists at a depth of greater than 200 feet. The deeper penetrating, wider dipole spreads could easily miss a narrow body below this depth

and the shorter dipole spacings couldn't penetrate more than 200 feet (See USB Report of Feb. 3, 1977 and accompanying MGS reports). Since the detection limit of conventional ground EM systems at that time was ±200 feet, no further geophysics were tried.

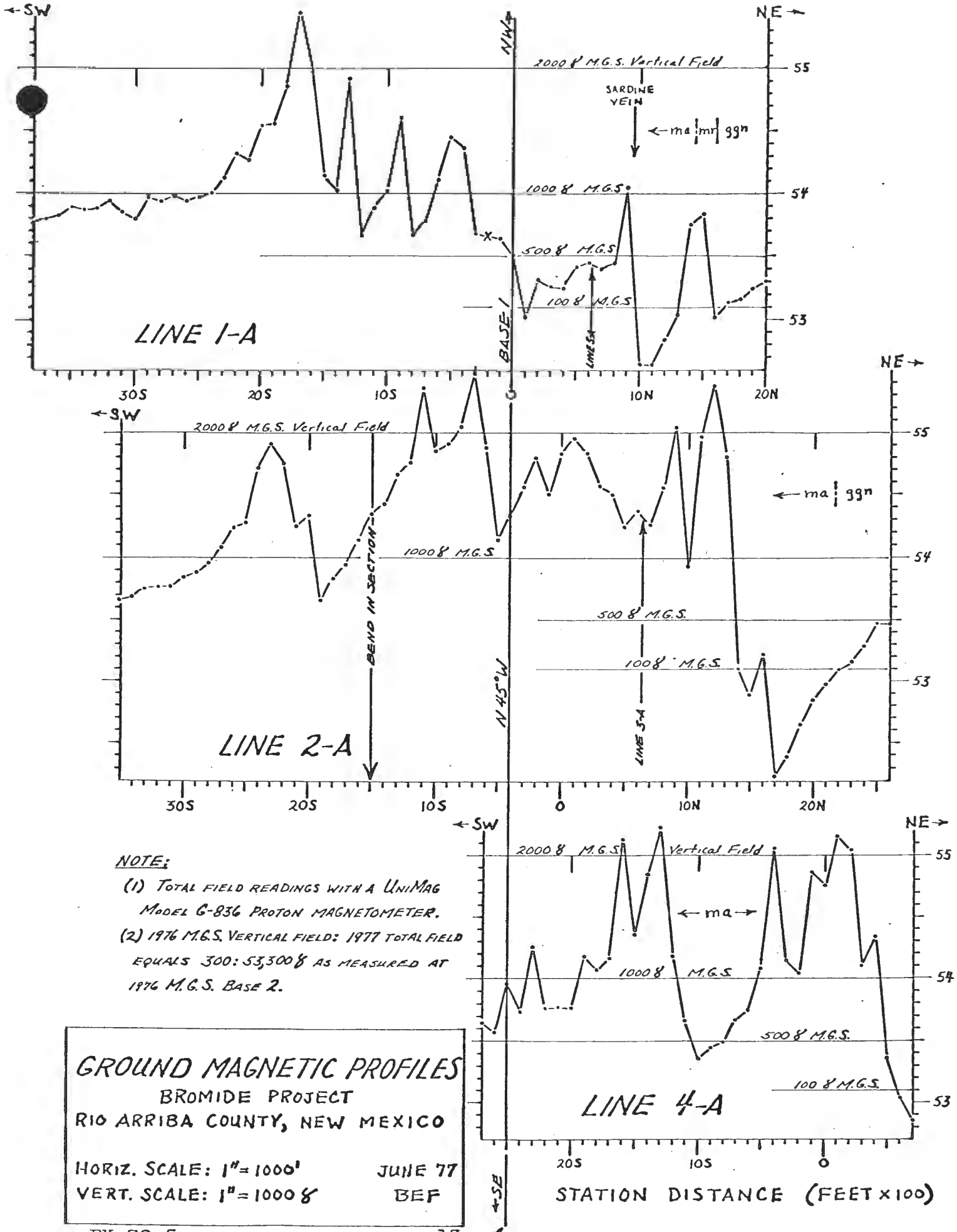
Magnetics. Ground magnetic profiles were made along with the I.P. survey. Contouring this data resulted in a magnetic high, sub-parallel to the zone of copper occurrences and intersecting the zone in the vicinity of the Pay Role shaft.

During the drilling this past summer, I ran four fill-in magnetic lines. Profiles of these are shown on Figures 3 and 4 and a corrected contour overlay is included as Map 3. These lines confirmed the initial data and indicated a steep, descending gradient on the NE edge of the high. Magnetite in drill hole B-2 agreed with the surface work and indicates that the gradient and magnetic low reflect an intrusive contact rather than a barren hangingwall above a magnetite-rich, volcanogenic alteration pipe.

Drilling did show that the copper has an affinity for magnetite concentrations, so perhaps magnetics will be useful when combined with new EM data and future drilling.

Max Min EM. Max Min, made by Apex of Toronto, was designed to detect electrically disseminated massive sulfides. The system recently became available in the U.S., and during August and September an initial survey followed by fill-in work was done by Applied Geophysics of Salt Lake. The final report has not yet been received, but a preliminary 1"=1000' overlay is enclosed as Map 4(the final map will be 1"=500' and will overlay Map 2).

Results were very encouraging. Several conductors and possible conductors were found and verified by the fill-in work and VLF EM. Much of this year's drilling will be aimed at testing these conductors. According to the geophysicist, Dave Smith, the best conductors, which should be tested first, are those labeled "A" and "B" on Map 4. Although no mineral is present on the surface, these



NOTE:

(1) TOTAL FIELD READINGS WITH A UNIMAG MODEL G-836 PROTON MAGNETOMETER.

(2) 1976 M.G.S. VERTICAL FIELD: 1977 TOTAL FIELD EQUALS 300: 53,300 γ AS MEASURED AT 1976 M.G.S. BASE 2.

GROUND MAGNETIC PROFILES

BROMIDE PROJECT

RIO ARRIBA COUNTY, NEW MEXICO

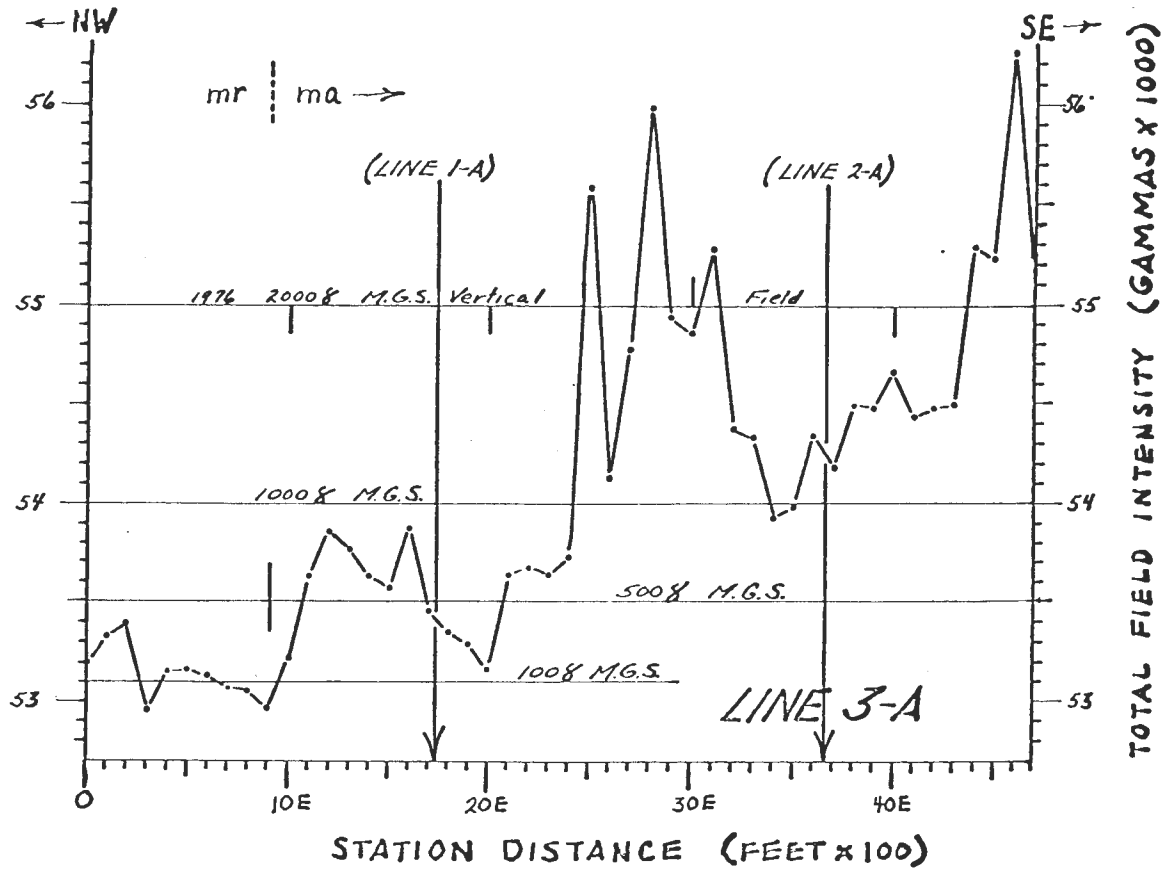
HORIZ. SCALE: 1" = 1000'

VERT. SCALE: 1" = 1000 γ

JUNE 77

BEF

FIGURE 3



NOTE:

(1) TOTAL FIELD READINGS WITH A UNIMAG MODEL G-836 PROTON MAGNETOM.

(2) 1976 M.G.S. VERTICAL FIELD: 1977 TOTAL FIELD EQUALS 300: 53,300 γ AS MEASURED AT 1976 M.G.S. BASE 2.

GROUND MAGNETIC PROFILE
BROMIDE PROJECT
RIO ARRIBA COUNTY, NEW MEXICO

HORIZ. SCALE: 1" = 1000' JUNE 77
VERT. SCALE: 1" = 1000 γ BEF

FIGURE 4

conductors coincide with an outcrop of altered, quartz-eye porphyry ashflow, which geologically makes them even more attractive. Southeast of the above, two conductors follow the altered ashflow-andesite contact stopping just short of drill hole B-2. Numerous, but less continuous conductors, exist northwest of "A" and "B", and one small response was detected near the Pay Role shaft and drill hole B-1. Unfortunately, B-1 could have overdrilled this conductor.

According to Dave Smith, even the weaker EM responses can be meaningful. In Wisconsin one company found ore on the EM anomaly originally rated twenty-third in priority. Thus, unless we intersect ore on the first hole, a variety of the indicated conductors should be drilled before the project is abandoned.

The EM report and map to accompany this report will be forwarded when received.

CONCLUSIONS AND RECOMMENDATIONS

The schists of the Bromide Project area represent the ideal host environment for the formation of a volcanogenic copper deposit. Some stratabound copper is visible on the surface, but far more visible copper is evident in our recent drill holes. Although assay values were only in the geochemical range, the holes penetrated approximately 1500 feet of disseminated, footwall-type mineralization. This alone would justify additional work in the project area which still contains a lot of room for ore bodies. The EM results were a very pleasant surprise and make further drilling even more of a must.

All the land with potential is finally under USB control. To adequately test the area, at least 5000 feet of drilling is recommended in 1978. The initial hole should test the "A-B" EM conductor in the altered ashflow. The remaining 5 to 7 holes should be located on a one hole-at-a-time basis, using data gained in preceding holes. Prior to drilling, geology and the EM data will be reviewed

with Dave Smith, so that the angle and placement of the holes will test his conductors at the point of their maximum potential.

A P P E N D I X

1.) Drill Hole Summary Sheet - Drill Hole B-1
2.) Diamond Drill Field Log - Drill Hole B-1
3.) Drill Hole Summary Sheet - Drill Hole B-2
4.) Diamond Drill Field Log - Drill Hole B-2
5.) Spectrographic Analyses
6.) Daily Shift Summaries and Shift Reports (Tucson file - only)

DRILL HOLE SUMMARY SHEET

Hole no. B-1 Date started May 6, 1977 Total depth 830 feet

Contractor Connors Drilling Inc Date completed June 9, 1977 Total footage 794.4 (95.7% R

MATERIALS & SERVICES

Hammer:62'@6.50/ft.	403.00
Core:407.6'NX@12.65/ft.	5156.14
Core:330'NX@13.50/ft.	4455.00
69 Hours @ 40/hr	2760.00
1 mon.Compressor Rental	1200.00
Water truck Rental & Milege	553.53
Water Driver 55 hrs @9/hr	495.00
Materials + 10% SC	1361.60
1/3 Mobilization	750.00
1/3 Compressor Mob	449.28
1/3 U-Haul&Generator Rental	480.18
Total $	18,063.73
Est Cost/ft.	$ 21.76

TIME DISTRIBUTION Hrs.

	Charge @ 40/hr	Non-Charge
Drilling		135
Move & Set-up & teardown	23	
Tripping		5
Stond by *	2	34
Repairs		40
Spot core		
Fishing		
Casing & Casing WOC	15	
Water trips(delay)*	2	1
Condition Hole	7	
Misc. delays		8
Mixing mud*	20	1
Mobilization		46
Total	69	270

ROTARY FOOTAGE

Size	From	To
4" HQ	0	8 ft.
4" HQ	8	70 ft.

CORE FOOTAGE

Size	From	To	Recov.
NX	70	77	7
NX	77	129	29.1
NX	129	830	688.3

CASING

Size	Casing set	Size	Casing pulled
4"	10'(left in-hole)		
NXC	70'(left in hole-TO CHC		

DIRECT COST BREAKDOWN

Item	Contractor	Operator	Cost/ft
Footage 22.4'	(-($283))	10014.14	12.07
Casing		57.20	0.07
Mud & additives		1080.50	1.30
Bits		0	0
Misc. Materials + 10%SC		223.90	0.27
Drilling (Hrly.)			
Casing,WOC (Hrly.)		600.00	0.72
Cementing,WOC (Hrly.)			
Moving (Hrly.)		920.00	1.11
Misc. Delays * (Hrly.)	(3360.00)	960.00	1.16
Condition Hole (Hrly.)		280.00	0.34
Misc. Services (H_2O Driver)		495.00	0.60
Contractor Services			
Equipment Rental		2233.71	2.69
Mob & Comp. Mob	(3643.00)	1199.28	1.45

MATERIALS BREAKDOWN

Quantity	Item	Amount
10'	4" casing	57.20
66	NX core bxs @1.40	92.40
245 gal	soluble oil@1.87	458.15
135 gal	diesel @0.3885	52.45
30 sacks	Quik-Trol@6.95	208.50
7 "	Quik-Gel @ 4.93	34.51
1 "	CC-16 @ 20.07	20.07
1 "	Kwik-Seal	21.58
1 "	Gelflake	19.07
1 "	Dextrid	56.23
2 cans	Quik-Foam @ 58.27	116.54
2 cans	Condet @ 46.70	93.40
4 sacks	cement @ 3.23	12.92
10%	Service chg on supplies excluding casing	118.58

EQUIPMENT USED

Rig: Wesdrill Model 60

Drillers: Jerry Davis(Foreman)&Gary Cooper

Collors:

Drill pipe:

Compressors:

Pumps:

Bits:

ESTIMATED FOOTAGE / BIT

From To Aver. ft.

From To Aver. ft.

From To Aver. ft.

EST. ON-BOTTOM PENETRATION RATE

From 8-830'(822'/13.5)	ft./10hr. shift	60.8
From 8 To 70(62'/14hr)	ft./hr.	4.4
From 70-830'(760'/121hr)	ft./hr.	6.3
From 8-830'(822'/135hr)	ft./hr.	6.1

EST. INCLUSIVE PENETRATION RATE

From 8-830'(822'/25.5)	ft./10hr. shift	32.2
From To	ft./hr.	
From 8-830'(822'/255 hr)	ft./hr.	3.2

U.S. BORAX DIAMOND DRILL LOG

EXPLORATION — PRELIMINARY FIELD LOG —

Property BROMIDE PROJECT Hole No. B-1

Location Rio Arriba Co., New Mex. Total Depth 830 FEET

Date Started 5-8-77 Collar Elevation ±9700

Date Completed 6-9-77 Incl. & Bearing -55° N45E

Logged By B. E. FRENCH Core Size NX

HOLE SURVEY

Footage	Bearing	Inclination

Footage From	Footage To	Int.	Rec. %	Alteration* Mgn	Alteration* $CaCO_3$	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	General Description Rock Type, Structure, Etc.	Assays
0	10	10								No Returns	SET SURFACE PIPE AND HAMMER DRILLED TO 70 FEET	
10	20	10		2-3				lim/pyrite flooding schist and on fractures.	10	see core board	Meta-andesite: oxidized chlorite-sericite schist. Coarse fragments.	
20	30	10		2				same	20	"	same	
30	40	10		3-4				same with some. diss. lim/py.	30	"	Same, but coarse fraction all fine.	
40	50	10		3				lim/py flooding	40	"	Same, all fines, plus 10-15% bull quartz fragments - barren.	
									50			

*

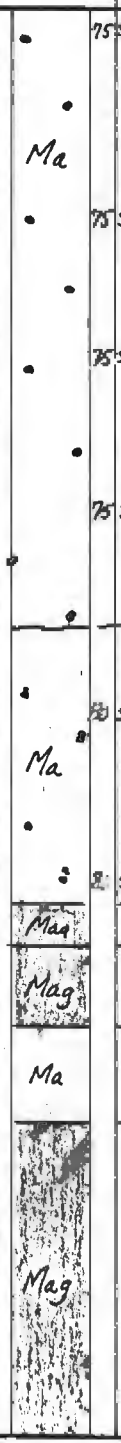
Footage From	Footage To	Int.	Core Rec. %	Alteration * Magn.	Alteration * Calc.	Alteration *	Alteration *	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Incl. -55° DIP (SCH.)	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
50	60	10		3							lim/py flooding		see core board	Meta-andesite: oxidized chlorite-sericite schist. Coarse fraction – all fine.						
				3-4							same	60	"	Same						
70	71.5	1.5	100	4	3						Stringers	70	0/INCL.	FAULT — T.D. FOR HAMMER, SET CASING TO CORE — 71' Lost CIRCULATION, CEMENTED: POSSIBLE FAULT						
71.5			100			Partially Oxidized			0-1%	cpy on frac. no ox. Cu	of diss py, pyr, or chalcopy. One ¾"x⅛" lenses of pyrrhotite at 71'	80	88 NE to VERTICAL	Pe Meta-porphyritic andesite: partially oxidized chlorite-sericite schist with minor qtz eyes and common 77 stringers and lenses of $CaCO_3$. Abund. magnetite as dust and some larger specks. sometimes associated with sulfides. Schistosity at 35° to core, ie. ~vertical	1	220	15	75	<.02	<.2
	77	5.5	100																	
77				4	3					Completely oxidized	Stringers of diss. lim/py or pyr. and lim/py coating fractures.	90	Mag V	Pe Meta-andesite and andesite porphyry with several small intervals of probable andesitic agglomerate: completely oxidized chlorite-sericite schist with minor stretched-pebble schist. Carbonate still abundant in streaks, but stained with limonite, not white and pink as in 70-77. Magnetite still abundant. Lim/py diss along foliation and staining fractures.	2	270	10	150	"	"
	97	2	(3' lost) 60										V							
97												100	Ma V	78- Agglomeratic unit with coarse pebbles at basal contact (78') and finer stretched pebbles downwards. Indicates that NE is strat'g. up + SW strat'g. down.	3	255	10	140	"	0.2
	108	11	(4' lost) 50											Meta-andesite: oxidized 108'						
108										Trace ox. Cu along schistos.		110	Mag V	Meta-agglomerate	4	630	10	110	"	<.2
												120	V							

Footage From	Footage To	Int.	c. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Gra Ft.	Log Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
			(11' lost)						M V	Meta-agglomerate						
	125	17	35							125'	4	630	10	110	<.02	<.2
125						ox. Cu rimming small lense of 1m/s.lf//schist			Ma 75° SW V	Meta-andesite						
								130	80° SW							
									Ma		5	95	10	120	"	"
	139.7	14.7	±95													
139.7	141	1.3	100					140	Δ▲▽Δ	FAULT, near vertical 140'						
141									Ma 70° NE	Meta-andesite: green speckled						
	145	4	100			Trace ox. Cu along Calcite seam	Blue oxide coating fractures			145'	6	60	20	110	"	"
145						½" band of diss. ox. Cu				Meta-agglomerate						
								150	Mag 25° SW	← Mafic sill						
	153	8	100						25° SW		7	250	15	130	"	"
153	155	2	100						Ma	Meta-andesite						
155							3" Chert cobble		V	Meta-agglomerate						
								160	Mag V	158'						
	164.5	9.5	100			part. oxidized traces of py/pyr	trace cpy		V		8	265	10	110	"	"
164.5									Ma	Meta-andesite						
	168.5	4	100							grad. contact 168'						
168.5						0.5-1.0% ½' diss. Nat. Cu		170	75° NE SW	Meta-agglomerate						
						0.1-0.5% 3½' diss. Nat. Cu locally coating magn. x/s. & generally assoc. with magn. concentrations					9	250	5	125	"	"
									Mag 80° SW	177'						
									80° SW		10	145	10	85	"	0.2
						4" wkly diss Nat. Cu 0.1% 1" same				181' ½" FAULT						
	187	18.5	100						Ma 70° SW		11	240	10	115	"	<.2
187						Part. oxid. several stringers cpy		190	Ma 80° SW	Meta-andesite 2" possible Meta-sediment (Ms)	12	185	10	115	"	0.2

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	193	6	100			frac c/ sulfide specks		190	Ma 80 SW Meta-andesite						
193		1.8	100			trace Nat. Cu in fractures	epidote increasing		Meta-sediment?: sericite schist						
194.8	199	4.2	100						80 SW Meta-agglomerate	12	185	10	115	<.02	0.2
199	203	4	100					200	199' 80 SW Meta-ashflow? qtz-poor						
203	207.5	4.5	100						70 SW Meta-agglomerate	13	110	5	85	"	<.2
207.5	212	4.5				Brown specks with chlorite ~3%!!		210	207.5' "Millrock" breccia grading downward (up strat.) to a tuff-like rock with silicified or cherty clasts	14	75	5	90	"	"
212	212.8	0.8							212' 2" Magglom. Meta-andesite: green-speckled ½" FAULT						
212.8	227.5	14.7	100			Diss. cpy in Mag frag. definite specks of cpy with ov. Cu alomd it	2" qtz cobble 1" qtz (bwl)	220	Meta-agglomerate 80 SW Mag 85 SW 222'	15	205	5	140	"	"
227.5	230.5	3	10					230	Map Meta-porphyritic andesite	16	175	5	110	"	0.2
230.5	234.2	3.7	100						Mag 80 SW Meta-agglomerate 232'						
234.2	235.7	1.5	100						Ms? 80 SW Meta-sediments? (or Fine Mag)						
235.7	241.8	6.1	100				FeS_2 (No Cu)	240	Map 80 SW Meta-porph. andesite	17	190	10	105	"	<.2
241.8	243	1.2	100			Specks of cpy on calcite stringer			Ms 75 SW Meta-sediments 242'						
243	248.3	5.3	100				Mr cobble? c/qtz. eyes		Cherty conglom. (or agglom.) 75 SW	18	245	5	130	"	0.2
248.3	251	2.7	100					250	Map 80 W Meta-porp. andesite grad. contact 251'						
251							large pyrs scattered		Mag - - - - Mag 80 SW FAULT in Mag - - - -	19	230	5	120	"	<.2
								260	Mag 260'						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Ore Min.	Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	261.5	10.5	100			wk. flecks cpy	scattered py x/s		Meta-agglomerate – part. oxid. (funny green oxide)						
261.5	263	1.5	100			MOSTLY UNOXIDIZED FROM HERE			Meta-andesite						
263	267	4	100				0.5-1.0% diss py-pyr		← 4" Millrock 70 SW Meta-agglomerate	20	145	10	85	∠.02	∠.2
267	269.7	2.7	100	4 chl.		wkly. diss. cpy – py – pyr often assoc. c/magn., chlor, acarb.			75 SW Meta-andesite: fine-grained						
269.7	278.5	8.8	100	3-4 chl.		same	zinc-like oxide (white) on frac. →	270	75 SW Meta-agglomerate --> "Millrock" 75 SW	21	155	15	80	"	"
278.5	281	2.5	100			same		280	Meta-andesite: fine-grained, dark green, chloritic						
281	308.5	27.5	100			same cpy diss in chert →		290 300 310	Meta-agglomeratic andesite, dark green, chloritic 75 SW Small FAULT, reverses schistosity 75 SW — chert cobbles with cpy Meta-andesite: swirly, fine-grained, green } green-speckled Ma	22 23 24	210 185 155	10 10 5	110 105 95	" " "	" " "
308.5	313	4.5	100			same			75 NE Contact						
313						slightly more cpy diss stringers →		320 330	80 NE Meta-agglomeratic andesite 75 NE 75 SW 75 SW	25 26	185 235	5 5	120 125	" "	" "

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Ore Min.	Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
						weakly diss cpy – py – pyr		340	Meta-agglomeratic andesite	27	230	10	75	<.02	<.2
									340'	28	255	5	100	"	"
								350	350'	29	260	5	105	"	"
								360	½" bull qtz. vein, near vertical, N15E 360'	30	215	5	160	"	"
								370	370'	31	200	5	100	"	"
	374.5	61.5	100			Note — 260-275: 1/15' wk. cpy									
374.5	380.5	6	100			Very little sulfide, if any		380	Meta-agglomerate Z FAULT 380'						
380.5	385.3	4.8	100			same	Fe-stained calc. vein at contact		Meta-andesite	32	275	5	125	"	0.2
385.3						same		390	Meta-agglomerate 390'						
										33	265	10	125	"	<.2
								400	400'						



Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	406	20.7	100			very little sulfide			Mag.	Meta-agglomerate	34	225	5	115	<.02	<.1
406								410		Meta-andesite						
						minor streaks cpy					35	220	5	105	"	"
						very little sulfide		420								
									Ma		36	205	5	120	"	"
								430								
											37	275	5	120	"	"
								440								
						Sulfides picking-up					38	175	5	110	"	"
						¾" band of 5-8% cpy // schist		450								
	453.7	47.7				¾-1" band of 8-10% pyr-cpy					39	810	5	110	"	"
453.7	456	2.3	100						Mag							
456	458	2	100						Ma	FAULT						
458			100						Mag							
459	461	2	100			trace cpy		460	Ma							
461							course diss. py			Meta-agglomerate	40	315	5	110	"	"
								470	Mag							

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	474	13	100						Mag						
474	478	4	100			no sulfides			Ma: Meta-andesite: green-speckled, chloritic	41	205	5	150	<.02	<.2
478	484	6	100					480	480' Mag						
484	484.5	0.5	100						Ma: Meta-andesite: green-speckled, chloritic						
484.5	487	1.5	100						M Meta-agglomerate (andesitic)	42	220	10	120	"	"
487	489.5	2.5	100						Ma: Meta-andesite: green-speckled, chloritic						
489.5								490	490' Meta-agglomerate (andesitic): stretched pebble agglom. in chloritic schist matrix.	43	215	5	100	"	"
									85 SW 5 NE V 5 NE						
								500	500'						
						qtz contains scattered blebs of cpy			V 75 SW Bull qtz cobbles or veins with chlorite clots	44	420	5	100	"	0.2
						Flecks of Nat. Cu		510	Mag 75 SW 510'						
						Wkly. diss. flecks Nat. Cu			55 SW						
						cpy diss wkly			75 SW						
						Wkly diss Nat. Cu cpy wkly diss in lim oxid. rock			60 SW	45	185	5	135	"	<.2
						Strong flecks Native Cu on frac.		520	520'						
						1-5% cpy									
						Nat. Cu			75 SW	46	210	5	115	"	"
						Nat. Cu 531-31.5		530	FAULT - Chloritic matrix 530'						
						part. oxid., diss cpy & Nat. Cu			75 SW Meta-agglomerate: same as above 80 SW Mag	47	23	10	130	"	"
	540	50.5						540	FAULT 540'						

Footage From	Footage To	Int. ft.	Rec. %	Alteration * Mag.	Ca	Chlor.	Ser.		Mineralization T.S.	Ore Min.	Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
540	544	4	100	2-3		4			Z0.05 ±0.2	Cpy, weak to nil last ½' has common Nat. Cu			Meta-andesite: fine-grained, chloritic, partly oxidized	48	105	10	150	<.02	<.2
	545	1	100	3									75° Qtz-pink calcite-chlorite-magnetite vein, trace native Cu						
545	546.5	1.5	100									Map-Ma	546.5' Intersection with downward projection of the Key Rose shaft!						
546.5			100	3		3-4			Z0.1	Cpy, 0-0.2 (usually 0.05-0.1) Native Cu flecks in oxidized zones	Xline. magn. 2-3% diss.	550	35° NE Meta-ashflow: possible Mr-2. Matrix chloritic schist with inclusions of feldspathic, ♦ pumice?, & minor qtz. eyes. Also scattered lithic fragments.	49	260	20	120	"	"
													Andesite flow: Ma, chloritic						
													75° NE						
												560	30° NE 2° Andesite flow 560'						
													80° NE	50	165	10	115	"	"
												Maf							
												570	570'						
	579.7	33.2	100										30° SW	51	305	5	120	"	"
579.7										Sulfides nil but Nat. Cu were oxidized	very weak flecks	580	579'						
	585	5.3	100							Sulf. & Nat. Cu extremely sparse to nil			30° W Meta-andesite: dark grey, fine-grained bio-ser-chl schist						
585												Ma	gradational contact						
										Fleck of bornite in schist on floor.			Meta-agglomerate, very andesitic, very	52	255	15	150	"	"
												Mag	75° W chloritic						
	593	8	100							Wk. flecks of Native Cu		590	590'						
593													72° W						
	598.3	5.3	100							Hard to see sulf. but still very sparse flecks Nat. Cu were oxidized.		Map	Meta-porphyritic andesite	53	165	5	115	"	"
598.5													80° SW						
	601	2.7	100									Ma	Meta-andesite						
601	603	2.0	100							No sulf. or Nat. Cu evident		600	600'						
603												Mag	Meta-agglomerate						
												Ma	Meta-andesite						
										Several tiny specks Nat. Cu		Mag Ma	---> Meta-agglom.	54	195	5	110	"	"
	610.5												Contact 83° NE						
												610'	610'						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
610.5	613	2.5	100			Scattered, very weak diss. bornite?	Epid. increasing		Meta-porphyritic andesite: chlorite decreasing, epidote increasing						
613	613.6	0.6	100				diss. garnet?	Na	Contact 57° SW Meta-andesite:						
613.6						"	wk diss. garnet		55 SW Meta-porph. andesite (agglomeratic)	55	190	5	105	<.02	<.2
						Frac. with flecks of cpy	epid. increasing chlor. decreasing	620 Map	620'						
						Frac. with flecks of Nat. Cu	epid.		25 SW						
						Very minor bornite			75 SW	56	285	5	130	"	"
						Slightly more "									
	629	15.4	100			Hardly any sulf.			← 2" band of Mag						
629						629.1-635: 4" 1% Nat. Cu disseminated on frac. with cuprite		630	← Meta-agglomerate	57	305	10	110	"	"
						.5-.1% "			75 SW Meta-porphyritic andesite	633'					
									75 SW	58	140	15	125	"	"
								Map		636'					
64[illegible]	641.5	12.5	100			Traces of tiny diss. Nat. Cu &		640		59	105	20	105	"	"
641.5						cpy (some born) <.1%			Meta-agglomerate with cherty cobbles						
									70 SW	60	150	20	115	"	"
								650		650'					
						Frac. with diss bornite			70 SW						
										61	205	15	120	"	"
						Same as above		660		660'					
						666.2' cpy on frac.				62	170	15	110	"	"
									75 SW						
								670		670'					
						Cu greatly diminished to nil		Mag	75 SW						
						Very, very weak tiny diss. Nat. Cu				63	155	15	100	"	"
								680		680'					

Footage From	Footage To	Int.	Rec. %	Alteration *	T.S.	Mineralization: Ore Min.	Mineralization: Gangue	Graphic Log: Ft.	General Description: Rock Type, Structure, Etc.	Assays (ppm): No.	Cu	Pb	Zn	Au	Ag
(641.5	758	116.5)				Cu much less to nil			Same						
									Mag	64	185	15	95	"	"
						689.5' Nat. Cu on frac.			10 SW						
						690: Diss. bornite		690							
						Cu nil			70 SW	690'					
										65	170	15	115	"	"
								700		700'					
						Diss. Nat. Cu & bornite & cpy locally				66	220	15	105	"	"
								710		710'					
						Cu very sparse to nil			Mag	67	125	15	95	"	"
									65 SW	720'					
								720							
									3" FAULT						
						725.4' one tiny speck Nat Cu			70 SW	68	100	15	90	"	"
						728.2' same				730'					
						+28.5' "									
						Cu nil except as noted		730	Mag						
									35?SW	69	65	10	90	"	"
									35?SW	740'					
								740							
										70	60	10	85	"	"
						748.2': cpy on frac				750'					
								750							

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.
(41.5)	758	116.5	100			Cu nil except as noted			Meta-agglomerate
758	762.5	4.5	100					760	Meta-sediments with chert in strat. upper 2 feet.
762.5	764	1.5	100						Meta-agglomerate
764	768	4	100					Ms	Meta-sediment
768								770	Meta-agglomerate
						Traces of diss. cpy		Mag 780	
						788': 2" band of ore grade diss. cpy		788' 790	788-89: partially oxidized with some cpy? No ox. Cu or Nat. Cu in oxid. zone 789'
								800'	
								Mag 810'	
						814.3': traces of cpy		820'	

Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
71	30	5	70	<.02	<.2
72	10	5	75	"	"
73	120	5	90	"	"
74	215	5	70	"	"
75	6000	5	65	0.05	0.
76	135	5	95	<.02	<.2
77	215	5	115	"	"
78	180	5	115	"	

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
						oxidized			Meta-agglomerate						
	830 T.D.	62	100					Mag		79	140	5	85	<.02	<.2
								830	TOTAL DEPTH						

DRILL HOLE SUMMARY SHEET

Hole no. B-2 Date started June 9, 1977 Total depth 1299 feet

Contractor Connors Drilling, Inc. Date completed July 26, 1977 Total footage 1278 (98.4% Rec)

MATERIALS & SERVICES	
Hammer: 56' @ 6.50/ft.	364.00
Core footage-see below**	18604.65
48.5 hrs @40/hr	1940.00
121 hrs @ 44/hr	5324.00
1 mon. Compressor Rental	1200.00
Water Trk Rental & Mileage	1169.74
Water Driver & Water	403.50
Materials +10% SC	3773.60
½ Mobilization	750.00
½ Compressor Mob	449.28
½ U-Haul & Generator Rental	480.19
Site preparation	125.00
Total $	34589.96
Est. Cost/ft.	26.63

TIME DISTRIBUTION Hrs.	Charge 40/hr	Charge 44/hr	Non-Charge 40/hr	Non-Charge 44/hr
Drilling			36	102
Move & Set-up	22	26		3
Tripping				
Stand by *		3	6	149
Repairs			4	70
Spot core				
Fishing				
Casing & Casing WOC	10	3		
Water delay *		33		
Condition Hole	6	30		7
Misc. delays				
Mixing Mud *	10.5	26		
Stuck rods				9
Total	48.5	121	46	420

ROTARY FOOTAGE

Size	From	To
6¼"	0	10'
4"HO	10	66'

CORE FOOTAGE

Size	From	To	Recov.
NX	66	1278	1212

CASING

Size	Casing set	Size	Casing pulled
4"	10' (left-in-hole)		
NC	65'	NC	65'

DIRECT COST BREAKDOWN

Item	Contractor	Operator	Cost/ft.
Footage 16'	(214.65)	18968.65	14.84
Casing & bit		225.20	0.17
Mud & additives		3063.20	2.36
Bits			
Misc. Materials & water		445.50	0.34
Drilling (Hrly.)			
Casing, WOC (Hrly.)		532.00	0.41
Cementing, WOC (Hrly.)			
Moving (Hrly.)		2024.00	1.56
Misc. Delays * (Hrly.)	(10872.00)	3148.00	2.42
Condition Hole (Hrly.)		1560.00	1.20
Water Driver & site prep.		251.00	0.19
Contractor Services 10%SC		323.13	0.25
Equip. Rental		2841.93	2.19
Mob & Comp. Mob	(11086.65)	1199.20	0.92

MATERIALS BREAKDOWN

Quantity	Item	Amount
10'	4" Casing	57.20
1	6¼" Tricone rock bit	168.00
120	NXcore boxes @ 1.40	168.00
525 gal	soluble oil @ 1.87	981.75
351 gal	diesel @ 0.3885	136.37
8 cans	Condet @ 46.70	373.60
1 can	Quik-Foam	58.27
33 sacks	Quik-Trol @ 6.95	229.35
8 "	Cellex @ 126.54	1012.32
10 "	Quik-Gel @ 4.93	49.30
1 "	CC-16@20.07&Gel@19.07	39.14
2 "	Dextrid@56.23	112.46
22 boxs	Tide soap @ 2.14	47.08
2 "	Soap @ 11.82	23.64
37 loads	Water @ 7.50	277.50

EQUIPMENT USED

Rig: Wesdrill Model 60

Drillers: Jerry Davis (Foreman) & Gary Cooper

Collars:

Drill pipe:

Compressors:

Pumps:

Bits:

**CORE FOOTAGE BREAKDOWN:

66'-239' (9'lost-NC): 230'NX@12.65=2074.60

Price Increase

239-500' (7'lost-NC): 254'NX@14.40=3657.60

500-1000' 500'NX @15.25 = 7625.00

1000-1299': 299'NX @17.55= 5247.45

Total Footage Cost $ 18604.65

ESTIMATED FOOTAGE / BIT

From To Aver. ft.

From To Aver. ft.

From To Aver. ft.

EST. ON-BOTTOM PENETRATION RATE

From 10-1299' (1289'/21.8) ft./10hr. shift 59

From To ft./hr.

From 10-1299' (1289'/218hr ft./hr. 5.9

60 To ft./hr.

EST. INCLUSIVE PENETRATION RATE

From 10-1299' (1289'/57) ft./10hr. shift 22.5

45 To ft./hr.

From 10-1299' (1289'/571.5hrs) ft./hr. 2.3

U.S. BORAX DIAMOND DRILL LOG

EXPLORATION — PRELIMINARY FIELD LOG —

HOLE SURVEY

Footage	Bearing	Inclination

Property BROMIDE PROJECT Hole No. B-2

Location Rio Arriba Co., New Mex. Total Depth 1299 FEET

Date Started 6-9-77 Collar Elevation Approx. 9734

Date Completed 7-26-77 Incl. & Bearing -5°, 110E

Logged By B. E. FRENCH Core Size NX

Footage From	Footage To	Int.	Rec. %	Alteration*	Mineralization T.S	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
0	10	10						10	see core board	SET SURFACE PIPE AND HAMMER DRILLED TO 66'.						
10	20	10						20		Oxidized chloritic & sericitic schist. Probably meta-andesite or agglomerate Minor limonite after pyrite						
20	30	10						30		Same						
30	40	10						40		Same						
40	50	10						50		Same						

*Alteration Symbols: 1 = weak; 2 = moderate; 3 = strong; 4 = intense

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	General Description Rock Type, Structure, Etc.	Assays (ppm) Na.	Cu	Pb	Zn	Au	Ag
50										Sericitic schist. Possible meta-sediment						
	60	10						60								
60										Same, more chlorite						
	66	6								START NX CORE						
66										75 SW Meta-agglomerate with thin interlayers of andesitic material	1	165	5	120	<.02	<.2
								70		Magnetite common to abundant downwards, unless otherwise noted (see p. 11, 727-730). 95.5'						
						79.3' trace Nat. Cu in tiny specks			Mag							
						1.2 diss. Nat. Cu		80		75 SW	2	170	5	105	"	"
						81.5 " " "										
						trace ox. Cu				85.5' FAULT						
								90		FAULT & Bull qtz vein						
	93	27	100						Mag	2" clay gouge — FAULT	3	205	5	100	"	"
93										SW Meta-andesite: 95.5'						
	100	7	10						Ma							
100								100								
	103	3	100						Mag	SW Meta-agglomerate:	4	200	10	110	"	"
103										Meta-ashflow 105.5'						
									Mat	½" Fault						
	112.5	9.5	100					110			5	130	5	85	"	"
112.5									Mag	2" FAULT 115.5'						
						118.5' Diss. Nat. Cu on frac.			Mag	Chlorite vein	6	see	p.3			
								120								

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	121	2.5	100						Mag								
121	183.5	2.5	100						Maf		Meta-ash flow	6	205	5	110	<.02	0.2
123.5		1	100														
124.5						Scattered diss. Nat. Cu & some cpy					Meta-andesite						
						up to 0.5% diss Nat. Cu		130	Ma	75 SW	126'						
												7	210	5	145	"	<.2
											136'						
	138.5	14	99														
138.5	139	0.5	100														
139	140.3	1.3	100					140	Ma	70 SW	Meta-ash flow, siliceous						
140.3											Meta-andesite						
											Meta-agglomerate: tuffaceous	8	280	5	130	"	"
											146'						
						N.I to scattered traces of Nat. Cu		150	Mago	70 SW		9	340	5	130	"	"
						150.5: cpy & bornite on frac					156'						
	159.5	14.2	100														
159.5								160	Ma		Meta-andesite: black, partially to completely siliceous.	10	250	5	120	"	"
	168	8.5	90								166'						
168	170.3	2.3	100						Mag		Meta-agglomerate	11	300	5	110	"	0.2
170.3	173	2.7	100			Scattered, tiny diss Nat. Cu in oxid. zones; cpy not readily evident in unoxid. rock		170	Ma		FAULT, .3' Meta-andesite: black, siliceous	12	500	5	125	"	"
173	174.6	1.6	100			Diss. Nat. Cu					Meta-ash flow: very siliceous	13	100	5	155	"	"
174.6						Ox. Cu in schist				75 SW							
	179	4.4	80			Scattered, very weak diss, Nat. Cu			Ma		Meta-andesite	14	255	5	95	"	0.4
179								180			180' with oxid. fracs. Probably contains tiny, weak, diss. cpy — but can't see it, only Nat. Cu in oxid. areas.						
						183.5: Nat. Cu on oxid. frac (can't see sulfides)			Mag			15	295	5	125	"	0.2
						187: Tiny but, diss Nat. Cu				70 SW							
								190			190'						

Footage From	Footage To	Int.	Sec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
						Sporadic, weak diss. Nat. Cu		200	Mag			16	295	5	120	<.02	0.2
											200'						
												17	465	5	105	"	"
								210			210'						
	213	34'	100														
213	214.2	1.2	100						Ma	75 SW	Meta-andesite	18	330	5	120	"	"
214.2	216	1.8	100			215-216': Nat. Cu picking-up			Mag		Meta-agglomerate						
216											Mislatch - Core lost	X	NA	NA	NA	NA	NA
	221	5	0					220									
221						No Cu or sulfide			Ma? Mg		Meta-ashflow						
	226.5	5.5	100									19	180	5	110	"	<.2
226.5											Meta-andesite						
								230	Ma		230'						
	234	7.5	95														
234											Mislatch - core lost						
	241	7	0									20	190	5	110	"	0.2
241	242.5	1.5	100					240			Meta-ashflow						
242.5									Ma		Meta-andesite						
											247'						
						Scattered small blebs of cpy		250									
	254	11.5	95									21	300	5	120	"	<.2
254																	
	259	5	2%			?					Mislatch - core lost except for jumbled small fragments						
259								260	Ms	80 SW	Meta-sediment, gneissic						

Footage From	Footage To	Int.	%	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graph Ft.	Log	DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
											Meta-sediment, gneissic						
											262.6'	22	50	5	35	<.02	<.2
						Very weakly disseminated Native Cu											
						"		270	Ms			23	185	5	95	"	"
											271'						
							6" Chert					24	145	5	105	"	"
											FAULT						
								280		70 SW	281'						
	287.5	28.5	99						Ms			25	155	5	55	"	"
											1" FAULT						
287.5						Very weak disseminated native Cu in oxidized zones and very weak diss. bornite and cpy in un-oxidized zones		290	Ma		Meta-andesite, agglomeratic						
											291'						
										70 SW		26	170	5	50	"	"
	300.7	13.2	100					300									
300.7						No Cu			Map		Meta-porphyritic andesite						
	306.5	5.8	100								301'	27	80	5	100	"	"
306.5						No Cu	chlorite bull quartz				FAULT with chlorite and bull qtz.						
	309	2.5	100														
309						No Cu		310	Ma		Meta-andesite, fine-grained, weakly silic?						
											311'						
	315	6	100														
315						No Cu			Mag	60 SW	Meta-agglomerate	28	350	5	95	"	"
	317.6	2.6	100														
317.6	318.6	1	100			wk., tiny Nat. Cu + cpy					Meta-andesite						
318.6						No Cu		320	Mag		Meta-agglomerate						
											321'						
						"			Mag			29	215	5	95	"	"
	324	5.4	100														
								330	Ma								

Footage From	Footage To	Int.	Rec. %	Alteration *	T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
329.4											Meta-andesite with minor bull quartz veining						
						Starting at: 335.4, Common disseminated Native Cu or cpy in unoxidized zones (.5-1?%)			Ma	70 SW	335.4'	30	320	5	115	<.02	<.2
	340.5	11.1	100					340			338'	31	330	5	125	"	"
												32	325	5	105	"	0.2
340.5											Meta-agglomerate						
	343	2.5	100			"			Mag			33	250	5	115	"	<.2
343											Meta-andesite	343.2'					
						"			Ma								
	347.5	4.5	100									34	270	5	135	"	"
347.5						Weak disseminated Native Cu + bornite		350			Meta-agglomerate						
						Cu nil to sporadic traces of Native Cu			Mag		351'						
	353.5	6	100														
353.5						"					Meta-andesite & and. porphyry						
						"			Ma			35	55	5	95	"	"
								360			361'						
						Cu nil											
	364.5	11	100														
364.5	366.2	1.7	100			"			Mag		Meta-agglomerate						
												36	170	5	125	"	"
366.2						"					Meta-andesite						
						Native Cu diss. on frac.		370			371'						
						Cu nil			Ma			37	170	5	110	"	"
						Native Cu diss. on Frac.		380			381'						
						Weak traces disseminated Native Cu	384.5–385.5' near 50° quartz seam		Ma		Meta-agglomerate	38	115	5	45	"	"
								390		65 SW	391'						
						Cu nil			Ma			39	150	5	90	"	"
								400									

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	405	30.8	100			Cu nil			Ma	60 SW	Meta-andesite	401'					
405						"		410	Mag		Meta-agglomerate	40	100	5	95	<.02	<.2
						Sporadic, weak diss. Native Cu						411'					
									Ma		Green speckled meta-andesite	41	160	5	125	"	"
						Cu nil		420	Mag	55 SW		421'					
						Very weak, scattered diss. cpy						42	150	5	125	"	"
						Cu nil		430				431'					
						Very weak, scattered disseminated cpy		440	Mag	45 SW	gray, cherty pebbles in Mag	43	170	5	125	"	"
						"		450				441'					
												44	190	5	130	"	"
											1½" FAULT	451'					
						Cu nil		460	Mag		Meta-agglomerate, but finer clasts, and grading to very fine downwards	45	185	5	130	"	"
	464	5?	100			Vy. wk., scattered diss. cpy						461'					
464	466.2	2.2	100			Cu nil			Ma		Green speckled meta-andesite						
466.2	469	2.8	100			"			Ma		Meta-andesite: fine-grained, dark, Invn ?, some porphyry	46	160	5	100	"	"
						minor cpy @ 470.5'		470	Mag		Meta-agglomerate	470'					

Footage From	Footage To	Int.	Rec. %	Alteration *	T.S.	Mineralization: Ore Min.	Mineralization: Gangue	Graphic Log: Ft.	Graphic Log: DIP	General Description: Rock Type, Structure, Etc.	Assays (ppm): No.	Cu	Pb	Zn	Au	Ag
										Meta-agglomerate						
									Mag		47	210	5	60	<.02	<.2
										476.5'						
						Diss. cpy increasing ↓ Native Cu →		480		← oxide Cu on fracs. & cpy stringers 479.4'	48	1200	5	75	0.05	0.4
										← 1½" bull quartz vein 85° NE						
						Disseminated cpy & bornite, altered to Native Cu in oxidized zones				Meta-agglomerate, but more andesitic ↓	49	295	5	65	<.02	<.2
										No. 49-A: 1150, 5, 55, <.02, 0.2 {487.2' / 488'}						
								490	Mag	490'	49					
											50	370	5	60	<.02	0.2
						Sporadic, weak disseminated cpy & bornite				500'						
								500		60 SW						
						" Native Cu on frac →					51	230	5	60	"	<.2
						"				510'						
								510		45 SW						
									Mag		52	185	5	115	"	"
						"										
								520		520'						
										65 SW						
						"				— 2" FAULT						
										Finer-grained, more andesitic Mag	53	65	5	100	"	"
								530		530'						
									Mag							
						Cu nil					54	40	5	65	"	
								540		540'						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) Na	Cu	Pb	Zn	Au	Ag
						Cu nil			Mag			55	195	5	75	<.02	<.2
						Traces Cu		550		15 SW	550'						
						Cu nil						56	95	5	60	"	"
	560	9'	100					560									
560						Cu nil			Ma		Meta-andesite: fine, dense	57	40	5	110	"	"
						Large streaks of cpy, some Native Cu		570			571'	58		5	120	"	0.8
						Cu nil					573' ← streaks of cpy						
	577	17	100									59	520	5	100	"	0.2
577						Scattered streaks of cpy		580	Mag		Meta-agglomerate 580'						
	585.5	8.5	100									60	310	5	95	"	0.2
585.5						Very little cpy → scattered weakly	Epidote increasing ↓	590			Meta-andesite, locally agglomeratic, epidote increasing 590'						
									Ma			61	255	5	75	"	0.2
								600			600'						
						Cu nil											
	606	20.5	100									62	310	5	85	"	0.2
606	608	2	100			"			Mag		Meta-porphyritic andesite						
608						"		610	Mag		Meta-agglomerate 610'						

Footage From	Footage To	Int.	Rec. %	Alteration *	T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	612	4	100			Cu nil			Meg		Meta-agglomerate						
612	613.5	1.5	100						Ma		Green speckled andesite						
613.5						Trace cpy or py			dior.		Quartz diorite: very fine-grained, very little if any foliation (ie. post-metamorphics)	63	135	5	190	<.02	0.2
	621.7	8.2	100			Scattered streaks and specks of cpy		620			620'						
621.7												64	265	5	85	"	"
						Trace cpy in 6"	Bull quartz vein			70 SW							
								630			630'						
						Very weak, very widely scattered disseminated cpy						65	205	5	175	"	<.2
									Ma								
								640			640'						
												66	205	5	85	"	"
								650			650'						
												67	140	5	65	"	"
						same			Ma								
								660			660'						
												68	65	10	80	"	"
							1" calcite vein										
	666	44.3	100														
666						same		670	Map		Meta-porphyritic andesite	69	350	5	140	"	0.2
	676	10	100														
676						Sulfides trace to nil			Ma		Meta-andesite	70	210	5	210	"	<.2
	680.8	4.8	100					680									

Footage From	Footage To	Int.	%	Alteration *	T.S.	Mineralization: Ore Min.	Mineralization: Gangue	Graphic Log Ft.	Graphic Log	DIP		General Description: Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
680.8	684	3.2	100			Cu trace to nil			Map			Meta-porphyritic andesitic { Fine-grained / Coarse-grained 683' Cu increasing	70	(see p. 10)			
684	688	4	100			Cpy & bornite in fract. Cu rare	with epidote & calcite		Ma			686'	71	700	5	195	∠.02	0.2
688	699	11	100			"	2" epidote vein	690	Ma	85	SW	Meta-agglomerate 690' / Meta-andesite, agglomeratic	72	335	5	145	"	"
699	723	24	100			Cu nil	6" epidote vein; Ma epidotized	700 / 710 / 720	Ma	85	SW	Meta-andesite 700' / 692—718' HEAVILY FRACTURED / 710'	73	100	5	170	"	∠.2
													74	135	5	145	"	"
													75	240	5	115	"	"
									VEIN	85	SW	Vein: Quartz, chlorite, epidote, trace cpy and bornite @ 721.7'	76	430	5	180	"	0.2
723	727	4	100			"	Well epidotized		Mag			Andesitic meta-agglomerate	77	205	5	185	"	"
727	730.5	3.5	100			"	chlorite & epidote	730	Map	70	SW	Meta-porphyritic andesite (NO MAGNETITE)						
730.5	735	4.5	100			scattered blebs of bornite			Ma			Meta-andesite 731'	78	280	5	110	"	"
735	737.8	2.8	100			Cu nil	3" garnet common epid.		Mag.			Meta-agglomerate						
737.8	739	1.2	100			bleb [illegible] rn.			Ma			Meta-andesite						
739	746.5	7.5	100			Occassional traces of cpy & bornite		740	Mag			Meta-agglomerate	79	230	5	160	"	"
746.5						trace bornite &	1" qtz-epid vein?	750	Ma	80	NE	Meta-andesite 749'						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	757	10.5	100			Rare cpy-bornite	1" bull quartz		Ma	75 SW		80	55	5	145	∠.02	∠.2
757						"		760	Mag		Meta-agglomerate, black 759'	81	135	5	145	"	"
	771.7	14.7	100					770			769'						
771.7						Scattered blebs of cpy-bornite			Ma		Meta-andesite	82	225	5	100	"	"
	779	7.3	100														
779						Very weak sulfides— scattered traces of cpy-bornite		780			Black meta-agglomerate	83	225	5	115	"	"
								790	Mag		789'	84	230	5	95	"	"
						same only less Cu		800			799'	85	295	5	100	"	"
						same		810			809'						
	815	36	100								— Calcitic Fault	86	290	5	70	"	"
815						"	3" Epid, chl, qtz vein		Map	75 SW	Meta-porphyritic andesite 819'						
								820									

Footage From	Footage To	Int.	%	Alteration *	Mineralization T.S	Ore Min.	Gangue	Graphic Log Ft.	Dip	General Description Rock Type, Structure, Etc.	No.	Cu	Pb	Zn	Au	Ag
	828.5	13.5	100			Very minor cpy-bornite	Abundant epidote		Map.	Meta-porph. andesite	87	110	5	85	<.02	<.2
828.5						same	same									
	831.5	3	100			scant traces to nil Cu		830	Ma	Green speckled meta-andesite 829'						
831.5						same				Porphyritic meta-agglomerate	88	120	5	125	"	"
										839'						
						widely scattered traces of cpy and lesser bornite		840	Mag		89	120	5	85	"	"
										849'						
								850			90	195	5	80	"	"
							3" Epidote vein →			859'						
	860.5	29	100					860								
860.5						scattered traces of cpy, increasing in last 2'			Ma	Pink, feldspathic dike?						
										Meta-andesite, fine-grained, and minor meta-agglomerate layers	91	570	5	155	"	"
										869'						
								870								
						scattered traces cpy? (no Nat. or ox. Cu in oxid. zone)			Ma		92	230	5	75	"	"
										879'						
								880								
						same					93	520	5	95	"	"
	886.5	26	100													
886.5						same		890	Ma	Meta-andesite, coarser-grained (biotite schist) 889'						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Graphic Log Dip	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
											Meta-andesite, coarse-grained (bio. schist)	94	215	5	140	∠.02	∠.2
	909	22.5	100			Same ↓ very little Cu		900	Ma		899'						
											more agglomeratic	95	260	5	155	"	"
909	912.5	3.5	100			"		910	Mag		Meta-agglomerate						
912.5	915	2.5	100			"			Ms.?		Meta-sediment?	96	90	5	135	"	"
915											Agglomeratic meta-andesite						
								920			919'						
											Note: Rock is magnetic except where cut by epidote stringers, i.e. magnetite is primary and is destroyed by later, secondary epidote.	97	115	5	100	"	"
						"			Ma								
								930			929'						
	933	18	100									98	215	5	120	"	"
933											Meta-agglomerate: dark green, epidotized and chloritic with contorted white calcite stringers.						
						Minor Traces of cpy	epidote and chlorite abundant	940	Mag		939'						
												99	125	5	130	"	"
	951	18	100								949'						
951						Traces cpy & Lrge. xls of py or pyr	Carbonate speck & abundant epidote		Ma		Meta-andesite						
						black oxide Cu					— No MAGNETITE, except in last 1.5'	100	110	5	105	"	"
						scattered large xls of py or pyr	Very chloritic, Locally flooded with epidote	960	Ma		959'						
											No Magnetite						

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	Graphic Log Dip	General Description Rock Type, Structure, Etc.	Assays (p/m) No.	Cu	Pb	Zn	Au	Ag
						Scattered braces of cpy & py-pyr.	very chloritic		Ma	30 SW	Meta-andesite	101	115	5	95	∠.02	∠.2
								970			969'						
							Bull qtz. vein				NO MAGNETITE	102	90	5	95	"	"
							same		Ma								
							2" Bull qtz. vein										
						Same	"	980	Ma			979'					
							Bull qtz. veins										
							"					103	85	5	95	"	"
	1004	3.5	100				Irregular qtz with magnetite blebs		Mag Ma		Dark green meta-agglomerate, epidotized and chloritic with contorted, white calcite stringers						
989						Vein?	Epid. & pink K-spar	990									
							Chloritic				Meta-agglomerate, chloritic, and NO MAGNETITE	104	60	5	80	"	"
						Same			Mag								
								1000			999'						
	1006.5	17.5	100									105	115	5	125	"	"
1006.5						same	very										
	1011	4.5	100				Chloritic	1010	Ma		Meta-andesite NO MAGNETITE 1009'						
1011							same		Mag		Meta-agglomerate, chloritic No MAGNETITE	106	85	5	105	"	"
						same, but mostly pyrrhotite	3" Bull qtz. vein				1019'						
								1020	Mag			107	95	5	115	"	"
							Same 3" K-spar-Epid. vein				vein Meta-andesite = No MAGNETITE						
							K-spar Epid. vein		Ma		vein K-spar? — Epidote flooding 1029'						
								1030	Ma								

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Ore Min.	Gangue	Graphic Log Ft.	DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
	1033.3	19.[illegible]	100													
1030.5						Scattered xls of pyr common. Hardly any cpy	Chloritic		Mag	Meta-agglomerate with thin interlayers of andesite. NO MAGNETITE	108	90	5	90	0.02	0.2
	1039	5.5	100					1040								
1039							1043: 4" silica vein →		Map	Meta-porphyritic andesite NO MAGN.						
	1043	4	100													
1043						same	same		Ma	Meta-andesite, well-fractured NO MAGNETITE	109	135	5	95	"	"
								1050		1049'						
						Lots of pyr disseminated and on fractures	Same		Ma	Distorted foliation						
										Fine-grained	110	105	5	110	"	"
						Abundant diss. & frac. pyr. Trace CuS??	" Bull qtz + epid. →	1060	Ma	Meta-agglomerate 1059'						
							Heavy replacement by epidote		Ma		111	160	5	60	"	"
	1069	26	100													
1069						Less pyr, but still fairly common as above Cu nil	Chloritic	1070		Meta-andesite and porphyritic andesite, interlayered NO MAGNETITE	112	70	5	90	"	"
								1080		1079'						
											113	180	5	65	"	"
	1089	20	100							1088.6'						
1089						Scattered pyr Cu nil pyr common	3" Bull Qtz. → Chloritic	1090	Map	Meta-porphyritic andesite NO MAGNETITE	114	115	5	85	"	"
									Map							
										Distorted foliation (fault?) 1098'						
	1100.2	11.2	100					1100								

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log DIP	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
1100.2						Less pyr	"		Ma	Meta-andesite, distorted NO MAGN.						
	1104	3.8	100								115	115	5	95	4.02	4.2
1104						Little pyr	Chloritic		Map	very chloritic 1108'						
						"		1110	Map	Meta-porphyritic andesite — difformed and punky — No MAGN.						
	1112.5	8.5	100								116	35	5	115	"	"
1112.5						Pyr weak to fairly abundant thru out	NOTE: Biotite abundant Chlorite ceases abruptly			Looks conglomeratic in first ½'. Meta-sediment.? (Biotitic schist) NO MAGNETITE 1118'						
						Cu nil		1120	Ms		117	40	5	160	"	"
										1128'						
						Abundant pyr, diss. & on fracs.	biotitic	1130								
						Cu nil				Same, finer-grained (Some scattered MAGNETITE from 1134–1139')	118	55	5	185	"	"
									Ms	1138'						
						Same	same	1140		NO MAGNETITE	119	45	5	215	"	0.2
						Cu nil										
										Sparse MAGNETITE 1148'						
								1150								
										NO MAGN.	120	30	5	190	"	4.2
										1158'						
	1161.8	49.3	100					1160								
1161.8	1163	1.2	100			Little pyr	moderate chlor.		Ma	Green & schist meta-andesite — NO MAGN.						
1163	1165.3	2.3	100			"	no chlor.			Fine-grained meta-agglom or meta-ash flow NO MAGN.	121	55	5	215	0.05	0.2
1165.3						Common pyr Cu nil	"		Mag	Meta-agglomerate, andesitic NO MAGNETITE 1167.5'						
								1170			122	(see p. 18)				

Footage From	Footage To	Int.	%	Alteration *	T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
						same	"		No MAGNETITE	122	50	5	185	4.02	0.2
						3-5%: pyr & py cpy??		1180	1179'	123	55	5	205	"	4.2
								1187'							
							"	1190	Scattered, spotty - MAGNETITE	124	50	5	145	"	"
								1196.5'							
								1200		125	55	5	115	"	"
								1206.5'							
						same	"	1210	same MAGN.	126	65	5	125	"	0.2
									1216'						
								1220		127	55	5	140	"	0.2
	1223.7	58.4	100												
1223.7		0.8	100			No Sulfide	chloritic		Meta-andesite (post-mineral dike?)						
1224.5		1	100			pyr py, # cpy?			Meta-agglomerate 1226'						
1225.5	1226.8	1.3	100			No sulfide	chloritic		Meta-andesite (post-mineral dike?)						
1226.8															
						Common pyr, py & cpy diss. & on fracs.	No Chlorite Silica flooding?	1230	Meta-agglomerate?, fine, dense, silicified? No MAGNETITE	128	45	5	135	"	4.2
									1236'						
								1240		129		(see	p.	19)	

Footage From	Footage To	Int.	Rec. %	Alteration *	Mineralization T.S.	Mineralization Ore Min.	Mineralization Gangue	Graphic Log Ft.	Graphic Log	General Description Rock Type, Structure, Etc.	Assays (ppm) No.	Cu	Pb	Zn	Au	Ag
						"	"		Mag?							
	1243.5	16.7	100								129	80	5	145	∠.02	∠.2
1243.5						"	"		Mag?	Meta-porphyritic andesite, silicic Meta-andesite, fine, silicic 1245.5' NO MAGNETITE						
	1249	5.5	100													
1249						"	"	1250	Ma	Various meta-andesites, some porphyritic, still siliceous. NO MAGNETITE	130	195	5	160	"	0.2
	1255.4	6.4	100													
1255.4						"	"	1260		Meta-agglomerate (fine-grained) or ash flow or crystalline tuff. Quartz eyes not apparent, but rock is well silicified. NO MAGNETITE	131	50	5	120	"	∠.2
										1265.5'						
								1270	Mf?		132	65	5	115	"	"
										1275'						
										} well fractured						
								1280			133	45	5	105	"	"
										1285'						
										Ma: pre-mineral dike?						
	1289.7	34.3	100													
1289.7						Less sulfide	"	1290	Ma	Speckled andesite and 1½" Bull Qtz. vein Meta-andesite, fine-grained, siliceous NO MAGNETITE	134	135	5	135	"	"
	1295.5	5.8	100													
1295.5						Barren	"		gn	Hybrid? zone						
	1299	3.5	100						ggn?	Fine-grained, gneissic (chill margin??)	135	40	5	90	"	"
1299								1299								
T.D.									T.D.	Biotitic gneiss — possible intrusive						

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

Job No. 122753
H&H No. 772569
December 10, 1977

U. S. Borax
Attention: Mr. Barry French
1802 West Grant Road, #108
Tucson, Arizona 85705

Values reported in parts per million, except where noted otherwise, to the nearest number in the series 1, 1.5, 2, 3, 5, 7 etc.

Element	Sample Number B-1-1	B-1-5	B-1-10	B-1-15	B-1-20
Fe	10%	5%	15%	10%	10%
Ca	2%	2%	1.5%	3%	1.5%
Mg	.5%	1%	1%	1%	1%
Ag	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500
B	10	<10	20	30	10
Ba	20	10	500	200	150
Be	<2	<2	2	<2	<2
Bi	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50
Co	10	5	20	20	10
Cr	20	15	10	200	10
Cu	100	20	100	150	70
Ga	<10	<10	20	10	10
Ge	<20	<20	<20	<20	<20
La	<20	20	<20	<20	<20
Mn	500	500	300	500	300
Mo	<2	<2	<2	<2	2
Nb	20	<20	20	20	20
Ni	5	5	5	50	5
Pb	10	<10	15	10	10
Sb	<100	<100	<100	<100	<100
Sc	20	10	30	20	20
Sn	<10	<10	<10	<10	<10
Sr	200	<100	200	200	200
Ti	7,000	5,000	7,000	7,000	7,000
V	200	200	200	150	150
W	<50	<50	<50	<50	<50
Y	10	<10	20	10	10
Zn	<200	<200	<200	<200	<200
Zr	50	<20	100	70	100

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

SKYLINE LABS, INC.

Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

Job No. 122747
H&H No. 772687
December 10, 1977

U. S. Borax
Attention: Mr. Barry French
1802 West Grant Road, #108
Tucson, Arizona 85705

Values reported in parts per million, except where noted otherwise, to the nearest number in the series 1, 1.5, 2, 3, 5, 7 etc.

	Sample Number						
Element	B-1-47	B-1-51	B-1-56	B-1-61	B-1-66	B-1-71	B-1-76
Fe	10%	10%	10%	10%	10%	7%	10%
Ca	2%	2%	3%	2	1.5%	1%	2%
Mg	1%	.7%	1%	1%	.5%	.2%	.7%
Ag	<1	<1	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500
B	10	20	<10	<10	10	<10	10
Ba	200	300	200	500	200	500	100
Be	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50
Co	15	15	10	10	7	5	7
Cr	20	20	10	30	20	20	10
Cu	50	150	200	100	100	15	150
Ga	<10	15	10	10	10	10	10
Ge	<20	<20	<20	<20	<20	<20	<20
La	20	20	20	20	20	20	50
Mn	500	500	700	700	700	300	500
Mo	2	<2	<2	2	<2	<2	<2
Nb	20	20	20	20	20	20	20
Ni	7	7	7	7	5	5	5
Pb	<10	10	10	10	<10	<10	<10
Sb	<100	<100	<100	<100	<100	<100	<100
Sc	20	20	20	20	15	10	15
Sn	<10	<10	<10	<10	<10	<10	<10
Sr	100	300	500	500	200	500	200
Ti	5,000	5,000	7,000	5,000	5,000	2,000	3,000
V	150	100	150	100	100	30	70
W	<50	<50	<50	<50	<50	<50	<50
Y	15	15	20	15	15	15	15
Zn	<200	<200	<200	<200	<200	<200	<200
Zr	100	100	100	100	100	100	100

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED 12-14-77 Arizona U.S.A.

William L. Lehmbeck
Manager

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

Element	Sample Number B-1-25	B-1-30	B-1-35	B-1-40	B-1-45
Fe	7%	10%	5%	10%	10%
Ca	3%	3%	1.5%	3%	5%
Mg	1%	1.5%	.5%	.7%	1.5%
Ag	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500
B	10	10	<10	20	10
Ba	150	200	150	150	200
Be	<2	<2	<2	<2	2
Bi	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50
Co	20	10	5	10	10
Cr	200	10	<10	<10	100
Cu	100	200	150	200	150
Ga	<10	10	<10	10	10
Ge	<20	<20	<20	<20	<20
La	<20	20	20	20	20
Mn	300	1,000	500	1,000	500
Mo	<2	2	<2	<2	<2
Nb	20	20	<20	20	20
Ni	30	5	<5	<5	50
Pb	<10	10	<10	10	10
Sb	<100	<100	<100	<100	<100
Sc	30	20	10	15	20
Sn	<10	<10	<10	<10	<10
Sr	200	500	100	100	200
Ti	5,000	7,000	3,000	5,000	5,000
V	100	100	70	100	100
W	<50	<50	<50	<50	<50
Y	10	15	10	15	15
Zn	<200	<200	<200	<200	<200
Zr	70	100	50	70	100

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED Arizona U.S.A.

William L. Lehmbeck
Manager

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

Job No. 772989-Part II
Job No. DSJ 010
PAGE 1
January 16, 1978

REPORT OF SPECTROGRAPHIC ANALYSIS

U. S. Borax
Attention: Barry French
1802 West Grant Road, #108
Tucson, Arizona 85705

ITEM NO. SAMPLE NO.
1 = B-2-001
2 = B-2-005
3 = B-2-010
4 = B-2-015
5 = B-2-020
6 = B-2-025
7 = B-2-030
8 = B-2-035

Values reported in parts per million, except where noted otherwise, to the nearest number in the series 1, 1.5, 2, 3, 5, 7 etc.

ITEM	1	2	3	4	5	6	7	8
ELEMENT								
Fe	10%	10%	10%	10%	3%	15%	10%	10%
Ca	7%	7%	2%	7%	1%	5%	2%	10%
Mg	1%	1%	.5%	1%	.5%	1%	.7%	2%
Ag	<1	<1	<1	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	20	20	10	10	<10	20	10	20
Ba	200	300	100	200	10	300	100	500
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	10	15	10	20	5	10	10	20
Cr	<10	15	10	15	<10	15	15	70
Cu	150	100	150	200	100	300	300	50
Ga	10	10	15	30	<10	15	15	20
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	20	20	20	20	20	20	20	20
Mn	1000	700	700	1000	500	1000	700	1000
Mo	2	<2	2	2	<2	<2	2	<2
Nb	20	20	20	20	<20	20	20	20
Ni	<5	5	<5	<5	<5	<5	<5	20
Pb	70	10	10	20	10	10	15	15
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	20	20	15	20	10	20	15	20
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	300	500	300	700	<100	200	300	500
Ti	7000	10000	5000	7000	3000	10000	5000	7000
V	100	200	100	150	70	300	100	200
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	20	15	15	20	10	<10	15	15
Zn	<200	<200	<200	<200	<200	<200	<200	<200
Zr	100	100	100	100	30	100	70	70

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

Job No. 772989-Part II
Job No. DSJ 010

January 16, 1978

ITEM NO. SAMPLE NO.
9 = B-2-040
10 = B-2-045
11 = B-2-050
12 = B-2-055
13 = B-2-060
14 = B-2-065
15 = B-2-070
16 = B-2-075

ITEM	9	10	11	12	13	14	15	16
ELEMENT								
Fe	10%	5%	10%	10%	10%	10%	10%	7%
Ca	3%	.5%	5%	7%	2%	7%	7%	5%
Mg	1%	.2%	1%	1%	1%	2%	2%	1.5%
Ag	<1	<1	<1	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	10	20	10	10	10	10	10	10
Ba	300	5	300	300	500	500	1000	1000
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	5	5	15	15	10	15	20	10
Cr	20	<10	10	10	10	100	100	10
Cu	100	150	300	300	200	200	150	150
Ga	15	15	15	15	15	15	10	10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	20	20	20	20	50	20	20	50
Mn	700	500	700	700	1000	1000	1000	1000
Mo	<2	<2	2	2	2	2	2	2
Nb	20	<20	20	20	20	20	20	20
Ni	<5	<5	5	<5	<5	10	50	5
Pb	20	20	15	10	10	20	10	10
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	10	<10	20	20	20	20	20	20
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	200	100	500	500	200	700	500	500
Ti	3000	1000	7000	7000	5000	7000	5000	5000
V	70	70	100	200	150	100	200	200
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	<10	20	15	20	20	10	15
Zn	<200	<200	<200	<200	<200	<200	<200	<200
Zr	100	20	70	50	100	70	70	70

ITEM NO. SAMPLE NO.
17 = B-2-080
18 = B-2-085
19 = B-2-090
20 = B-2-095
21 = B-2-100
22 = B-2-105
23 = B-2-110
24 = B-2-115

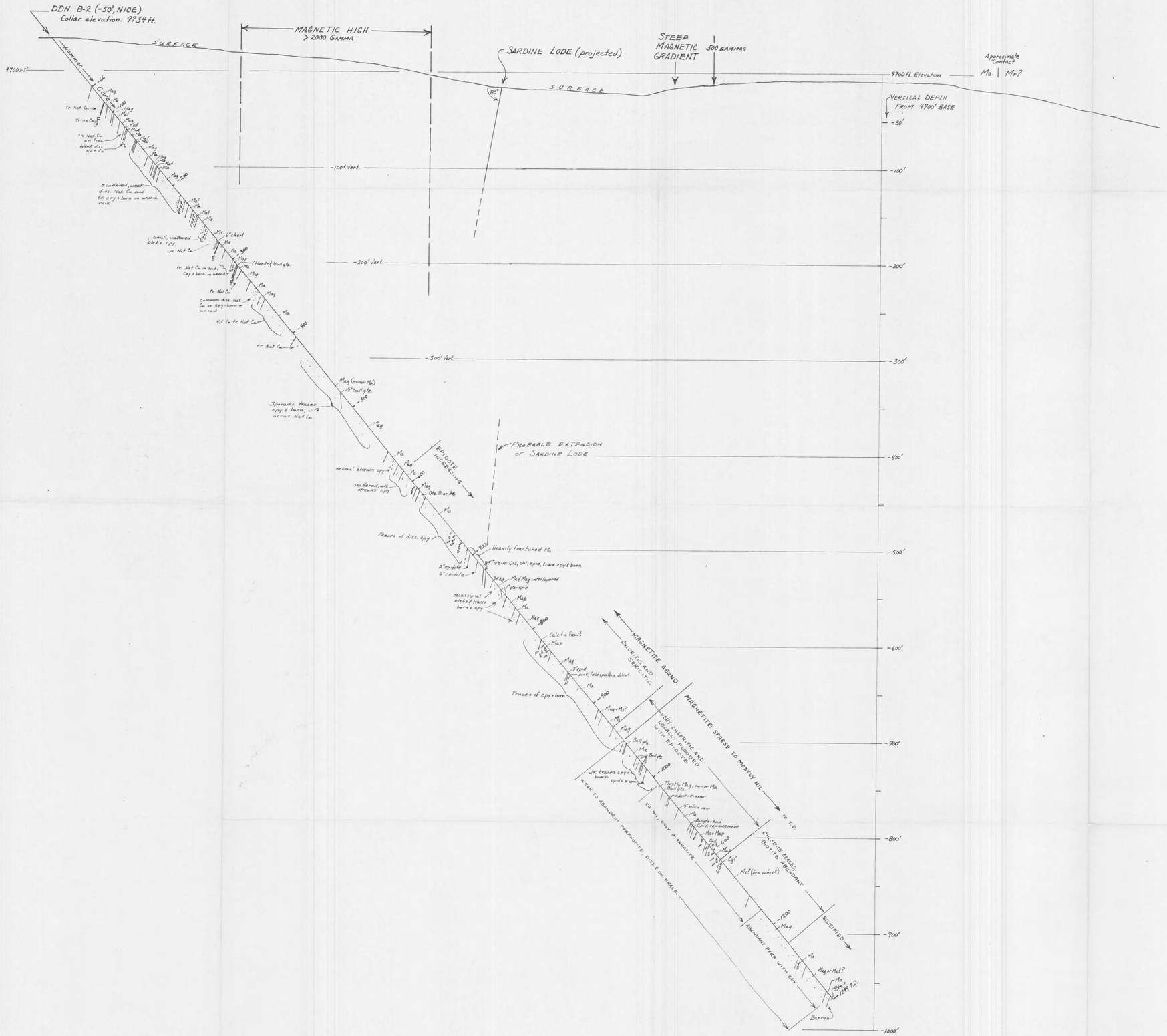
ITEM	17	18	19	20	21	22	23	24
ELEMENT								
Fe	10%	10%	7%	10%	15%	15%	15%	10%
Ca	7%	5%	10%	5%	15%	10%	7%	10%
Mg	2%	1%	2%	2%	5%	10%	5%	5%
Ag	<1	<1	<1	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	10	<10	<10	20	<10	10	<10	10
Ba	500	300	300	500	100	50	200	150
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	15	15	10	15	50	50	20	20
Cr	15	10	50	<10	700	500	100	300
Cu	50	200	150	200	150	100	200	100
Ga	20	15	20	20	15	20	10	10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	20	50	20	20	<20	<20	<20	<20
Mn	1000	1000	700	1000	1500	2000	1000	1000
Mo	2	2	<2	<2	2	2	2	<2
Nb	20	20	20	20	20	20	20	20
Ni	10	<5	10	<5	100	50	30	100
Pb	20	15	15	<10	<10	10	10	10
Sb	<100	<100	<100	<100	200	100	<100	100
Sc	30	30	15	20	30	30	30	20
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	1000	500	700	100	300	500	200	500
Ti	7000	7000	5000	7000	5000	7000	5000	3000
V	300	100	100	100	200	300	200	100
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	20	15	15	10	15	<10	10
Zn	<200	<200	<200	200	<200	200	<200	<200
Zr	50	70	50	100	30	30	30	30

ITEM NO. SAMPLE NO.
25 = B-2-120
26 = B-2-125
27 = B-2-130
28 = B-2-135

ITEM	25	26	27	28
ELEMENT				
Fe	10%	10%	10%	10%
Ca	5%	15%	5%	7%
Mg	1.5%	2%	2%	2%
Ag	<1	<1	<1	<1
As	<500	<500	<500	<500
B	<10	<10	<10	10
Ba	200	300	300	500
Be	<2	<2	<2	<2
Bi	<10	<10	<10	<10
Cd	<50	<50	<50	<50
Co	<5	5	20	5
Cr	15	10	100	10
Cu	30	50	150	150
Ga	10	15	10	10
Ge	<20	<20	<20	<20
La	20	50	20	20
Mn	1500	1000	500	700
Mo	<2	10	3	2
Nb	20	20	20	20
Ni	<5	<5	30	<5
Pb	20	30	20	15
Sb	<100	<100	<100	<100
Sc	10	20	20	20
Sn	<10	<10	<10	<10
Sr	300	1000	200	200
Ti	7000	7000	5000	7000
V	50	50	70	50
W	<50	<50	<50	<50
Y	10	20	10	20
Zn	200	<200	<200	<200
Zr	200	150	100	100

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L.
LEHMBECK
STATE SIGNED
Arizona U.S.A.

William L. Lehmbeck
Manager



USBORAX
EXPLORATION

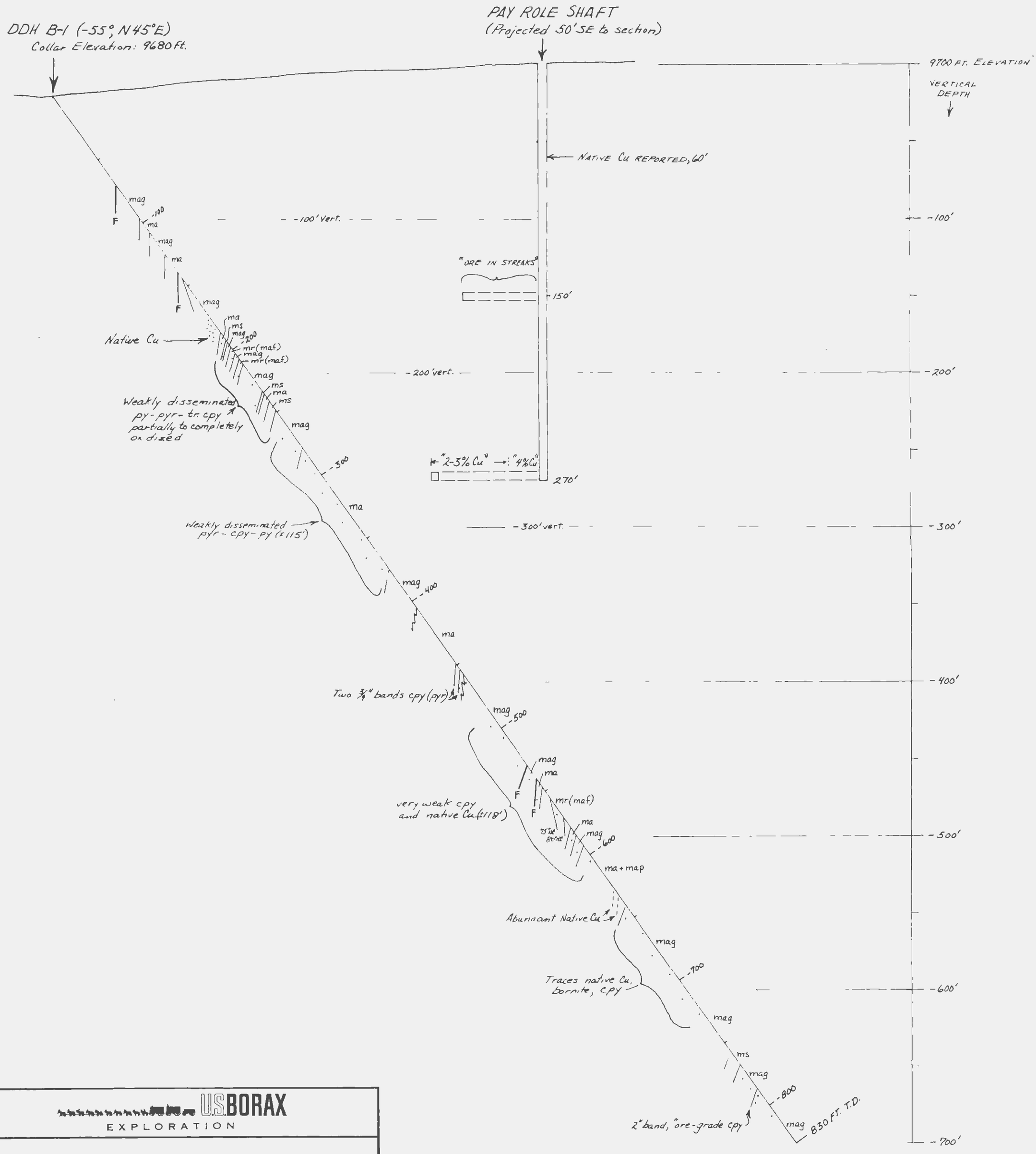
GENERALIZED SECTION
N10°E THROUGH DRILL HOLE B-2
(LOOKING N80°W)

BROMIDE PROJECT
RIO ARRIBA COUNTY, NEW MEXICO

SCALE: 1 INCH = 50 FEET (H & V)

DATE: 12-77
BY: BEF

FIGURE 2



U.S. BORAX
EXPLORATION

GENERALIZED SECTION
N45°E THROUGH DRILL HOLE B-1
(LOOKING N45°W)

BROMIDE PROJECT
RIO ARRIBA COUNTY, NEW MEXICO

SCALE: 1 INCH = 50 FEET (H & V)

DATE: 1-78
BY: BEF

EXPLANATION: (SEE MAP 2 AND DRILL LOG)

FIGURE 1

Rinker Lake
RINKER CABIN
COSART
WHALE
USLM No. 2
Prospects
PAY ROLE
DDH B-1
DDH B-2
TANK
9667 Prospect
Creek
9720
9730
9760
9700
9490
9600
9400
9745
9680
16
15
14

EXPLANATION:

ROCK TYPES

TERTIARY-QUATERNARY

- Alluvial cover

TERTIARY

- Tqm — Quartz monzonite: fine-grained, siliceous, with sericite on fractures. Also includes minor sericitic aplite.

PRECAMBRIAN (p omitted from symbols)

- kqu — Upper quartzite member of the Kiawa Mt. formation: massive, vitreous (orthoquartzite) (from Barker, 1958).
- qfp — Quartz feldspar porphyry of Tusas Mt.
- Basic dikes
- ggn — Granodioritic gneiss (intrudes meta-andesite and metarhyolite)
- mr-2 (cc 38) — Younger metarhyolite: probably a rhyolitic ash-flow; contains abundant quartz eyes in a sericitic(s) and chloritic(c) schistose matrix.
- mq — Meta-andesite: interlayered series of porphyritic andesite and massive andesite flows, stretched pebble agglomerates, and fine-grained sericitic, chloritic gneiss-schists. Commonly contains dark brown limonite in vugs, on fractures, and locally disseminated after pyrite. Also commonly contains interlayered marbands of abundant disseminated magnetite. Locally contains minor amphibole.

Moppin Group

- mr-1 — Older metarhyolite: hard, siliceous, rhyolitic ash-flow with soft, schistose, unbedded basal ash unit. Contains abundant quartz and orthoclase phenocrysts in a siliceous, felsitic matrix. Equivalent to Burned Mt. metarhyolite of Barker (1958).
- ms — Metasediments: mostly micaceous, feldspathic quartzite with local cross-bedding; also stretched pebble, schistose conglomerate units and a thin, younger unit of sericitic and conglomeratic phyllite which interfingers with "mq". Possibly equivalent to the Petaca schist of Barker, 1958. Occurs both above and below "mr-1" — the upper unit (exposed in Section 9) contains cobbles of "mr-1".
- mu — Metamorphics, undivided (on NW side of Cunningham Gulch). Probably mostly sedimentary in origin. Seem to be more highly metamorphosed and are amphibolitic in part.

ALTERATION

- s - Sericitized
- c - Chloritized
- e - Epidotized, usually accompanied by silication and/or silicification

MINERALIZATION

(= occurs on dump, no attitude; / or / = outcrops at prospect or along fault)

- Red - Copper-bearing quartz vein (exceptions, i.e. CaF_2, noted)
- Blue - Bull quartz vein - barren (Note: darker blue along faults → unmineralized)
- ⁘ - Oxide copper disseminated in meta-andesite, also includes chalcopyrite on dumps at Pay Role, Bromide, and Tampa mines

DRILL HOLES

- DDH B-1 — Diamond drill hole; showing surface projection, bearing, & angle of inclination.

DIAGRAM OF STRATIGRAPHIC RELATIONSHIPS IN THE MOPPIN GROUP.

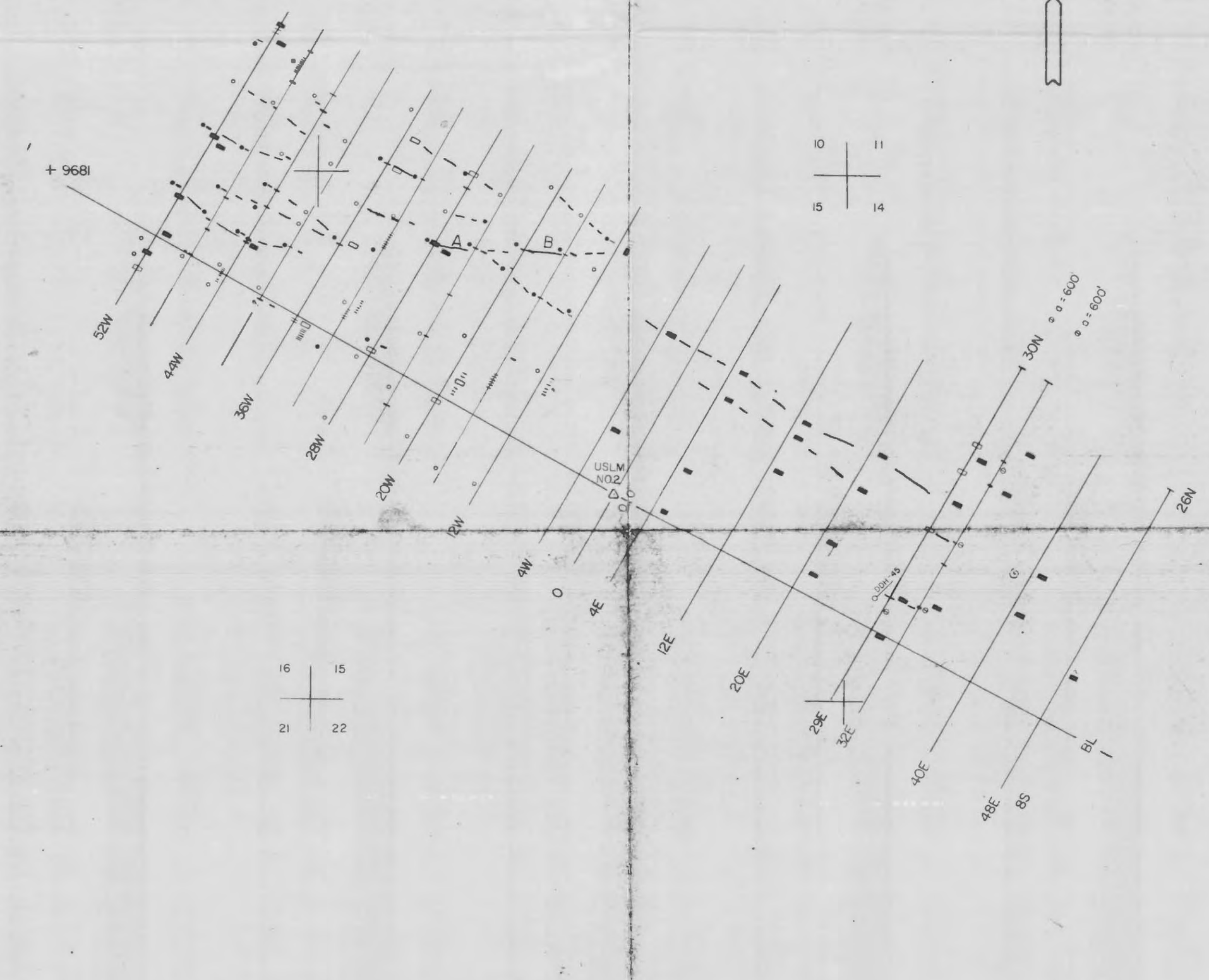
U.S. BORAX
EXPLORATION

GEOLOGY AND
LOCATION OF 1977 DRILL HOLES
BROMIDE PROJECT
RIO ARRIBA CO., NEW MEXICO

SCALE: 1 INCH = 500 FEET
DATE: 1-78
BY BEF

EX-78-5 MAP 2

PRELIMINARY COPY
UNEDITED



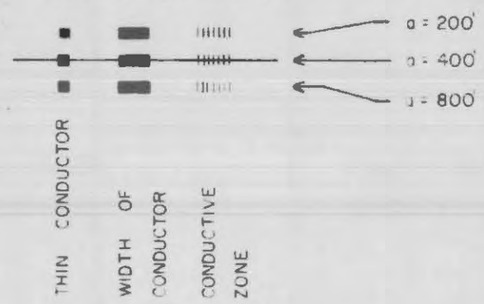
LEGEND

— — — SURFACE PROJECTION OF CONDUCTORS

VLF EM • CONDUCTOR

° POSSIBLE CONDUCTOR

MAXMIN EM



OPEN SYMBOL ▭ INDICATES POSSIBLE CONDUCTOR

SCALE 1"= 1000'

PRELIMINARY COPY

U.S. BORAX CORPORATION

PLAN MAP

BROMIDE PROJECT

RIO ARRIBA COUNTY, NEW MEXICO

by

Applied geophysics inc

SALT LAKE CITY, UTAH

SEPTEMBER 1977

MAP 4

U.S. BORAX
EXPLORATION

LOCATION OF FILL-IN MAGNETIC LINES AND REVISED MAGNETIC CONTOURS

BROMIDE PROJECT

RIO ARRIBA COUNTY, NEW MEXICO

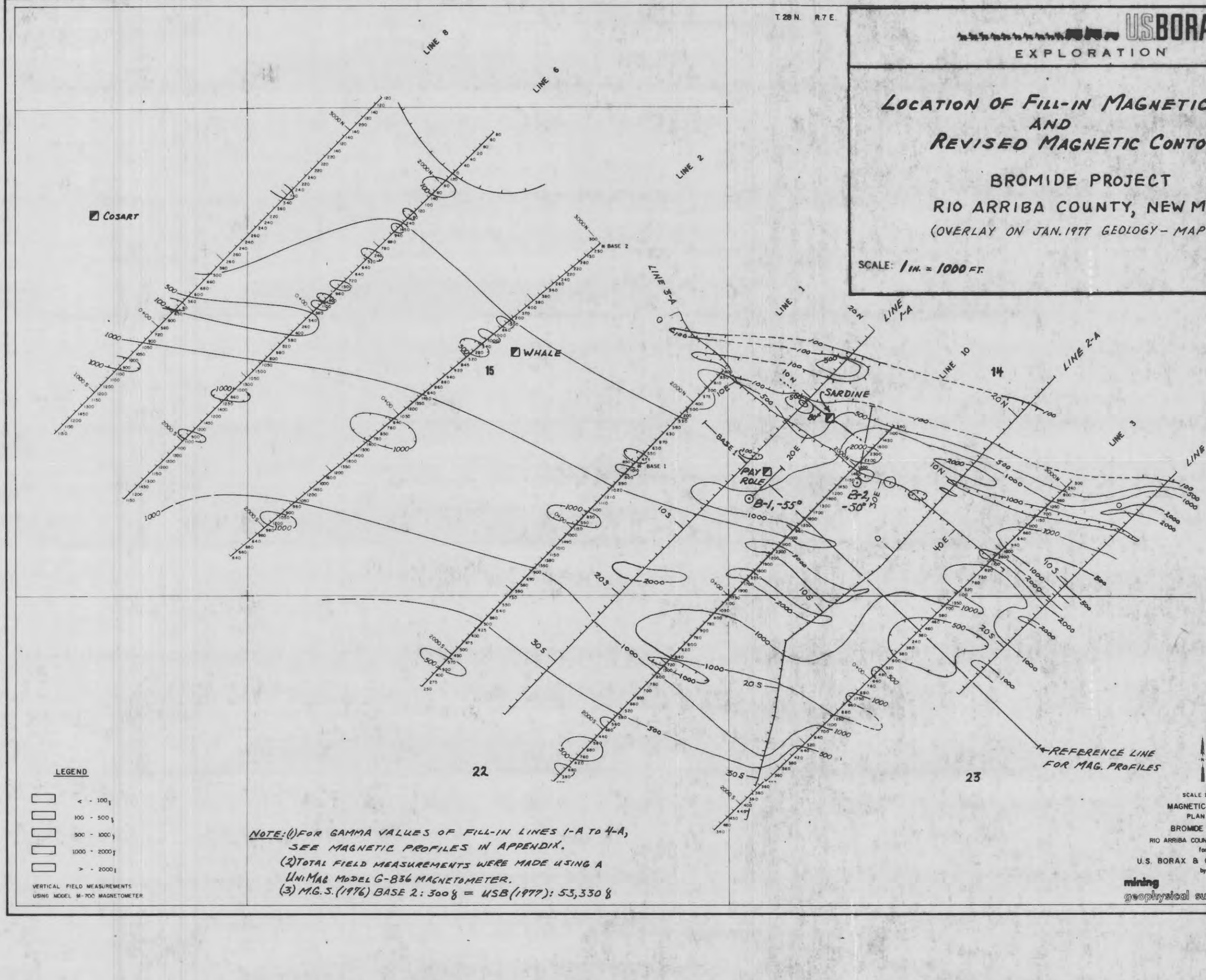
(OVERLAY ON JAN. 1977 GEOLOGY - MAP 2)

SCALE: 1 IN. = 1000 FT.

DATE: JUNE 77

BY: BEF

T. 28 N. R. 7 E.



LEGEND

- < - 100 γ
- 100 - 500 γ
- 500 - 1000 γ
- 1000 - 2000 γ
- > - 2000 γ

VERTICAL FIELD MEASUREMENTS USING MODEL M-700 MAGNETOMETER

NOTE: (1) FOR GAMMA VALUES OF FILL-IN LINES 1-A TO 4-A, SEE MAGNETIC PROFILES IN APPENDIX.
(2) TOTAL FIELD MEASUREMENTS WERE MADE USING A UNIMAG MODEL G-836 MAGNETOMETER.
(3) M.G.S. (1976) BASE 2: 300 γ = USB (1977): 53,330 γ

SCALE 1" = 1000'
MAGNETIC SURVEY
PLAN MAP
BROMIDE PROJECT
RIO ARRIBA COUNTY, NEW MEXICO
for
U.S. BORAX & CHEMICAL CORP.
by
mining geophysical surveys
SEPT. 76

MAP 3