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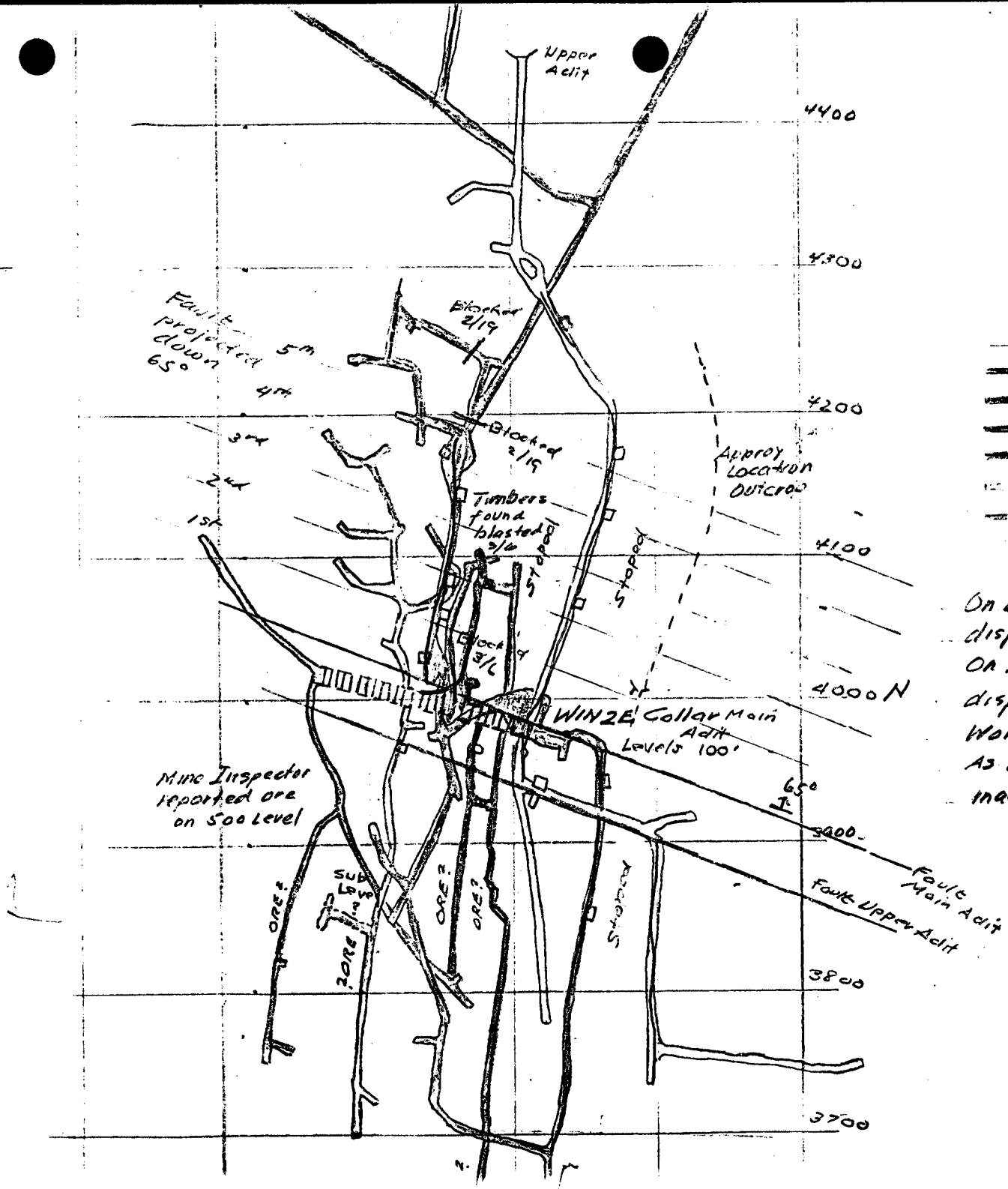


WORLD FAIR WORKINGS
FROM OLD 40 scale MAP
1 in = 100 ft

Upper Adit		
Lower or Main Adit	El 4680	
First Level	Winge	4580 ?
Second "	"	4480 ?
Third "	"	4350 ?
Fourth "	"	4280 ?
Fifth "	"	4180 ?

On Upper Adit South End of Vein displaced 100' East
On Main Adit South End of Vein displaced 130' East
Work on Winge Levels South of Fault As of Mar 6, 1964 Fault & Winge inaccessible.

Memorandum to: Lyall Lichty
Will Cole

September 9, 1983

Three (3) principal target areas have emerged from this year's work. This includes sampling and analyses by Lyall Lichty during the year:

1. The southern part of the World's Fair vein system is at the caldera border and shows strong faulting, silicification, and possible vein displacements. Significant exploration potential exists on the southern projection of the vein. This target potential may be obscured by alteration or fault displacements.

2. The anomalous zone of alteration, geochemical values, clay alteration, pebble breccias and structural intersections in the southwest corner of our property exhibits all of the characteristics of the top of an epithermal system that could have high grade bonanza silver ores in the boiling zone, which should in this case, top at the 4800 ft. elevation.

3. The extension of the January fault system extends through the World's Fair Syndicate ownership and could have epithermal mineralization at unknown depths.

The recommended exploration of these targets, based on our current knowledge and my evaluation, is as follows:

1. Southern World's Fair Vein System. We should follow the structure identified by Lyall Lichty with an adit. If this adit continues on high grade silver vein mineralization, it should be continued If the high grade mineralization shown on the surface does not continue, the adit should be driven ahead 200-300 feet, an underground diamond drill station should be cut, and underground drilling should probe for the extensions of the World's Fair vein system, or a possible vein structure normal to the World's Fair system.

2. The Southwest Epithermal Target System.

   A. A 1000 ft. sq. area should be sampled on a 100 ft. grid, and the samples should be analyzed for silver, arsenic and antimony. Two to four samples should be analyzed for fluid inclusion temperatures, and two to three clay samples should be analyzed to determine temperatures of deposition.

   B. Three diamond drill holes should be drilled as shown on the attached map and sections to test this important target area between 4800 and 4500 ft. elevations.

Memorandum to: Lyall Lichty
Will Cole

September 9, 1983

3. The January Fault Extension. No exploration of this area is recommended at this time.

The above program of targets 1 and 2 should be done concurrently with the drilling of the southwest target two to three months after the initiation of the World's Fair vein adit to allow time to finish the geochemical sampling and analyze that data.

At the end of these steps the results from this work should then indicate the course of future drilling and underground work.

PIE:vh
Dictated by Paul Eimon and corrected by telephone on September 9, 1983.

1000 West Coy Drive,
Flagstaff,
Az. 86001.

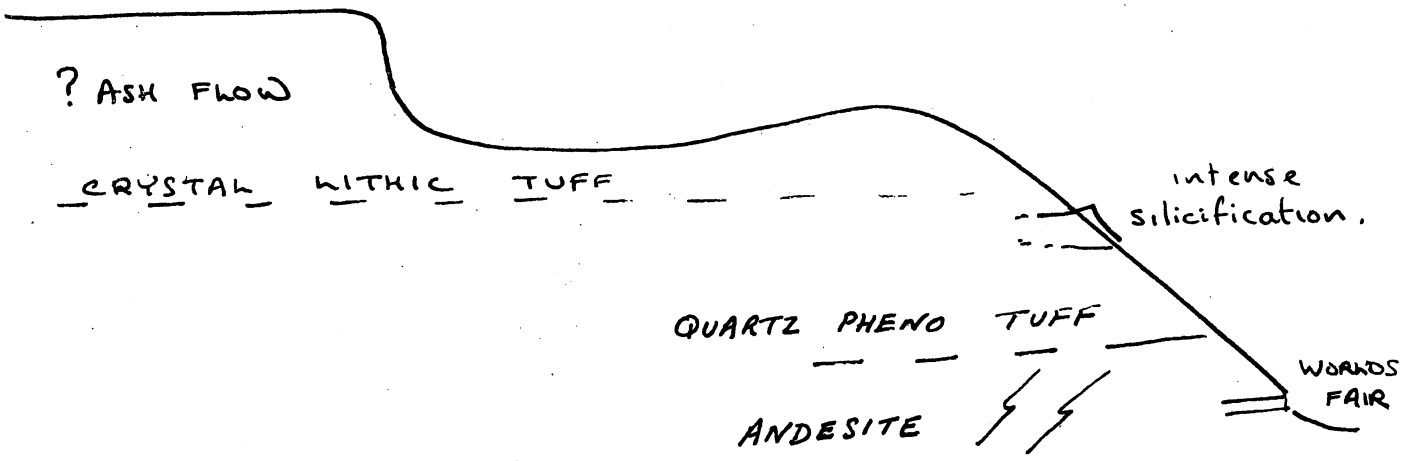
3rd July, 1983.

Paul Eimon,
Commonwealth International,
Box 15570,
Amarillo,
Tx. 79105.

Dear Paul,

Here are some more or less ordered notes and thoughts following a day in the World's Fair district. It is certainly a fascinating area worthy of a great deal of study. Grover and Lyall provided background information as well as good company in the field. However without having a geologist along, who was fully familiar with the area, I was not able to fully grasp a number of geological relationships in the time available. During the day I inspected outcrop and alteration along the road to #4972, the silicified zones to the south of #4972, the alteration zones near the World's Fair adit and made a visual inspection from the Liza.

The general area of World's Fair contains a complex volcanic suite ranging from andesites through to silicic ash flows and I presume that the rhyolite body east of World's Fair is intrusive into the andesite. From Liza looking south a single unit traverses the area forming cliffs southwest of the World's Fair. The joint structure, constant thickness and uniform upper surface suggest that this unit is an ash flow. Hand specimens in scree near #4972 and fallen boulders on the Asarco drill road to the southeast are crystal-lithic tuffs of variable lithic content. This unit strikes across the World's Fair area but is eroded leaving only the lower lithic ("breccia") unit above the silica knobs exposed immediately above #4972. The quartz 'pheno' tuff mapped on the World's Fair property may be related to the upper more resistant ash flow unit.



SKETCH X SECTION - NO SCALE.

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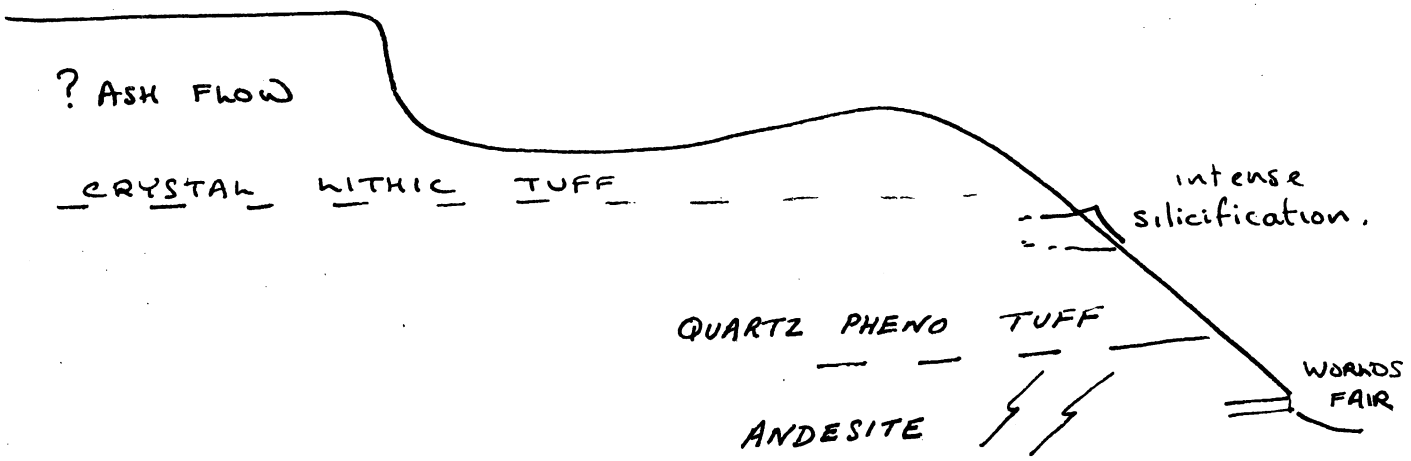


SKETCH X SECTION - NO SCALE.

Age relations in the area are largely unknown and it is possible that the alteration and volcanic structure are related to the Red Mountain volcanic centre to the north. The andesite-diorite distinction shown on the geologic map is primarily a grain-size distinction which may not reflect the presence of dikes or other intrusives. I did not have the time to look at contact relationships.

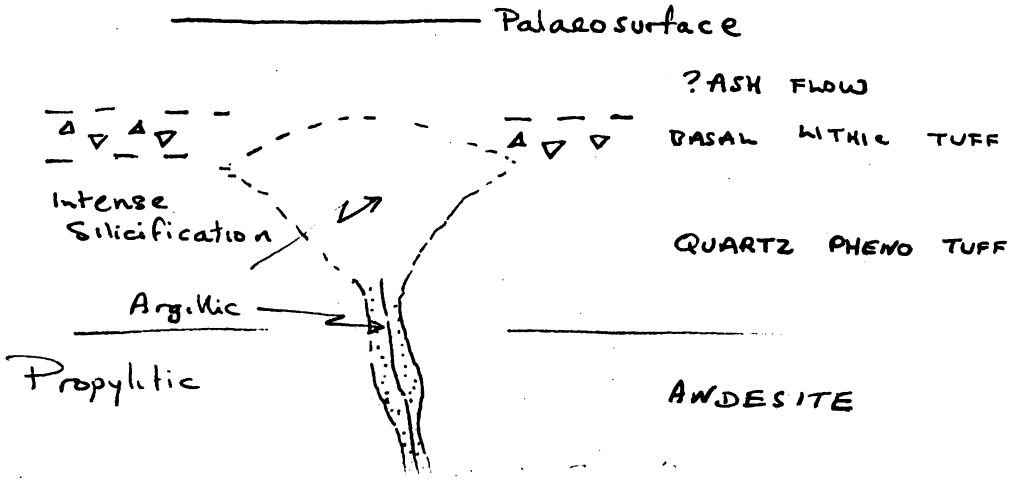
Discontinuous argillic alteration zones are present in the andesite, and appear to become more silicified adjacent to the World's Fair adit. Silicified argillic cobbles occur in the vein exposed at #4972 and may correlate with a cobble-rich zone in the (now collapsed) World's Fair structure to the northeast. Away from the vein system andesite is pervasively propylitically altered (chlorite-epidote-pyrite), the alteration being typical of that in geothermal systems in andesite terrane. In active systems epidote is often used to infer temperatures greater than 250°C and relatively low gas contents in the hydrothermal fluid. Prominent silicification occurs on the ridge to the south of #4972. I visited the two most prominent "knobs" which occur on the east and west sides of the gully striking south west from #4972. Neither showed any features typical of near surface sinters. Some silicified breccia occurs in the scree and may be derived from silicified zones in the overlying crystal-lithic tuff discussed above. Angular breccias occur locally in the silicified zones but sequential silicification - hydraulic fracturing was not evident. Occasional sheeting in the silicified zone may represent some primary bedding feature in the tuff unit.

From the occurrence of epidote and its assummed 250° minimum formation temperature, boiling-point depth relations require a minimum fluid depth of 1380'. The argillic alteration associated with mineralised veins postdates the propylitic alteration and may have been superimposed on an earlier altered and eroded andesite-hosted geothermal system. Somewhat lower temperatures, say 200° ± 20° might then be appropriate for the vein formation event, and a minimum depth of 480'. This estimate corresponds approximately to the upper surface of the crystal lithic tuff - or ash flow- which may then represent a cap to the World's Fair vein systems.

Clearly a number of important studies are required in support or contradiction of this proposal. These would include,

1. Thin section examination of the crystal lithic tuff, and silicified zones.

2. More detailed alteration studies focussing on clay identification in the argillic zones and age relations between the argillite and propylite.



3. Determination of vein formation temperature using fluid inclusion, clay mineralogy. Is vein mineralogy and economic mineralisation related to boiling?

Vein structure: The essential problem at World's Fair itself is the relocation of the mineralised vein structure beyond the limits of earlier mining. The vein structure dips steeply NW at #4972 and is recorded as subvertical at #4648. The vein appears to be cut by a subvertical fault striking SW. A careful fault-plane solution may be helpful in estimating the displacement of the vein. The steep dip of both structures, as well as curvature on each, lead to large relative errors which should be considered in siting drill holes. Looking south from Liza it appears that the World's Fair structure follows the gully through #4972 and between the prominent silica "knobs" at the higher elevation*. Similar gully structures parallel the World's Fair to the east and west and may represent vein outcrop buried by scree.

Two final comments. Do the January and World's Fair veins represent conjugate fractures? I noted some iron stained stockwork in the road (approx 8900N, 18600E) similar in appearance to the hanging wall stockwork above the January lode.

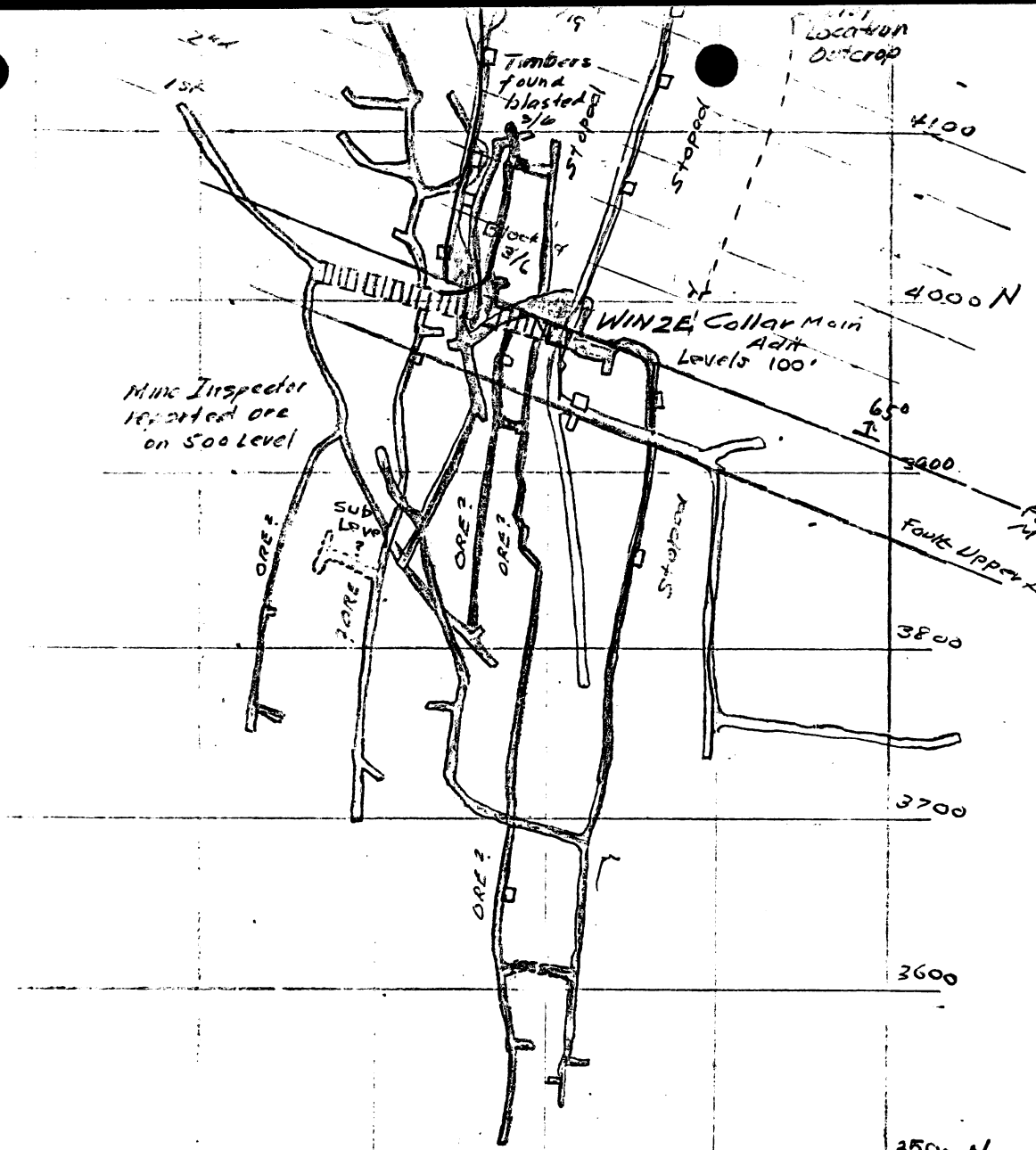
Overall the district is certainly a large fossil geothermal system, possibly capped by a relatively impermeable ash flow. An earlier andesite-hosted, barren hydrothermal system may have been succeeded, following some erosion, by silicic volcanism and renewed hydrothermal activity focussed by available fractures. Mineralisation and alteration all around Red Mountain suggest that a number of other hydrothermal systems have operated in the past and may have hosted economic mineralisation.

Hope these thoughts are of interest. No doubt we can pick up the discussion in Creede next month.

Best wishes,

Dick

* Note the erosion surface and recent conglomerate immediately above the World's Fair adit.



Fourth " " " 4280 ?

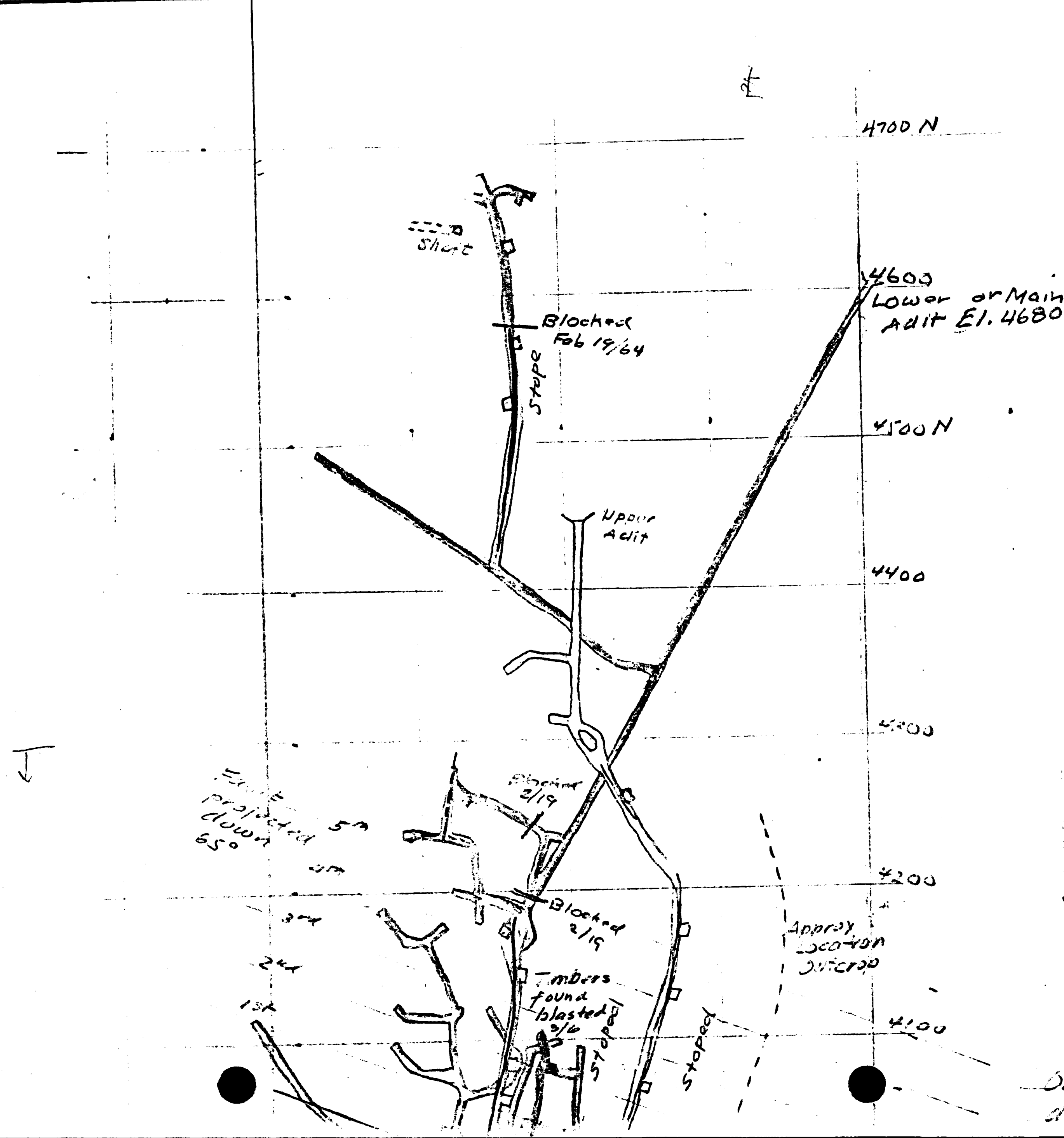
Fifth " " " 4180 ?

- On Upper Adit South End of Vein displaced 100' East
- On Main Adit South End of Vein displaced 130' East
- Work on Winze Levels South of Fault As of Mar 6, 1964 Fault & Winze inaccessible.

MAP #4

(18)

SC 38N [illegible] 32 [illegible] AG



WORLD FAIR WORKINGS
FROM OLD 40 scale MAP
1 in = 100 ft

Level				El.
Upper Adit				
Lower or Main Adit				El 4680
First Level in Winze				4580 ?
Second	"	"	-	4480 ?
Third	"	"	"	4350 ?
Fourth	"	"	"	4280 ?
Fifth	"	"	"	4180 ?

On Upper Adit South End of Vein displaced 100' East

Report on the

WORLD'S FAIR MINE

Harshaw Mining District
Santa Cruz County, Arizona

Introduction

The World's Fair mining property consists of nine unpatented mining claims controlled by Mr. Lyall Lichty of Tubac, Arizona. Information has been compiled from various sources including publications by U.S. Geological Survey geologists F.C. Schrader and F.S. Simons, American Smelting and Refining Company information, a Platoro Corporation report by D.M. Stranahan, and geological mapping, sampling, and surveying by various personnel. This report was compiled in November 1974 by Paul I. Eimon and J. Kenneth Jones for Mr. Lyall Lichty.

Location

The property is located in the Harshaw Mining District in the Patagonia Mountains of Santa Cruz County, Arizona, in Section 21, Township 22 South, Range 16 East. Elevation ranges from 4600 to 5600 feet on the claim group. Closest accommodations are in Patagonia, a town with a population of about 1000 situated 10 miles by dirt road north of the property. Nogales, Arizona, on the Mexican border approximately 30 miles by road from the mine, is the nearest supply center. The claims are within the Coronado National Forest and recent regulations on surface disturbance must be considered in planning an exploration program.

History

The silver-bearing veins of the World's Fair mine are thought to have been discovered by early Spanish prospectors, but the first record of American activity is by a Mr. McNamee who located a claim in 1879 and shipped ore until 1881 when he abandoned the mine. Intermittent mining of high grade ore continued under several owners, and a 10-stamp mill operated briefly in 1897.

In 1963 the claims lapsed for lack of assessment work, and Platoro Corporation, owned largely by Thayer Lindsley, staked new mining claims to acquire the property. The field engineer who directed staking of the claims for Platoro Corporation was Lyall Lichty, who has continued to supervise assessment work and holds an option on the property from Lindsley. In 1974 the claims were re-surveyed and corners were re-established.

Development

Approximately 15,000 feet of underground mine workings are reported on the property. The main mine working is a 1200-foot-long adit at the 4680 foot elevation and known as the "main level." In the main level about 700 feet from the portal is an internal shaft 348 feet below the collar. Above the main level is the 510-foot-long upper level with stopes reaching through to the surface. A short adit known as the uppermost level occurs farther up the slope. Platoro Corporation cleaned out the main level, and partially cleaned out the upper and uppermost levels. The main level was surveyed and preparations were started for underground diamond drill locations to search for ore extensions. The internal shaft is filled with water and, except for a map of underground workings, no information is available on these deeper workings.

Production records are incomplete, but the mine is reported to have produced more than $1,000,000 by 1915. Smelter records of shipments from the property during the period 1937 to 1942 are listed below.

Year	Tons	Gold Oz./Ton	Silver Oz./Ton	Lead%
1937	538	.025	22.1	16.6
1938	198	.065	151.7	7.3
1939	526	.139	107.1	7.6
1940	200	.21	65.4	7.8
1941	167	.04	98.2	9.3
1942	53	.01	12.4	22.2

Arizona Bureau of Mines Bulletin 140, "Arizona Metal Production," published in 1936, lists the following production for the mine from 1903 to 1930.

Copper (pounds)	Lead (pounds)	Silver (value)
400,000	100,000	$725,000

Several former producing mines are found adjacent to the World's Fair property. About one mile to the south is the January-Trench property which was operated for 20 years by American Smelting and Refining Company. That same company also operated the Flux Mine about a mile northwest of the World's Fair. Both properties produced silver-lead-zinc ore from fault zones in Mesozoic sedimentary and volcanic rocks. Harshaw District production recorded prior to 1936 has a value of $3,835,000, but much production from the Trench and Flux mines came after this time.

Geology

Exposed in the Patagonia Mountains are pre-Cambrian intrusive and metamorphic rocks, patches of Paleozoic sedimentary rocks, large areas of Jurassic and early Tertiary granitic intrusives, and complex piles of Mesozoic and Tertiary volcanics with some sedimentary sections and interbeds. Because of complex stratigraphic relationships, alteration, structure, and previous lack of understanding of some types of volcanic rocks, the several geologic maps of the district show profound differences. The World's Fair claims fall in rocks, depicted on the 1974 USGS map MF I-762 as Cretaceous age trachyandesite and biotite latite, and as Laramide age tuff. Previously, these rock types have been described as conglomerate, diabase and diorite. Pervasive, low grade propylitic alteration and spotty, in part structurally controlled feldspar-destructive alteration characterize the area and probably result from the location of the property in the outer portion of the alteration halo of a large, deep porphyry copper deposit beneath Red Mountain 1½ miles to the north. Although the recently published USGS map corrects some previous errors in rock-type terminology, additional changes undoubtedly would be required if detailed mapping were conducted.

The rock type exposed on the high ridge on the southwest portion of the claims is a fragmental, rhyolite, ash flow tuff although it has in the past been confused with sedimentary rocks at the Flux Mine to the northwest. Previous observers have mapped the rock type in which the World's Fair veins occur as diorite, quartz diorite, and diabase. The recent USGS map shows this rock unit as a flow rather than an intrusive. Field relations observed to date are not conclusive. This rock type exhibits no flow banding in the exposures seen, and has somewhat coarser textures than typcially associated with extrusives. However, neither is any firm evidence of intrusive origin known at present. Feldspar-destructive alteration (probably mostly clay alteration but possibly including sericite) appears to be controlled by faults and fracture

systems in the diorite. These altered zones are striking in appearance because the normally dark colored rock is bleached and contains substantial amounts of limonite after sulfides. In part the apparent strong alteration may be supergene, resulting from oxidation of pyrite above the water table and attack of the rock by the acid solutions generated from breakdown of the pyrite. Throughout the diorite ferromagnesian minerals are altered to chlorite, and epidote occurs as blebs and seams.

Latite, exposed on the northeast portion of the claims, texturally resembles a flow rock, but shows no obvious flow structure. Spotty feldspar-destructive alteration accompanied by at least several percent limonite after sulfides occurs in this rock type, and it is difficult to discern latite from diorite in places because of the effects of alteration. Sparse epidote is recognized in this rock type in the absence of feldspar-destructive alteration.

Feldspar-destructive alteration which resembles sericite rather than clay is strongly developed in the rhyolite ash flow tuff previously mentioned on the southwest portion of the claims. Alteration and the associated limonite are most intense adjacent to the contact with weakly altered diorite. This strongly altered and mineralized zone may be 2000 feet long and several hundred feet or more in thickness, but additional work is needed for definition. The rhyolite ash flow tuff appears to dip gently to the southwest, although eutaxitic structure is not well developed in the exposures seen to date. Local silicified zones in this rock type may be a result of hydrothermal alteration or may be partially devitrified glass portions of the tuff.

Mineralization

On the basis of the layout of mine workings and descriptions, most ore mined has come from one or two parallel, north striking, 50° to 60° west-dipping veins. Two northwest striking veins are also known. One of these dips 30° to 45° northeasterly and the other 60° southwesterly. At surface the north striking vein typically consists of 4½ feet of soft, clay or sericite altered diorite containing 5% to 10% limonite after sulfides, and pod-like masses of unoxidized vein material consisting of quartz, pyrite, and a few grains of galena. Specimens of vein matter on the dumps consist of quartz, barite, pyrite and galena. The 1915 report by Schrader identifies antimonial silver, tetrahedrite, and some chalcocite in addition to a sprinkling of finely disseminated chalcopyrite and pyrite. Schrader states that ores changed from rich silver sulfides in the oxidized zone to galena-copper-silver ores at depth averaging 20% copper, 500 ounces in silver, and $15 in gold per ton.

Sample Results

Six grab samples of mineralized material from the main level taken in September 1973 and fire assayed by Jacobs Assay Office in Tucson, Arizona, ranged from 0.45 to 6.15 ounces silver and average 2.23 ounces. Widths are not specified on these samples. High grade material at the portal of the upper tunnel contained 201.50 ounces silver and .085 ounce gold. Six samples were taken from the upper tunnel including one grab of the altered, pyritized dump. One of the samples from vein material contained 145.50 ounces of silver and the other five range from 0.25 to 3.25 ounces silver and average 1.47 ounces. Nine additional samples contained from 0.50 to 7.75 ounces of silver and suggested the possibility of substantial amounts of low grade values.

A program of grid sampling of outcrops and soil was then undertaken in order to determine the extent of possible silver values on the claims. Ten of these samples contained one ounce or more silver by fire assay and substantial areas showed anomalous values. The largest and strongest of the anomalies occurs in the central portion of the claim group and appears to be related to the strongly altered and limonite stained locus along the contact of the rhyolite ash flow tuff with underlying diorite. In an area approximately 1200 feet long by 200 to 600 feet wide values exceed 0.30 ounce in silver. This anomalous area falls on a steep slope and access is difficult. One surface sample in this little prospected area contained 2.05 ounces silver.

Conclusions

Information available indicates that a small tonnage of very high grade silver ore was produced by small scale, leaser-type operations from narrow veins at the World's Fair Mine. The veins may have pinched out or contained only low grade values at depth and laterally or mining would have been continued. However, at present metal prices additional development on the veins may be justified. The objective of this work would be a small tonnage of high grade ore.

Grid sampling has discovered a large area of anomalous silver values at surface in an area that has no development work and very little prospecting. The possibility that this low grade silver mineralization represents a large enough tonnage and high enough grade to support a larger mining operation should be further investigated.

Recommendations

1. Additional surface samples should be taken and geological mapping completed to confirm and add detail to the large area of anomalously high silver values in the central portion of the claims. Sample locations must be clearly identified in the field to serve as a guide for further work.

2. All accessible underground workings should be mapped and systematically sampled.

3. When the surface silver anomaly is detailed by additional work a road should be built into the area to provide access, exposures for additional sampling, and sites for possible drill holes. Prospecting by such road cuts is no longer permissible under U.S. Forest Service regulations, so it may be necessary to plan for drill sites as justification for the road work. However, drilling should be undertaken when geologic mapping and sampling are completed.

4. Additional development of the vein from which past high grade production has come may be justified depending on results of underground mapping and sampling. The internal shaft probably should be pumped out at low cost, but installation of ladders and timber to provide safe access for mapping and sampling of deeper workings will be costly.

Paul I. Eimon
Tucson, Arizona
November 18, 1974

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Copied from USGS Bulletin 582,
Mineral Deposits of the Santa Rita and Patagonia Mountains,
by Frank C. Schrader, 1915.

WORLD'S FAIR MINE

The World's Fair mine is near the center of the western part of the district, 2 miles west of Harshaw, on Alum Gulch, at an elevation of about 4,680 feet.

It was located in 1879 by a Mr. McNamee, who shipped a considerable quantity of ore from it and is said to have abandoned it in 1881. In 1883 William Moran relocated the property and in 1884 sold it to Frank Powers, the present owner, for $100. Mr. Powers is reported to have soon shipped a few carloads of ore of 25 tons each, which brought from $8,000 to $25,000 a car, and by 1903 it was said that $600,000 worth of ore had been blocked out in the mine ready to ship. Since its acquisition by Mr. Powers it has been worked at intervals only[1] but has always produced considerable rich ore, which was mined or milled and shipped as desired. In 1907, for instance, the production was $74,210 worth of ore, in lead, copper, gold, and silver.[2] During the year 1910 the production was $42,730.82.[3] In 1912 a shipment of a few carloads, mostly very rich ore, is reported to have been made to the Selby Smelter. Early in August, 1914, the mine was said to be shipping two carloads of rich ore a week to Douglas.

The property comprises a group of eight claims and is reported to have produced more than $1,000,000, of which over $500,000 was in high-grade ore. Several hundred thousand dollars' worth of medium-grade ore, it is said, now lies on the dumps. It is reported that the owner has received several offers for the mine, ranging as high as $500,000 to $600,000,[1] but that the price asked has been $1,000,000, of which 10 per cent was to be paid down before anyone would be allowed to enter the mine to make an examination. In 1913 the mine was reported to have been sold or bonded to

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[1]U.S. Geol. Survey Mineral Resources, 1905, p. 155, 1906; Idem, 1906, p. 170, 1907.

[2]Idem, 1907, pt. 1, p. 178, 1908.

[3]Mines and Mining, Aug. 1, 1911.

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[1]Curtis, J.N., Report of the Governor of Arizona, 1902, p. 47.

the Copper Queen Co. for $800,000. Early in 1914 the tax commission of the State of Arizona was reported to have valued the mine at $155,000 and to have collected $7,000 in taxes based on this valuation. More recently it has been reported that Charles E. Knox, president of the Montana-Tonopah Mining Co., of Tonopah, Nev., and A.Y. Smith, formerly manager of the Prince Consolidated, of Pioche, Nev., have taken over the mine, and are shipping about 50 tons of ore daily.

The mine is said to be developed to a depth of 600 feet and is the deepest mine in the district. It contains about 15,000 feet of drifts, tunnels, stopes, shafts, and winzes. The owner was absent at the time of visit and the mine was closed. The main entrance to the mine is a crosscut tunnel at an elevation of 4,680 feet, from which, it is reported, a winze has been sunk to a depth of 600 feet with drifting 1,000 feet each way from the winze on the vein at levels spaced 100 feet apart.

The principal equipments are a 10-stamp mill supplied with concentrators, etc., which made an apparently unsuccessful run of three months in 1897 and has been idle ever since. There is also a steam hoist within the tunnel and power drills.

The topography is rough, as shown in Plate XVII, A, and the canyon on the north below the property is impassable, so that the mine is reached by 1½ miles of wagon road of easy grade descending the canyon on the south from the county highway at a point a mile west of Harshaw.

The country rock, as shown in figure 31, is a small area of diorite which forms the northward continuation of the Harshaw belt, but which at the mine is almost surrounded, overlain, and intruded by rhyolite and is more or less pyritic and mineralized. The rhyolite, which is also considerably mineralized and altered, seems to be similar to that at Red Mountain, with which it is apparently connected. Just across the canyon east of the mine the surface is underlain by a purple altered andesitic volcanic rock composed almost wholly of oligoclase-andesine and a little biotite or altered hornblende.

The deposits, to judge from the location of the workings, are about all on or associated with the contact of the rhyolite intruded into the diorite. The workings trend north-northwest and the deposits seem to dip about 80° WSW into the mountain, but in the mine the dip is said to be about 45°. From the main entrance, which is located about 40 feet above the floor of the canyon, the openings and

croppings extend for one-eighth of a mile or more southward and through a vertical range of about 400 feet, which together with the 600 feet of depth the vein is said to have in the mine gives for the deposits a known vertical range of about 1,000 feet. The croppings are irregular, however, and in places difficult to identify and follow.

The croppings range from 10 to 14 feet in width, and the average width of the vein in the mine is said to be about 6 feet, nearly all of which is good workable ore. The metalliferous minerals are said to occur mostly in the rhyolite or hanging-wall side of the contact. A considerable portion of the openings to the south of the mine are on the north-south rhyolite dike cutting the diorite. The croppings of the dike are 15 to 25 feet wide and consist of a reddish-yellow siliceous rhyolite. The valuable metals in the ore are silver, gold, lead, and copper, silver predominating. The gangue of the vein is commonly said to be quartz, but in most of the ore seen on the dump barite seems to equal the quartz in amount, and in some run of mine specimens it is the chief or only gangue mineral, quartz being inconspicuous or absent. The barite gives to much of the ore a sparry aspect and is particularly prominent as seams, blades, and plates filling fractures and cavities, denoting that much of it is of late or postvein age.

In the upper workings of the ores, it is said, were mostly rich lead-silver sulphides, but below water level, in the unoxidized zone, where they maintain or exceed their surface tenor, they carry besides galena considerable copper, mostly in the form of tetrahedrite or gray copper, with some chalcocite and antimonial silver, in places rich in gold. In fact, a considerable part of the ore seems to be antimonial silver. There is also a sprinkling of finely disseminated chalcopyrite and pyrite. The ores from the deeper part of the mine are reported to average about 20 per cent in copper and 500 ounces in silver and $15 in gold to the ton. Judging from about 500 tons or more seen on the dump the ore is mostly hand-sorted and well graded, seemingly by screens, into sizes ranging from that of a walnut up to that of a 10-inch bowlder. It is then shipped direct to the smelter at Selby, Cal.

(4)

MEMORANDUM

TO: Will Cole and Lyall Lichty, Tucson, Arizona
DATE: November 12, 1981

FROM: Paul Eimon, Mexico City
SUBJECT: Exploration of World's Fair Claims

Our current exploration knowledge of the World's Fair claim block indicates the following target potential:

1. High grade epithermal bonanza silver-gold-lead mineralization similar to past production (1896(?)-1934).

2. Bulk silver mineralization in the shattered boiling zone in the upper part of the epithermal model. This type of mineralization has been increasingly evident because of plotting of wall rock assay data from the 1907-1917 assay book that Lyall has recently produced.

3. Our ownership as part of a very large mineralized system that ASARCO appears to be finding in Humbolt Canyon. The World's Fair claims, in this case, can contain important quantities of ore and/or a strategic position relative to the mining of the entire mineralized zone.

Our work to date exploring the World's Fair claim block has been quite minimum and low cost: Three to four days mapping by Ken Jones. Occasional investigative and mapping visits by me. Crucial assessment work supervised by Lyall Lichty. Research on the data by me in connection with my overall study of epithermal systems. Geochemical sampling on a grid by Bill Brown. Preparation of maps by me in San Francisco for assessment purposes. Attempts to open up the lower workings. Three rotary holes spotted long distance by me and picked because of convenient road location and a general silver geochem anomaly. Assimilation of by-product information from Byron Berger in connection with current Commonwealth International Ag-Au field seminars.

Because of the close fit of World's Fair production and outcrop data with the newly developing epithermal Ag-Au exploration model and ASARCO exploration activity, we now have reason for renewed interest in exploration of our claim block. Because a systematic program has not been done on the claim block, we still do not have good solid exploration data covering the area.

My work on the World's Fair the past months has been directed toward developing an appropriate exploration program. The next stage of exploration should focus on getting the data to define drilling targets if warranted. The program I envision was outlined in the memorandum of October 29th from Grover Heinrichs to Lyall

Lichty which I helped prepare and that was discussed in our meeting of October 26, 1981. It was based in part on a previous offer by Will Cole to give up 25% of his ownership if I could obtain $250,000.00 for exploration of the World's Fair.

In any case, my proposal was my best outline of the most efficient program to explore the World's Fair. Because of necessary projected delays due to property negotiations and financial restrictions suggested by Will Cole in his memo of November 1, 1981, I have made a restudy of possible exploration approaches to World's Fair and present my conclusions from that restudy:

The next stage at World's Fair exploration, in my opinion, should include the following sequential and consequential steps:

1) Creation of an accurate three dimensional mapping and plotting base.

2) Detailed geological mapping on this base to get geological alteration and mineralization patterns in three dimensions.

3) Outcrop geochemical sampling and analysis in conjunction with the geologic work to show metalization patterns.

4) Further laboratory analysis to show alteration and depositional characteristics to define position in the epithermal model.

5) Creation of sections and maps to define specific exploration targets.

6) Production of a report to recommend a cohesive and understandable exploration program to present for funding subsequent drilling or underground work by any party including WERA.

My restudy convinces me that the above is necessary no matter what we collectively or individually decide to do with our ownership rights. Professionally and personally, I am committed to the proposed program, and am willing to assist in the financing of such an exploration approach to the World's Fair. I think we would make a serious mistake in continuing the type of exploration that has characterized the World's Fair over the past eighty years.

Therefore, unless you want me to finance this program, it is my recommendation that we delay implementation of the overall program until it is financially feasible and we can obtain a qualified geologist to do the necessary detailed mapping and sampling at reasonable rates.

In the meantime we can do paneling and black and white photography with enlargements and mylars (estimated cost, $900-$1,500). I can do initial geologic mapping on this base in connection with my seminar trips and Pearce Project work. We can also have some initial pathfinder geochemical analysis done(estimated cost, $700-$1,200).

Respectfully submitted,

Paul Eimon

PE:vh
cc: Grover Heinrichs

(3)

5/26/82
II 9

MEMORANDUM

TO: Lyall Lichty
W. D. Cole

FROM: P. I. Eimon

RE: Progress Report
World's Fair Mine
Santa Cruz County, Arizona

INTRODUCTION

During the past six months, with limited time, I have been attempting to consolidate exploration data on the World's Fair Mine and build a quality data base for future work. We, as owners, want the property explored for any potential it may have. This recent work has been greatly assisted by the research of Grover Heinrich and the interest of a number of geologists who feel that the World's Fair area is a model for epithermal exploration. John Rice, a geology student from Colorado, did mapping and sampling during January 1981 on the World's Fair and Grover Heinrich has now produced an excellent set of maps which are to be considered part of this memorandum as well as previous reports on the World's Fair that are in the Platoro files. In late 1981 the Journal of Geochemistry Exploration published the results of the U.S. Geological Survey geochemical sampling in the Patagonia Mountains. A copy of this publication is attached to this memorandum.

The purpose of this memorandum is to highlight recent work and make recommendations internally for our consideration in planning future exploration work. The information in this memo with the attached maps

can also be used to give background to anyone interested in working with Platoro in further exploration of the property.

LOCATION

The World's Fair mine property consists of eleven unpatented mining claims controlled by Argentor Corporation now owned by Lichty, Cole and Eimon. The property is located in the Harshaw Mining District in the Patagonia Mountains, Santa Cruz County, Arizona in Section 32, T22S, R16E. The property is 10 miles by road southwest of Patagonia, Arizona. Elevation ranges from 4,600 to 5,600 feet above sea level on the claim group. The closest accommodations are in Patagonia which has a population of approximately 1,000.

HISTORY

The high grade silver veins of the World's Fair Mine were reportedly discovered by the Spanish but first record of American activity was in 1879 when the mine was claimed by Mr. McNamee. Various individuals mined from the property until the 1940's. Mr. Thayer Lindsey acquired the property in 1963 by staking claims which became open for location. Limited exploration was done by Thayer Lindsey and the property was optioned by Lyall Lichty from Lindsey in the early 1970's. The under-lying claims owned by Thayer Lindsey in the name of Argentor Corporation were purchased by Lichty, Cole, and Eimon in 1981. At present both under-lying claims and the option are controlled by

Lichty, Cole and Eimon. Any obligations of the Argentor Corporation are being cleared so the property will be totally free and clear.

PAST PRODUCTION AND DEVELOPMENT

The reader is referred to the Platoro files for records on the production. Recent analysis of all the existing records has shown new assay information for the period 1907-1913 but no new production information. The best estimate at present would indicate a total production from the World's Fair mine at 30-50,000 tons of ore averaging over 50 oz. of silver/T, gold values in the region of .01-.30 oz./T and lead values of 5-20%. The 1907-1913 assay records show early high grade veins with 200 ounces Ag or greater per ton.

GEOLOGY

The geology is detailed in the report of the Platoro Corporation especially in my report of November 18, 1974 which is attached. Additional geologic mapping and observations have shown that the overall alteration and structural features of the area make it difficult to get a clear picture of the subsurface geology without drilling combined with detailed surface mapping. Information from Asarco and other geologists indicate that the diabase or diorite can be sill-like in character. Study of the underground mapping by the Thayer Lindsey Group shows extensive diabase and also conglomerates on the main level on the southwestern edge of the workings. The discovery of the high grade

lead-silver-zinc mineralization limestone by Asarco drilling near the Humbolt below 4,000 ft serves as a indications of the structural problems in the area.

Information rumors from Asarco drilling show a large breccia pipe in the area of the Humbolt mine with mineralization similar to that of the Flux Mine at depth. Asarco's reluctance to discuss the geology and geochemistry of the area or allow visits in the central part of the Patagonia Mountains indicates their exploration interest in the area.

I am saying that with the possible exception of Asarco, I doubt if anyone has a clear picture of the relationship of mineralized areas including Red Mountain, the Ag, Mn, Pb epithermal belt, and the Cu-Mo center between the Humbolt Mine and Sunnyside. Our mapping has shown that (1) the World's Fair fits the epithermal model quite well; (2) that the silica cap and quartz alunite zone related to either northeast trending or northwest trending faults could be related to underlying high grade epithermal silver-lead mineralization on the World's Fair; and (3) that the overall relationship could give a deeper mineralization system similar to the Flux mine or the new mineralization found at depth by Asarco at the Humbolt Mine.

Referring to recommendation of my report of November 18 (page 8) some of these recommendations have been completed but the results have not given us clear cut anamolies or defined targets for drilling. Our knowledge of the epithermal model tells us that we should go laterally for targets for high grade ores. The underground work will be expensive so a change in the emphasis of exploration is necessary.

OTHER DEVELOPMENT

U.S. Geological Survey Geochemical Study

The U.S.G.S. Stream Sediment sampling report in 1981 in the Journal of Geochemistry Exploration, Vol. 14, Pages 135-153, shows strong antimony, silver, lead, tellurium, boron and molybdenum anomolies in the World's Fair-Humbolt-Trench areas. This study is an interesting use of stream sediment sampling in a surface contaminated area. The study was directed to the geochemical characteristics related to the Red Mountain porphyry deposit. A study of this data shows that the World's Fair-Humbolt area is a strong geochemical anomaly related to epithermal mineralization.

Asarco Exploration

Although Asarco has attempted to keep much of their work in the Central Patagonia Mountains confidential it is increasing apparent that they feel that the Humbolt-World's Fair zone could contain precious and base metal mineralization related to epithermal, mesothermal or porphyry copper mineralization. Asarco's exploration game plan is to consolidate the area around Humbolt Canyon including the World's Fair property. At this point Asarco does not appear interested in high grade epithermal mineralization such as that found at World's Fair. It appears that they are interested in base metal and porphyry copper mineralization in depth.

CONCLUSIONS

Development of a geological data base and studies underway of the geochemistry alteration, structural, topographic, and geologic data gives us fundamental data on the World's Fair. The maps, alteration patterns, and geochemical sample results have not given us clear targets for drilling. The topography has given us an accurate three-dimensional picture of the surface and geochemical sampling shows a horizon which is projectable to the structural system outlined by the mapping. Due to lack of outcrop and limited understanding of the underlying structural, alteration, and mineralization features, our targets are somewhat general.

Based on a study of geological information available to us at this time, the World's Fair property contains high grade epithermal silver-lead mineralization targets similar to the ore zones that were mined at the World's Fair. Mineralization will probably be structurally controlled as at the World's Fair Mine and will follow the northwest or northeast structures shown on the mapping. These include (1) the northwest trending structure under the silica caprock on the west side of the World's Fair claims; (2) the northeast trending faults zone striking through the Argentor prospect at the south end of the claim block; and (3) the northwest trending fault systems projected from the American Mine to the south. It is my opinion that the best targets at the World's Fair at this time are the horizons of high grade potential in these zones which are being ascertained by a study of the vertical zoning in the World's Fair mine and projection of that horizon under

altered mineralized structures. Although past production records are sketchy, at best, the targets could contain 50-100,000 T of direct shipping ore in high grade veins. These will be explored by continued geologic mapping, alteration studies and geochemical sampling followed by drilling of specific targets shown by this mapping.

RECOMMENDATIONS

1. We should continue geological mapping, geochemical sampling on the mapping base we have created.

2. A program of angle diamond drilling should begin to test targets below the indicated mineralization target zones as shown by our mapping. I would recommend drilling one or two holes in late 1982, followed by careful logging and assaying of the core and a reanalysis of the target potential based on the new information.

3. I would recommend a continued program of mapping, drilling and data compilation until indications of high grade vein mineralization are found. If and when discovery is made, a drift should be driven to the discovery and high grade direct shipping ore developed.

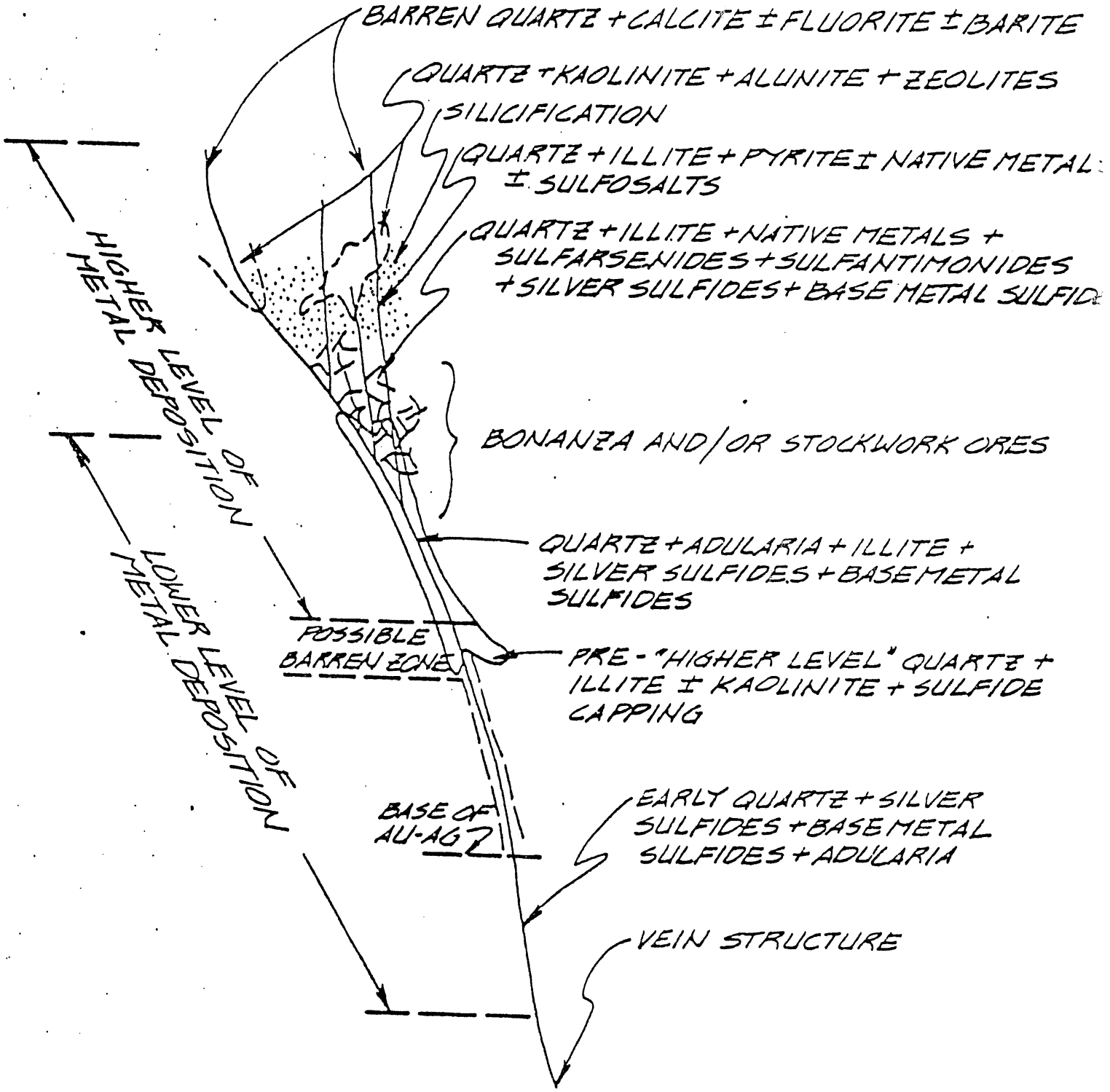
4. If deeper bulk targets are shown by this program, exploration planning should be changed to accommodate such information. As our program is directed to the discovery of small high grade mines, the exploration budgets must be planned and executed with some hope for

mining targets so that exploration-development can be done in ore thus reducing the cost of exploration and development.

Paul I. Eimon

May 26, 1982

Figure 17b. Model of multiple-level closed-cell deposition



3. Determination of vein formation temperature using fluid inclusion, clay mineralogy. Is vein mineralogy and economic mineralisation related to boiling?

Vein structure: The essential problem at World's Fair itself is the relocation of the mineralised vein structure beyond the limits of earlier mining. The vein structure dips steeply NW at #4972 and is recorded as subvertical at #4648. The vein appears to be cut by a subvertical fault striking SW. A careful fault-plane solution may be helpful in estimating the displacement of the vein. The steep dip of both structures, as well as curvature on each, lead to large relative errors which should be considered in siting drill holes. Looking south from Liza it appears that the World's Fair structure follows the gully through #4972 and between the prominent silica "knobs" at the higher elevation*. Similar gully structures parallel the World's Fair to the east and west and may represent vein outcrop buried by scree.

Two final comments. Do the January and World's Fair veins represent conjugate fractures? I noted some iron stained stockwork in the road (approx 8900N, 18600E) similar in appearance to the hanging wall stockwork above the January lode.

Overall the district is certainly a large fossil geothermal system, possibly capped by a relatively impermeable ash flow. An earlier andesite-hosted, barren hydrothermal system may have been succeeded, following some erosion, by silicic volcanism and renewed hydrothermal activity focussed by available fractures. Mineralisation and alteration all around Red Mountain suggest that a number of other hydrothermal systems have operated in the past and may have hosted economic mineralisation.

Hope these thoughts are of interest. No doubt we can pick up the discussion in Creede next month.

Best wishes,

Dick

* Note the erosion surface and recent conglomerate immediately above the World's Fair adit.

Age relations in the area are largely unknown and it is possible that the alteration and volcanic structure are related to the Red Mountain volcanic centre to the north. The andesite-diorite distinction shown on the geologic map is primarily a grain-size distinction which may not reflect the presence of dikes or other intrusives. I did not have the time to look at contact relationships.

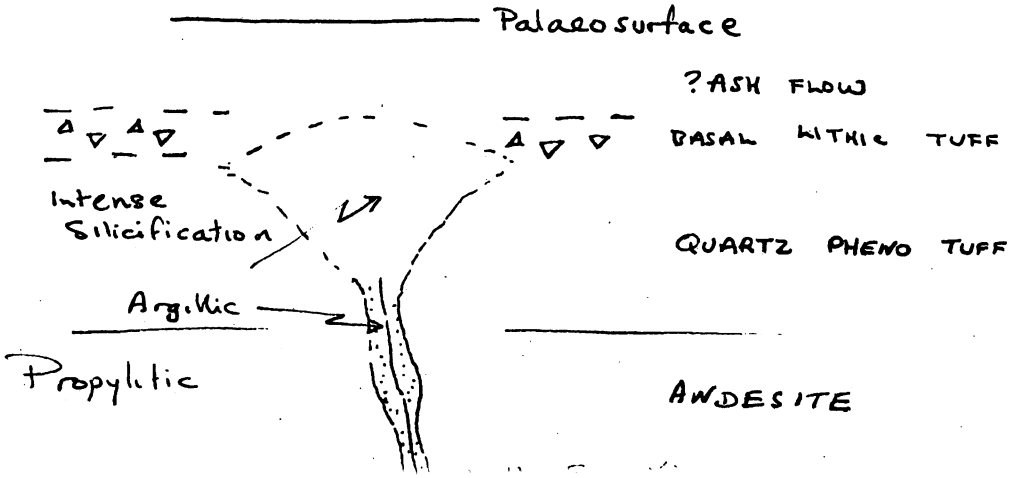
Discontinuous argillic alteration zones are present in the andesite, and appear to become more silicified adjacent to the World's Fair adit. Silicified argillic cobbles occur in the vein exposed at #4972 and may correlate with a cobble-rich zone in the (now collapsed) World's Fair structure to the northeast. Away from the vein system andesite is pervasively propylitically altered (chlorite-epidote-pyrite), the alteration being typical of that in geothermal systems in andesite terrane. In active systems epidote is often used to infer temperatures greater than 250°C and relatively low gas contents in the hydrothermal fluid. Prominent silicification occurs on the ridge to the south of #4972. I visited the two most prominent "knobs" which occur on the east and west sides of the gully striking south west from #4972. Neither showed any features typical of near surface sinters. Some silicified breccia occurs in the scree and may be derived from silicified zones in the overlying crystal-lithic tuff discussed above. Angular breccias occur locally in the silicified zones but sequential silicification - hydraulic fracturing was not evident. Occasional sheeting in the silicified zone may represent some primary bedding feature in the tuff unit.

From the occurrence of epidote and its assummed 250° minimum formation temperature, boiling-point depth relations require a minimum fluid depth of 1380'. The argillic alteration associated with mineralised veins postdates the propylitic alteration and may have been superimposed on an earlier altered and eroded andesite-hosted geothermal system. Somewhat lower temperatures, say 200° ± 20° might then be appropriate for the vein formation event, and a minimum depth of 480'. This estimate corresponds approximately to the upper surface of the crystal lithic tuff - or ash flow- which may then represent a cap to the World's Fair vein systems.

Clearly a number of important studies are required in support or contradiction of this proposal. These would include,

1. Thin section examination of the crystal lithic tuff, and silicified zones.

2. More detailed alteration studies focussing on clay identification in the argillic zones and age relations between the argillite and propylite.



(9)

PRELIMINARY REPORT ON
WORLD'S FAIR MINE
Located near Patagonia, Santa Cruz Co.
Arizona
by Neil O'Donnell
October 20, 1966

Includes Memo of 12/30/1966
from James E Redmond.

NEIL O' DONNELL

PRELIMINARY REPORT ON WORLD'S FAIR MINE
Property of Argentor Mining Corp.
Located near Patagonia, Santa Cruz Co.
Arizona
by Neil O'Donnell
October 20, 1966

Summary:

The conclusion reached as the result of work on this property in June and September of this year is that this former producer of high grade silver ores does not have any ore blocked out in it. It does have, however, five places underground which should be prospected with the expectancy of yielding additional high grade ores. There are, on surface, seven other places which should be investigated, one of them the extension of the January vein of the Trench mine into Argentor property.

It is doubtful that the World's Fair might develop into a large mine but it could be a very profitable small mine, say of 50 to 100 tons per day capacity.

There are no serious operating problems envisaged. A county road is within 100 feet of main portal; power line already installed to the main portal. Lack of water and tailing facilities are not considered serious problems as the Trench mill had both. The Trench mill is on a neighboring group and is being dismantled. Sufficient labor is available for an operation on the scale proposed. Timber, explosives and fuel are available in Patagonia. Almost any other material is available either through Nogales or Tucson.

A budget of $150,000 is recommended to repair underground workings, acquire necessary equipment and prospect the points detailed in this report, both by diamond drilling, by drifting or by cross-cutting.

There is a possibility that sufficient ore might be mined to finance an extensive examination of this mine without net investment of the amount mentioned above.

The price of silver at present is $1.29 per Troy ounce. Everyone expects the price to be increased because consumption, as nearly as it can be determined, appears to exceed production in the free world.

Introduction:

Purpose of Report: The purpose of this report is to bring together in one place as much information as is available, which is believed to be correct. Another purpose of the report is to point out where information is lacking or deficient and places where the information available seems to be contradictory.

Time of Examination: Although I had visited the World's Fair mine on previous occasions no mapping was done. The field work for this report was done between June 18th and July 1st, 1966, on the first visit and September 18th and 23rd, 1966, on the second visit.

I was accompanied on both visits by Mr. D.M. Stranahan, who rendered invaluable assistance in the location and mapping of workings

on the property, plus provision of maps and information on adjacent groups of claims. Mr. Raul Ortega took charge of repairing and opening caved workings so they might be inspected.

Previous Work: The earliest published work of which I have knowledge is Frank C. Schrader, Bulletin 582 of the U.S.G.S., Mineral Deposits of the Santa Rita and Patagonia Mountains, Arizona, published in 1915. We also have a copy of an areal geologic map made by Mr. J.N. Courtright in 1951 for the American Smelting and Refining Co. Permission was secured by Mr. Stranahan from the Tucson office of ASR Co. to use this map.

Location:

The mine is located in Santa Cruz County, Arizona about five miles in an airline southwest of Patagonia, Arizona. Patagonia is on Highway 82, between Nogales and Tombstone, and is twenty miles by road from Nogales where rail, limited airline and telegraphic facilities are available. The mine is about eleven miles by good road from Patagonia, via Harshaw and the Trench mine.

It is located in Section 32 - T. 22 S - R. 16 E.

The nearest shipping point for ores, concentrates or supplies is Nogales.

The county road passes within 100 feet of the main tunnel portal.

Property:

The property consists of 9 unpatented claims, all recorded in the County Seat at Nogales as follows:

		Docket	Page
Old Prospector	No. 1	55	355
Argentor	No. 2 Amended	43	382
Argentor	No. 3 Amended	43	383
Argentor	No. 4 Amended	43	384
Argentor	No. 5	46	313
Argentor	No. 6	46	314
Argentor	No. 7	55	259
Argentor	No. 8	55	260
Argentor	No. 9	55	261

The World's Fair is a well known silver property, however the owner during its most productive years, Mr. Frank Powers, neglected to patent the claims and after his death the ground became open. It was located by Platero Corporation, the predecessor of Argentor Mining Corporation.

Geography:

The main portal is in a steep-sided canyon known as Alum Gulch or Alum Canyon and on the hills south of the gulch. The elevation of the main tunnel portal is 4700 feet.

The climate is typical mountainous desert country with limited vegetation. There are no trees of consequence on the property.

Rainfall is limited to about 10" per year, on the average, although the last two years have had considerably more than 10".

Drainage is good through Alum Gulch, in fact most of the rainfall runs off in a few hours. Alum Gulch is usually dry but can be a raging torrent.

A review of the history is given in Bulletin 582 and will not be repeated here.

Geology:

The area is composed of sedimentary rocks, igneous extrusive rocks and igneous intrusive rocks. Mr. Courtright has given names to a complete series of rocks in this area but in or adjacent to the Argentor property there are only six. Mr. Courtrights list is given below in age relationship.

1. Valley Gravel
2. Andesite porphyry dikes
3. Monzonite - plutonic
4. Diabase - sills and dikes
5. Wieland Canyon andesite
6. Alum Canyon andesite
7. Alaskite conglomerate, angular
8. Chief Conglomerate - unconformity
9. Alaskite - plutonic
10. Upper grits and quartzite
11. California shale
12. Middle grits, quartzite and fine conglomerate
13. Limestone
14. Mudstone
15. Lower conglomerate

In the area about the mine, only numbers 3 through 8 are known. The relationship of the rocks in the mine area is shown on the 100 ft. scale surface map which is an enlargement of a portion of Mr. Courtright's map. (Map No. 1).

The general sequence of geologic events based on evidence close at hand, is the deposition of Chief Conglomerate, followed by three flows: the lowest is the Alaskite Angular Conglomerate; next highest the Alum Canyon andesite; and the highest, Wieland Canyon andesite. Into this column has been intruded the diabase and all have been intruded by a younger mass, probably monzonite. I saw no exposures of monzonite or rhyolite but I believe careful examination of the area will yield some. All of the rocks underground including both diabase and Alum Canyon andesite have been intensely altered by hydrothermal action indicating the presence of a younger intrusive mass at no great depth.

Faulting:

Mr. Courtright indicates the presence of an unconformity below the Chief Conglomerate. This may be a thrust fault. We made no effort to clarify this point.

There is faulting indicated in all the workings. The 100' scale surface map shows the presence of fractures which may be faults - or veins - or both.

I was able to complete the 100' scale sheet during the last days work at Patagonia indicating the relationship between the surface and the Argentor holdings. Had we had more time we would have investigated these points. For example the 100' scale map shows a group of "veins" on surface designed A-A' to K-K' and O-O'. These may be faults - or veins - or both. They should be investigated more closely.

Maps:

Inasmuch as the results of the field work is largely found on the set of maps made up to accompany this report they should be discussed here. The maps are six in number and are listed herein.

Map No. 1 - 100' Scale Surface Map.
Map No. 2 - 50' Scale Surface Map, over 50' scale workings.
Map No. 3 - Geology of upper tunnel and surface pits on scale of 1" = 50'.
Map No. 4 - Geology of Main Tunnel on scale of 1" = 50'.
Map No. 5 - Property Map on scale of 1" = 300' showing Trench, Humbolt and Argentor group with vein structures in each.
Map No. 6 - Composite of all known workings of World's Fair mine.

No long section was made because of the inadequacy of the information, at this time, for such work.

Wherever possible numbers have been given to workings so that they may be referred to specifically.

Map No. 1, as noted, is an enlargement to 100' scale of Mr. Courtright's map. There is a notation on the original sheet which is quoted here in full:

> "Topography of Flux Mine area from 100' scale map No. 992. All other topography from tracing by A.E. Ring of map prepared by University of Arizona students. The discrepancy between U. of A. and Flux surveys is as much as 60 feet in horizontal distance. Adjustment of topography to coordinates was not made in the Trench area of this map - see note above. The area from California Mine northerly mapped by A.C.S. aerial photograph enlargement. This portion to be used as a sketch map and not to be used for accurate measurements."

With reservations indicated by the above as indicative of probable inaccuracies, I have nevertheless made a tracing of the area covered by the Argentor Claims to indicate in a general way what the claims cover. Mr. Stranahan had tied into the Trench properties by stadia survey and had used coordinates so determined in making surveys about the mine. This tie should be checked by transit and tape survey, or better by resort to triangulation.

Using his ties, the main level was reduced from 50' scale to 100' scale and plotted on this sheet to show relationship between underground and surface work on broad scale. A Brunton and tape survey from point "J" (tied in by Mr. Stranahan) to the portal of the main tunnel along the road, did not check the road alignment on this map - neither did it check an enlargement of the U.S.G.S. sheet. The Brunton and tape survey was accurate within limits of such work.

Map No. 2 is a 50' scale enlargement of the U.S.G.S. sheet immediately over the mine area. There are two U.S.G.S. sheets for this area, one gives the elevation of the portal of the main tunnel at 4555' and the other at 4700'. Schrader says the elevation is 4680'. We used the 4700' elevation for the rail at the portal. The road on this map is the road from the 50' scale enlargement. Orienting the enlargement on the locations for the main tunnel and upper tunnel No. 15 locates the center end line of Argentor north of the road. It is south, also Argentor 4 tunnel when plotted from stadia surveys was several hundred feet south of the road. It is north, actually. Subsequent re-calculation of surveys placed it nearer road but not where it actually is in relation to road. This road seems to be inaccurately located.

Map No. 3 is a 50' scale geologic map of the No. One upper tunnel with open cuts adjacent to and above this tunnel. The open cuts were plotted on this sheet at the mine to show relationship.

Map No. 4 is a geologic map of the Main Tunnel - or as much of it as was accessible. A crew of three men worked for a week to open a hole in a cave near M-1 winze so we could see the southern portion of the level.

On this sheet is also shown a tunnel on the Argentor 4 claim. It is referred to as the Argentor 4 tunnel, formerly it was called the No. 2 workings. The new name is more specific.

No. 5 map is a tracing of a print from the Platoro files. This map indicates an overlap of Argentor group claims on the Trench group with no open space between the two groups. On Map 1 a gap of 130' to 300'+ is shown. No. 5 also shows the locations of the January, Josephine and Humbolt veins. Some claims on the eastern end were added as indicated by Trench group map of Mr. R. Lenon, which includes the Trench Extension No. 4; Hardshell No. 7; Trench Extension No. 1; G-84, and Alta. The ownership of these added claims has not been verified.

A system of coordinates was added also based on coordinates of portal of World's Fair portal and stake "J". Room has been left on this sheet for location of claims of Chief Mine which lies westerly and is believed to be within area of map. We did not have any information on Chief group.

Map No. 6 is a composite of all known workings on the Argentor property, including workings from the World's Fair shaft (or winze). The survey by Mr. Stranahan of the main level showed that the location of the levels below the Main Tunnel should be changed. No level maps were made for levels from shaft because when shaft is pumped out and new surveys made it is probable that the outlines will have to be changed again.

There is reported to be a 100' level from winze M-1 connecting with 100' level from shaft, however there is no definite information available on this. Also the area between the M-5 winze and the Inclined Shaft in M-15 is stoped below the Main Tunnel level and there is probably a level below the Main Level in this area. The location of collar of the Incline shaft is either Shaft No. 6 or Shaft No. 7. Location of both of these shafts should be checked on surface.

The problem of importance in the underground area was whether or not there was one or two main veins in the mine. The reason for believing that there was two is the fact that with normal dip-slip movement on the Shaft Fault there should be right-lateral displacement. In place of turning right on encountering the Shaft Fault, the previous operators, turned left and found a vein, which they exploited. It was my proposal to drill parallel to the Shaft Fault, west on the south side and east on the north side, to attempt to find two unexploited segments of vein. However, careful mapping of this level, the upper level and the surface, casts doubt on the existence of two principal veins. Apparently someone else had the same idea because working M-14 was driven east on the north side of the Shaft Fault for 140' and encountered no vein. Working M-9 was driven westerly from the main vein 120' and M-4 was driven 160' westerly from the same structure without encountering any vein.

Investigation in the upper tunnel showed the vein outcropping and exploited between the Shaft Fault and the Argentor Fault. There is no outcrop or workings on the vein south of the upper tunnel No. 16, that I could find. I was unable to see the Shaft Fault in the upper tunnel, nor did I see the vein south of the Shaft Fault there. The Shaft Fault is not exposed in the Upper Tunnel No. 15, although it cannot be far ahead of the present face.

In the Main Tunnel there seems to be but one vein, with a strike of N 5° E, more or less, offset by a series of faults, beginning with the M-7 fault on the north; the Argentor Fault near the intersection of M-1 and M-9; the M-1 Fault and the Shaft Fault. In every instance, regardless of dip of fault, the movement is left-lateral.

Some of the faults are mineralized. There is some in the Argentor Fault and some in the Northwest striking fracture in M-4.

The main structure is not mineralized throughout its length. On the north end it is mineralized from the M-5 winze northward to the inclined shaft, a shoot about 120' in length. This winze was sunk on the intersection of the vein structure and a fault - M-5 fault. North of this fault the vein walls are hydrothermally altered south of this fault the walls are brecciated but there is no alteration. There seems to be no mineralization until the Argentor Fault is encountered, here there is a shoot 180' in length. This is the block which has an ore-shoot going to surface, but apparently is only explored below the level by very limited work. South of the Shaft Fault the workings extend for 440'. In the Main Tunnel the workings are caved as shown on the map. However from the intersection of M-24 and M-19 we could look back and see many chutes. The drift was filled with water because of a high dam in the drift. The structure is 7' wide here but it was too dangerous to examine closely.

All of the workings below the level, from the shaft, from which ore was extracted are in the footwall of the Shaft Fault. The shaft was sunk 90' vertically, until it encountered the vein. They followed the vein downward on dip until it passed the Fourth Level when the vein was lost. Mr. Stranahan says that old workmen informed him that the winze from 40? is in ore. There is a 5th level working from this winze.

The shaft station is partially caved. The head frame has fallen. While the hoist is there it is doubtful that it has any value as hoisting equipment. It apparently was a steam hoist. It would be better to

install an electric hoist, if the shaft is repaired.

On this same map is shown the workings of the Argentor 4 tunnel. The elevation of the portal has not been exactly determined. In this working there is some ore showing. The shoot is about 40' in length, but is cut off by a fault - the Raul fault. This working started on a large fault which it crossed at an acute angle which has dropped the Alum Canyon andesite down in contact with the diabase. The andesite is altered and bleached white for a width of four or five feet. While it appears to be nearest on line with the January vein (see map No. 5) this vein dips flatly to the south. The January vein dips north. There is about 6" of ore in a 30" vein in this tunnel. We did not sample it.

In the workings M-16, M-20 and M-21 is found veins or altered dikes. The vein like material consists of very porous quartz, which may be a replacement product. In places it contains rounded quartz grains. It does not contain any pyrite or ore minerals, however.

Ore:

There is no ore exposed in the levels anywhere and Mr. Stranahan, who investigated much of the stoped area is authority for the statement that there is none exposed in the open stoped area.

It appears that the principal vein dipped steeply westerly from 50° - 65°. However, there are places adjacent to this vein where ore has been mined in what are very flat stopes. One is in the upper tunnel above and below the level from working U-6. Another is near the shaft in the main tunnel in working M-18. These flat stopes do not seem to be extensive. At present they are filled or closed.

The vein varies in width from 7' to a mere fracture. Many of the stoped areas do not seem to be more than 2' from foot-wall to hanging-wall.

No effort was made to secure a long section giving an outline of the ore-shoots at this time, partly due to the fact that the time available was consumed in acquiring the information assembled here and partly in trying to make mis-matched maps fit. We realized that to acquire the information needed for sections would require a minimum of one week and possibly as much as two weeks and then the sections might be quite incomplete because many of the workings are either closed or too dangerous to enter. However, from such an inspection better information on the veins, branches, mineralization might be pieced together than we now have, incomplete though it may be.

No ore was inspected in place in the mine with the exception of minor occurrences in cross-vein (or faults). The ore in these rarely exceeded 6" in width and was typically lead-zinc ore. Assay records as found in the appendix show: Lead and copper assays are shown, but not zinc. Lead assays vary from 26.9% to 0.6%; copper from 3.4% to 0.6%; silver from 1205.2 ounces to 11.8 ounces per ton. The average silver value for 2481 tons of which we have record is 113.04 oz. per ton. Silica was high averaging above 55% signifying presence of much quartz. Silver probably occurred with lead, with copper and as separate silver minerals. One shipment went 0.9% Pb - 0.81% copper and 103.4 oz. silver per ton. Sulfur varied from 4.1% to 13.9% as can be seen in the appendix. Some arsenic and antimony is present in the ore.

Wall-rocks:

The only wall rock in which ore is found is the diabase intrusive mass, a hard, green, blocky rock away from the veins containing a very high percentage of pyrite. In places this rock contains 5% pyrite. I never saw a place in which it did not contain some pyrite. In many places it contains epidote as a secondary mineral. Due to the high pyrite content, mine water is extremely corrosive.

The only other rock seen underground was Alum Canyon andesite, which is found for the first 70' in the main tunnel and in the Argentor tunnel, very highly altered in both cases.

Mr. Courtright calls the diabase a sill. We made no effort to study this. The 100' scale map gives a general review of the rocks in which ore might be found. It indicates that the workings M-5 in the northwest might pass out of the diabase into Alum Canyon andesite if driven northerly or easterly. It also indicates that the M-19 working might soon pass into Chief Conglomerate if driven southerly. Open cut No. 17 on surface is in diabase as is the 102 Raise in M-19, both a considerable distance south of the projected contact of the Diabase and Chief conglomerate on surface.

In the creek bed between the main tunnel portal and the Argentor 4 tunnel an outcrop of Alaskite angular conglomerate occurs indicating that the Alum Canyon andesite is not thick in that area and there is a possibility of veins having both formations as wall rocks. The Courtright map might need amending in this area. It is believed that the location of the contact between the diabase and the conglomerate on surface might also need revision.

Places to Prospect:

In view of the absence of any place underground or on surface where ores might be extracted operations at the World's Fair must be those of searching for ore.

There is a group of places to prospect in this property, any one of which might give the World's Fair a new lease of life. Within the mine itself, the most promising place is north of the Shaft Fault. In order to explore this area it will be necessary to pump out the shaft. The off-set of the World's Fair vein on the level is 103 feet. Vertical working sections through the vein north and south of the Shaft Fault indicate that the segment of the vein north of the fault has a flatter dip than the vein south of the fault, as has been pointed out by Mr. Shanahan. As a result the offset between the two veins will exceed 103' on the first level below the main tunnel and will increase with depth. Construction of these sections has shown that the vein south of the Shaft Fault has been disturbed between the second and fourth levels in the shaft apparently by a strike fault. It is probable that there is a gap in the vein between faulted segments from the second to the fourth levels.

The second most attractive place to search for ore in the mine is north of the M-7 fault. There is ore up to this fault and there should be more found on left-lateral exploration from northerly end of M-5.

The third attractive place is in winze M-5. This shoot should be explored below the level.

The fourth place underground is in Argentor 4 tunnel. A4-4 working should be driven across the Raul fault and explored westerly.

Underground three holes, each 400' in length should be drilled. They are shown on the Main Level geologic map: one is from the junction of M-20 and M-22; one is from the face of M-14 and the third is from the westerly face of M-4. These three holes would cover a zone approximately 1000' wide parallel to the World's Fair Vein.

There are other places where work might expose veins of value and I will now refer to the 100' scale surface map (No. 1). On this map all indications of veins are marked with parallel lines and letters such as A-A', B-B', etc. up to L-L' and also O-O'.

On this map is shown the projection of the January vein, the most productive vein on the neighboring Trench property of American Smelting and Refining Co. This vein might be the C-C' vein on Map No. 1. There are two other veins in this area as noted, the A-A' and L-L'. The C-C' vein would bear further investigation.

The next important project on surface is the F-F' and G-G' structures. As noted they are close to the face of the Main Tunnel working M-19. This structure should be investigated on surface - and if it seems justifiable it should be investigated from M-19. There would be 500' of backs over M-19. The diabase conglomerate contact in this area does not fit the workings up there as surveyed.

Other structures within the boundary of the Argentor claims are D-D' - E-E' - H-H' and I-I'. They too should be investigated.

Due to the high pyritic content of the diabase I thought it might contain some copper. Chip samples were taken from the walls: one sample from the contact near the portal to the Argentor Fault; the second in M-4 from the Main Tunnel to the face. They were assayed by Smith-Emery of Los Angeles and reported copper as "nil" in both cases.

Operating Conditions:

Conditions for operating here are very good. The weather is ideal, except for occasional heavy rains there would be no interference because of weather. Able miners of Spanish-American extraction are available. The County road passes within 100 feet of the Main Tunnel and a 3-phase power line passes directly over the Main Tunnel portal.

A road once was built from the Main portal to the Argentor 4 tunnel up the canyon, but it was washed out. A new road here above high water would not be difficult to construct.

Claims:

As can be seen on the attached maps the claims are laid out in such form that the principal vein does not follow the center line of the Old Prospector claim for instance. It has been suggested that the claims should be amended. However, none of these claims are patented. In order to patent them, ore in place must be shown. I would recommend that the claims not be amended because if ore is found in the shaft the Old Prospector could be patented; if ore is found in the extension of the northwesterly workings, Argentor 5 could be patented; if ore is found in the

extension of M-19 southward, Argentor 2 can be patented; if additional ore is found in Argentor 4 tunnel, Argentor 4 could be patented. In principle this applies to all the located claims with possible exception of Argentor 3 claim.

Conclusion:

The conclusion one must reach is that the World's Fair is a very good looking prospect for developing high-grade silver ores, perhaps on a limited scale, say 50 to 100 tons per day. It has had a good production record of high-grade ores.

It's location is good, lying as it does contiguous to the Trench property of the American Smelting and Refining Co. and between the Trench and Flux Mine of the above company.

There is a possibility of finding the extension of the Trench vein in Argentor ground which has not been investigated.

There are at least four places underground which would bear investigation with a hope of finding extensions of the present vein either on strike or dip. Exploration of this property has been on a very limited scale, especially on the dip of the vein.

A new lease of life should be given this prospect by infusion of a sum sufficiently large to carry out an extensive exploration campaign, a sum not less than $150,000 is recommended. If this amount is too great for Silver Eureka then a syndicate should be formed with some wealthy partners, because $150,000 may not be enough to complete examination work once it is undertaken.

If a campaign is undertaken the first requisite will be a reliable tie to the Trench triangulation system and tie of all surface work by transit and tape survey. The underground workings have been surveyed by transit and tape. Correct surface surveys are necessary in order to determine the exact location of AS&R claims and those of Argentor. No gap should exist between the two groups.

It is doubtful that any ore of real value exists above the Main tunnel level which has been the drainage level for the mine, so search for new ore should be down dip or on those points noted on the Main tunnel level, the former should yield ores of commercial grade sooner than the latter. Enough might be encountered to provide funds for an extensive examination of the property.

In the event that sufficient ores are found an effort should be made to acquire the Trench mill site, tailing storage facilities and source of water; the latter two are not readily available on Argentor ground. This millsite also has power facilities installed.

The continued investment of small sums each quarter or each year is not recommended because sooner or later $150,000 is invested by this method and no real accomplishment has been achieved.

The present price of silver is $1.29 per ounce. Nearly everyone expects this price to be increased when the U.S. Treasury Dept. ceases selling silver at that price. This expectancy is based on the fact that consumption exceeds production of the metal and production is largely as a by-product. Any increase in the price of silver would, naturally, make the World's Fair prospect more attractive than it is.

Neil O'Donnell
October 20, 1966

WORLD'S FAIR MINE
Harshaw District, Santa Cruz Co.

Receipts at Asarco Plants

Selby Plant-Frank Powers Lease

	Dry	Oz./ton		Percent:						
	Tons	Au	Ag	Pb	Cu	SiO2	Fe	S	Al2O3	As	Sb
1907											
Sept.	40	.02	212.00	.60	1.00						
October	40	.055	1205.20	4.00	3.40						
"	37	.22	362.13	9.70	1.70						
1908											
April	167	.061	66.24	3.50	.20						
1910											
April	43	.10	125.43	-	.40	57.4	9.0	1.4			
"	86	.105	417.51	-	3.20						
May	41	.085	247.96	2.20	1.20						
"	46	.05	384.37	.20	2.30						
"	51	.02	130.53	-	1.00						
1917											
May	39	.055	227.29	3.40	1.60						
"	84	.042	49.91	4.38	.90	67.1	9.8	10.5			
Selby Receipts	674										

El Paso Plant-World's Fair Mine

1937										
March	81	.02	32.4	26.0	.06	40.2	3.4	9.0	4.5	
April	92	.04	22.2	7.2	.10	56.4	5.6	7.2	11.8	
May	151	.027	11.8	10.3	.09	51.0	4.7	7.5	11.8	
June	103	.02	15.1	12.7	.14	51.4	4.3	7.2	10.8	
October	22	.03	21.4	24.0	.07	44.4	3.8	8.3	6.6	
December	50	.01	17.7		.25	66.6	4.7	5.6	9.2	
"	39	.02	17.7		.18	68.4	4.0	4.1	8.6	
1938										
January	38	.01	15.0	1.6	.16	65.2	5.5	5.5	8.1	
March	24	.06	111.19	3.9	.6	59.4	6.7	8.3	7.2	
May	26	.04	97.96	8.23	.32	56.6	5.4	7.7	9.4	
July	19	.12	277.8	13.1	.89	50.3	7.1	11.0	5.4	
"	2	.06	247.7	3.3	.72	61.4	5.5	7.1	6.9	
Sept.	33	.095	203.99	6.8	1.12	56.2	7.5	10.6	3.5	
November	28	.11	288.5	5.6	1.17	65.2	7.8	11.0	.7	
December	28	.055	146.0	3.3	.92	58.4	8.8	11.0	4.2	
1939										
January	4	.27	335.3	26.9	1.68	36.2	5.1	12.5	.4	
April	32	.066	118.5	.7	.58	58.3	8.5	8.9	9.3	
May	45	.128	111.05	.9	.58	58.8	9.2	9.4	8.7	
June	29	.024	89.07	.6	.28	66.8	5.8	6.2	5.1	
July	66	.04	61.9	1.0	.33	63.7	6.0	7.2	12.2	
"	2	.095	130.2	6.0	.79	55.6	5.6	8.2	6.8	
Sept.	143	.04	59.4	1.96	1.94	57.1	9.1	11.2	7.2	
October	28	.025	47.1	.3	2.82	57.0	10.3	13.3	5.6	
November	14	.03	21.51	3.2	2.01	53.6	11.3	14.7	5.2	
"	24	.03	41.92	4.8	.10	60.0	5.2	7.1	10.0	

World's Fair Mine-Receipts Asarco Plants

El Paso Plant, Con't.

	Dry Tons	Oz./ton Au	Oz./ton Ag	Percent Pb	Percent Cu	SiO2	Fe	S	Al2O3	As	Sb
1940											
January	27	.026	60.5	2.6	3.04	55.0	9.4	13.6	5.9		
"	17	.08	96.6	6.9	.65	55.4	7.3	11.0	7.6		
March	48	.036	74.0	5.7	.88	57.0	5.8	7.7	6.1		
April	38	.0825	109.15	2.0	1.66	57.0	10.6	12.6	6.1		
May	26	.025	21.7	3.3	1.29	56.0	11.6	13.9	3.5		
"	9	.03	28.1	13.6	.12	54.2	4.1	7.1	8.6		
June	37	.10	63.0	3.4	.49	59.0	9.4	10.8	5.1		
July	33	.035	37.9	2.3	1.03	57.4	9.7	11.4	6.1		
Sept.	27	.4	44.3	3.4	2.94	59.7	5.6	5.0	8.7		
December	18	.105	105.3	3.7	.74	60.6	7.8	10.5	8.1		
1941											
February	36	.063	53.0	1.5	1.62	61.4	9.6	12.1	6.8	.75	.5
March	38	.02	103.4	.9	.81	63.5	7.1	8.3	9.0	.55	.2
May	26	.06	176.6	1.7	.56	57.0	6.8	7.9	13.6	.32	.1
July	28	.04	65.5	1.9	.33	58.0	5.3	6.2	13.8	.42	.1
October	9	.02	19.9	17.8	.07	44.6	5.2	6.2	9.2	.25	.1
November	30	.03	69.3	1.1	.22	67.6	4.6	4.7	11.0	.30	.2
1942											
July	53	.01	12.4	22.2	.10	45.7	4.1	8.2	8.6	.15	.1
H.P. Oswalt											
1952											
January	24	.004	3.30	5.50	.24	50.0	6.1	4.2	8.7	.20	.1
El Paso											
Receipt	1647										

Hayden Plant-World's Fair Mine

1939											
November	36	.028	25.3	2.5	1.02	60.3	7.2	10.2	8.6		
December	103	.023	46.4	.7	1.06	60.7	10.5	12.6	6.8		
	139										

Trench Mill-O&R Mining Co.

1952											
March	21	-	1.80	2.92	Tr						
Grand Total	2481										

Tucson, Arizona
March 16, 1964

REED F. WELCH

(10)

PATRICK J. HUGHES

162 CLONTARF ROAD,
DUBLIN 3, IRELAND
TELEPHONE: 332211

TL

April 9, 1968

Mr. Thayer Lindsley,
230 Park Avenue
New York, N.Y. 10017

Dear TL,

Enclosed please find a copy of Ed Campbell's report on the World's Fair Mine, Arizona. As I previously advised you by telephone, I regret that this property would not hold sufficient interest for us to invest in or attempt to develop at this time.

Dick Schultz and Bill Fredenburg are currently carrying out the preliminary examinations in France. I will contact you regarding this when I have their initial impressions.

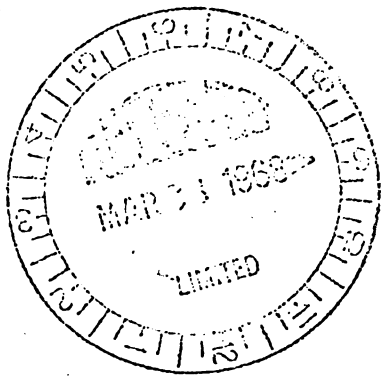
Kind regards and wishing you a very happy Easter.

Yours sincerely,

Pat.

Pat J. Hughes

PJH:af
Encl.



REPORT OF EXAMINATION

WORLD'S FAIR MINE

SANTA CRUZ CO., ARIZONA

Haileybury, Ont.,
23 March 1968.

E.E. Campbell P. Eng.

INTRODUCTION

On 1 March 1968, the writer was commissioned by Mr. G.T. Smith, President of Siscoe Mines Limited, to make an examination of the World's Fair Mine in southern Arizona on behalf of Siscoe and the Northgate Explorations Limited.

The mine is located in the Patagonia Mountains in Santa Cruz county, 5 miles south of the village of Patagonia, which in turn is 20 miles northeast of Nogales. The mine is accessible by road; care in driving must be exerted on the last few miles.

The property consists of 9 unpatented claims, which in Arizona measure 1500 feet by 600 feet.

Essentially the workings expose one single vein which strikes north and dips west at 60°. The main level is an adit at an elevation of 4700 feet. Two higher adits expose the vein at heights of 90 and 190 feet above the main level. An internal shaft collared on the main level serves levels below at depths of 100, 150, 190, 250, and 345 feet. The internal shaft and 2 winzes were full of water and could not be examined.

The property was first located in 1897 and has always been operated under personal ownership or by lease to individuals.

The writer's examination covered the period 9-19 March. Underground caving prevented full access to the main level workings until 18 March.

The following references were made available to the writer by Mr. G.R. Cunningham-Dunlop, Mr. J.M. Cunningham-Dunlop, and Mr. L.J. Lichty:

Schrader, F.C., 1915, Mineral Deposits of the Santa Rita and Patagonia Mountains, Arizona: U.S. Geol. Survey Bull. 582.

Courtright, J.H. 1951, Areal Geologic Map, vicinity of Flux, Chief, Trench Mines, 1"= 500', American Smelting and Refining Company.

Cross, W.H., 1961, Silver Possibilities of the Patagonia Area, Arizona.

Stranahan, D.M., 1965, Report on World's Fair Mine, Santa Cruz County, Arizona.

O'Donnell, Neil, 1966, Preliminary Report on World's Fair Mine.

The writer fullsomely acknowledges the personal aid in his examination provided by Mr. L.J. Lichty, and Mr. D.M. Stranahan.

CONCLUSIONS

The silver-lead deposits of the World's Fair Mine and the numerous similar deposits in Santa Cruz county, Arizona, are too small and too lean to justify the expenditure of capital on property acquisition, exploration, or development.

GEOLOGY

The nomenclature employed herein is that used by Courtright. It seems probable that all of the rock units concerned are of Cretaceous and Tertiary age.

The rocks exposed on the World's Fair property, (youngest at the top) are:

Diabase, sills and dykes
Wieland Canyon andesite
Alum Canyon andesite
Alaskite conglomerate, angular
Chief conglomerate.

The writer observed rhyolite dykes and pebble dykes cutting the diabase.

Intense alteration has affected all of these rocks and makes them unrecognizable in places. First of all there has been a primary stage of alteration attending the mineralization of all rock in the vicinity of the mine by disseminated pyrite in cubic and pyritohedral crystals measuring about 1 millimetre. The bounds of pyritization could not be determined within the time and with the survey resources available to the writer. Those bounds appear to be distinct however and, from an economic viewpoint, worthy of definition.

Secondly the rocks have been subjected to severe chemical weathering which has produced a two-fold affect. Near surface, especially in the Chief Conglomerate which locally overlies the mine itself, the rock has been reduced to silica and is stained a spectacular red and yellow colour by residual iron oxide. Undoubtedly the pyrite mineralization has produced much of the iron oxide and acid which caused this alteration, but the feldspars and ferromagnesium silicates seem largely to have been destroyed and may have contributed to the residual staining. Beneath the surface weathering, in the mine workings themselves, the process of alteration can be seen in action. The acid produced by oxidizing pyrite is changing the feldspars to alunite, (potassium aluminum sulphate), iron oxide is staining the exposures, and the surface waters, seriously corrosive to iron pipe and rail, are depositing alum (calcium sulphate) on the drift walls and on the banks of Alum gulch which drains the area. Underground the movement of these acidic waters are channelled by the many faults which cut the rocks, and by the large pebble dyke exposed in the workings. In these channel-ways the alteration (alunitization) is most intense.

The many faults observed underground have been recorded efficiently by O'Donnell on the maps accompanying his report. Those which cut the World's Fair vein have all produced left-hand separation which, along one of them called the "shaft fault" amounts to 10? feet.

The host rock containing the mineralization seems mostly to be diabase; away from the faults and the main vein, the distinction of this rock is clear when viewed in the open air by a mineral glass. The feldspars of the diabase have a reddish or purplish cast which might be indicative of the presence of potash feldspar. If so the rock could be a diabasic monzonite. Some specimens contain the pyrite noted above; some do not. The rock exposed along the first 70 feet of the main tunnel is andesite. At some point south of the shaft the workings enter altered andesite or Chief Conglomerate. Although carefully studied on surface, the relationship between the diabase and the rocks in contact with it could not be determined. The contact is not chilled.

The World's Fair vein is contained in a fault which, where it could be studied with safety, seems to coincide with a pebble dyke from 2 to 6 feet wide. The mineralization is galena, probably some tetrahedrite, and argentite. It is remarkable that there is no gangue mineral, such as quartz. A calcite gangue could not survive the corrosive effect of the mine waters, but no voids representing leached out calcite could be observed. Very little metallic mineralization can be seen in place. Its removal by leasors has been most efficient.

The term "pebble dyke" requires an explanation. It is an apparent intrusion of conglomerate into another rock. In the tunnel workings a pebble dyke can be seen intruding the igneous diabase. The interpretation of this anomaly is that the diabase intruded and solidified before underlying conglomerate had consolidated into solid rock. An opening fracture in the solid diabase was then filled by the unconsolidated conglomerate, forced into the fracture by the pressure of the overlying rock.

ECONOMIC GEOLOGY

Of over-riding interest in assessment of the productive potential of the World's Fair Mine is its own productive history and that of the district in which it lies. Records are fragmentary, but an indication can be obtained from various sources.

Schrader	World's Fair Mine
"Up to 1915,	Reported to have produced more than $1,000,000 of which over $500,000 was high grade ore."
"1903,	$600,000 of ore blocked out"

If the estimate of blocked out ore in 1903 was reliable, about one half of the production was made in the years 1903-1915.

"1907 e.g.	$74,210 produced
1910	$42,730 produced
1912	A few carloads, mostly very rich ore shipped to Selby smelter.
August 1914	2 carloads of rich ore a week being shipped to Douglas smelter."

A comment is required on the terms "high grade ore" and "very rich ore". These terms are relative only to the area in which they are used. In assessing the measure of such terms in discussing estimates of grade of ore samples with Mr. Lichty, Mr. Stranahan, and Mr. Reynolds Sanchez, a former lessor, "high grade" was estimated to grade more than 100 ounces of silver per ton; rich ore was estimated at 50 ounces per ton. These estimates were of massive vein material in hand samples.

For a period of leasing operations in which, as throughout all but 3 months of the history of the mine, production consisted of rescued, cobbed, or hand picked material, shipped directly to a smelter, smelter returns for 6 years' production 1937-1942 amounted to 2481 tons averaging 113.04 ozs. Ag. per ton (O'Donnell).

In 1951 Schrader names 73 producing mines in the Patagonia Mountains. There must have been a comparable number in the Santa Rita Mountains and somewhat fewer in the Sierrita Mountains. All of these are in Santa Cruz county. Gross gives the metal production of Santa Cruz county since 1900:

Copper	54,000,000 lbs
Lead	222,000,000 lbs
Zinc	196,000,000 lbs
Silver	15,000,000 ozs
Gold	108,000 ozs.

The American Smelting and Refining Company operated the January Mine, adjoining the World's Fair mine on the south, throughout the period 1944-49. They operated a mill on the site. Gross gives the following statistics for their production during those 6 years:

Tons milled:	86,711
Lead	3.4%
Zinc	5.0%
Silver	6.5 ozs per ton

Gross gives a statement of diamond drill indicated ore reserves remaining on closing down the January mine in 1949:

Tons	28,331
Lead	4.1%
Zinc	7.2%
Silver	6.4 ozs per ton

The reader must wonder how, under the conditions of grade and tonnage listed above, the many small silver mines in Santa Cruz county could have been profitable. The writer has not in his possession a record of the changing price of silver period prior to 1895. His memory is that it was as high as $1.00 per ounce. Between 1895 and 1915 it varied between 49¢ and 67¢ per ounce. During that period the cost of local labour varied between 25¢ and $1.00 per day. Furthermore a good Mexican miner with hand steel was probably as productive in the soft rock of the vein zones as a modern miner. Roughly speaking, 1 ounce of silver would purchase 1 day of his labour. Eight to ten ounces would be required to purchase 1 day's labour from his modern descendant. Basically, modern mining practices in such narrow vein deposits are unchanged from those whose results are visible underground at the World's Fair.

Haileybury, Ont.
23 March 1968.

E.E. Campbell P. Eng.

H. S. ROBINSON
580 SABAL PALM ROAD
MIAMI 37, FLORIDA

Report on the

WORLDS FAIR and HUMBOLT PROPERTIES

and

Notes on the

TRENCH AND JANUARY MINES,

H. S. Robinson

March 21, 1964.

H. S. ROBINSON
580 SABAL PALM ROAD
MIAMI 37, FLORIDA

WORLDS FAIR PROPERTY

On Wednesday, Feb. 19th I spent the day at the Worlds Fair property. Platoro is engaged in opening up the Main and South Adits. Most of the workings were inaccessible. The attached Map # 1 shows the several groups in which Platoro is interested. Map # 2, taken from W. H. Gross' Report, 1961, shows the principle veins on the Worlds Fair, Humbolt and adjacent properties. Map # 4 shows the Worlds Fair underground workings, taken from an old map but apparently essentially correct. As of Fe. 19th the Main Adit had been cleared up to the points indicated on Map # 4. As of March 6th the workings had been cleared up to within 50 feet of the Winze. A letter from D. Stranahan dated March 14th states that the Winze had been reached. The stope timbers had been blasted or had caved but there was ore in the muck. The Winze was flooded. As of Feb. 19th the first X-cut west off the Main Adit was cleared and the vein going north could be inspected as far as the end of the stope but beyond that the drift was blocked and the workings under the surface shaft or pit could not be examined. At the north end of the stope the vein consists of a shear about 16 in wide dipping steeply west. The shear contained an inch or so of massive black granular sulphides, typical of the lead-silver ore. The footwall was smooth and had an inch of gouge. The hangingwall was a dark andesite with disseminated pyrite and galena, probably low-grade mill rock.

The Winze, according to the map, has five levels, probably at 100 ft intervals. It is said that ore was encountered on the fifth level. It is important to clean out the workings to the Winze and beyond and to pump out the winze. When the Winze is being dewatered it would be a good idea to wash down the walls of the Main Adit. It is apparent, from Map # 4, that the vein was offset to the west (going north) on the Main and Upper Adits by a fault dipping NE. The Winze appears to have gone down in the footwall of the fault and all the workings(with minor exceptions) from the Winze appear to have been done in the footwall of the fault. Therefore there is an excellent chance of opening up ore on the Winze levels north and in the hangingwall of the fault.

In spite of the expensive and tedious business of cleaning out the old workings, there is a good chance of getting into production in a short time after the Winze is cleared. The distance along the fault to the position of the faulted vein is about 150 ft. It is also probable that the previous leasers had opened up some ore above the Main Adit as ore was found in the muck.

I did not have much chance of studying the geology underground. The upper stopes were apparently in

H. S. ROBINSON
580 SABAL PALM ROAD
MIAMI 37, FLORIDA

Rhyolite. According to the A S & R geologists the Main Adit is in a more basic rock which they term 'diabase' The wall rock in the first X-cut was a dark porphyritic type which I would call Rhyolite (quartz phenocrysts) . There is a plug of very acid rock to the east on the other side of Alum Gulch. It is about ½ mile in diameter. I called this Alaskite. I ran a cross-section a little south of the South Adit and Map # 3 is a sketch of my impression of the overall structure. I suspect thet the Winze is in the diabase and it might just bottom in the tuff at the base of the diabase flow.

The Worlds Fair has an excellent history of production. The Bureau of Mines estimates 400 000# Cu, 100 000# Pb and $ 750 000 in Ag. It was located in 1879, relocated in 1883 and purchased by a Mr. Powers in 1884. He worked it off and on for about ten years. The production up to 1894 is estimated at $ 600 000. In 1907 lessors produced $ 74000 and in 1910, $ 43000.

Like other veins in the district the ore occurs in a strong shear. massive lenses of sulphides are in the shear (Shipping Ore) and disseminated sulphides in the hanging-wall. The ore occurs in Rhyolite and the underlying diabase flow. It may bottom in the latter flow as the vertical range of about 800 ft seems to be the maximum for the district. This type of vein does not give good core recovery in diamond drilling still this method of exploration seems to be the best one to test for extensions north of the fault and for parallel veins. Further geological information could be obtained by drilling east under Alum Gulch, which appears to be a line of weakness and possible shearing. There is also the possibility that the Alaskite has something to do with the ore.

My impression is that the Worlds Fair is an excellent prospect. There are good chances of opening new ore north of the fault. This would result in an early production from shipping ore. The character of the veins however suggest production on a small scale.

.....
H. S. ROBINSON
March 31, 1964.

(6)

6

COPY

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlement

Bought of O. T. Richey,
Patagonia, Ariz.

El Paso, Texas May 16th, 1925.

Classification Ore Smelter Lot 1751 Shippers Lot _____

Car SP 8447 Net Weight 74960 Moisture 1% Dry Weight 74,210
Settlement date 5-9-25
Silver .67875 cts. per oz.
Lead 7.75 per 100 lbs.

Payments for Metals

Silver	28.6 oz. % pd. for 95; Net Pd. for 27.17 oz @ .67875		18.44
Lead	34.7 % deduction 1.5 equals 33.2 equivalent 954 lbs % Pd. for 90; net pd. for 597.6 lbs. @ .0635		37.95
	Total payments for metals		56.39
Treatment charge		5;00	
insoluble 44.0 @ 05		2.20	
Sulphur 9/2 % deduction 1.0 net 8/2 @ .25	Max	2.00	
		9.20	9.20
	Net Value per ton		47.19
Total value on 37.105 Drt Tons @ 47.19 per ton			1750.98
Less Freight 37.480 Wet Tons @ 3.80 per ton		142.42	
Switching		2.25	
BALANCE DUE SHIPPER		1606.31	
		1750.98	1750.98

COPY

The Consolidated Kansas City Smelting & Refining Company
El Paso Smelting Works Plant
Ore Settlement

Bought of O. T. Richey, Patagonia, Ariz.

El Paso, Texas Sept. 2nd, 1924.

Classification Ore Smelter lot 2212 Shippers Lot 2.

Car SP 21353 Net Weight 2838 Moisture 1.2 % Dry Weight 28039
Settlement date 8/17/24
Silver 68375 cts, per oz.
Lead 8.00 per 100 lbs.
Copper 13.375 cts. per lb

Payments for Metals.

Gold 106 oz	@19.50	1.17
Silver113.1 oz % pd. for 95 Net Pd. For 107.445 oz as 68375		73.47
Copper 1.10 % deduction .4 net assay .70; net pd. for 14.0 lbs. @ 10775		1.51
Total Paymwnt for Metals		76.15
Treatment charge	5.00	5.00
NET Value per ton		71.15
Total Value on 14.0195 Dry Tons @ 71.15 per ton		997.49
Less Freight pn 14.190 Wet Tons @ 4.40 per ton	62.44	
Reweight	3.15	
BALANCE DUE SHIPPER	931.90	
	997.49	997.49

COPY

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlemtn

Bought of Oscar T. Richey
Patagonia, Arizona.

El Paso Texas,
May 22, 1924

Classification Ore Smelter Lot 1249 Shippers Lot 2.

Car RM 35269 Net Weight 8215 Moisture 1% Dry Weight 8133 — 8133
Settlement Date 5-11-24
Silver 6525 cts per oz.
Lead 7.50 per 100 lbs.
Regular deduction 1.5
Add. deduc A/c Cu pd for 1.548
3.048

Payments for Metals.

Gold	.10 oz	@20.00		2.00
Silver	161.8 oz	% pd. for 95; net pd. for 153.71 oz @ 6525		100.30
Lead	9.4 % less 3.048 equals 6.352 or 127.04 in lbs, % pd. for 90 net pd. for 114.336 lbs. @ 6.10			6.97
Copper	4.62 % deducted .75 equals 3.87 or 77.4 in lbs @ 100625			7.79
				117.06
Treatment charge		5.00		
Handling sacks		.50		
Insoluble analysys 53.8 aret 05		2.69		
Sulphur 14.1 deduction 1. net 13.1 @		3.00		
	Total deductions	11.19		11.19
				105.87
Total value on 4.0665 Dry Tons @ 105.87 per ton				430.52
Less Freight 4.1625 Wet Tons @ 3.80 per ton		17.10		
Sacks		.68		
Sampling		5.00		
	Balance due Shipper	407.74		
		430.52		430.52

COPY

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlement

Bought of Oscar Richey
Patagonia, Arizona.

El Paso, Texas
3/26/24

Classification Ore Smleterc Lot 588 Shippers Lot 1.

Car GH 35837 Net Weight 24150 Moisture 1% Dry Weight 23908
Settlements date 3-9-24
Silver 6425 cts per oz.
Lead 9.00 per 100 lbs.
Copper 125625 cts. per oz.

Regular lead deduction	1.5
Lead ded A/c copper pd for	.748
	2.248

Payments for Metals

Gold	.08		@ 20.00	1.60
Silver	168.92 ozs.	% paid For 95; Net Pd. for 160.474 @ 6425		103.10
Lead	9.7 %	Dedicted 2.248 Net Assay 7.452 equals 149.04 lbs, % pd. for 90; Net Pd. For 134.136 lbs. Rate 7.60		10.19
Copper	2.62 %	Deducted .75 net 1.87 equals 37.4 lbs aret 105625		3.95
		Total Payt. for Metals		118.84

Treatment charge	5.00	
Handling Sacks	.50	
Insoluble 60.4 ~~axax~~ rate 05	3.02	
Sulphir 10.7 deduction 1. net 9.7 @ 30	2.91	
Total Deduction	11.43	11.43
		107.41

Total value on 11,954 Dry Tons @ 107.41 per ton		1283.98
Less freight on 12,220 wet tons @ 5.00 per tin	82.50	
Sacks returned	1.80	
Switching	2.25	
Balance due Shipper	1283.98	1197.43
	1283.98	1283.98

COPY

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlement

Bought of Oscar Richey
Patagonia, Ariz.

El Paso, Texas
Apr. 20th, 1923

Classification Ore Smelter Lot 883 Shippers Lot 1.

Car 51239 COFG; Gross 46880; Net Weight 46430 Moistire 1% Dry Weight 45966
Settlement Date 3-31-23
Silver 99 5/8 cts. per oz.
Lead 8.25 per 100 lbs.
"Silver purchased under the Pittman Act 2013 oza
Silver value withheld $704.55

Payments for Metdals

Gold .053	@20.00		1.06
Silver 87.00 Ozs (87.6)	@ 99 5-8		87.27
Lead 35.6 % Deducted 1/5 net 34.1 lbs 682 % pd for 613.8 @ 6.75			41.43
			129.76
Treatment charges		5.00	
Handling Sacks		.50	
4.33 ozs Ag @ 99 5/8		4.36	
Insoluble 40.4 rate o5bcts.		2.02	
Sulphur 11.2 Deduction 1.0 Net 10.2 @ 30 Max		3.00	
Total Deductions			14.88
NETV VALUE PER TON			$114.88

Total Value on 22,983 Dry Tons @ 114.88 per ton		2,640.29
Less Freight on 23,215 Wet Tons @ 5.30 per ton	159.00	
Switching	2.25	
Returning Sacks	2.79	
Umpire	2.54	
BALANCE DUE SHIPPER	2$473.71	
	2,640.29	2,640.29

c o p y

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlement

Bought of the Worlds Fair Mine
Patagonia, Arizona

El Paso, Texas
Aug. 6, 1919

Classification: Conds Smelter Lot 1510

Car SMSTP 91284 Net Weight 76018 Moisture 9% Dry Weight 68492

Silver 106½

Gold .04 oz		@ 19.50	.78	
Silver 88⁹ oz.	95 %	@ 106½	89.94	
				90.72
	Less treatment charges		7.00	7.00
				83.72
Total Value: 34²⁴⁶	tons @ 83.72			2 867 08
Less Freight @ 5.00	per ton 190.05	WT 5.70	195.75	
			2.06	
			2 669.27	
	Total paid to Shipper		2 867.08	2 867.08

c o p y

The Consolidated Kansas City Smelting & Refining Co.
El Paso Smelting Works Plant
Ore Settlement

Bought of the Worlds Fair Mine
Patagonia, Arizona

El Paso, Texas,
July 9th, 1919

Smelter Lot 1346

Classification conc

Car RI 38[illegible]--Net Weight 78620 --Moisture 6[1] -- Dry Weight 73824
Settlement Date June, 30
Silver 108¼
Copper 1525.
Lead 5.40 per 100 lbs

Rate of Payment

	Gold .06 oz	@ 20.00	1.20	
Silver -	91[8] 95%	@ 108¼	94.40	
	Lead $10^2 - 1^5 = 174$ lbs @ 90% = 156^6	@ 390	6.11	
	Copper $1^{91} - 75$ $1^{16} = 23^2$	@.1525	3.54	
	Iron 21^6)			
	Lime 0^6) 22^2	@.08	1.78	
				107.03
		Less	4.50	
		Treatment Charge -	3.50	
			3.00	11.05
		Net Value		95.98

Total Value	36^{912} Tons @	95.98		
Less Freight	5.00 "	196.55 tax 5.90	202.45	3 542.81
			2.06	
			3 338.30	
			3 542.81	3 542.81

COPY

Lay 1427

San Francsico May 13th, 1910.

Returns of Ore

Received of Frank Powers

SELBY SMELTING AND LEAD COMPANY
Merchants Exchange Building

Car 84798 SP Arrived May 4th	Bulk weighing gross Moisture 3.2 %		94860 lbs. 3036
			91824 lbs.
Assay per ton:			
Silver 334.37 ozs.	Loss 5% @ 54-1/8	Treatment	197.64 10.00 187.64
	Value 91824 lbs. @ 187.64 per ton		8,614.93
	Freiggts @ 12.50 per ton		592.87
			$8,022.06

COPY

Lot 1363 San Francisco, April 30th, 1910.

Returns of Ore Received of Frank Powers

SELBY SMELTING AND LEAD COMPANY
Merchants Exchange Building

Mark Worlds Fair Mine	Bulk Weighing gross		79720 lbs.
Car 84366 SP	Moisture 3/2 %		2551
Arrived 4/23/10		NET WEIGHT	77169

Assay per ton:

Gold	.115 ozs.	@ 19.00		2.18
Silver	399.76 ozs.	Less 5% @ 53 5/8		203.65
				$205.83
			Treatment	10.00
				$195.83

Value 77169 lbs. @ 195.83 per ton	$7,556.00
Freight @ 12.50 per ton	498.25
NET PROCEEDS	$7,057.75

COPY

Lot 1337 San Francisco, Apr. 27th, 1910

Returns of Ore Recived of Frank Powers

SELBY SMELTING AND LEAD COMPANY
Merchants Exchange Building

Mark Worlds Fair Mine	Bulk weighning Gross		98540 Lbs.
Car 11782 ORN			
Arrived 4/20/10	Moisture 3.0		2959
	NET WEIGHT		95581

Assay per ton:

Gold	.10 ozs		@ 19.00	1.90
Silver	435.40 ozs.	Less 5%	@ 53 /1/4	220/25
				222.16
			Treatment	10.00
				212.16

Value 95581 lbs. @ 212.16 per ton	10,149.81
Freight @ 12.50 per ton	616.50
NET PROCEEDS . .	$ 9,533.31

COPY

LOT 3818

San Francisco, March 7th, 1907
1907

RETURNS of Ore

Received of Frank Powers

SELBY SMELTING AND LEAD COMPANY
Merchants Exchange Building

Car 85845	557 Sacks weigning gross		79500 lbs.
	Tare		850
		~~NET WEIGHT~~	78650
Arrived Ach. 1st.	Moisture 1.0 %		786
		NET WEIGHT	77864

Assay per ton.

Gold	.12		@ 19.00		2.28
Silver	299.88	Less 5% @	69 3/8		197.63
Lead	1/1				
Copper	1/7				
					199.91
			Treatment		10.00
					189.91

VALUE 77864 lbs. @ 189.91 percton $7,39[illegible].57
FREIGHT @ 12.50 [illegible].87

NET PROCEEDS $6,896.70

Copy

Lot 726 San Francisco April 30th, 1906

Returns of Ore Received of WorldsFair Mines Co.
Frank Powers

SELBY SMELTING AND LEAD CO.
Merchants Exchange Building.

Car 32395 Bulk weighing gross 72850 lbs.
Tare 430
Arivved Apr. 21st 1906
NET WEIGHT 72420 lbs.,

Assay per ton.

Gold	.28	ozs	@	@ 19.00	5.32
Silver	367.88	ozs.	Less 5% @	64-7/8	226.73
Lead (wet)	25.70	%	Less 10% @	5.50 per lb. less 1.25 (4.25)	19.66
Copper (wet)	.9				
Zinc	5.5				
					251.71
				Treatment	8.00
				Value per ton	$243.71

Value of 72420 lbs. @ 243.71 per ton 8824.74
Freight from Patagonia @ 12.50 455.31

NET PROCEEDS $8369.43

COPY

Lot 6843 San Francisco Feb. 27th, 1905

Returns of ORE Received of WORLDS FAIR MINES

SELBY SMELTING AND LEADE COMPANY
Merchants Exchange Building

Car 60032 Bulk weighing gross 60200 lbs.
Arrived Feb. 22nd. Moisture 2% 1204
NET WEIGHT 58996 lbs.

Assay per ton

Gold	.30	8.849 ozs. @ $19.99			168.13
Silver	335.10	9884.78 ozs less 494.24 Mxx2 5% is 9390.54 @ 60 ¼			5657.80
Lead	18.40	10855 lbs.			
		Less 10% 1085	9770 @ 3.70		
			less 1.00	2.70	263.79
Copper	1.70				
Zinc	4.70		Gross Value		6089.72
		TREATMENT @ 8.00			235.98
		Value 58996 lbs. @ 198.45 per ton			5853.74
		Freight @ 12.50	376.25		
		Advance charges	9.00		
			385.25		385.25
		NET PROCEEDS. . . .			$5468.49

WORLD'S FAIR MINE
Harshaw District, Santa Cruz Co.

Receipts at Asarco Plants

Selby Plant-Frank Powers Lease

	Dry Tons	Oz./ton Au	Oz./ton Ag	Percent: Pb	Percent: Cu	SiO2	Fe	S	Al2O3	As	Sb
1907											
Sept.	40	.02	212.00	.60	1.00						
October	40	.055	1205.20	4.00	3.40						
"	37	.22	362.13	9.70	1.70						
1908											
April	167	.061	66.24	3.50	.20						
1910											
April	43	.10	125.43	-	.40	57.4	9.0	1.4			
"	86	.105	417.51	-	3.20						
May	41	.085	247.96	2.20	1.20						
"	46	.05	384.37	.20	2.30						
"	51	.02	130.53	-	1.00						
1917											
May	39	.055	227.29	3.40	1.60						
"	84	.042	49.91	4.38	.90	67.1	9.8	10.5			
Selby Receipts	674										

El Paso Plant-World's Fair Mine

1937										
March	81	.02	32.4	26.0	.06	40.2	3.4	9.0	4.5	
April	92	.04	22.2	7.2	.10	56.4	5.6	7.2	11.8	
May	151	.027	11.8	10.3	.09	51.0	4.7	7.5	11.8	
June	103	.02	15.1	12.7	.14	51.4	4.3	7.2	10.8	
October	22	.03	21.4	24.0	.07	44.4	3.8	8.3	6.6	
December	50	.01	17.7		.25	66.6	4.7	5.6	9.2	
"	39	.02	17.7		.18	68.4	4.0	4.1	8.6	
1938										
January	38	.01	15.0	1.6	.16	65.2	5.5	5.5	8.1	
March	24	.06	111.19	3.9	.6	59.4	6.7	8.3	7.2	
May	26	.04	97.96	8.23	.32	56.6	5.4	7.7	9.4	
July	19	.12	277.8	13.1	.89	50.3	7.1	11.0	5.4	
"	2	.06	247.7	3.3	.72	61.4	5.5	7.1	6.9	
Sept.	33	.095	203.99	6.8	1.12	56.2	7.5	10.6	3.5	
November	28	.11	288.5	5.6	1.17	65.2	7.8	11.0	.7	
December	28	.055	146.0	3.3	.92	58.4	8.8	11.0	4.2	
1939										
January	4	.27	335.3	26.9	1.68	36.2	5.1	12.5	.4	
April	32	.066	118.5	.7	.58	58.3	8.5	8.9	9.3	
May	45	.128	111.05	.9	.58	58.8	9.2	9.4	8.7	
June	29	.024	89.07	.6	.28	66.8	5.8	6.2	5.1	
July	66	.04	61.9	1.0	.33	63.7	6.0	7.2	12.2	
"	2	.095	130.2	6.0	.79	55.6	5.6	8.2	6.8	
Sept.	143	.04	59.4	1.96	1.94	57.1	9.1	11.2	7.2	
October	28	.025	47.1	.3	2.82	57.0	10.3	13.3	5.6	
November	1[illegible]	.03	21.51	3.2	2.01	53.6	11.3	14.7	5.2	
"	2[illegible]	.03	41.92	4.8	.10	60.0	5.2	7.1	10.0	

World's Fair Mine-Receipts Asarco Plants

El Paso Plant, Con't.

	Dry Tons	Oz./ton Au	Oz./ton Ag	Percent Pb	Percent Cu	SiO2	Fe	S	Al2O3	As	Sb
1940											
January	27	.026	60.5	2.6	3.04	55.0	9.4	13.6	5.9		
"	17	.08	96.6	6.9	.65	55.4	7.3	11.0	7.6		
March	48	.036	74.0	5.7	.88	57.0	5.8	7.7	6.1		
April	38	.0825	109.15	2.0	1.66	57.0	10.6	12.6	6.1		
May	26	.025	21.7	3.3	1.29	56.0	11.6	13.9	3.5		
"	9	.03	28.1	13.6	.12	54.2	4.1	7.1	8.6		
June	37	.10	63.0	3.4	.49	59.0	9.4	10.8	5.1		
July	33	.035	37.9	2.3	1.03	57.4	9.7	11.4	6.1		
Sept.	27	.4	44.3	3.4	2.94	59.7	5.6	5.0	8.7		
December	18	.105	105.3	3.7	.74	60.6	7.8	10.5	8.1		
1941											
February	36	.063	53.0	1.5	1.62	61.4	9.6	12.1	6.8	.75	.5
March	38	.02	103.4	.9	.81	63.5	7.1	8.3	9.0	.55	.2
May	26	.06	176.6	1.7	.56	57.0	6.8	7.9	13.6	.32	.1
July	28	.04	65.5	1.9	.33	58.0	5.3	6.2	13.8	.42	.1
October	9	.02	19.9	17.8	.07	44.6	5.2	6.2	9.2	.25	.1
November	30	.03	69.3	1.1	.22	67.6	4.6	4.7	11.0	.30	.2
1942											
July	53	.01	12.4	22.2	.10	45.7	4.1	8.2	8.6	.15	.1
H.P. Oswalt											
1952											
January	24	.004	3.30	5.50	.24	50.0	6.1	4.2	8.7	.20	.1
El Paso											
Receipt 1647											

Hayden Plant-World's Fair Mine

1939											
November	36	.028	25.3	2.5	1.02	60.3	7.2	10.2	8.6		
December	103	.023	46.4	.7	1.06	60.7	10.5	12.6	6.8		
	139										

Trench Mill-O&R Mining Co.

1952											
March	21	-	1.80	2.92	Tr						
Grand Total	2481										

Tucson, Arizona
March 16, 1964

REED F. WELCH

MEMORANDUM

TO: Lyall Lichty
Will Cole

DATE: September 9, 1983

FROM: Paul I. Eimon

SUBJECT: Status Report
Geologic and Exploration
Developments
World's Fair Mine
Santa Cruz County, Arizona

Although only limited physical work has been done on the World's Fair property during the past year, several important advances have been made:

1. The work of Lyall Lichty and Grover Heinrichs has verified property boundaries and defined important exploration target areas in the southwestern portion of the World's Fair property belonging to us. This has been an excellent job by Lyall and Grover - in property work, and in negotiations with ASARCO.

2. We have made significant advances in the development of the epithermal model, as applied to the World's Fair property, through research, by myself, Barney Berger, and twelve (12) geologists and geochemists who attended the Epithermal Field Seminar in central Mexico in June of this year.

3. Dr. Richard Henley of New Zealand, visited the property this summer as a consultant to the World's Fair Syndicate, and he confirmed the epithermal relationships that are key to the exploration target potential with which we are now working.

The results of the above show:

1. The World's Fair, albeit a medium to small property, lives up to Thayer Lindsley's belief that this is one of the premium silver exploration targets in the United States.

2. We can focus on targets relative to the epithermal model and we are well positioned in the model.

3. These results and analyses of epithermal deposits surrounding the deposit show the top of the vein system to be about 4800 feet, with a possible vein extension above that elevation in the immediate area of the World's Fair vein.

4. Structural interpretation now gives us two (2) principal structural trends that can be used in the projection of targets for exploration, drilling or drifting.