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In the Organ Mining District, Dona Ana County, New Mexico, Continental Oil Company is seeking a joint venture partner on an 8,522 acre parcel. This area has been considered to have porphyry copper exploration potential since at least 1957 when a private ASARCO report recommended exploration in the area. Since that time a number of companies have had an interest in the area and holes with an aggregate footage of feet have been drilled. Drilling, an induced polarization survey, and geological mapping indicates a large sulfide system largely under shallow gravel cover on a pediment ~~on~~ at the west ~~flank~~ edge of the Organ Mountains.

A 25% carried interest is held by Leland A. Hodges of Fort Worth, Texas, and CONOCO owns 75%. For a work committment of two 3000 foot core drill holes CONOCO will grant half of their interest in the property, or 37½%. One of these holes must be started before June 1, 1973, in order to fulfill a ~~on~~ work committment, but the second hole can be drilled ~~at a~~ ~~later time~~. prior to June 1974. Hodges reserves the right to convert the 25% carried interest into a 5% net smelter return royalty. ~~in the event~~ CONOCO would prefer to remain ~~be~~ the operator but they are willing to consider other arrangements. Cost of maintaining the leases

~~PENDING AGREEMENT WITH ASARCO~~

LAND EXPENDITURE COMMITMENTS

Metallics Exploration

State New Mexico County Dona Ana District _____ Block Organ #12

Land Unit	Type & No.	Date Effective	Date Expiration	Net Acres (INC. PARTNERS 25% CWI)	Commitments Required	Date	Fulfilled	Date
ML-249	N.M. 71-0274	~~11-26-71~~	9-28-76	3,553	$3/acre rental 7265	by each 9-28		
250	71-0275	9-28-66	"	120.00	" " 360.00			
251	71-0276	"	"	251.12	" " 753.36			
252	72-3850	"	9-5-72	640.00	" " 1920.00	9-5		
253	73-4183	9-30-68	9-30-73	640.00	$.50/acre "	9-30-72		
			9-30-78		$3/acre " 1920.00	9-30-73		
						and each		
						yr. there-		
						after		
254	740201	"	1-22-74	40.00	$.50/acre " 20.00	1-22-73		
			1-22-79		$3/acre "	1-22-74		
						and each		
						yr. there-		
						after		
ML-255	Sun Claims	6-1-71	1-1-99	6,800.00	$100/claim - $20,300(max)			
	totaling 203							
MC-27	Contract	6-1-71			$30,000 work commit.	6-1-73		
	covering all				40,000 " "	6-1-74		
	above				60,000 " "	6-1-75		
					60,000 " "	6-1-76		
					90,000 " "	6-1-77		
2/8/73	Total For	Block		8,522.67				

(1) *25% CWI in Leland Hodges. Conoco pays all bills due to withdrawal of NL as 50% - 50% WI partner.

WORK COMMITMENT UNDER MC-27 INCLUDES ALL RENTALS AND ASSESSMENT WORK

* Convertible to 5% NSR anytime after farmoutees have earned 75% WI (6-1-77)
Dilution at rate of 1% per $20,000 of non-consenting party's share.

BFK 6-16-70

conoco

Interoffice Communication

To P. J. Sterling - Albuquerque

From Richard Loring - Albuquerque

Date January 30, 1973

Subject Project Report - Organ Prospect

Conclusions and Recommendations

Surface geology and subsurface information derived from drilling indicate the presence of a large sulfide system underlying the Organ prospect. This system contains local concentrations of copper mineralization and is controlled by altered latite porphyries, Mesozoic to Tertiary monzonitic stock rocks, and contact metasomatic - hydrothermal effects in Paleozoic carbonate rocks. Chances are good that economic copper - molybdenum mineralization can be found within the delineated sulfide system.

All drilling to date has failed to intersect economic mineralization, and the possibility of a shallow target has definitely been eliminated. However, evidence strongly suggests the likelihood of deeper targets which can be pursued using the above mentioned controls as guides.

Two untested targets exist at depth, and the following are recommended for drilling, in order of priority:

1. Center SE1/4 SE1/4, section 26; depth to 3500 ft.

2. W1/2NE1/4NW1/4, section 36; depth to 3000 ft.

Geologic Summary and Interpretation

Located just north of the town of Organ, New Mexico, the prospect occupies the western pediment of the Organ Mts. Surface mapping and drill hole data indicate that the Organ prospect is underlain by limestones variously intruded by several different rock types. As described in the appendix, the oldest of these intrusives is a monzonite regionally associated with the Organ stock. In the prospect area the stock is cut by latite and quartz latite to hornblende latite porphyry dikes which also have intruded the limestones. Quartz latite porphyry sills, possibly fed by the dikes, occupy a horizon between the limestones and overlying older andesitic (?) volcanics.

The block containing the sills and limestone has been downfaulted to the west against the monzonite and dikes of the footwall block along the Stevenson-Bennett fault zone. This N-S lineament terminates the NW-trending dike swarm in the footwall block, but several minute outcrops support the inference that these dikes continue into the downthrown limestones at depth.

Drilling and outcrop patterns have outlined a pyritic halo at least 4 miles long and 1 1/2 mile wide involving both fault blocks. Oriented parallel to and enclosing the dike swarm, the pyritization is associated with increasingly altered dikes, stock, and sill rocks to the NW under cover. Alteration trends are augmented by capping characteristics in intrusive rocks and mineralization in dike rocks which indicate higher sulfide and copper content to the NW. Alteration at the surface is associated with the quartz latite dikes and sills and occurs as intense quartz-sericite. The monzonite wall rocks are affected primarily with moderate propylitic alteration but patchy phyllic phases occur in a few zones of quartz veining associated with plunging dike contacts. One drill hole in NW1/4, section 36 near the center of the dike swarm indicates increasing wall rock alteration at least to strong sericite at depth. In the downthrown block, limestones are mildly silicated and silicified except in areas of contact with quartz latite porphyry dikes or monzonite, where intense chlorite-garnet or complete silicification occur.

Copper mineralization in drill holes is fairly anomalous in monzonite beginning about 1500 feet E of the Stevenson-Bennett fault zone. This anomaly in the upthrown block is terminated at the surface by vertical displacement along the fault. However, mineralization is expected to continue across the fault, as the pyritic halo has been shown to do by relatively shallow drilling in the downthrown side. The estimated depth at which this mineralization becomes anomalous hinges partly on rock types, amount of diking, and structure, but should be much deeper on the downthrown side of the Stevenson-Bennett fault. Indications are that equivalent horizons on opposite sides of the fault are at least 2200 feet apart in dip slip separation. This throw is based upon intersection of the limestone-monzonite contact in D.H. Sun #2 and assumes that the contact was not too far above the present erosional surface in the upthrown block. Therefore, this displacement estimate is a minimum (structure cross-section A-A'). Because the sediments dip westward, this estimated depth grows quickly as distance from the fault increases.

Mineralization is expected to be of two separate types, and either could result in a large-volume economic deposit. Both types are discussed in the next section as separate targets, although they may not be unique, unconnected systems.

Recommended Drill Targets

It has been previously noted that the alteration zonation, the pyritic halo, and other mineral guides are controlled by, or enclose, the dike swarm trending NW through the prospect. Both alteration and mineralization characteristics,

except the halo, intensify to the NW along the dike trend at the surface until cut off by the N-S Stevenson-Bennett lineament. Both scant outcrop and deep drilling in Sun #2 have shown that the dikes are present in the downthrown block. Therefore, it is fairly safe to assume that the dike swarm continues into the limestones across the Stevenson-Bennett fault zone to loosely coincide with the outlined pyritic halo. Deep drilling in both monzonitic footwall block and downthrown limestones indicate increasing copper values with depth.

The increase in copper content with depth in both blocks is significant and is supported by the intensification of alteration noted in several of the holes. From largely the above data alone two separate types of targets can be postulated to exist with depth. Both of these targets can be tested with one deep drill hole each.

The first is probably easiest to intersect and therefore has first priority. The location of this target is established on the assumption that the dike swarm noted in NW1/4, section 36 continues NW into the downthrown block of sills and limestones. It is noted on the surface and in D.H. Sun #2 that replacement mineralization in limestones intensifies to at least subeconomic grade in the vicinity of quartz latite porphyry dikes and the contact with monzonite. Therefore, the most likely location of a large mineral deposit would be where the dike swarm cutting the limestones is most intensely developed.

The hypothesis is best tested along the swarm where the limestones in the downthrown block are shallowest. Limestones are nearest surface in the SE1/4, section 26, where northward projections of cross-sections C-C' and A-A' indicate that a drilling depth of 3000 to 3500 feet is needed to entirely test the known limestone section. This depth is a minimum estimate; so the drill site should be chosen as close as possible to the Stevenson-Bennett fault zone without penetrating it before this depth is reached. This site is best located in the center of SE1/4 SE1/4, section 26 to test the possibility of a replacement deposit in the carbonate sediments.

The above data plus the actual size of the pyritic halo involving both blocks provide strong justification for the interpretation supporting the presence of a porphyry copper-type disseminated target associated with the stock. The dike swarm may be a structural localizer of this possible mineralized system, or it may be the actual mineralizing source for the sulfide zone. The alteration encountered at the bottom of Sun #1 is characteristic of this type of target. Since the monzonite is upthrown it will be easier to encounter more intense mineralization E of the Stevenson-Bennett fault than drilling deeper

into the downthrown block. Even though the system may be centered in the latter, it may be too deep to be economically recovered. Therefore, a site is chosen in W1/2 NE1/4 NW1/4, section 36 to establish the presence of the disseminated system. A depth of 3000 feet or more is necessary in order to reject or prove the above hypothesis. A deepening of Sun #1 to 3500 feet would yield as much if not more information and would probably cost about the same.

Richard Loring
Geologist - Metallics

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APPENDIX

Surface Geology

The Organ prospect is underlain by a complex of sedimentary, intrusive, and extrusive rocks, all of which are weakly to strongly altered by hydrothermal and contact metamorphic activity (see maps).

The oldest exposed units in the area consist of a moderately thick sequence of dolomitic limestones. The carbonates are tentatively identified as Fusselman dolomite of Silurian age, but alteration has destroyed any fossil evidence within the unit. The exposed section is approximately 1000 ft. thick, but undulating dips and faults prevent measurement of the true stratigraphic thickness. The top and bottom of the section are intrusive or faulted intrusive contacts with quartz latite and monzonite. Drilling indicates the true section to be almost double that exposed at the surface if not more. A strongly altered feldspathic rock occupies about 50 ft. of sedimentary section in the SW1/4, section 36 and was mapped as arkosic quartzite because of its equigranular texture and possible sedimentary structures; but it may be a sill of intrusive rock somewhat variant from others in the prospect area.

The intrusive rock types consist of at least three compositionally similar units. The oldest phase is a monzonite or monzodiorite which occupies a large part of the San Andres Mts. east of Organ. This unit is usually a medium grained, holocrystalline rock of microcline, plagioclase, biotite, hornblende, and minor quartz. The monzonite is everywhere along the western range front of the San Andres-Organ Mts. in fault or faulted intrusive contact with the Paleozoic sediments. A K-A age determination is being run on one sample of monzonite from San Augustine Pass, east of Organ to pin down its relationship to other units. It is probably Laramide or at least premid-Tertiary and is a host for much of the mineralization and alteration in the Organ area.

The monzonite is cut by several types of dike rocks most of which are similar to the major intrusive in composition and vary from quartz latite to latite porphyry to hornblende latite (?). Of these the youngest are the quartz latite to hornblende latite which cut or contain local fragments of latite porphyry. The latite prophyry is distinctive in containing twinned crystals of orthoclase. The quartz latite porphyry dikes strike NW toward, and probably were the feeders for, a thick quartz latite (?) to monzonite porphyry sill which occupies the horizon between the limestones and andesitic volcanics in W1/2 section 36, section 35, and section 26. Alteration and grain size decrease in these dikes to the SE indicating that the porphyritic hornblende latite in this direction is a chill phase of the dike system. It follows then that the intrusive center for the dike system is toward the NW beneath some portion of the sill, probably in section 26.

A third dike rock is a felsitic unit which occurs as an ENE-trending structure in N1/2, section 36 and as a plug-like body in SE1/4, section 25. Here called an aplorhyolite because of its grainy texture, its relationships to the latite dike system are debatable. Loghry in his August 1971 report for NL (enclosed) placed this rock at the end of the intrusive sequence and mapped it as cross-cutting the quartz latite dikes. But the rhyolite, as I found it, is terminated by the quartz latite, and alteration in the aplorhyolite intensifies toward the latite system. Because of its lack of influence on the alteration and mineralization, its place in the intrusive events is probably academic.

Structure

Two structural trends dominate the area in and around the Organ prospect. One, an approximately N-S lineament, is more in evidence north and south of the prospect than in the project area. This lineament is in part a normal fault which extends along the entire San Andres-Organ range, downdropped to the west. Called the Stevenson-Bennett or Torpedo-Bennett fault in previous reports, the structure separates andesites from limestones in section 24 N of the prospect and limestones from Organ stock in and south of the prospect. While most motion along this zone occured post-mineralization, some weak evidence suggests that motion may have initiated during intrusion and consolidation of the Organ stock. The vertical offset, at least 2500 feet, is critical in further exploration in the prospect area because reactive limestones and mineralization intrusive rocks are downdropped along it.

The second major structural trend is expressed by the strongly NW-striking dikes through the prospect area. These structures are offset by the vertical motion along the Stevenson-Bennett zone, but NW movements may be syntectonic with early deformation along the N-S lineament and could account for minor offsets along it. Structure cross-sections included with this report emphasize vertical movement, but put more weight on NW structure than they may deserve. Loghry, in his report, makes no mention of possible NW movement and arrives at the same structural configuration using partial en echelon displacements along the Stevenson-Bennett zone. Either interpretation is valid until more detailed work is done. The net effect on possible drill targets is the same for either concept.

Alteration

In outcrop, limestones are only weakly recrystallized and silicated except near latitic dikes or quartz-veined monzonite. In areas where limestones are in contact with highly altered dike rocks or monzonite, the sediments themselves are often strongly altered to a garnet-chlorite-quartz skarn or are

completely replaced by quartz, as at a locality south of the town of Organ (see map). In other areas limestones are almost fresh, except for recrystallization, even though adjacent intrusive rocks have experienced intense quartz sericite alteration. Such situations may be explained by the structural positons of the intrusives relative to the limestones in that both the heat and fluids rose upward away from the limestones through the overlying sill.

The most intense alteration occurs in, and spatially related to, the NW-trending quartz latite dikes and sills. These porphyritic intrusives are increasingly altered to a quartz-sericite assemblage to the west and northwest with the alteration occurring as intense quartz flooding accompanied by sericitization of all mafics and feldspars not replaced by quartz. The porphyritic texture may be a secondary alteration effect, itself, in many instances. These effects occur in all large quartz latite porphyry bodies. In narrow dikes less than 10-15 ft. wide, though, alteration decreases so that some intrusives in the S and SE portions of section 36 are only affected by moderate chloritization of mafic phenocrysts.

Monzonitic wall rocks are generally much less altered than the dikes and exhibit a weak sericitization with moderate to strong chloritization adjacent to the more strongly altered latitic bodies. Through out the prospect area and to the south and east for up to a half mile, the monzonite is at least propylitized where ever it is exposed. A weak intensification of wall rock alteration coincides with the more noticeable increase in the dike rocks to the NW. Several outcrops of monzonite are intensely cut by quartz sulfide veinlets and are associated with the structural plunge of dike rock contacts beneath or into the stock; some of these occurrences may be mapped as quartz latite prophyry due to the similarity in appearance.

Mineralization

The Organ prospect is situated within a large pyritic halo first defined by Dunham (1935). The sulfidized area is approximately 1 1/2 miles wide by 2 miles long in outcrop elongated NW. The mineralization occurs mostly in monzonite of the Organ stock and consists of primarily fracture controlled pyritic capping. A weak to moderate intensification of sulfides occurs northwesterly toward the Stevenson-Bennett fault zone where a considerable amount of copper mineralization is developed in the limestones.

Except for a gap in the SW1/4, section 36, the prospect overlies the best mineralization. Within the prospect area, capping characteristics indicate that sulfide content varies from nil (<1%) to over 5%, controlled by rock type, alteration, and, to some degree the amount of fracturing. Generally, the most intense capping development occurs in association with the quartz

latite dikes and sills in the NW1/4, section 36 and in several outcrops in section 26. In both dikes and wallrock, capping is mostly goethitic, but hematite and some jarosite are common along the dike trend to the NW. Pyritic boxwork is weakly developed along fractures. Several silicified latitic dikes contain fresh pyrite, chalcopyrite, and rare copper oxides in outcrop before being cut off by the Stevenson-Bennett fault zone or plunging under cover to the NW. Monzonite contains about 2 to 3% sulfides in the same area. Chalcopyrite pitch was noted but overall is rare in the monzonitic wallrocks.

The best developed structural control is also NW-SE with most quartz sulfide veinlets oriented approximately parallel with the dike trend. ENE and NNE trends are secondary components present in many areas of sulfidization, but the overall control of sulfide occurrence is quite conformable to the NW trends.

Summary of Drillhole Geology

At least 33 drillholes are known in and around the Organ claim block. All but 8 of these penetrated less than 700 feet in total depth. For specifics, refer to the logs or to the drillhole summary map of NL (Loghry and Maciulaitus). The contribution of the shallow holes to prospect geology consists of extension of known units and normal faulting under cover westward and the delineation of the sulfide zone to the NW another 1 1/2 miles beyond outcrop. These holes also helped to outline the zones of alteration in covered areas but failed to provide much information on the character or location of major mineralization.

The deeper drillholes are much more encouraging in providing data on mineralization trends, at least as derived from assays. Further, these drillholes strongly reinforce the interpretation of the large quartz latite bodies along the W section line, section 36, as a sill or sills sandwiched between volcanics above and limestones below. The volcanics and sills are firmly rejected as possible sources or hosts for economic mineralization, but assay data from several of the drillholes indicate increasing values with depth within these units above terminal depth. Increases in copper values of significant magnitude are noted in AMAX-4, AMAX-6, SUN-1 and SUN-3. The deeper holes have demonstrated that the limestones and sills are definitely downthrown against the Organ intrusive. Also the displacement, in the vicinity of D.H. Sun #2, is at least 2200 feet downthrown to the west as shown by the position at that depth of the limestone to monzonite contact.

Sun #1 was terminated in monzonite that was anomalously mineralized, quartz-flooded, and altered to a green sericite (?) or montmorillonite (?) and sugary quartz-sericite at 1120 feet. Sun #2 bottomed at 2373 feet in anomalous mineralization in monzonite altered not unlike that at the surface east of the projected Stevenson-Bennett fault zone. AMAX-4 terminated in mineralized, silicated limestones. All of these drillholes are located within 1000 feet of the projected center of the dike swarm in the monzonitic footwall block, but not enough drilling has been done in this block to demonstrate that mineralization does or does not

not extend outside these limits. Pyritic capping indicates that it should. AMAX-5 is located within a few hundred feet of the center of the swarm and bottoms in nearly background mineralization, possibly placing a southeastward limit to anomalous copper within the pyritic halo.

Besides AMAX-4, other drillholes encountered anomalous copper values in limestones. Sun #3 and Hodges #1, both located in the downthrown block, were terminated in somewhat anomalous carbonates beneath porphyritic sill rocks. Sun #1 penetrated very anomalous, subeconomic mineralization in two short intervals; one was associated with quartz latite porphyry dike (?) cutting carbonates and the other with the limestone-monzonite contact.

References: Dunham, K. C., 1935, New Mexico Bureau of Mines Bulletin 11.

Enclosures: 2 Geologic maps - CONOCO's and NL's with drill holes
3 Structure cross-sections
1 Alteration map

THE ORGAN PROSPECT, DONA ANA COUNTY, NEW MEXICO

Previous drilling, geologic mapping and geochemical sampling suggest the Sun Claims and vicinity have the potential for a large buried porphyry copper or molybdenum deposit and smaller vein, replacement and tactite deposits associated with the Organ stock and older Paleozoic sediments and Cretaceous or Tertiary volcanics and sills. The Organ stock is a coarse-grained quartz monzonite, called qm 3 by K.C. Dunham (New Mexico Bureau of Mines Bulletin 11, 1935) and described as the third phase of the Organ batholith. This stock is referred to as intrusive "A" in the 1"=100' maps and the 1"=500' geologic map attached to this report. The 500 scale map is an overlay to Plate I of previous reports (Peter Maciulaitis) and serves to show our interpretation after detailed mapping of the geology in the NW 1/4 of Section 36, T 21S, R 3E. Surface mapping by Dunham and others shows the Organ stock is about 20,000 by 12,000 feet tapering to the east and elongate in an easterly direction. Geologic mapping and drilling indicate the stock is much larger and its western portion is concealed in down-faulted blocks buried by alluvium, quartz-sericite porphyry sills and dikes and andesite (or diorite) sills or volcanics. This concealing sill-complex (intrusives "D" and "E" and other rocks - Dunham's quartz monzonite porphyry or qmp) is tentatively correlated in age with Dunham's Orejon andesite and is post-Paleozoic and thought to be pre-Organ stock in age. Doregon suggests his qmp (D) is post-Organ stock, fed by a quartz monzonite dike ("B"). This is possible but we have found no field evidence for it. In the vicinity of the Memphis Mine, rock believed to be related to the Organ stock is a sill conformable to and capping Paleozoic sediments.

The Organ stock is intruded by at least three later rocks. There are two types of northwest trending porphyritic quartz monzonite dikes (intrusives "B" and "C"), coarser in texture than the stock with large K-spar phenocrysts. These dikes are usually pyrite bearing and alteration may be described as fresh to strong phyllic (quartz-sericite-pyrite). One of the dikes carries visible chalcopyrite. Both types of dikes have imposed very strong sericite alteration with complete texture destruction on the surrounding stock for distances of 50-100 feet from their contacts. These dikes vary from fresh to strong phyllic alteration increasing in intensity to the northwest in the 100 scale map area. The Organ stock is also cut by an easterly yellow-white fine-grained rhyolite dike (intrusive "F") believed by Dunham to represent the final intrusive phase of the Organ batholith. This dike is strongly altered (clay-sericite) but appears to carry no pyrite. It is possible that dikes like this were feeders for rhyolite sills and flows scattered throughout the region including an occurrence outcropping in center section 26, T 21S, R 3E.

Outcrop mapping and drilling indicate a northwesterly trending pyrite zone about 20,000 feet by 6000-3000 feet wide extending from points south and east of the Torpedo Mine (Dunham) to points north and west of drillholes RM-216 and PC-1. This pyritization has affected the western exposures of the Organ stock ("A"), dikes ("B","C") intruding the stock and the complex of igneous rocks and Paleozoic sediments capping it.

In general, Organ stock (A) alteration increases in intensity toward the west and northwest, the most intensely altered and geochemically anomalous exposure being an upthrown 1000 feet by 600 feet block between two major northerly faults in the NW 1/4, NW 1/4, Section 36, T 21S, R 3E, which may be strands of the regional Torpedo - Stevenson - Bennett fault. South of the highway this Torpedo fault is a silificied, mineralized breccia evidently the mineralizer for the Torpedo copper ores and the lead-zinc mines to the south. If the northerly faults in Section 36 are mineralizers causing the strong alteration and mineralization in adjacent rocks, this fact has been obscured by post-sulfide movement. The west fault forming the contact between the stock and the sill complex which is downthrown on the west has a 25 to 40 foot wide clay gouge zone carrying no contemporaneous sulfides or evidence for them. There are chips of gray-green pyritic hornfels and white crystalline limestone, also a boulder of altered rock mineralized with hematite and gypsum in the gouge material. This fault block shows very strong pervasive phyllic (quartz-sericite-pyrite) alteration with abundant quartz veinlets. There is abundant jarosite and hematite after pyrite and minor amounts of other sulfides, also rare green copper oxides. This fault block exhibits the strongest alteration and mineralization of any exposure of the Organ stock. Furthermore it occupies a strategic location in a + 4000 foot diameter area of near-surface higher temperature strong phyllic alteration giving way to an argillic zone and an outermost propylitic zone. This zoning need not be symmetrical or center on a possible orebody at depth but it is wise to place our initial drill holes within the phyllic zone. The fault block is believed to reflect the deep, strongly mineralized interior of the Organ stock and it is proposed we drill our first hole within it. We recognize the outcrop may prove to be a sill. If so, we need to know if there is any contact metasomatic ore in the sediments, which are likely to underlie the sill. If we encounter strong copper or molybdenum mineralization by drilling here we can hope to find it at greater depths in the areas surrounding the fault block. Our $20,000 budget will permit about 4000 feet of rotary drilling in two or three holes. The second and third holes will be spotted south of hole No. 1 to penetrate altered Paleozoic sediments and underlying Organ stock which is likely to be highly mineralized; and west of hole No. 1 to penetrate the highly altered and mineralized rocks of the sill complex and determine if strong mineralization is to be found in the stock below. In my opinion the 650 foot Hodges No. 1 diamond drill hole never encountered the Organ stock. It penetrated phyllic altered sills ("P") and dikes, pyritic andesites and sediments ceasing in a fault zone. The sulfide-rich sediments and Organ stock presumed to lie below them need to be tested.

During our investigations of the Sun Claims and vicinity, 195 geochemical rock chip samples were collected and analyzed for copper, molybdenum and silver. Copper values range from 10 ppm to 3.37% cu, with an average background of 13 ppm. The frequency diagram suggests 36 weakly anomalous samples (26-45 ppm Cu) of which 18 are greater than 150 ppm Cu. Molybdenum values range from less than 1 ppm to 0.02% Mo. Discounting the less than 1 ppm Mo samples the average background is 7 ppm. This is unusually high since 2 or 3 ppm background is common in most districts. About 74 or 38% of the samples are considered to be anomalous (greater than 20 ppm) in molybdenum, 44 of them being greater than 60 ppm Mo. It is not often that one encounters such high molybdenum values in surface samples.

Most of the strong anomalies are found in the NW 1/4, NW 1/4, Section 36, T 21S, R 3E in the aforementioned Organ stock block and the adjacent "D" sill

(see 1"= 100" geochemical map with 50 ppm Mo contours). Thirty-one samples taken in the stock block average 31 ppm Cu and 50 ppm Mo. Sixteen samples taken in the north outcrop average 42 ppm Cu and 84 ppm Mo. I suspect there is an easterly fault in the covered area between the north outcrop and the south portion of the block. I propose to collar the first hole to coincide with the strong alteration and anomalous values of the north outcrop about 1060 feet S 55°E of the NW corner of Section 36, T 21S, R 3E. We reserve the right to change this location to coincide best with geology and terrain.

James D. Loghry

James D. Loghry

August 26, 1971

ORGAN, DONA ANA COUNTY, NEW MEXICO

MEMPHIS MINE VICINITY

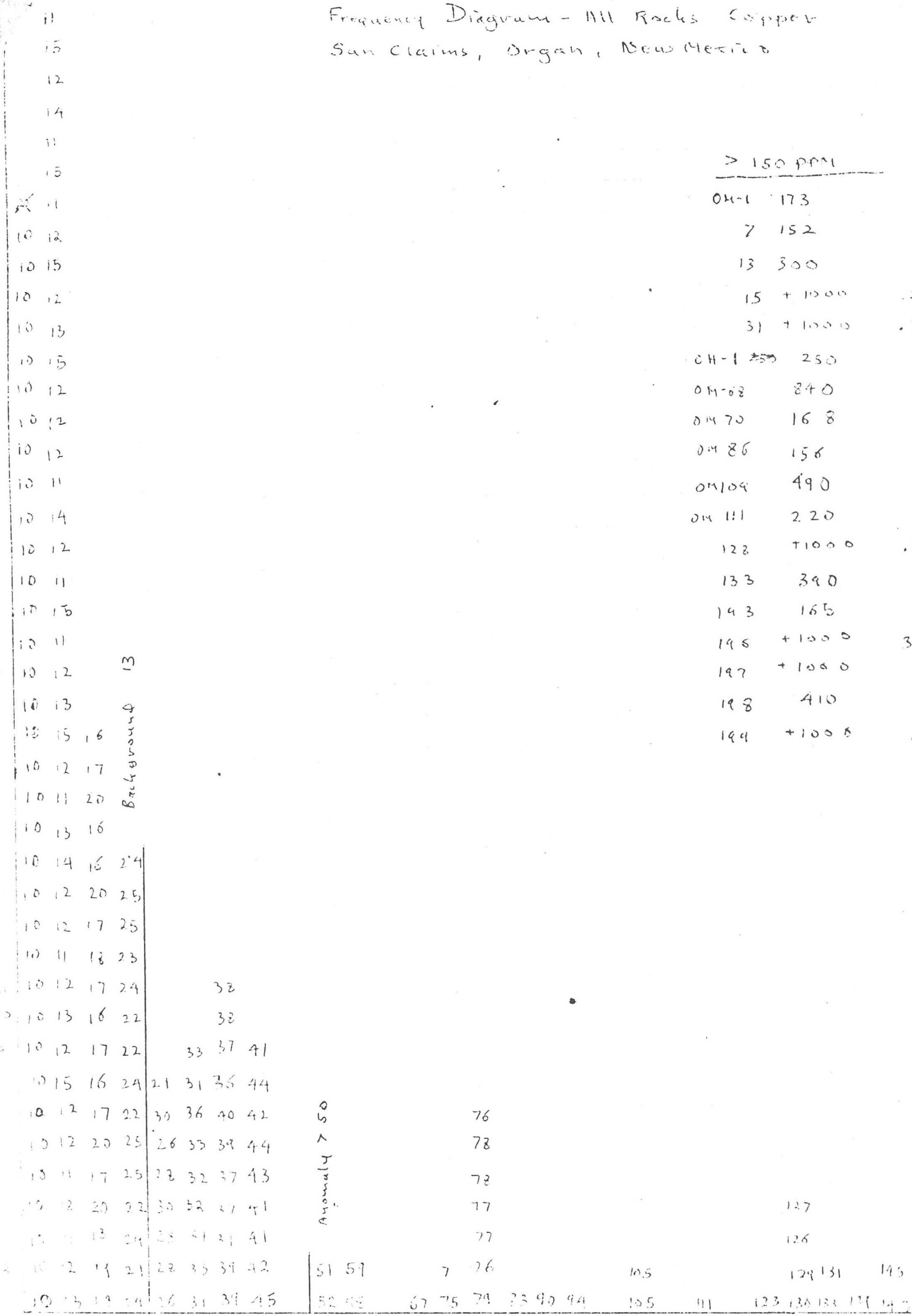
Spec. No.	Sampled by Fred Jenkins, Continental Oil Company 29 June,'71
190	Totally sericitized sill(?), hematitic, fracturing 350/75°E, N-S/70°W, 295/75°N, sill dipping 20°N. Sill is similar to and probably related to the Organ stock ("A").
191	Quartz-sericite alteration, veins trending 60°, hematite, Organ stock ("A").
192	Weakly altered quartz monzonite w/hem. staining, feldspars part kaolinized. Organ stock ("A").
193	Prosp. pit - contact between kaolinized quartz monzonite and sericitized hematitic rock. Organ stock ("A").
194	Sericitized rock w/quarts-hem. veins, strike 118 dipping south. Quartz monzonite, Organ stock ("A").
195	Totally sericitized to only kaolinized rock trending 340°. Hematitic w/some jarosite. Same fracture pattern as #190. Sill probably related to the Organ stock ("A").
Memphis Mine	Major vein 210°, 60° dip W.
196	Prospect pit, south end of hill in which majority of shafts located, mostly garnet-hematite rich w/some Cu.
197	Prospect pit, top of hill, garnet-rich skarn w/considerable amounts of hematite.
198	Prospect pit, extremely altered rock, unidentifiable, in close contact w/sericitized sill rock.
199	Marbleized rock layer <u>above</u> major vein or mineralized bed in the metasediments of the Memphis Mine. Trends 210° dipping 50° west.

May 17, 1971

Grab samples of selected intervals from drillholes Amax - 4 and 5 were taken and analysed for Mo, Cu, Ag. This was done to get some idea of Ag values encountered by drilling in unweathered rocks.

Sample No.	Hole & Interval	Cu	Mo	Ag
OH-1	Amax 4 (1400'-1500')	250	21	16.8
OH-2	Amax 5 (300'- 400')	105	34	8.9
OH-3	Amax 4 (940'-1040')	130	19	10.6
OH-4	Amax 4 (600'- 700')	143	21	11.3
OH-5	Amax 4 (200'- 260')	129	3	10.3
OH-6	Amax 5 (960'-1100')	90	11	7.2

Frequency Diagram - All Rocks Copper
San Claims, Organ, New Mexico



> 150 PPM		
OM-1	173	
7	152	
13	300	
15	+ 1000	.23%
31	+ 1000	.75%
CH-1	250	
OM-68	840	
OM 70	168	
OM 86	156	
OM 109	490	
OM 111	220	
128	+ 1000	.25%
133	390	
143	165	
195	+ 1000	3.37%
197	+ 1000	.15%
198	410	
199	+ 1000	.39%

Frequency Diagram - All Rocks Molybdenum
Sun Claims, Organ, New Mexico

OM 10	250
26	250
59	194
66	166
68	229
69	+ 500
72	157
84	177
99	+ 500
100	160
107	212
175 A	157
180	272

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3 6 14
4 7 13
4 6 11
5 10 11
4 10 11
3 7 11 19
3 6 11 18
3 9 14 16
5 9 14 16
4 6 13 20
1 9 11 17 23
1 9 14 17 24
3 9 14 17 26
3 6 11 20 21
3 6 14 19 21 30 37
3 6 14 19 24 27 36 61 71 109
2 6 11 20 21 33 34 40 43 49 61 67 74 97 109
5 6 12 19 23 29 34 37 44 48 51 63 69 74 89 100 107 114 137
5 8 11 18 24 30 34 38 43 49 51 60 64 69 73 80 83 87 92 100 106 115 122 140 144 149

COVER ONE SUBJECT ONLY IN EACH LETTER

YOUR LETTER OF SUBJECT

The Organ Project, Sun Claims and Vicinity, Dona Ana County, New Mexico

DATE

January 8, 1972

TO

FROM

LeRoy Scharon, Bill F. Kern, Phillip Sterling

DIVISION OR BRANCH

James D. Loghry

Tucson Field Office

Summary and Recommendations

Our work to date suggests that a porphyry copper deposit may be concealed beneath pyritized, altered andesites, porphyry sills, and Paleozoic sediments in the down-dropped west block of the Torpedo fault. The deposit may occur in Paleozoic rocks, the Organ stock, a later intrusive, or all three. Previous drilling, the three Sun holes, and the trace of the Torpedo fault define a mineralized block 4000 x 2000 feet with an average depth of about 1400 feet, and it is postulated that a porphyry copper deposit may occur in its vicinity.

It is recommended that the project continue and that the year 2 program be a 2500-foot diamond drill hole extending Sun 3. The hole would commence in October 1972 in the 1972-73 assessment year and cost about $30,000 (a preliminary estimate).

NL-Continental Joint Venture Drilling Project

Phase one of the joint venture commenced August 27, 1971, ending September 29, 1971. The program was supervised by J. D. Loghry, NL, during the periods August 27-September 4, September 7-8, and September 14-29, a total of 27 days. During the period September 9-12, the project was supervised by Continental geologists Phillip Sterling (1 day) and Fred Jenkins (4 days). Jenkins spent a total of 7 days and Sterling a total of 3 days on the project. Rotary drilling with spot coring by Loman Exploration Company commenced at 2:15 p.m., August 30, 1971 and was completed at 1:30 p.m., September 28, 1971, including a September 4-6 break between Sun 1 and 2--a total of 28 drilling days. Casing was left in Sun 2 and Sun 3 but had to be pulled from Sun 1 for use in Sun 3, so it is likely one could deepen 2 and 3 with a diamond drill, but it might be impossible to reenter Sun 1.

The objective of the program was to test the area of strong sulfide mineralization and argillic and phyllic alteration indicated by previous drilling and geologic mapping and geochemical sampling. The program also had to fulfill our contractual obligations of spending at least $20,000 in exploration on the Sun claims and leases during the period June 1971-June 1972 and reasonably satisfy the assessment work obligations for the year September 1, 1971 to September 1, 1972 as to those 175 mining claims described in Exhibit "A1" of the Agreement. The owner, with NL-Continental's assent, elected to file Bear Creek's work for the period 1970-71. Bear Creek filed the work for the assessment year 1969-70 in good faith, but against the wishes of the owner. All of Bear Creek's drilling--6 Con-cor holes--was done in the period September 1-September 16, 1970 and the expenditures should have been filed by Bear Creek for the 1970-71 assessment year. Even if no work had been done during the 1970-71 assessment year, the Sun claims in Exhibit "A1" would not have

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JAN 31 1972
MAXIMUM RETENTION DATE

been open until 12 noon September 1, 1971. The Otis 1-25 claims staked August 3-5, 1971 over 28 of the Sun claims staked in 1965 and 1969 are invalid.

The Agreement obligates NL-Continental to conduct 1971-72 assessment work requiring a legally acceptable expenditure of at least $17,500 benefiting the 175 claims of the "A-1" list. Total first year expenditure must be over $20,000. Owner and NL-Continental agree that drilling on the state lease in the NW1/4 sec. 36, T. 21 S., R. 3 E. benefits and applies as assessment work on the Sun claims which bound the lease on three sides. This position is supported by Continental Oil attorney Kent Olson and another opinion (October 15, 1971) by Leo Smith. Ben Donegan, Phil Sterling and I have studied court rulings pertaining to assessment work, and it appears we can file expenditures for supervisors' salaries, drilling (including mobilization and demobilization costs) and drillsite preparation (road work, mud pit digging, site leveling). Leo Smith agrees with these findings and states that assays of drill hole samples are not applicable. Supervisors' room, board, transportation and office time are not applicable, although they would be if we used consultants as supervisors. Under these guidelines, NL-Continental spent $3,602.98 in the 1970-71 assessment year: drilling--$3,213.98, site preparation--$36.00, and NL supervision--$353.00. Since the owner has filed for the 1970-71 period, all parties feel it is unnecessary to file these expenditures. Likewise it is unnecessary to file geological and geochemical work done by NL and Continental personnel. It is agreed that this would require public disclosures of information we do not wish to make. All parties agreed it was advisable to commence drilling on August 30, 1971 to fully protect the Sun claims.

As of November 16, 1971, NL has been invoiced for expenditures applicable to 1971-72 assessment work totaling $18,014: Loman Exploration drilling--$17,862.80, Caldwell drillsite preparation and restoration--$151.20. These costs plus supervisors' salaries calculated on a 20-day-per-month basis (NL--$1,906.20, Continental--$447.50) total $20,367.70, allowing us to file assessment work on 203 Sun claims. It is recommended we file on the 175 Sun claims described in Exhibit "A1" of the Agreement, also Sun Nos. 105-118, 120, 122, 124, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, and 279. This will cover the area of near-surface pyritization and most of the ground east of the valley fault.

The partners allocated $20,000 ($10,000 apiece) for drilling costs. For their 50% share of the total 1971 costs, Continental allocated $13,000. As of November 16, 1971, the NL Tucson field office has been invoiced for drilling, Loman Exploration--$21,076.78; drillsite preparation and restoration, Caldwell--$187.20; geochemical analyses, EFCO--$1,104.68; state leases rental, Hodges--$1,848.01; R. Isaacks watchman services, Donegan--$100; to total $24,316.67. Ben Donegan has proposed that Hodges pay 25% of Isaacks wages, so NL-Continental have been billed for $24,296.67. This is not to be regarded as an official accounting, but these charges are included among the direct charges

attributable to the joint venture. Four thousand one hundred seventy-five feet of rotary drilling plus minor spot coring were accomplished at a cost of $5.05 per foot.

Accomplishments of the 1971 Program

Sun Claims

Prior to signing of the Agreement (about August 28, 1971), Bob Donegan, agent for L. Hodges, restored claim corners and notices in the area of strongest alteration.

The conflicting Otis claims staked August 3-5, 1971, were abandoned by the Owner after he and his agents were notified they were in trespass.

Agreement Obligations

Contractual obligation to spend $20,000 in year 1 on the Sun claims has been fulfilled, since over $27,000 is charged to the project, the overage being credited to year 2 and the total $300,000 expenditure.

Expenditures in September and October, 1971 applicable to 1971-72 assessment work were $20,367.70. A proof of labor for 203 Sun claims, including the 175 "1A" claims, was prepared by Loghry and has been approved by the Donegans. Continental (Pokluda to St. John, 12-21-71) have also approved it, but Wes Pokluda recommends we file on additional claims. I have reviewed the expenditures and cannot recommend this for reasons stated in the assessment work analysis on preceding pages.

Summary of Drill Hole Geology and Geochemistry

Sun 1 — 8/30-9/3/71 — T.D.--1120'

0-18': Qal

18-1120': quartz monzonite of Organ stock, intrusive "A" of NL 1" = 100' map, qm 3 of Dunham (1934).

- 18 - 65': limonite (jarosite) zone
- 18 - ±300': phyllic alteration (quartz greater than sericite)
- ±300 - 500': do, minor biotite
- 500 - 600': highly silicified, minor sericite, abundant green clay (hydromica?), no biotite, argillic-silicic alteration.
- 600-1120': highly silicified, with mixed argillic and phyllic alteration with veinlet and disseminated pyrite (cuttings contain 3-10% volume percent pyrite,

averaging 4-5% pyrite). Plagioclase feldspars are weakly to completely altered to white or green clay. Biotites show no to complete alteration to green clay, sericite, or partial replacement by quartz or pyrite--judged to be similar to core at 1065'-1070'. Minor amounts of chalcopyrite, molybdenite and a gray sulfide, possibly tetrahedrite, were noted in cuttings throughout the hole.

In the core, a 1-mm pyrite veinlet with minor chalcopyrite and molybdenite was noted. A 1/4" quartz-pyrite veinlet imposed an inch of complete quartz-sericite alteration on its wall rock.

Sun 1 was terminated at 1120 feet because it seemed to be passing from higher to lower temperature mineral assemblages and sulfides seemed to be decreasing. I propose that these changes were caused by faults and a phyllic alteration event imposed on argillic altered rocks. It is possible the sulfides and anomalous Cu-Mo-Ag values, the silicic, argillic and phyllic alteration were imposed on the stock by a later intrusive at depth which could also be the source of the phyllic altered Cu-Mo-bearing sills and dikes encountered in surface mapping, RDH Sun 3 and DDH Hodges 1.

Sun 1 geochemical analyses are more encouraging than the cuttings examined under a binocular microscope at 18X, and the hole might have been taken deeper had the analyses been available. Copper values ranged from 30 to 400 ppm, averaging 127 ppm (20-1120'). Molybdenum values ranged from 7 to 272 ppm, averaging 39 ppm. Averages of selected intervals are: 20-190', 104 ppm Cu, 74 ppm Mo: 460-490', 299 ppm Cu, 12 ppm Mo; 20-810', 103 ppm Cu, 12 ppm Mo; 810-1120', 188 ppm Cu, 43 ppm Mo. The first 190 feet represent strongly altered phyllic quartz monzonites with anomalous molybdenum and copper values surface-mapped and sampled by Loghry and Maciulaitis. The increase in metal values with depth (810-1120') in the hole is regarded as encouraging.

Sun 2 9/7-9/18/71 T.D.--1400'

0-35': Qal

35-1400': pyritic, silicated Pennsylvanian-Permian sediments--fine-grained limestones, hornfelses with minor chalcopyrite, galena, gray sulfide (tetrahedrite?), and molybdenite. Pyrite content varies from 1-30 percent. The average was not estimated. Pyrite to 30 percent with minor galena was noted at 120-140'. Analyses in this zone average 0.25% Pb, 8.4 ppm Ag, 731 ppm Cu, and 16 ppm Mo. The rock is quartz rich with yellow garnet streaks, some garnet with pyrite being noted.

Geochemical analyses range from 73-774 ppm Cu and 3-186 ppm Mo. The entire hole, 20'-1400', averages 189 ppm Cu and 19 ppm Mo. The last 600' (800'-1400') averages 201 ppm Cu and 23 ppm Mo, compared with the first 780' (20'-800'), which averaged 180 ppm Cu and 16 ppm Mo.

Objective of Sun 2 was to test altered sulfide-bearing limy sediments for replacement ore bodies, determine if a tactite ore deposit exists near the Organ stock contact, and penetrate the stock to determine its potential for a porphyry copper deposit. Mineralization and alteration was encouraging, but the hole was stopped at 1400 feet, because it was advisable to conserve funds for Sun 3 to do a significant amount of drilling on the Sun claims and deeper drilling by the rotary method was impractical due to the hard ground. A best guess based on geologic projection places the stock contact at or below 1750 feet.

Sun 3 9/18-8/28/71 T.D.--1655'

0-25': Qal

25-110': quartz feldspar porphyry(?), phyllic altered; cuttings heavily contaminated by sand and gravel.
90-110': unweathered gray quartz feldspar (plagioclase) porphyry; 3% disseminated pyrite

110-440': Cretaceous(?) gray-green andesite, 5% pyrite, propylitized, intruded by thin gray phyllic-altered quartz feldspar porphyry dikes, or sills.
280-380': mostly gray phyllic quartz feldspar porphyry

440-600': phyllic quartz feldspar porphyry greater than propylitized andesite. Core at 435-440' (poor recovery) includes fragments of quartz feldspar porphyry (3-4% pyrite) and propylitized (+5% pyrite) fine-grained andesite. Texture alteration is similar to Dunham's Orejon andesite in secs. 23, 24, T. 21 S., R. 3 E.
510-530': quartz feldspar porphyry.

600-840': quartz feldspar porphyry, rare molybdenite, 5-10% pyrite.

840-1655': late Paleozoic (Pennsylvanian-Permian) weakly calcareous sediments, 2-10% pyrite.
1500-1650': much harder; more quartz.
1650-1655': (core) gray, very hard, siliceous limestone, very fine uniform bedding 30-35°. A poor host for sulfides, expect an increase with other formations.

Sun 3 analyses range from 44-250 ppm Cu, 3-109 ppm Mo, averaging 140 ppm Cu and 30 ppm Mo over most of the hole (100-1650').

The first 90' (10'-100') were phyllic-altered gray feldspar porphyry heavily contaminated with soil and gravel, averaging 50 ppm Cu and 3.6 ppm Mo. Values show a close correlation with rock types, the propylitized, pyritic andesites (100'-600') averaging 78 ppm Cu and 5 ppm Mo; the lower phyllic-altered gray quartz feldspar porphyry sill (600'-840') averaging 187 ppm Cu and 70 ppm Mo, while the pyritic, silicified late Paleozoic sediments (840'-1650') average 164 ppm Cu and 14 ppm Mo. Sun 3 is the only hole of the three to show a decrease in Cu-Mo values in the lower portion of the hole, but most of the sediments encountered are judged to be poor hosts for sulfide mineralization, and there appears to be an increasing curve of values, starting near the bottom of the hole.

Conclusions and Recommendations

I believe that all of us familiar with the Organ district are aware that it exhibits most of the characteristics of a porphyry copper district. These are: (1) porphyry copper-type ore in altered quartz monzonite in the Torpedo mine, (2) a passive pluton with (3) widespread anomalous copper and molybdenum values, (4) the elongate Organ stock (qm 3) of (5) Laramide or mid-Tertiary age, (6) intruding Precambrian basement rocks, (7) intruded by parallel quartz monzonite dikes and (8) altered quartz feldspar and rhyolite dikes; (9) a large 20,000 x 8000 foot pyritic zone in the qm 3 and other rocks; widespread (10) propylitic, (11) argillic, and (12) phyllic alteration; (13) silicification and silication, including tactite copper ores in Paleozoic limy sediments and (14) numerous copper, lead, zinc, gold and silver mines and prospects.

As one proceeds northwesterly from the center of section 36, phyllic alteration, texture destruction and limonite content increase. Strongest alteration coincides with a +50 ppm molybdenum anomaly with scattered high copper values in most of a triangular horst block of the Organ stock (qm 3), bound by the northerly Torpedo fault on the east and a N. 7° W. fault on the west. A considerable area of a strong phyllic-altered monzonite(?) porphyry sill west of the N. 7° W. fault also contains anomalous molybdenum values. Sun 1 was drilled to 1120 feet in the altered qm 3 fault block. The westernmost outcrops of the qm 3 are included in this block and KM-211 and Amax 4 were dilled in it. Except for Amax 5, no other hole encountered the qm 3 stock. It seems unlikely that the Torpedo fault is the original west boundary of the qm 3 stock, and I believe an extension of the stock is to be found at depth buried under propylitized andesites, phyllic sills and mineralized sediments west of the fault. The strong alteration and mineralization of these cover rocks suggest that the west extension of the qm 3 or a later intrusive in it is a juicy mineralizer that may be host to porphyry copper ore.

This opinion may be altered by thin-section study, but the alteration minerals present in the qm 3 core and cuttings of Sun 1 are quartz greater than clay, greater than sericite, greater than chlorite, corresponding to the typical intermediate (argillic) alteration zone described by Lowell and Guilbert (1969, 1970). Like the argillic zone at San Manuel-Kalamazoo,

some of the primary biotite is unaffected by alteration or is weakly altered to clay, chlorite or sericite. My impression is that phyllic alteration--quartz, sericite, pyrite with minor chalcopyrite and molybdenite--was imposed on the argillic alteration. Similarly altered qm 3 was encountered in KM-211 and Amax 4, and the horst block may represent part of the intermediate zone of a porphyry copper deposit. Alteration of qm 3 outcrops east of the Torpedo fault is not so intense as in the horst block, so present knowledge suggests the postulated ore deposit is more likely to be west of the fault.

The three Sun holes, Hodges No. 1, KM-211, KM-102, Amax 4, and the Torpedo fault define a northerly mineralized block about 4000 feet x 2000 feet with strong copper-molybdenum mineralization to an average depth of 1400 feet. It is recommended that Sun 3 be deepened, 2500 feet if necessary, to penetrate at least 500 feet of qm 3 or a later intrusive believed to be concealed below the volcanic-sill-sediment complex. Ore intercepts might be encountered in altered Paleozoic sediments at or above the intrusive contact. Cost of the program (preliminary estimate) would be less than $30,000. The program would commence in October 1972 during the 1972-73 assessment year.

James D. Loghry

James D. Loghry

JDL:h

References

Dunham, K. C., 1934, The geology of the Organ Mountains: New Mexico State Bureau of Mines and Mineral Resources Bull 11.

Lowell, J. D., and Guilbert, J. M., 1969, Geologic characteristics of 26 major porphyry copper and molybdenum deposits: Presented at AIME Annual Meeting.

Lowell, J. D., and Guilbert, J. M., 1970, Lateral and vertical alteration-mineralization in porphyry ore deposits: Econ. Geol., v. 65, no. 4, p. 373-408.

BLOCK NO. Organ #12

LEASE NO. ML-250

A. No. of claims _____

B. No. of acres _____

C. Other _____

EXPENDITURE REQUIRED $ _____ AMOUNT EXPENDED $ 23,349.80

WORK PERFORMED

1. DRILLING

Location and hole number D.H. Sun #2 (Ext)
SE1/4 SW1/4 NW1/4, Section 36

Size of hole or bit NQ Core

Feet drilled and total depth 983' drilled to TD of 2373'

Dates performed 11-7-72 to 1-3-73

Cost $19,386.14

Contractor and address E. J. Longyear Co., Phoenix, Arizona

2. ASSAYING AND/OR GEOCHEMICAL

Cost $ 813.45

Company and address Southwestern Assayers and Chemists
P. O. Box 7517 Tucson, Arizona 85725

3. GEOPHYSICAL SURVEYS

Cost _____

Contractor or company crew _____

4. GEOLOGICAL LOGGING AND MAPPING INTERPRETATION

Cost _____

5. ROADBUILDING AND LOCATION WORK

Cost 65.00 + 49.92 = $ 114.92

Contractor and address Curtis Cauldwell Construction
Las Cruces, New Mexico

6. GEOLOGIST'S TIME 2 months @ $950/mo. $ 1900.00

7. OTHER - SURVEYING, ETC. Travel Exp. $ 1135.29

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project Lyons, New Mexico Location ¼ Cor Sec 35/36, T21S R3E; 1100'N, 804' N 57½°W Sun Hole No. 3 Page No. 1 of 9

Collar Elevation approx 5016' Bearing — Inclination 90° Total Depth 1655' Begun 9-19-71 4PM Completed Sept 26, 1971 1:30 PM

Hole Type(s) Rotary - spot core Core or Hole Size(s) 0-43, 6" 43- 4¾" Drilling Co. Lomen Exploration Driller Mac Edmonston, Carl Bass, John Cathey Logged by J.D. Loghry

Casing left in hole

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data: No.	Footage
					0	Sun 3-	
	py	sil?		Qal	0 - 25' Qal, sand-gravel	1	10-20
						2	20-30
				Qmp sill ?	20-30' pyritic (oxidized) qtz-feldspar biotite irregments apper sill complex(?) py is weak, dissem, euhedral. Dunhame Qmp? 30-100' cuttings mostly Qal contamination	3	30-40
					40	4	40-50
				D	Firm ground reported @ 35'	5	50-60
						6	60-70
						7	70-80
					80	8	80-90
					90-100 - fresh lt-gy f.g. feldspar porphyry w/ 3% diss. pyrite	9	90-100
				D?		10	100-110
						11	110-20
	py	prop		Ka	120 110-20 - dn gray green andesite? porphyry w/ 5% py Cretaceous? andesite Ka? strong chlorite, wk epidote altn	12	120-30
						13	130-40
						14	140-50
						15	150-60
					160	16	160-70
					Few slickensided pieces white gouge	17	170-80
						18	180-90
						19	190-200
					200		

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project Organ, New Mexico Location Sun Hole No. 3 Page No. 2

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by T D Loghry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
	py	Prop		Ka	200 Andesite porphyry qtz-py vnlts
					220 -3% qtz-py - minor hematite vnlts
					240 230-40 - vfg cuttings, abundant clay - fault ? streaks of gray qtz-feldspar porphyry phyllic altn qtz >> sericite, either dikes or streaks of phyllic altn
		qtz >> ser + ~~pind~~			280 280-380 mostly gray porphyry cuttings
rare Mo		Prop			320 310-20 rare mo w/py in fracture
					360 350 - 15% pyrite 330-430 prop "andesite" > gray qtz-feldspar porphyry, phyllic qtz >> ser
					400

Assay and or Geochemical Data

No.	Footage
20	200-10
21	210-20
22	220-30
23	230-40
24	240-50
25	250-60
26	260-70
27	270-80
28	280-90
29	290-300
30	300-10
31	310-20
32	320-30
33	330-40
34	340-50
35	350-60
36	360-70
37	370-80
38	380-90
39	390-400

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project [illegible] Location [illegible] Sun Hole No. 3 Page No. 3

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Completed .....

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller ..... Logged by J. D. Lagby

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data: No.	Footage
	py	qtz + prop		Ka	400 Cretaceous ? andesite, propylitized, intruded by gray qtz-feldspar porphyry dikes, phyllic (qtz >> ser)	40	400-10
						41	410-20
						42	420-30
						43	430-40
				Ka	435-440 Light gray qtz-feldspar porphyry w/	44	440-50
	py	phyl + prop		qfp > Ka	440 dissem py, py veins, minor amounts of andesite. Core 450-55 (1' recovery, clay, fractured) Gray quartz-feldspar porphyry (similar to plug near Sun # 2), phyllic alt'n qtz >> sericite, 3-4% diss py — incl 1 ½" py	45	450-60
						46	460-70
	mo					47	470-80
					480 veinlet w ½" qtz walls	48	480-90
					Few large core fragments lt. green propylitized, fine grained igneous rock - the andesites texture similar to Dunham's Orejon andesite 460-70 - mo, minor	49	490-500
						50	500-10
		phyl		qfp		51	510-20
		phyl		qfp	520 510-530 mostly qfp phyllic	52	520-30
						53	530-40
				qfp > Ka	530-600 qfp > Ka	54	540-50
	mo				560 rare Mo	55	550-60
						56	560-70
						57	570-80
						58	580-90
	py rare mo				600 Rare Mo	59	590-600

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 3 Page No. 4

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loughry

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
	py			qtz	600 grey phyllic qtz-feldspar porphyry, abundant 5-10% py avg. 6%?
	MO				640 640-60 - 10% py, rare MO
					1-5% py
					680
					720
					760
	py			qtz	800

Assay and/or Geochemical Data

No.	Footage
60	600-10
61	610-20
62	620-30
63	630-40
64	640-50
65	650-60
66	660-70
67	670-80
68	680-90
69	690-700
70	700-10
71	710-20
72	720-30
73	730-40
74	740-50
75	750-60
76	760-70
77	770-80
78	780-90
79	790-800

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Hole No. 3 Page No. 5

Project Grant, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loghry

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
				qfp	800
					840 840- lt. gy seds appear, brown seds, $CaCO_3$, slightly calcareous
	py	Prop		Pzl	850-60 - soft formation, easy drilling; few sed. cuttings; brown pyritic mudstone, lt. green slightly calcareous mudstone
					870-90 - harder - f.g clayey cuttings, white grp? fault ?
					880 870- dense green propylitized sed with abundant pyrite +5%
					920 910-20 large 4 mm. flake Mo
					950-953.5 Core recover 2.5' : 0.5' white non-calcareous fragments "siltite" cemented with f.g. gray and lt brown calcareous mat'l, both cut by 30° 1 mm. chlor-calcite-pyrite veins; 1-1.5' broken green and gray f.g. seds, clay seams; 1' green-white calcareous siltstone c. 2 30° calcite-pyrite-chlorite veins 2 mm. wide
					960
	Py	Prop		Pzl	1000

Assay and/or Geochemical Data

No.	Footage
80	800-10
81	810-20
82	820-30
83	830-40
84	840-50
85	850-60
86	860-70
87	870-80
88	880-90
89	890-900
90	900-910
91	910-20
92	920-30
93	930-40
94	940-50
95	950-60
96	960-70
97	970-80
98	980-90
99	990-1000

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 3 Page No. 5

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loghry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40'	Description	Assay and/or Geochemical Data: No.	Footage
	Py	Prop		Pzl	1000	Paleozoic seds, white, lt. green, dark green cuttings predominate, abundant white calcite; sed cuttings non to weakly calcareous; abundant ±5% py, vnlts & dissem.	100	1000-10
							101	1010-20
							102	1020-30
							103	1030-40
					1040		104	1040-50
							105	1050-60
							106	1060-70
							107	1070-80
					1080		108	1080-90
							109	1090-1100
							110	1100-10
							111	1110-20
					1120	1110-1140 Brown non-calcareous sed 10%	112	1120-30
						lt orange calcareous sed ~1%	113	1130-40
						Abundant fol'ds green colc. seds		
	rare cp					1140-50 Black and dk gray limestone streaks	114	1140-50
							115	1150-60
					1160		116	1160-70
							117	1170-80
							118	1180-90
	Py			Pz			119	1190-1200+
					1200+			

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Hole No. 3 Page No. 7

Project Lincoln, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Sept. 18, 1971 4 P.M. Completed Sept. 20, 1971 1:30 P.M.

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Cogley

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data: No.	Footage
	Py			Pal	1600 Gray limey sediment v.f.g.	160	1600-10
						161	1610-20
						162	1620-30
	mo sp				1630-40 rare py-sp-mo vnlt(s)	163	1630-40
					1640		
					1655' T.D.		
					Core 1650-55' (Recover +5') Gray v. hard cherty limestone or calcareous slate, v. finely laminated beds are uniform 30-35° dip; numerous calcite-pyrite vnlts <1mm., also milky qtz-calcite-pyrite vnlts; dissem. pyrite cubes locally.		
					Also recovered a 2" x 1" piece of pyritic (5%) green andesite, from previous coring @ 75'		

DRILL HOLE LOG
NATIONAL LEAD COMPANY

Project Organ, New Mexico Location 131' N 60° E of OM-87 or apx 950' S 64° E of NW Cor Sec 36, T21S, R3E Sun Hole No. 1 Page No. 1
Dona Ana County

Collar Elevation apx 5120 Bearing Inclination 90° Total Depth 1120' Begun Aug. 30, 1971 3:15 pm Completed Sept. 3, 1971 2:30 pm

Hole Type(s) Rotary - Gardner Denver 1500 Core or Hole Size(s) 4 3/4" 0-20' - 6" Casing pulled Drilling Co. Loman Exploration Driller Carl Boss James Gay Logged by J. D. Hughry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40'	Description
					0	0-18' Qal
	Jar	Phyl qtz > ser		Qm	20	18 - 1120 Quartz monzonite of Organ stock - Dunham's Qm 3, intrusive A of NL geology map;
					40	18 - ±65' - limonite zone yellow white - yellow tan cuttings, limonite = jarosite
						65 - pyritic gray cuttings; Qm w/ 3 - 10% pyrite
	Py				80	phyllic altn qtz > sericite,
						90-100' clay cuttings - fault?
						Water @ ±100'
						100-120 clay, ufg cuttings - fault?
					120	large Qm rounded chips, broken ground? rare biotite
						120-130 strong sericite (sericite > qtz)
						130-160 large rounded chips Qm a) qtz > ser 4% py
					160	
				Qm	200	±190-200 5% py

Assay and/or Geochemical Data

No.	Footage						
Sun 1 - 1	20 - 30						
2	30 - 40						
3	40 - 50						
4	50 - 60						
5	60 - 70						
6	70 - 80						
7	80 - 90						
8	90 - 100						
9	100 - 110						
10	110 - 120						
11	120 - 130						
12	130 - 140						
13	140 - 150						
14	150 - 160						
15	160 - 170						
16	170 - 180						
17	180 - 190						
18	190 - 200						

fet ?

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Hole No. 1 Page No. 2

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Lagby

Scale 1" = 40'

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Description
		Phyl qtz > ser		Qm	200
					240
					280
					320
					330-40 10% py
					340-50 3% py, -0.5% biotite
					350-60 10% py, rare Mo
					360
					360-70 5% py, rare Mo
					370-80 6% py, rare cp
					380-90 4% py, -0.5% specularite, phyllic - qtz > sericite
				Qm	400

Assay and/or Geochemical Data

No.	Footage
19	200-210
20	210-220
21	220-230
22	230-240
23	240-250
24	250-260
25	260-270
26	270-280
27	280-290
28	290-300
29	300-310
30	310-320
31	320-330
32	330-340
33	340-350
34	350-360
35	360-370
36	370-380
37	380-390
38	390-400

DRILL HOLE LOG
NATIONAL LEAD COMPANY

Sun Hole No. 1 Page No. 3

Project Organ, New Mexico Location ..... Completed .....

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Logged by J. D. Loghry

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller .....

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
		phyl		Qm	400 Qm
		qtz > ser			
					440
					480
		arg sil			500-600' No ~~bio~~ fresh biotite, white frags with moderate green clay - qtz and argillic alt'n. 510-20 8% py
					520 520-30 "clay" gouge - fault?
					540-50 clay, fine sericite - fault?
					560
					600

Assay and/or Geochemical Data

No.	Footage						
39	400-10						
40	410-20						
41	420-30						
42	430-40						
43	440-50						
44	450-60						
45	460-70						
46	470-80						
47	480-90		phyllic alt				
48	490-500						
49	500-510		arg alt				
50	510-20						
51	520-30						
52	530-40						
53	540-50						
54	550-60						
55	560-70						
56	570-80						
57	580-90						
58	590-600						

DRILL HOLE LOG
NATIONAL LEAD COMPANY

Project Organ, New Mexico Location ..... Sun Hole No. 1 Page No. 4

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Completed .....

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller ..... Logged by .....

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data No.	Footage
	py	~~chl~~ sil arg some ser		Dm	600 Fresh bio appears again	59	600-10
						60	610-20
						61	620-30
					3% pyrite, rare cp, some bio → chlor	62	630-40
					640	63	640-50
						64	650-60
						65	660-70
						66	670-80
					680	67	680-90
						68	690-700
						69	700-10
					720 4% py, rare mo assoc. w. py, also cp	70	710-20
						71	720-30
						72	730-40
					10% py, rare cp, tetrahedrite (?)	73	740-50
					5% py, cp; gray sulfide, bio	74	750-60
					760	75	760-70
						76	770-80
						77	780-90
				Dm	800	78	790-800

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 1 Page No. 5

Project ..... Location .....

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Completed .....

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller ..... Logged by .....

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
				qm	800
					840
					89-60 strong 10% py, minor Mo
					860-70 py 4%, mo, cp rare
					880
					920
					Rare Mo w/ py
					Some bio altered to pyrite
					960
					2 bits used @ 980
					1000

Assay and/or Geochemical Data

No.	Footage
79	800-10
80	810-20
81	820-30
82	830-40
83	840-50
84	850-60
85	860-70
86	870-80
87	880-90
88	890-900
89	900-10
90	910-20
91	920-30
92	930-40
93	940-50
94	950-60
95	960-70
96	970-80
97	980-90
98	990-1000

DRILL HOLE LOG
NATIONAL LEAD COMPANY

Sun Hole No. 1 Page No. 6

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loghry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
				Qm	1000
					1040 Core 1055-1070', matrix is quartz-silicified, 40% plag phenos, 20% → green clay, 15-20% → white clay(?) Orthoclase phenos 5%, wkly altd to fresh 10% Brown bio phenos, fresh, see 2% → green clay, 1% part → qtz, py, or chlorite 2-3% diss-, vnlt pyrite. 1 py veinlet has
					1080 1" wall rock phyllic altn, one thin py veinlet w. minor cp, mo
					Organ Stock quartz monzonite porphyry (qm3), silicified argillized (green clay), some brown biotite; pyrite, rare cp
				Qm	1120 T.D. - 1120'

Assay and/or Geochemical Data	
No.	Footage
99	1000-10
100	1010-20
101	1020-30
102	1030-40
103	1040-50
104	1050-60
105	1060-70
106	1070-80
107	1080-90
108	1090-1100
109	1100-10
110	1110-20
[illegible]	1120-30
112	1130-40
113	1140-50
114	1150-60
115	1160-70
116	1170-80
117	1180-90
118	1190-1200

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project: Organ, New Mexico Location: ~~[illegible]~~ 1/2 Cor Sec 35/36, 685' E, 164' N 6°W Sun Hole No. 2 Page No. 1

Collar Elevation: Apx. 5125 Bearing: — Inclination: 90° Total Depth: 1400' Begun: 9-7-71 Completed: 9-13-71

Hole Type(s): Rotary Core or Hole Size(s): 4 3/4" - 400-1120; 5" - 0-400 Drilling Co.: Loman Exploration Driller: ~~Jerry Gay~~ ~~Bob~~ Carl Boss, Jerry Cathey, Mac Edmonston (pusher) Logged by: J. D. Loghry

Casing left in hole

Recovery	Mineralization	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data: No.	Footage
					0 — 0-35 ± Qal + caliche conglomerate		
				Qal	35-1400' pyritic, silicated Paleozoic calcareous sediments	Sun 2-1	20-30
					35-50 brown goethitic silicated f.g. limestone, w/	2	30-40
	py	silication		Pal	40 — abundant yellow-brown garnet, moderate calcite, rare sericite-pyrite fragments.	3	40-50
					50-150 green-white silicated limestone, 1% pyrite, dissem.	4	50-60
					cubes, pyritohedrons, fine vnlts. Lst v.f.g. - silty limestone	5	60-70
					70-80 rare gray sulfide	6	70-80
	py cp				80 — 80-90 qtz, pyrite vnlts	7	80-90
					90-100 rare gray sulfide, chalcopyrite	8	90-100
					100-110 yellow-green garnet beds, rare gray mudstone	9	100-110
	py cp gal				110-115 - strong py lamellae 30%, w. minor cpy, gal	10	110-120
					115-120 white silty lst, py	11	120-130
					120 — 120-125 yellow-green garnet	12	130-140
					125-140 Abundant f.g. pyrite 30%	13	140-150
					150 — white calcareous siltstone 1-2% py	14	150-160
					150-170 - pink streaks - dolomitization ? 150-210'	15	160-170
					2% py, rare gy sulfide	16	170-180
					160	17	180-190
					140-200 yellow-green silicates increasing	18	190-200
	Py			Pal	200		

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 2 Page No. 2

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loughry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
	py rare gy sulf.	silication		Pal	200 white calcareous siltstone continues, yellow and lt bn silicates increase, py increases; grey sulfides noted at 200-210, rare red mat'l may be ruby silver light green streaks coming in. Gray sulfides not galena, probly a sulfo salt w/ Ag. 150-250
					240 240-50 20% yellow-green silicates
					250-70 50% cuttings vfg - clay faults?
					280
					300-1400 v. hard, slow drilling
					320 320-30 - hard, blocky ground - change bit
					360
	Py			Pal	400

Assay and/or Geochemical Data

No.	Footage
19	200-10
20	210-20
21	220-30
22	230-40
23	240-50
24	250-60
25	260-70
26	270-80
27	280-90
28	290-300
29	300-10
30	310-20
31	320-30
32	330-40
33	340-50
34	350-60
35	360-70
36	370-80
37	380-90
38	390-400

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 2 Page No. 3

Project Organ, New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Lighty

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40'	Description
	Py			Pal	400	
					440	
					480	
					520	
					560	
	Py			Pal	600	

Assay and/or Geochemical Data

No.	Footage
39	400-10
40	410-20
41	420-30
42	430-40
43	440-50
44	450-60
45	460-70
46	470-80
47	480-90
48	490-500
49	500-10
50	510-20
51	520-30
52	530-40
53	540-50
54	550-60
55	560-70
56	570-80
57	580-90
58	590-600

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project Organ, New Mexico Location Sun Hole No. 2 Page No. 4

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Completed .....

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller ..... Logged by J. D. Loghry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description	Assay and/or Geochemical Data No.	Footage
					600 Calcareous hornfels, local garnet abundant pyrite	59	600-10
						60	610-20
						61	620-30
						62	630-40
					640	63	640-50
						64	650-60
					Core 655-660 see p. 4a	65	660-70
						66	670-80
					680	67	680-90
						68	690-700
						69	700-10
						70	710-20
					720	71	720-30
						72	730-40
						73	740-50
						74	750-60
					760	75	760-70
						76	770-80
						77	780-90
					800	78	790-800

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Sun Hole No. 2 Page No. 4a

Project Organ, N. M. Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loghry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 1' Description
				Pal	Core 655-660, recovery 5.25'
					655 white, calcareous siltstone, lt. green phases, crackled
					55-55.25 5 2mm qtz-calcite veinlets with minor pyrite, gray sulfide (tetrahedrite ?)
					55.25-55.75 dark gray lst w. calcite bodies, py xls (5% py)
					656 slicks on 30°, 50° slips
					55.75-56 calcareous shale w/ white, green (chlorite), black laminae (55° bedding), 3% py
					56-56.25 f.g. lst w/ calcite beds w/ yellow-green garnet, minor 1% py.
					56.25-57.5 green gray shaley lst-beds @ 50°; 75° slip w. lt. green serpentine coating
					657
					658 57.5-60 gray-dk gray calcareous shale, 3% py bedding @ 50°
					659
					60-60.25 lt. green, gray green finely laminated calcareous shale 40° bedding
					660
				Pal	660.25

Assay and/or Geochemical Data

No.	Footage						

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project Organ, New Mexico Location Sun Hole No. 3 Page No. 5

Collar Elevation ..... Bearing ..... Inclination ..... Total Depth ..... Begun ..... Completed .....

Hole Type(s) ..... Core or Hole Size(s) ..... Drilling Co. ..... Driller ..... Logged by T. D. Loghry

Scale 1" = 40'

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Description
	Py				800
					840
					880
					920 920-30 vfg white-lt. gy cuttings 4% PY
					960
	cp				930-80 5% med dark bands 980 – 1000 yellow garnet stringers
	Py				1000

Assay and/or Geochemical Data

No.	Footage
79	800-10
80	810-20
81	820-30
82	830-40
83	840-50
84	850-60
85	860-70
86	870-80
87	880-90
88	890-900
89	900-10
90	910-20
91	920-30
92	930-40
93	940-50
94	950-60
95	960-70
96	970-80
97	980-90
98	990-1000

DRILL HOLE LOG

NATIONAL LEAD COMPANY

S... Hole No. 5 Page No. 6

Project Gran. New Mexico Location

Collar Elevation Bearing Inclination Total Depth Begun Completed

Hole Type(s) Core or Hole Size(s) Drilling Co. Driller Logged by J. D. Loughry

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
					1000 lt gray silty lst w. gray and green laminae minor yellow garnet
					1030-40 more black mat'l
					1040
					1080
					1120
					gamers 1000'
					20-30 f.g. limy seds w. yellow-green garnet beds, thin carbon-pyrite 60 ∆s
	cp mo?				rare cp. 2% py, rare gy sulfide. Mo?
					40-50 lighter color, less garnet more calc.
					1160
					minor brown garnet 1170-80
					Minor gy sulfide incl. Mo 1170-1200'
					1200

Assay and/or Geochemical Data

No.	Footage
99	1000-10
100	1010-20
101	1020-30
102	1030-40.
103	1040-50
104	1050-60
105	1060-70
106	1070-80
107	1080-90
108	1090-1100
109	1100-10
110	1110-20
111	1120-30
112	1130-40
113	1140-50
114	1150-60
115	1160-70
116	1170-80
117	1180-90
118	1190-1200

DRILL HOLE LOG

NATIONAL LEAD COMPANY

Project Organ [illegible] Location [illegible] Hole No. #2 Page No. [illegible]

Elevation [illegible] Bearing — Inclination -45° Total Depth 1455' Begun [illegible] Completed 9-12-71

Type(s) [illegible] Core or Hole Size(s) 0-450' 5" / 450-1455' 4 3/4" Drilling Co. [illegible] Driller [illegible] Logged by J. D. Lyphay

Recovery	Mineralizat'n	Alteration	Structure	Rock-Fm.	Scale 1" = 40' Description
	cp			Pal	1200 Looks same as @ 1000' cpy of Minor tactite (garnet-pyrite-sulfide mix) appearing
					Cavity @ 1225' twist off pipe @ 583' 9 A.M. 45 [illegible] @ midnite(?) 9/15/71
	cp				1240 1230-40 +5% pyrite, rare cp
					1275' soft formation, thought to be a calcareous [illegible]
				Pal	1280 gray, gray green with pink specks. Pyrite black streaks appear
				Pal	± 1300' CaCO3 w abundant black mat'l streaks strong appear, rock is harder; pink specks dying out
					1320
					1360 1360-70 strong py 5-10% in veins w. minor cp rare brown garnet w/ py
					1375-83' Core 14' grey dense hornfels (marblized) -1% sulfide cp + py, dissem vein
					1400 T.D. 1455' ~~12 noon~~ 1 PM 9-12-71

Assay and or Geochemical Data

No.	Footage
118	1200-1210
119	1210-20
121	1220-30
122	1230-40
123	1240-50
124	1250-60
125	1260-70
126	1270-80
127	1280-90
128	1290-1300
129	1300-10
130	1310-20
131	1320-30
132	1330-40
133	1340-50
134	1350-60
135	1360-70
136	1370-80
137	1380-90
138	1390-1400

PROJECT: ORGAN
LOCATION:
PROPERTY OR CLAIM: SUN GROUP
CONTRACTOR: LONGYEAR
DATE STARTED: 11-27 COMPLETED: 12-23-72
LOGGED BY: RAL

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

SCALE 1" = 10'

HOLE NO. SUN #2 (EXT) PAGE 1 OF 15
COORDINATES:
COLLAR ELEVATION:
INCLINATION: VERT BEARING: —
TOTAL DEPTH:
TYPE DRILL: CORE BIT SIZE: NQ

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION EPI	TLC	CAR	GYP	CHL	SIL	SERP	RX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag		Estimates PY	cpy		Assay interval	CORES	DESCRIPTION	NOTES
1390	1396	6		wLS			W						M	52	2	34	1.8		<1/4			1396-1400		WHITE RESLD LS, DIP 35° (BEDDING)	
						?																(2201)		(ASSAY TICKET NO. IN PARENS)	
																								1394-96 BEDDING BX + DISTORTED	
1396	1400	4				W			W				C											SMALL CAVITIES, COARSE RESLD, PY BED CONTR.	
1400	1405	5							W				M	35	2	26	1.8		1/2			1400-1410		F. GR RX, CALCITE IN ALERS + VNLTS	
										W?									<1/4						
1405	1407	2		bLS									M						1/4-1/2					BLACK LS IN STYLOLITIC (?) CONTACT W/ WLS @ 1405	
1407	1410	3		wLS			?		?	W?			M						<1/4					TALC +/OR GYP VNLT CONTR W/ PY	
1410	1415	5	100	bLS									M	18	1	20	2.0		1/4-1/2			1410-1420		PY IN THIN VNLTS OF WHT + BLK CALCITE	
																			<1/4					SOME DISSEM	
1415	1423	8	90	wLS									M/C											PY IN CALC VNLTS ONLY, GRADES TO GREY DUNWD	
														40	4	560	1.6					1420-1430		10" STR. CRUSHING @ 1426	
1423	1428	5	100	bLS									M/C											LOCALLY STYLOLITIC (?)	
											W														
1428	1430		100	wLS							M		M						1/2 ?						
1430	1443	13	100	bLS					W		W		M	76	4	330	1.8		1/4			1430-1440		BLACK-LAMINATED LS CONTORTED LOCALLY	
																								FEW SHORT INTERVALS OF WLS @ 1432-34, 41-42	
									S					11	26	380	2.5					1440-1450			
1443	1473	30		wLS					W		M													1443-1444 STR SHEARED GYP(?) ACCN. PY.	
										S			M/C						1/4-1/2					WHT LS EXC FEW LAMINATED BLACK LAYERS @ 1450-51, 55-56	
										S									<1/4					PY LOC. UP TO 1% ALONG FRACTS	
										W?				18	3	285	2.2					1450-1460		@ 1447 1" CLOT OF SOLID PY W/ 40% CHLOR (?)	
			100																					@ 1456 BLACK, SOFT METALLIC MIN (MN?) SURD. BY SIDERITE IN PINK CALCITE VNLT	

PROJECT: ORGAN
LOCATION: ORGAN
PROPERTY OR CLAIM: SUN CLAIMS
CONTRACTOR: LONGYEAR
DATE STARTED: 10-27 COMPLETED:
LOGGED BY: RBL

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

HOLE NO. SUN 2 PAGE 2 OF
COORDINATES:
COLLAR ELEVATION:
INCLINATION: BEARING:
TOTAL DEPTH:
TYPE DRILL: BIT SIZE:

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION: EPI	TLC	CAR	SYP	CHL	SIL	SERP	RX	MINERALIZATION Assays (PPM): Cu	Mo	Zn	Ag		Estimates: PY	CPY		Assay interval	CORES DESCRIPTION	NOTES
				wLs									M/C						1/4					
														10	4	36	2.3					1460-1470 (2208)		
			100																				@ 1466 BRIGHT YELLOW LIMONITE IN VUGS	
										W?		?		26	12	170	2.5					1470-1480		
1473	1475	2	100	ep-qtz		S				M?	S	M/S							1-1½				QUARTZ-EPIDOTE REPLAC. OF LS. 5% HEM IN FRACTS POSS CHLOR ON FRACTS → SERP	
1475	1516	41		wLs							W		M/C						1/4				PY V. F. GR. DISSEM.	
														8	2	23	1.9					1480-1490		
			95																1/2				@ 1484 PY IN BROWN CALCITE VNLTS	
														26	3	76	1.7					1490-1500	@ 1488 FLT GOUGE CONT. PY; @ 1490 VUG CONT. PY + CALCITE XLS	
			100								W												@ 1494 - PY VNLT 1MM WIDE PY V. F. GR. DISSEM	
																			1/4				SIL. FLOODING @ 1495	
														15	3	55	2.4					1500-1510		
			100																1/2				@ 1508 QTZ-PY VNLT 1/8" WIDE.	
														15	5	38	1.7					1510-1520	PY MOSTLY DISSEM	
										M		?											CHLORITE ON FLT. SURFS.	
1516	1521	5	100	bLs																				
1521	1527			wLs							M			21	69	43	2.3		1/2-1			1520-1530	@ 1522 1/4" QTZ-PY VNLT; PY OUTSIDE QTS	
																			1/2					

PROJECT: ORGAN
LOCATION: ORGAN
PROPERTY OR CLAIM: SUN CLAIM
CONTRACTOR: LONGYEAR
DATE STARTED: 10-20 COMPLETED:
LOGGED BY: RBL

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

HOLE NO. Sun 2 PAGE 3 OF
COORDINATES:
COLLAR ELEVATION:
INCLINATION: BEARING:
TOTAL DEPTH:
TYPE DRILL: BIT SIZE:

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION FPY	TLC	CARB	GYP	CHL	SIL	SERP	RX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag		Estimates PY	cpy		Assay interval	CORES DESCRIPTION	NOTES
			90	wLS									M/C						~1/2				LS SLIGHTLY DOLOMITIZED (?)	
1527	1534	7		cav.																				
			0											19	20	455	1.5					1530-1540 (2215)		
																							MASSIVE → AMORPHOUS, DULL, EARTHY, WHITE TO BUFF 2 < HARDNESS < 3, DOESN'T REACT TO ACID	
1534	1540	6		kaoline ?															~1/2					
			50																					
1540	1564	24	75	wLS										35	3	1300	3.0					1540-1550		
						W				W	W	W											DENDRITES OF MN MINS @ 1544-45 BROWN AMORPHOUS SILICA @ 1544	
																			1				MOST PY OX @ INTERVAL 1545-48 STRING WLS	
			100										C						<1/4				CALCITE - FE OX VNLT	
														18	2	320	2.4					1550-1560		
																			1				OX PY - CALC. VNLTS	
																							open fractures filling -	
			90																1/4					
														11	1	18	1.9					1560-1570		
			95																					
1564	1568	4		bLS									F/M											
1568	1573		100	wLS									C	45	4	16	1.9					1570-1580		
1573	1575.5	2.5		SH							W/M								½-1				THINLY LAM. SILICIOUS SHALE BROWN TO WHT INCREASE IN PY	
1575				wLS							W		C						½					
			100											9	2	11	2.3					1580-1590		
										W														
										W		W		66	2	52	3.4					1590-1600		

PROJECT ORGAN
LOCATION
PROPERTY OR CLAIM SUN CLAIMS
CONTRACTOR LONGYEAR
DATE STARTED 10-22 COMPLETED
LOGGED BY DRR

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

HOLE NO. SUN #2 PAGE 4 OF
COORDINATES
COLLAR ELEVATION
INCLINATION BEARING
TOTAL DEPTH
TYPE DRILL BIT SIZE

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION EPI	-LC	GAR	GYP	CHL	SIL	SERP	PX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag		Estimates py	cpy		Assay interval	CORES	DESCRIPTION	NOTES
			95				W					M	F/M						1/4				CALCITE - PY VNLT @ 1594		
1595	1598	3		bLs			W					W	↓						↓			↓			
1598	1600	2	50	sSh	brecc brecc						M		M						1/2				PY COATS FRACT SURFACES		
1600	1632	32		wLs						W	W	W		20	1	23	3.6		<1/4			1600-1610 (2222)	[illegible]		
			100							W													1602 - 6" DOLOMITE (?) LAYER		
										M													1607 - CLAY, V. SOFT, PLIABLE WHEN WET CHLOR IN VNLTS		
			90		brecc fef																				
								W						19	<1	11	3.1					1610-1620	WTBR: FRACT IN FEP		
			65																↓						
						W					W	?							1/2				QTZ VNLT @ 1617 w/ MINUTE PY GRAINS (NOT GRAIN)		
						W						W							1/4				2" DOLOMITE (?) LAYER SEP. FROM CALCITE BY SERP(?) EPI IN VNLTS		
						M				W	W	?		17	2	65	2.9					1620-30			
			100																				VNLTS OF BROWN CALCITE		
																							@ 1625 FLT DIPS 60°		
																			↓						
			100										↓	23	4	18	3.2		1/2			1630-40	QTZ VNLTS w/ MINUTE PY		
1632	1634	2		bLs		W				W	W	?	F						1/4				BLACK LS LACED W/ QTZ - CALCITE - CHLOR VNLTS		
1634	1640	6		wLs		S	W	W				?	M												
													C												
1640	1642	2	95	dolo?									F	11	2	11	3.7					1640-50	1640-42 F. GR DOLOMITIC LAYER		
1642	1644	2										?	C												
1644	1646	2		dolo? wLs									F										Local defilite zones: (1644-1655) DOLOMITE (?)		
1646	1653	7	100			M				W		?	M										WHITE LS		
						M				M		?	↓	15	2	49	3.4					1650-60			
1653	1655	2		dolo									F												
1655	1672	17	100	wLs									C												
													↓						↓						

PROJECT: ORGAN
LOCATION:
PROPERTY OR CLAIM: SOM GROUP
CONTRACTOR: LONGYEAR
DATE STARTED: COMPLETED:
LOGGED BY: CRC

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION
SCALE: 1" = 10'

HOLE NO.: PAGE 5 OF
COORDINATES:
COLLAR ELEVATION:
INCLINATION: BEARING:
TOTAL DEPTH:
TYPE DRILL: BIT SIZE:

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION EPI	TRC	GAR	CHL	SIL	SERP	RX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag	Estimates PY	SPY	Assay interval	CORE'S DESCRIPTION NOTES
			100	wLS								C	16	2	170	3.7	1/4		1660-70 (2228)	SPORADIC LAYERS OF FGR. DOLOMITE IN 2" BEDS
										M							5-10			@ 1667 3" WIDE MASSIVE PY VN MINOR QTZ
			100			W/M		W		W	?	M					<1/4			
1672	1673	1		dolo		N/M		W		N	?	6	12	1	15	3.7			1670-90	
1673	1724	51		wLS					W			F								
			100						W			M/C								
						W/M														
						W/M			W		?		12	2	44	3.9			1680-90	MINOR DOLO (3") LAYER
																				DECAS. ANCILLIZ ZONES
						W		W	W				8	2	22	4.0			1690-1700	
						W		W	W			M								
									W											
						W/M		W	M/W	W			11	3	33	3.4			1700-1710	4" DOLOMITE @ 1701-2
									W											
									M								1/2			CALC-PY VNLT @ 1709
						W/M		W	S	M	?	M/C	27	2	27	2.8	<1/4		1710-1720	COMPLETE CHLORITIZATION → CUT BY CALCITE VNLT @ 1710-11 1/2% HEM
						W/M		W	M/S		M/S	F/M								SERP & CHLOR REPLMT TR. HEM
									M/S			M/C								@ 1712.5 - 6" DOLOMITE BED
									W											
							?		W		W	F/M	40	1	59	2.7			1720-1730	1720.5 IN ABOVE TALC (?) IN VNLTS
				bLS					W		W	F								
1724	1727	3	100						M	S	M/S									

PROJECT: ORGAN
LOCATION: ORGAN
PROPERTY OR CLAIM: SUN CLAIM
CONTRACTOR: LONE STAR
DATE STARTED: 1-27 COMPLETED:
LOGGED BY: [illegible]

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

HOLE NO. SUN #2 PAGE 6 OF
COORDINATES
COLLAR ELEVATION
INCLINATION BEARING
TOTAL DEPTH
TYPE DRILL BIT SIZE

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION EP	TLC	CAR	CYF	CHL	SIL	SERP	RX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag		Estimates CY	CPY		Assay interval	CORES DESCRIPTION NOTES
1727	1799	72	100	WLS	/						S		F						1/2				SMALL PY-CALC STRINGER @ 1729.5 + DIPS ~60° PERVASIVE SILIC. 1726.5 – 1729 (CHERTY)
					40					M/S		?	M/C	27	3	70	3.8		<1/4			1730 – 40 (2235)	
										W/M			M										BOSS HEM COATING ON FRACTS
			100		/								M/C										NR. VERT OPEN FRACT
													C										
													M/C	26	2	52	3.7					1740 – 50	DAS-TOOTH CALCITE @ 1742 IN OPEN FRACTS
													M										
			100										M/C										DAGTOOTH CALC @ 1747 OPEN FRACTS
					\																		
														9	<1	18	4.0					1750 – 60	
			100		\					W													
					\					W													WK PY @ 1759
														8	1	33	3.8					1760 – 70	
			100										M										
										?													WK PY STRINGER @ 1767.5
														8	1	13	4.0		1/4			1770 – 80	1782.5 – vert calc mt w/ minor PY
			100																<1/4				1785 – MINOR VUGS w/ CALC
								W		?	W		F/M										
											W								1/2				
											W/M			10	1	31	4.2		<1/4			1780 – 90	MICRO XLN QTZ in STRINGERS @ 1780.5
																							CHLOR STRINGERS DIP 45° (UNDULATORY) @ 1784
			100							W													QTZ-GARN STRINGERS DIP 35-40° @ 1785.5 QTZ STR @ 1786
								W			W		M/C										
													M										
								W		W	W		C	87	<1	61	4.4					1790 – 1800	1791.5 – SLIGHT HEM – IN CHLOR-GAR STRINGERS, DIPS 20°
			100					W															GAR VULT VENT @ 1793.5

PROJECT: ORGAN
LOCATION: ORGAN
PROPERTY OR CLAIM: SUN GRAND
CONTRACTOR: [illegible]
DATE STARTED: [illegible] COMPLETED:
LOGGED BY: LRC

CONTINENTAL OIL CO.
MINERAL EXPLORATION
METALLIC DIVISION

HOLE NO.: SUN [illegible] PAGE 2 OF
COORDINATES:
COLLAR ELEVATION:
INCLINATION: BEARING:
TOTAL DEPTH:
TYPE DRILL: BIT SIZE:

DEPTH From	DEPTH To	Interval	Recov. %	Lith. Symb.	Rock Struc.	ALTERATION EPI	TLC	GAR	GYP	CHL	SIL	CARB	RX	MINERALIZATION Assays (PPM) Cu	Mo	Zn	Ag	Estimates PY	CPY	Assay interval	CORES	DESCRIPTION	NOTES
				wLs									M					1/4					
1799	1800	1		DOLO?				W		W/M	S		O/F					1/2	tr			GOUGE - FOLIAS AT CONTACT OF DOLO W/ LS	
1800	1843	43		wLs				W			S		F/M	21	1	27	3.7	1/4		1800 - 1810 (2242)		1798.5 - PY - HEM - CPY VNLTS, POSS. BN, DIP 20-30 + 60-70 1800 - 1801 1801-1804 SILICIFIED (GARNET FORMS) W/ MORE SULFIDE	
			100					W/M		W	S							<1/4				SILICA MOSTLY F.GR. CHERT	
								W			?												
										W/M								1/4-1/2				CHL VNLTS DIP 20°-60° @ 1808 W/ PY + HEM	
										W	W/M			12	1	77	3.8	<1/4		1810 - 20		MICRO - QTZ VNLTS DIP ~45-60°	
			95								W											1813 - 5" F.GR. DOLOMITIC LS W/ GAR	
								W/M					M/C					1/4				CARBONLY PRESERVED CRINOID STEM @ 1816 GAR - PY - HEM VNLTS DIP 20°	
								W			W/M		F/M					<1/4					
								W/M			M			12	3	23	3.9			1820 - 30		QTZ - GAR - CHL REPL. VNS DIP 55° @ 1820.3 SOME SLTCY DOLO. PODS (REMNANT ?)	
			100								W											CHL IN FLT	
								W		W/M													
								?			?			12	2	23	4.0			1830 - 40		GARNET IF PRESENT V.F.GR	
			100							W	?		M										
								W			?		F/M										
										?	W												
								W/M		W/M	W/M		F	9	3	43	4.2			1840 - 50		REPL VNLTS FOLLOW BEDDING, DIP 50°	
1843	1847	~4		DOLO? LS				M		M	M												
			100					W		W	W		F/M										
1847	1851	~4		wLS							W											CHERT VNLT DIPS 35°	
1851	1864	13		DOLO? LS						?	M/S		?	60	4	113	1.4			1850 - 60			
			100								M/S		?									POSS SILICA FLOODING	
											S												
								W		W	M			44	7	328	1.9			1860 - 70		GAR BEDDING CONTR DIP 45°	