



CONTACT INFORMATION  
Mining Records Curator  
Arizona Geological Survey  
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[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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James Doyle Sell Mining Collection

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Miscellaneous: Dull Hole, Reports, Thoughts

Supplemental Exploration Appropriation Requests/Approvals.  
1983 → 1992.

Dull Hole Temperatures 1971 → 1974.

Geophysical Work 1970 → 1979

Lease Agreement - Barris Storage Bldg, Miami 1985 → 1992

JIRanch Info.

Globe Ranger Station Memos 1983 → 1992



January 4, 1983

Mr. R. L. Brown  
Vice President of Exploration  
New York Office

Supplemental Exploration  
Appropriation Request  
Superior East Project (EA-0010)  
Pinal County, AZ

Dear Sir:

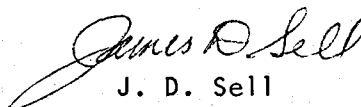
Attached is the location map and the form 302-MB request for a supplemental appropriation at Superior East to perform the 1983 annual assessment work. The proposed hole, P(A-15), is near an existing road and will require a minimal amount of site preparation. The monies requested will not complete the hole to its programmed depth, and the hole will be cased for reentry at a later date.

I enclose the March 10, 1982 report, which apparently had not previously been submitted to New York, entitled "Summary and Interpretation of Drilling Results thru Holes A-14 and AI-2, Porphyry Copper Area." The report is an update of the multiple shear zone concept previously outlined, and suggests that the drilling of Holes A-13 and AI-2 now indicates that the total zone of bornite-chalcocite mineralization may be part of a widespread tabular zone. A number of holes are outlined on an 800-foot equilateral triangular grid and the proposed hole is situated to test part of this extent and grade between Holes A-9 and A-13, and east of Hole A-8. The results will be indicative of the mineral reserve potential within a zone 3000 feet long and 1500 feet wide hosting some 200-500 million tons.

The funds requested are:

1) Assessment by Drilling (829 Claims, including Rawhide)	- \$ 82,900
2) Overrun of EA-0010-17	- 27,000
3) Supervision & Contingencies	- <u>8,600</u>
	<del>\$118,500</del>
	119,000

If you approve of the above expenditure, please request a supplemental appropriation.

  
J. D. Sell

JDS/cg

Attachments

cc: WLKurtz, RBCrist, JRStringham, AJRobles (form only)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

January 4, 1983

Originating Office SWED, Tucson, AZ

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

EA-0010-00 thru No. EA-0017\* Superior East, Pinal Co., AZ

Present total Estimated Cost (Form 302-MA attached)

3,642,000 \$ 3,641,500

Amount previously authorized (date .....

\$ 3,523,000

\* #0010-07 and -09 are J.I.Ranch purchase (\$520,000)

Balance for which Authorization is now requested

119,000 \$ 118,500

ADDITIONAL WORK CONTEMPLATED:

Fulfill assessment work requirements, including Rawhide claims, by starting a new hole which will be completed at a later date. Overrun from previous drilling of \$27,000, and supervision.

EXPLANATION OF INCREASED COST:

Drilling to better define the previously drilled intercepts of bornite-chalcocite mineralization is justified.

Reviewed by A.J. Tolle ACC'T. MGR. OR CHIEF ACC'NT.

Recommended by James D. Sell J. D. Sell SUPERVISOR

Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Approved by ..... VICE PRESIDENT

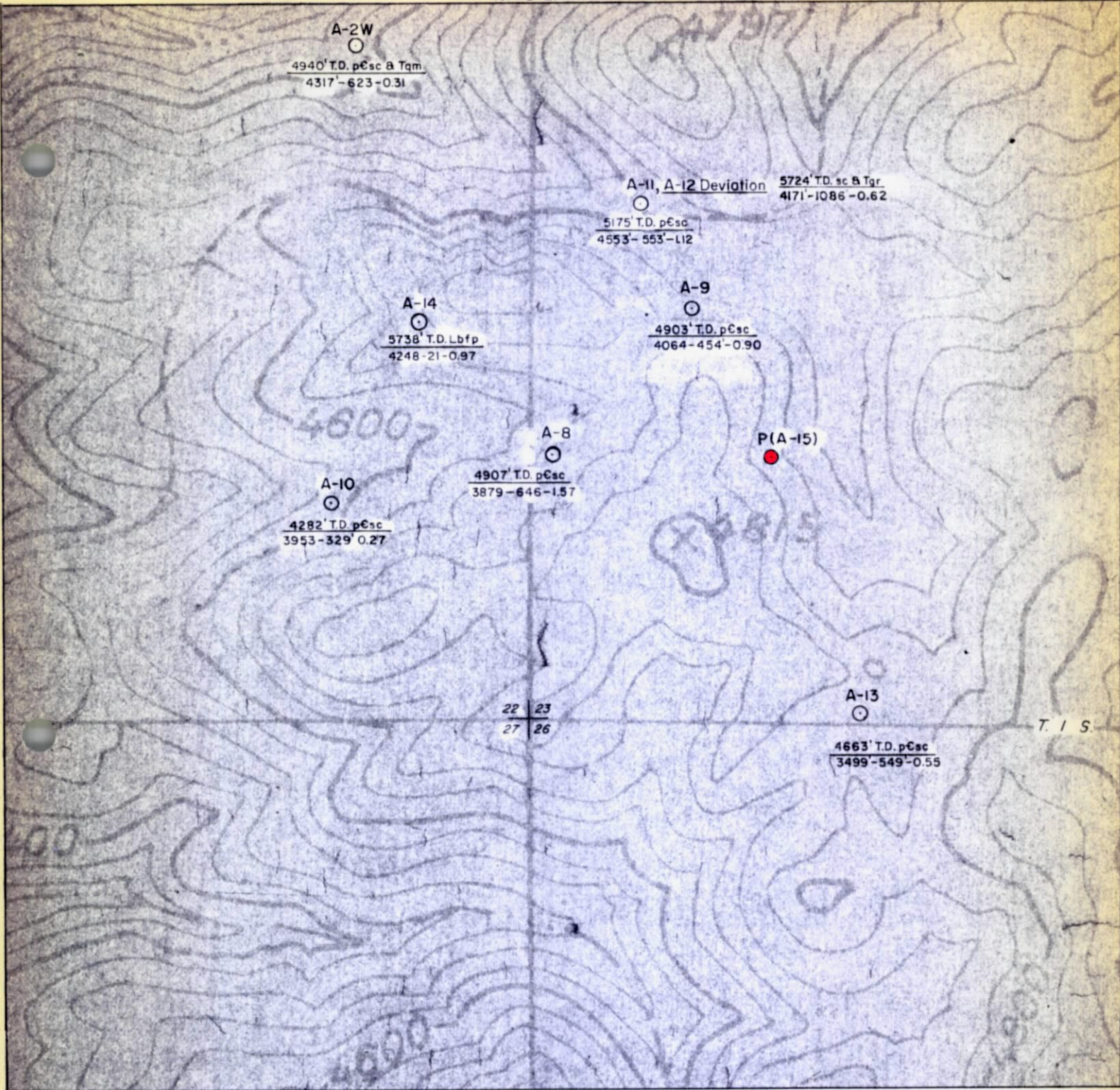
Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

..... 19.....





**EXPLANATION**

**POST-MINERAL ROCK UNIT**

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

**PRE-MINERAL ROCK TYPE**

- Tbx-Breccia
- Tqm-Quartz Monzonite
- Tgr-Granite
- Pe-Supai Formation
- Pn-Naco Limestone
- Me-Escabrosa Limestone
- Dm-Martin Limestone
- pCt-Troy Quartz
- pCdb-Diabase
- pCsc-Schist

A-8



ASARCO Hole & Designation

4907' T.D. pCsc  
3879-646-1.57

Total Depth - Rock Type  
Depth - Length - % Cu



Proposed Drill Site

TO ACCUM. ANY Supplemental  
Exploration Appropriation  
Request DATED Jan. 4, 1983  
BY James D. Sell



DRILLING PROGRESS MAP  
For The 4th Quarter, 1982

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1" = 500'

J.D. Sell

June 1977



February 10, 1984

Mr. R. L. Brown  
Vice President of Exploration  
New York Office

Supplemental Exploration  
Appropriation Request  
Superior East Project (EA-0010)  
Pinal County, AZ

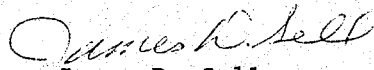
Attached is the location map and the Form 302-MB requesting a Supplemental Appropriation at Superior East to perform the 1984 annual assessment work. A minor amount, applicable to the assessment expenditures, has been spent and applied since September 1, 1983.

Drill hole A-15 has been drilled to 2029 feet and NX rods installed for casing. Hole A-15 is presently in Tertiary volcanics and will remain in them for several hundred feet before cutting the Whitetail Conglomerate.

The top of mineralized bedrock is expected between 3800 and 3900 feet and the basal part at between 4500 and 4600 feet of depth. To complete the hole to the latter depth would increase the cost some \$40,000 over that which is requested below. The funds requested are:

1) Assessment by drilling (829 claims, including Rawhide)	\$79,500
2) Supervision, building rental, and contingencies	<u>10,500</u>
	\$90,000

If you approve of the above expenditures, please request a Supplemental Appropriation.

  
James D. Sell

JDS/cg

Attachments

cc: WLKurtz  
JRStringham  
AJRobles (Form only)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

February 10 19 84

Originating Office SWED - Tucson, AZ

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

EA-0010-00 through
No. EA-0010-18\*, SUPERIOR EAST PROJECT, Pinal Co., AZ

Table with 2 columns: Description and Amount. Rows include Present total Estimated Cost (\$3,732,000), Amount previously authorized (\$3,642,000), and Balance for which Authorization is now requested (\$90,000).

ADDITIONAL WORK CONTEMPLATED:

Fulfillment of assessment work requirements, including Rawhide claims, by reentering last year's hole, drilling and supervision.

EXPLANATION OF INCREASED COST:

Drilling to better define the previously drilled intercepts of bornite-chalcocite mineralization is justified.

Reviewed by [Signature] ACC'T. MGR. OR CHIEF ACC'T.

Recommended by [Signature] James D. Sell SUPERVISOR

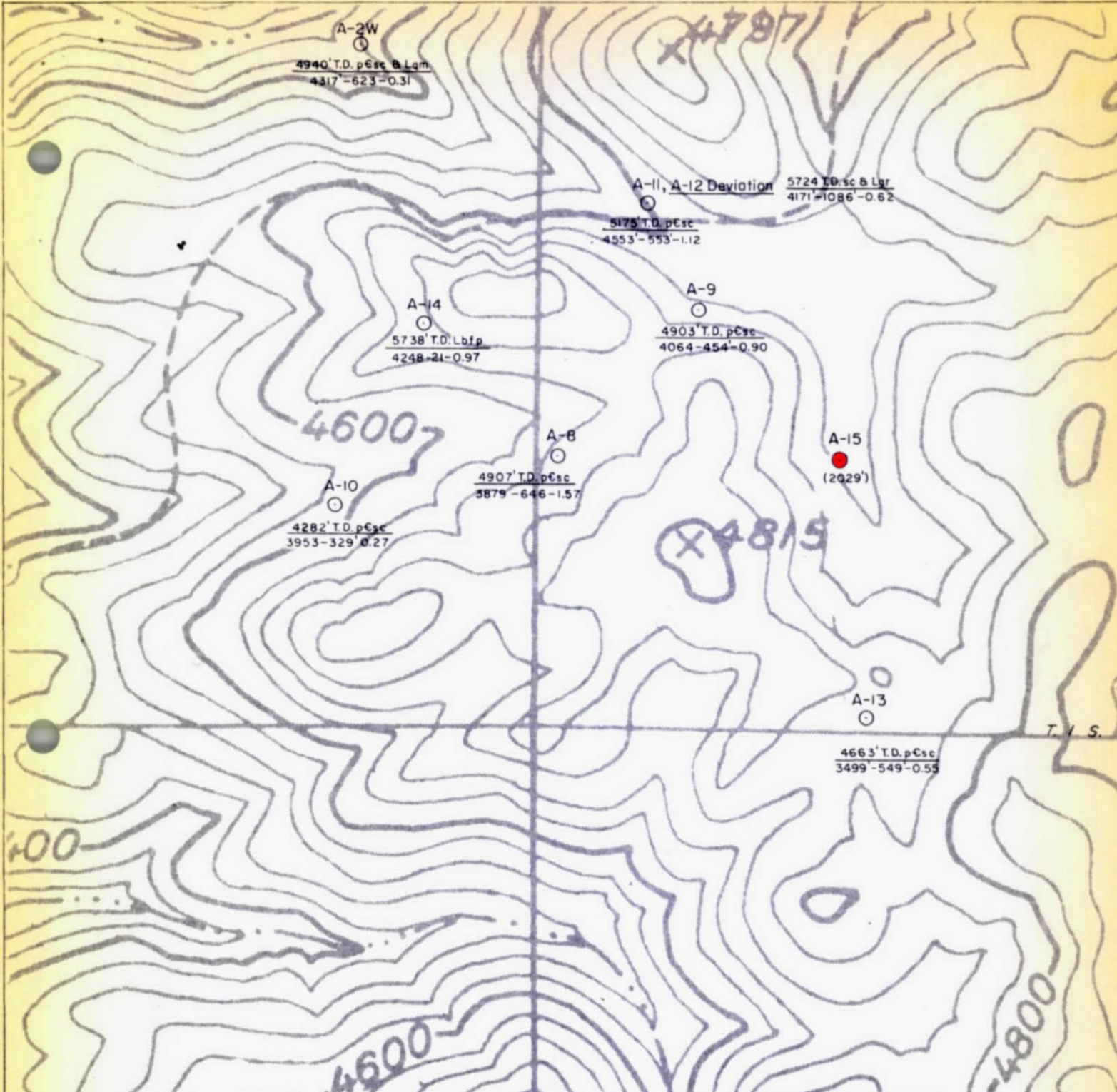
Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Approved by ..... VICE PRESIDENT

Approved by Advisory Committee Feb 29, 1984 19.....

Approved by Board of Directors ..... 19.....



TO ACCOMPANY *Supplemental*  
*Exploration Appropriation*  
*Request* DATED *2/10/84*  
 BY *J.D. Sell*

BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.



EXPLANATION

POST-MINERAL ROCK UNIT

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

PRE-MINERAL ROCK TYPE

- Lbx-Breccia
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8  
○

ASARCO Hole & Designation

4907' T.D. pCsc  
3879-646-1.57

Total Depth-Rock Type  
Depth-Length-% Cu

⊕

Proposed Drill Site

DRILLING PROGRESS MAP  
 For The 4 Quarter, 1983

SUPERIOR EAST PROJECT

PINAL COUNTY, ARIZONA

SCALE: 1"=500'

J.D.Sell

June 1977



JDS

From: R. L. Brown

To: Jim Sell

Approved today - I lease  
no over run this year unless  
you find ore in the road  
cut

Superior East Project  
EA-0010-20

\$55,000  
with \$14,300 for water  
ASARCO Incorporated

MAY 28 1985

SW Exploration

cc A. J. Robles

New York, May 21, 1985

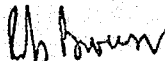
MEMORANDUM TO: Advisory Committee

Supplemental Exploration Authorization  
Superior East Project, Arizona

The Superior East Project covers a porphyry copper prospect with estimated reserves of 240 million tons grading .74% copper with an internal zone of 54 million tons grading .95% copper. The claim block overlying this mineralization has been reduced to 143 claims which require assessment work for the 1984-85 assessment year. Tucson Office geologists recommend that this work be performed by building a road to a new drill site at a total cost of \$17,700.

During 1984 an overrun was incurred while completing a hole containing good copper mineralization which extended to greater depths than anticipated when the hole was planned. Had the hole not been completed it might have caved and been lost.

Advisory Committee approval to spend \$55,000 at the Superior East Project, Arizona, is requested.



R. L. Brown

ASARCO Incorporated

MAY 28 1985

SW Exploration



May 14, 1985

Mr. R. L. Brown  
Vice President of Exploration  
New York Office

Supplemental Exploration  
Appropriation Request  
Superior East Project (EA-0010)  
Pinal County, AZ

Attached is the location map and the Form 302 requesting a Supplemental Appropriation at Superior East to perform the 1985 annual assessment work.

The work will be constructing a new road and drill site for the proposed hole A-16 as shown on the attached map. Also attached is a copy of the Forest Service approval letter.

The reduced claim block includes 123 claims held under long-term option with Continental Materials Corporation and 20 Asarco claims, all unpatented. The option includes holding the claims in force and a \$50,000 per year work commitment with a carried forward clause. Asarco's carried forward interest extends beyond this century.

Nine holes, holes A-2W and A-8 through A-15, have been completed in the porphyry copper area. These holes aggregate 42,281 feet of rotary and core drilling. The probable tonnage and grade indicated by these holes is 243 million tons at 0.74% copper. The higher grade portion of this tonnage is 54 million tons of 0.95% copper.

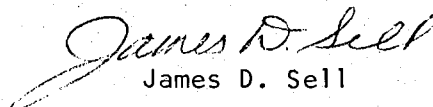
The funds requested are:

1. Assessment by road-site work (143 claims, reduced block)	\$14,300
2. Supervision, building rental, utilities, and contingencies	3,400
3. Overrun of completing hole A-15 through the mineralized zone	<u>37,300</u>
	<u>\$55,000</u>

If you approve of the above expenditure, please request a Supplemental Appropriation.

JDS:mek  
Atts.

cc: W.L. Kurtz  
J.R. Stringham  
A.J. Robles (Form only)

  
James D. Sell

**APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION**

..... May 14, 19 85 ..... Originating Office ..... SWED - Tucson, AZ .....

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

EA-0010-00 through  
No. .... EA-0010-19\*, Superior East Project, Pinal County, Arizona .....

Present total Estimated Cost	\$3,787,000
Amount previously authorized (date <u>6/70-2/84</u> .....	\$3,732,000
* #0010-07 & -09 are JI Ranch purchase (\$520,000)	
Balance for which Authorization is now requested	\$ ... 55,000

**ADDITIONAL WORK CONTEMPLATED:**

Fulfillment of assessment work requirements on reduced number of claims (143), core storage facility rental, utilities, and to cover the overrun of \$37,300.

The assessment work will be by construction of a road and drill site for proposed hole A-16.

**EXPLANATION OF INCREASED COST:**

Override costs were accumulated during completion of drilling hole A-15 through the mineral zone.

Reviewed by ..... *AJ Rolfe* .....  
ACCT. MGR. OR CHIEF ACNT.

Recommended by *James D. Sell* .....  
James D. Sell ..... SUPERVISOR

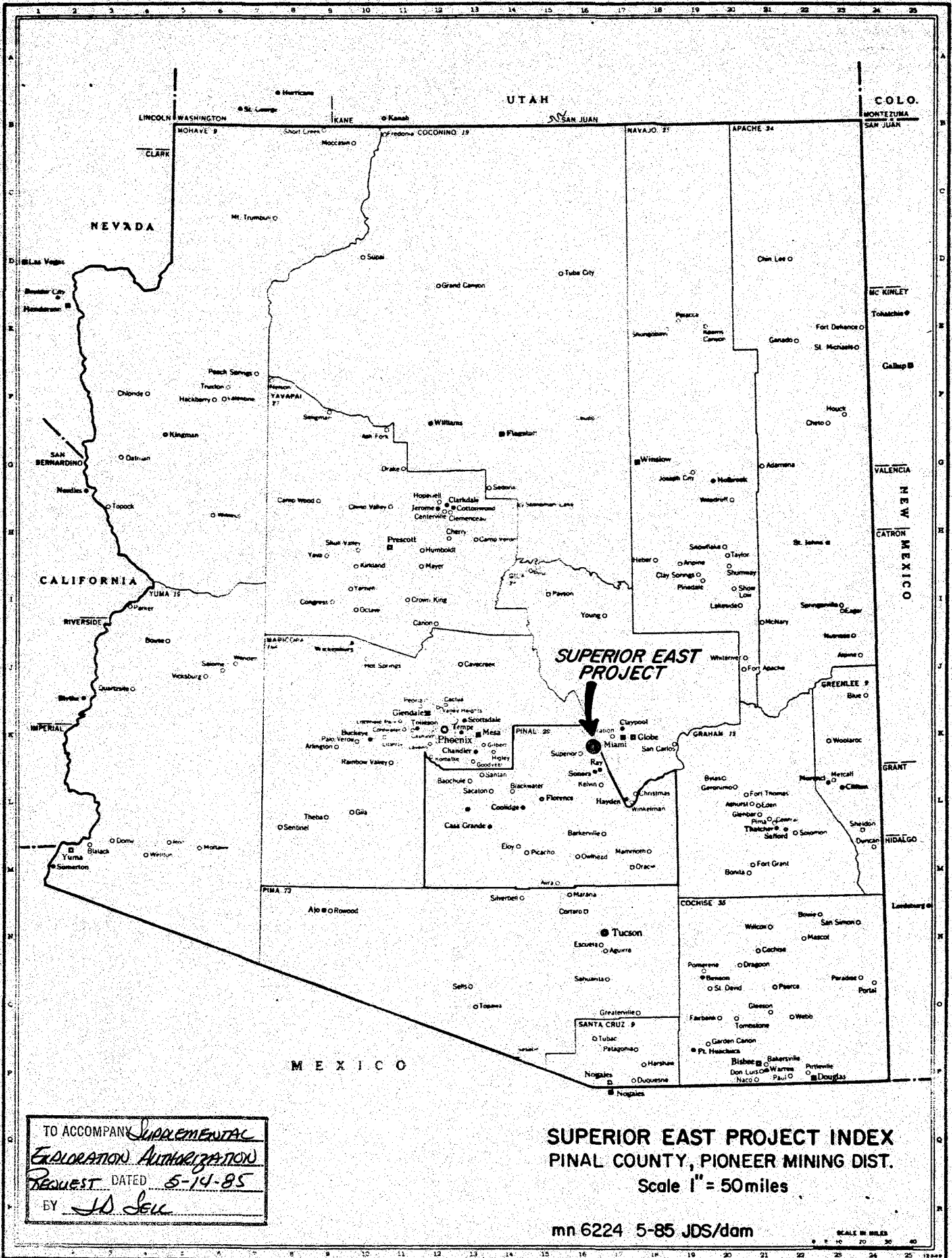
Approved by .....  
CONTROLLER

Account Chargeable to .....  
TO BE FILLED IN BY CONTROLLER

Approved by .....  
VICE PRESIDENT

Approved by Advisory Committee  
..... 19.....

Approved by Board of Directors  
..... 19.....



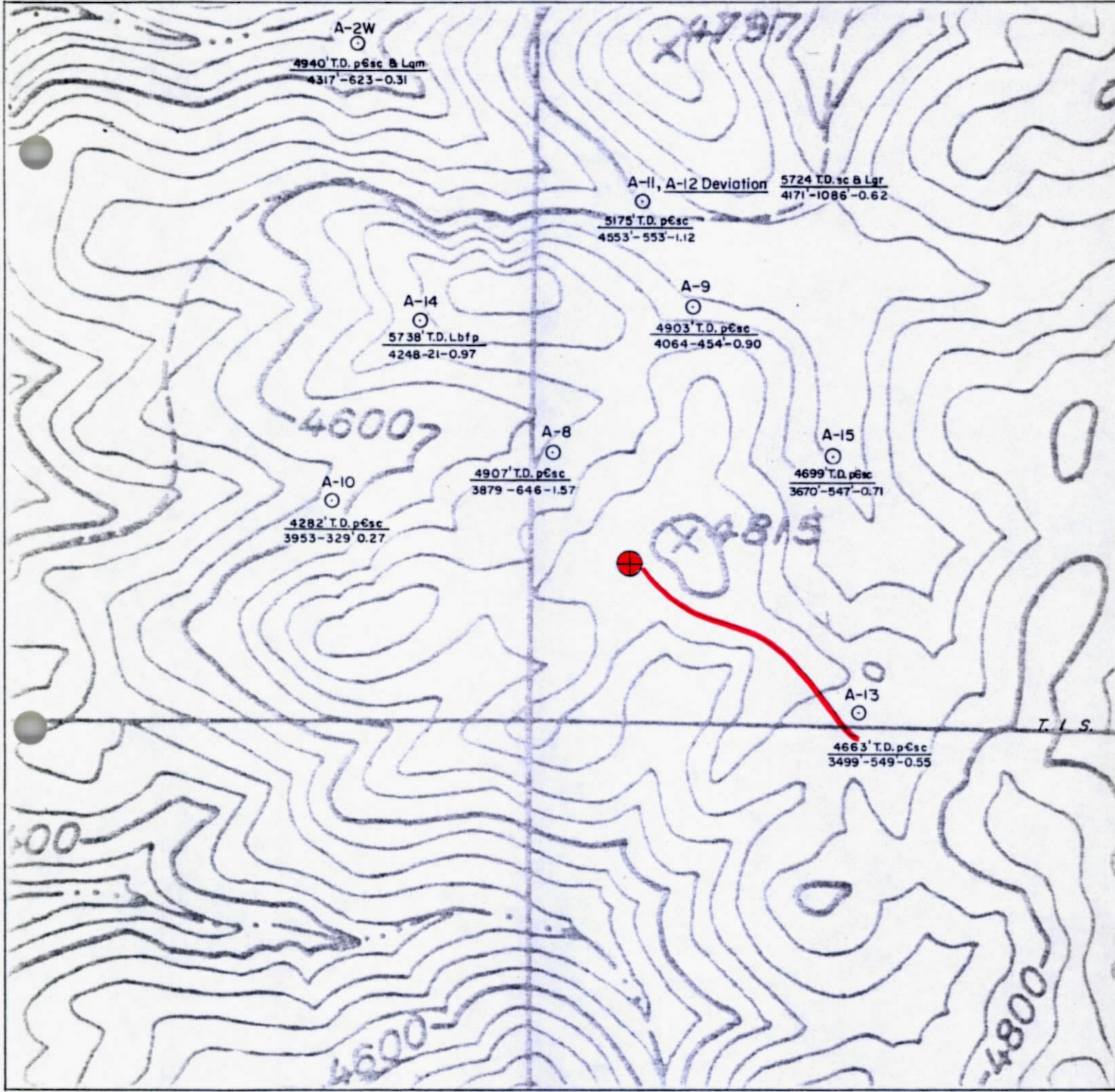
TO ACCOMPANY SUPPLEMENTAL  
EXPLORATION AUTHORIZATION  
 REQUEST DATED 5-14-85  
 BY J.D. SELL

**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

SCALE IN MILES  
 0 10 20 30 40





TO ACCOMPANY SUPPLEMENTAL  
EXPLORATION AUTHORIZATION  
 REQUEST DATED 5-14-85  
 BY J.D. Sell

BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.



EXPLANATION

POST-MINERAL ROCK UNIT

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

PRE-MINERAL ROCK TYPE

- Lbx-Breccia
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8  
 ○

4907' T.D. pCsc  
 3879-646-1.57

⊕

ASARCO Hole & Designation  
 Total Depth-Rock Type  
 Depth-Length-% Cu

Proposed Drill Site

DRILLING PROGRESS MAP  
 For The \_\_\_\_\_ Quarter, 1985

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1" = 500'

J.D. Sell

June 1977



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

J.R.S.  
Rt. 1, Box 33  
Globe, AZ 85501

Reply to: 2810 Mining Claims  
Margaret, et al.  
Date: February 27, 1985

American Smelting & Refining Co.  
ATTN: Mr. J. R. Stringham  
P. O. Box 5747  
Tucson, AZ 85703

J. R. S.  
MAR - 4 1985

Dear Mr. Stringham:

Thanks for your February 12, 1985, notice of intent to resume exploration under the operating plan dated January 23, 1980. We visited the site on February 19, 1985, and see no reason for you to not go ahead as you planned. Please notify us as you complete operations or for any extended period when no exploration is going on.

As you complete the work, please rip and seed the drill site and access road. This would also be a good time to rip and seed the drill site located near the beginning of the access road. Close the new road with an earth mound or boulders to keep traffic off your revegetation work. We recommend raking in a mixture of 1/2 lb. Lehman lovegrass, 1 lb. weeping lovegrass, and 3 lbs. of yellow sweetclover per acre right as the earth-work is completed.

It is difficult to tell which amendments in your file are still active. Also, with current policy and regulation, your road right-of-way permit should be canceled and your claim roads permitted on the operating plan(s). We would like to have you help in sifting through our files for the parts that are still active and/or have reclamation work still pending. To facilitate this, would you please prepare a map of all of your roads and disturbed areas. Use codes that would show the needed or used roads and areas, unused roads and areas, unused that are planned or scheduled for use in the future, and any other pertinent information.

*I'll get with her/hart his need what about you as?*

We look forward to meeting with you sometime when you are in the area. Please call Wayne Brasher at (602) 425-7189 to arrange the meeting time and place.

Sincerely,

*Larry Widner*

LARRY P. WIDNER  
District Ranger

ASARCO Incorporated

MAR 4 1985

SW Exploration



May 30, 1985

Mr. R. L. Brown, Jr.:

The following appropriations were approved at the Advisory Committee meeting held May 22, 1985:

Exploration Appropriation #0315-03  
Montana  
Heddleston Project

Spokane Office geologists recommend that the Company spend \$32,000 to cover assessment work at the Heddleston - Mike Horse property. This expenditure would cover the cost of testing a lead-silver rich gossan, which has not been explored to date, and which is located near the old Mike Horse vein. Other expenditures include property tax payments, inspection of the Mike Horse tailings dam and administration.

Advisory Committee approval of a \$32,000 expenditure at the Heddleston Project is requested.

There was approved a supplemental exploration appropriation of \$32,000 to cover assessment work, property tax payments, inspection and administration at the Heddleston Project, Montana.

Exploration Appropriation #0010-20  
Arizona  
Superior East Project

The Superior East Project covers a porphyry copper prospect with estimated reserves of 240 million tons grading .74% copper with an internal zone of 54 million tons grading .95% copper. The claim block overlying this mineralization has been reduced to 143 claims which require assessment work for the 1984-85 assessment year. Tucson Office geologists recommend that this work be performed by building a road to a new drill site at a total cost of \$17,700.

During 1984, an overrun was incurred while completing a hole containing good copper mineralization which extended to greater depths than anticipated when the hole was planned. Had the hole not been completed it might have caved and been lost.

Advisory Committee approval of a \$55,000 expenditure at the Superior East Project is requested to cover the overrun and 1984-85 assessment drilling.

There was approved a supplemental exploration appropriation of \$55,000 for assessment drilling and related road construction at the Superior East Project, Arizona.

Exploration Appropriation #0385-00  
New Mexico  
Old Hadley Project

Asarco controls 54 unpatented lode claims in the Old Hadley District of southwestern New Mexico which require 1984-85 assessment work to be kept valid. Prior production from the area was about 200,000 tons averaging 10% lead, 2% zinc, and 10-15% oz.Ag from veins in andesite.

Geologic mapping indicates the potential for 3 separate types of ore: (1) veins similar to those previously mined; (2) bulk tonnage in stockwork adjacent to the veins, and (3) massive sulfide replacement in underlying carbonate rocks. A single 500 ft. rotary or air-hammer hole is proposed to test the possibility for the 3 types of mineralization in an area of numerous small fissure veins. Estimated cost of this hole is \$7,000 which will fullfill assessment work requirements.

Advisory Committee approval of a \$7,000 expenditure at the Old Hadley Project is requested.

There was approved an exploration appropriation of \$7,000 for assessment drilling at the Old Hadley Project, New Mexico.

*Carmen D. Gonzalez*

Carmen D. Gonzalez  
Assistant Secretary

Enc.  
CDG:cf

cc: R. J. O'Keefe (w/enc.)  
S. P. McCandless (w/enc.)

cc: A. J. Robles (9/27/85)



# ASARCO

JDS

R. L. Brown  
Vice President

July 10, 1986

Mr. R. L. Hoyle  
Accounting Manager  
Tuéson Office

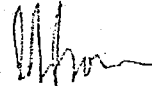
143 claims total

Dear Mr. Hoyle:

Enclosed are copies of the 302 forms concerning the Superior East Project, the Thunder Mtn. Project and the Ventura Project.

Please note that these forms have been processed by the controller and that the approval of the Advisory Committee on June 26, 1986 is indicated.

Yours very truly,



R. L. Brown

RLB/med  
Encl.

cc: JDSell - w/encl. and copy of minute  
RJO'Keefe/EJFranko - w/encl.

ASARCO Incorporated  
JUL 14 1986  
SW Exploration



New York, May 19, 1986

TO: The Advisory Committee

Superior East Project,  
Arizona

In 1971 Asarco acquired ground by staking and joint venture covering a deep sulfide reserve of 240 million tons averaging 0.74% Cu, including 54 million tons averaging 0.95% Cu and a separate immense zone of 0.6 - 0.7% native copper mineralization of unknown size.

Advisory Committee approval is requested for an expenditure of \$25,000 to cover current assessment work obligations which will be completed by geologic mapping and mineralogical studies.

*F. T. Graybeal*  
F. T. Graybeal

FTG:mr  
Att.

143 claims { 123 CMC's  
20 ASARCO'S

*Deeds #1 thru #6 = 6*  
*LD #1 thru #9 & amends. = 9*  
*Kay 139, 140, 144, 152, 154. = 5*  
*20*

ASARCO Incorporated

JUL 14 1986

SW Exploration

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

May 19, 1986

Originating Office Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. 0010 Superior East, Arizona

Present total Estimated Cost (Form 302-MA attached)	\$ 3,733,835
Amount previously authorized (date 5/22/85)	\$ 3,708,835
Balance for which Authorization is now requested	\$ 25,000

ADDITIONAL WORK CONTEMPLATED:

Geologic mapping and mineralogical work

EXPLANATION OF INCREASED COST:

1985 - 1986 assessment work

ASARCO Incorporated

JUL 14 1986

SW Exploration

Reviewed by R.J. O'KEEFE  
ACCT. MGR. OR CHIEF ACCT.  
 Approved by *[Signature]*  
CONTROLLER  
 Account Chargeable to EXPLORATION EXPENSE  
TO BE FILLED IN BY CONTROLLER

Recommended by J. D. Sell  
SUPERVISOR  
 Approved by *[Signature]*  
VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

JUN 26 1986 19

19

# ASARCO

Southwestern Exploration Division

June 10, 1987

R.L. Brown  
Vice President of Exploration  
New York Office

Supplemental Exploration  
Appropriation Request  
Superior East Project (EA-0010)  
Pinal County, Arizona

A Supplemental Exploration Appropriation is requested for the Superior East Project to perform the 1987 annual assessment work on 146 unpatented mining claims. To facilitate this request, five copies of Form 302, an index map, and a drill hole location map are attached.

The assessment work will be done by collaring and drilling hole A-16 to a depth that satisfies assessment work expenditure requirements. The hole will be left in such a condition that it can be deepened in the future.

The 146 unpatented mining claims, which include 123 claims optioned from Continental Materials Corporation, cover a porphyry copper deposit with probable geologic reserves of 243 million tons at 0.74% copper. To date nine holes, A-2W and A-8 through A-15, have been drilled in and about this reserve. The total footage drilled is 42,281'.

The funds requested are:

Drilling costs	\$14,000
Other Costs	<u>1,000</u>
<u>Total Costs</u>	<u>\$15,000</u>

If you approve of the above expenditure, please request a Supplemental Exploration Appropriation.



Henry G. Kreis

HGK:mek  
Atts.

cc: W.L. Kurtz  
J.D. Sell  
W.D. Gay  
A.J. Robles (form only)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

..... June 11, ..... 19 87.

Originating Office ..... Tucson .....

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. 0010 Superior East, Arizona

Present total Estimated Cost (Form 302-MA attached)	\$ 3,748,835
Amount previously authorized (date <u>6/26/86</u> .....)	\$ 3,733,835
Balance for which Authorization is now requested	\$ ..... 15,000

ADDITIONAL WORK CONTEMPLATED:

Rotary drill the upper portion of proposed drill hole A-16

EXPLANATION OF INCREASED COST:

1986 - 1987 assessment work on unpatented mining claims.

Reviewed by [Signature] ACC'T. MGR. OR CHIEF ACCNT.

Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Prepared by: H.G. Kreis

Recommended by [Signature] H.G. Kreis SUPERVISOR  
J.D. Sell

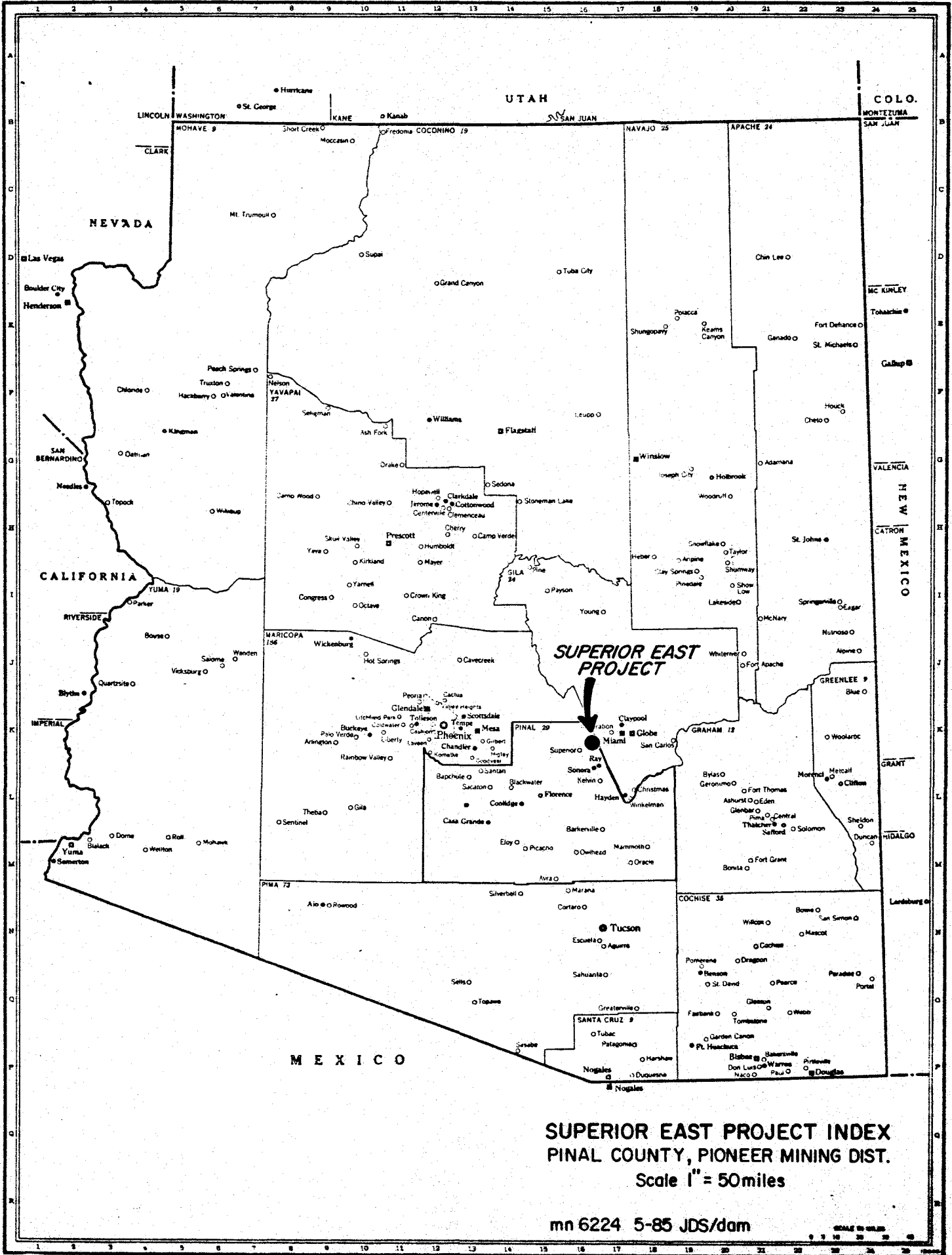
Approved by ..... VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

..... 19.....

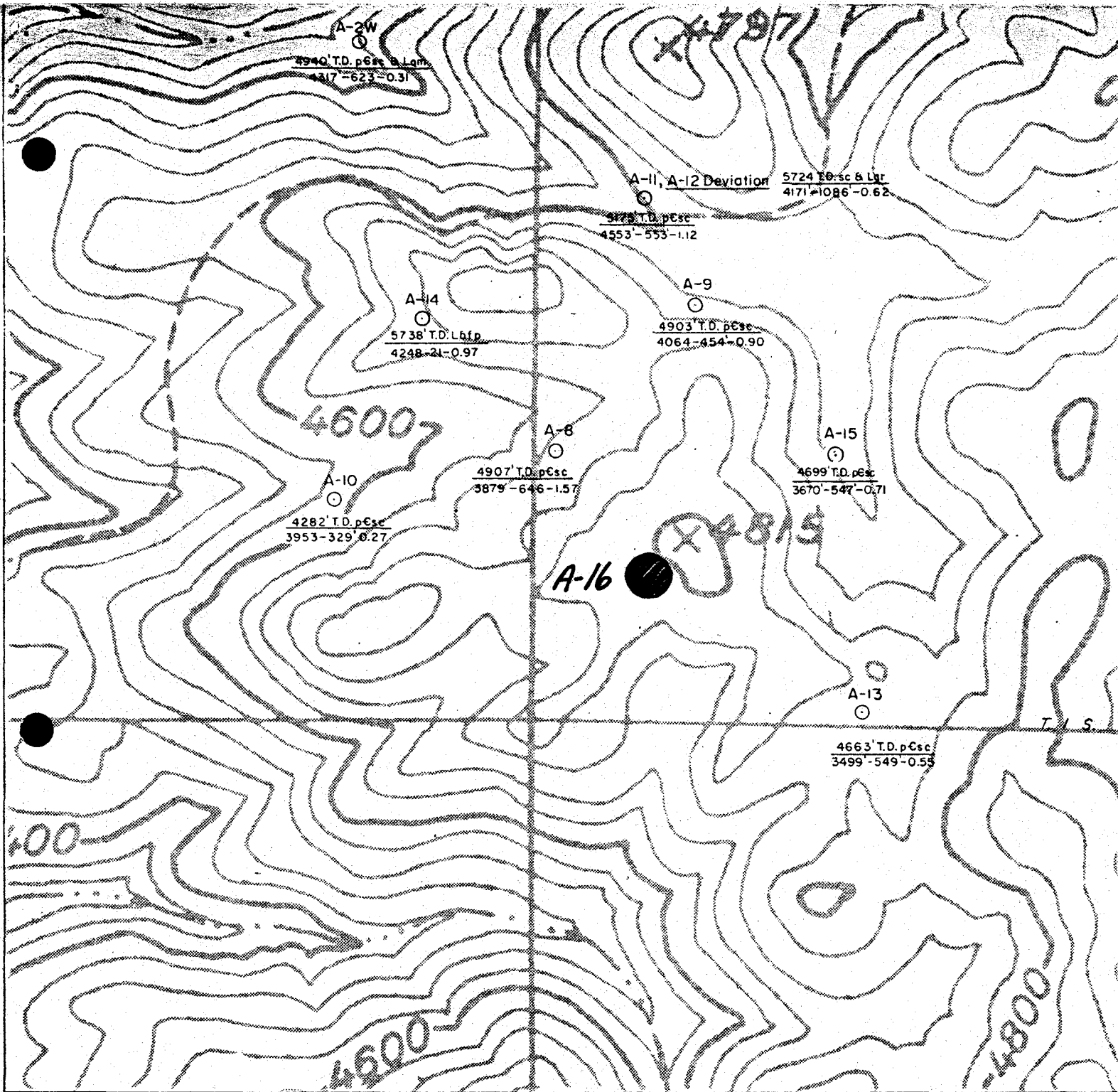


**SUPERIOR EAST PROJECT**

**SUPERIOR EAST PROJECT INDEX**  
PINAL COUNTY, PIONEER MINING DIST.  
Scale 1" = 50miles

mn 6224 5-85 JDS/dam

SCALE 1" = 50 MILES



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' CUAD.



EXPLANATION

POST-MINERAL ROCK UNIT

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

PRE-MINERAL ROCK TYPE

- Lbx-Breccia
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8



ASARCO Hole & Designation

4907' T.D. pCsc  
3879-646-1.57

Total Depth-Rock Type  
Depth-Length-% Cu

Proposed Drill Site

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1"=500'

J.D.Sell

June 1977

HGK 6-11-87

MVK-3041

From the desk of:

6-11-1987

H. G. KREIS

J.I.D.S.

Al Robles is checking on the Superior East SEA vs the N.Y. listing of authorizations and expenditures to resolve the difference. I told him what you said about the J.I. ranch. He will let you know what he finds out.

H.G.K.

# ASARCO

Exploration Department

Frederick T. Graybeal  
Chief Geologist

September 15, 1987

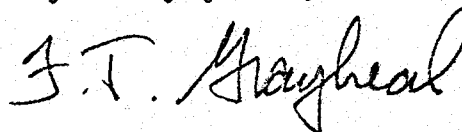
Mr. W. L. Schoonmaker  
Accounting Manager  
Wallace Office

Thunder Mtn. Project  
Superior East Project  
Arizona

Dear Mr. Schoonmaker:

Attached please find supplemental exploration appropriation forms for the above-mentioned projects which described expenditures which have been approved by Mr. T. C. Osborne.

Very truly yours,



F. T. Graybeal

FTG:mr  
Att.

cc: E. J. Franko (w/att.)  
J. D. Sell (w/att.)

cc: C.L. Snow - Tucson Accounting  
9/18/87

ASARCO Incorporated

SEP 18 1987

SW Exploration



APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

June 11, 19 87. Originating Office Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. 0010 Superior East, Arizona

Table with 2 columns: Description and Amount. Rows include Present total Estimated Cost (\$3,748,835), Amount previously authorized (\$3,733,835), and Balance for which Authorization is now requested (\$15,000).

ADDITIONAL WORK CONTEMPLATED:

Rotary drill the upper portion of proposed drill hole A-16

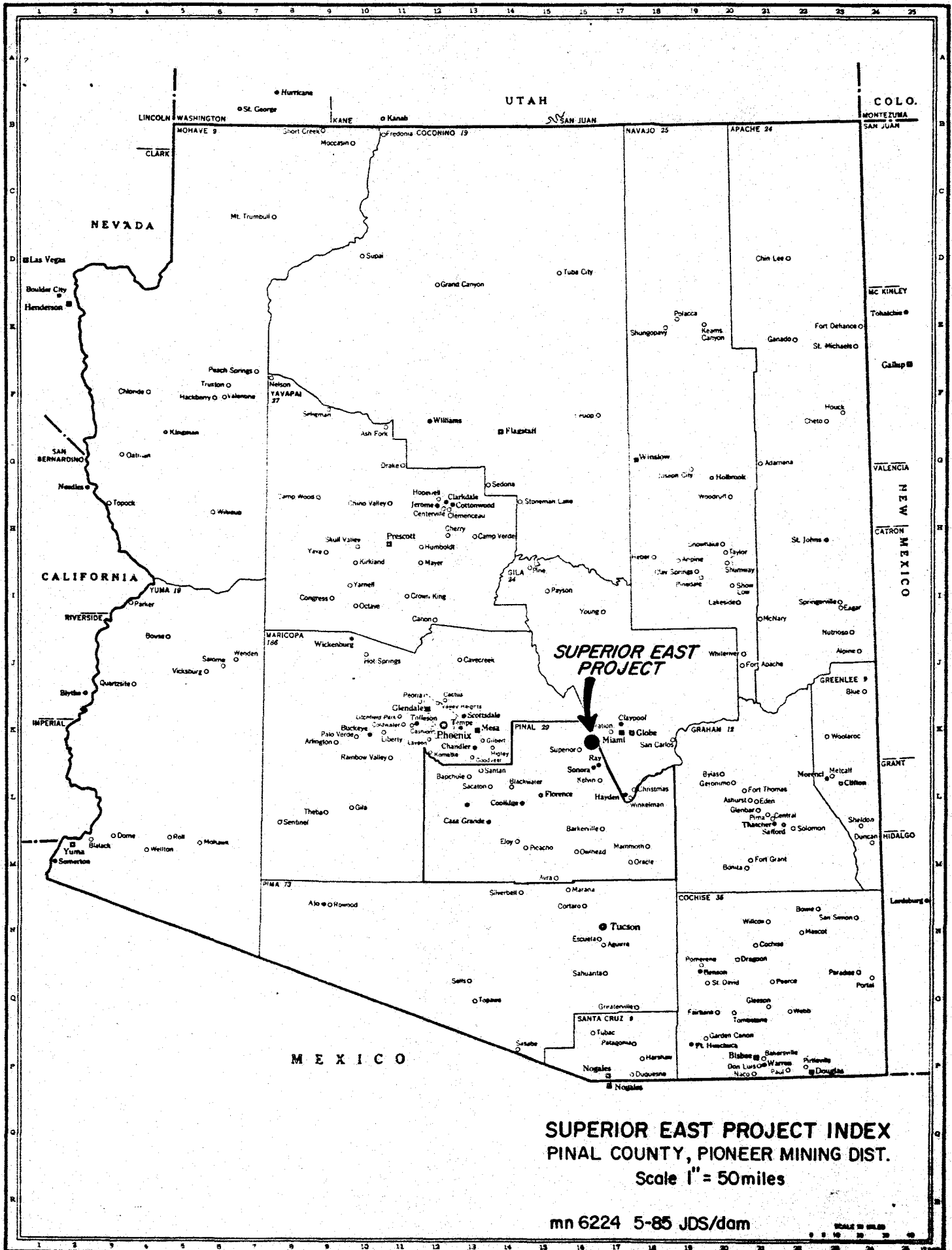
EXPLANATION OF INCREASED COST:

1986 - 1987 assessment work on unpatented mining claims.

Reviewed by [Signature] ACCT. MGR. OR CHIEF ACCNT.
Approved by ..... CONTROLLER
Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Prepared by: [Signature] H.G. Kreis
Recommended by [Signature] J.D. Sell SUPERVISOR
Approved by [Signature] VICE PRESIDENT

Approved by Advisory Committee ..... 19.....
Approved by Board of Directors ..... 19.....

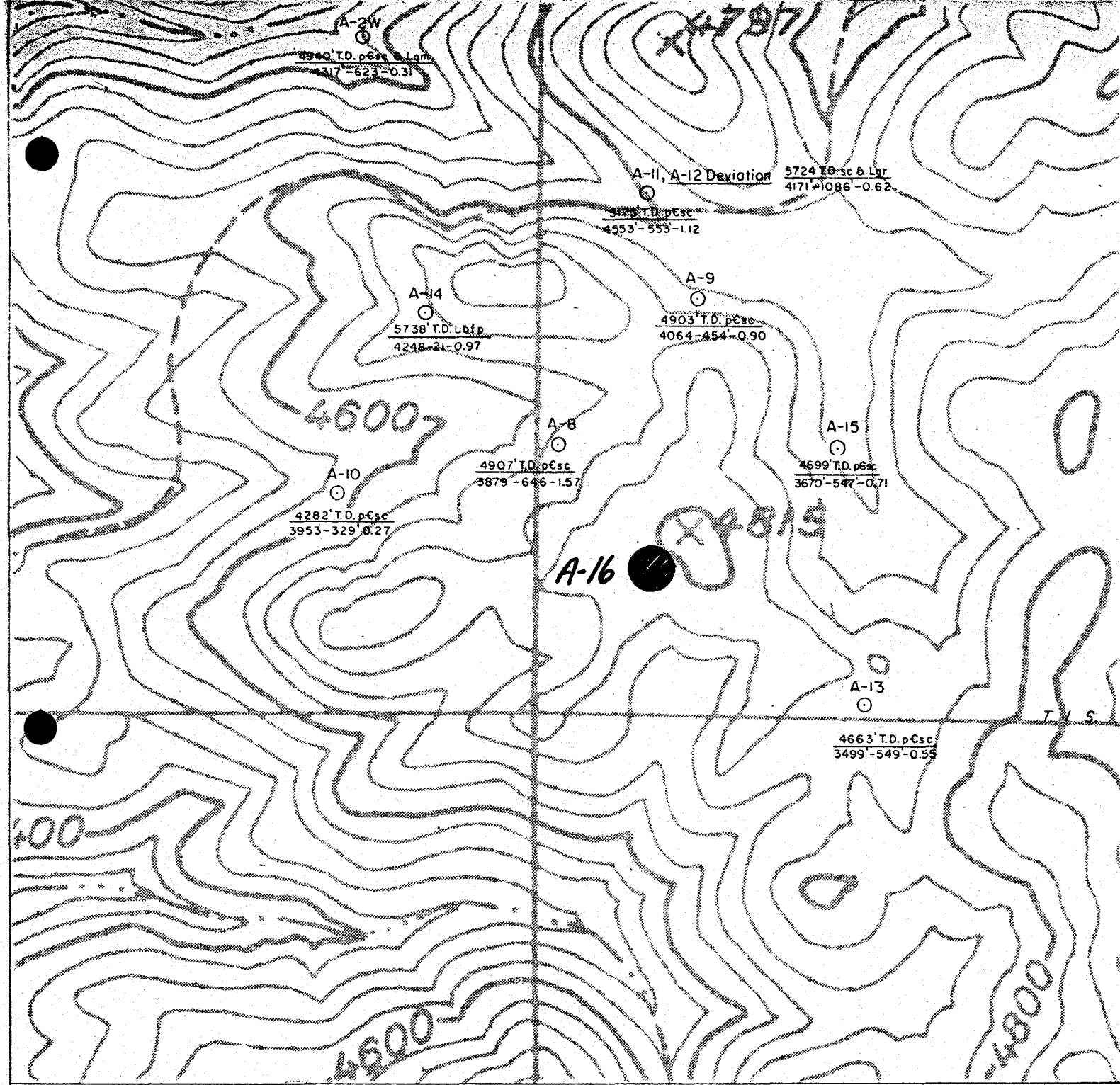


**SUPERIOR EAST PROJECT**

**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50miles

mn 6224 5-85 JDS/dam

SCALE IN MILES



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.



EXPLANATION

POST-MINERAL ROCK UNIT

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

PRE-MINERAL ROCK TYPE

- Lbx-Breccio
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8  
○

ASARCO Hole & Designation

4907' T.D. pCsc  
3879'-646'-1.57

Total Depth-Rock Type  
Depth-Length-% Cu



Proposed Drill Site

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1"=500'

J.D. Sell

June 1977

HGK 6-11-87

MVK-3041

April 25, 1988

R.L. Brown  
Vice President of Exploration  
New York Office

Supplemental Exploration  
Appropriation Request  
Superior East Project (EA-0010)  
Pinal County, Arizona

A Supplemental Exploration Appropriation is requested for the Superior East Project to perform the 1988 annual assessment work on 146 unpatented mining claims.

The assessment work will be done by diamond drilling starting at a depth of 1020 feet in a cased rotary hole completed last year. The hole A-16 will be left for reentry in the future.

The 146 unpatented claims cover a porphyry copper deposit with probable geologic reserves of 243 million tons of 0.74% copper. Hole A-16, when completed, will confirm the thickness/grade in this sector of the deposit.

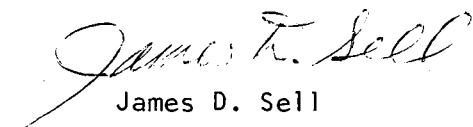
The funds requested are:

Drilling costs	\$15,000
Road cleanup	1,000
Previous Overrun	16,000
Storage rental	<u>2,500</u>
<u>Total</u>	<u>\$34,500</u>

Five copies of Form 302-MB are attached with index and drill location maps.

If you approve of the above expenditures, please request a Supplemental Exploration Appropriation for the Superior East Project.

JDS:mek  
Atts.

  
James D. Sell

cc: W.L. Kurtz  
W.D. Gay  
C.L. Snow (w/Form 302-MB)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

April 25 19 88

Originating Office Tucson, SWED

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA 0010 Superior East, Arizona

Present total Estimated Cost (Form 302-MB attached) \$ 3,861,500

Amount previously authorized (date 6/11/87) EA-0010-22 \$ 3,827,000

Balance for which Authorization is now requested \$ 34,500

ADDITIONAL WORK CONTEMPLATED:

Reenter cased rotary hole #A-16 and diamond drill for yearly assessment work on 146 unpatented claims.

EXPLANATION OF INCREASED COST:

1987-1988 Assessment work on unpatented mining claims. Clearing of previous years overruns.

Reviewed by [Signature] ACCT. MGR. OR CHIEF ACCNT.

Recommended by [Signature] SUPERVISOR James D. Sell

Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

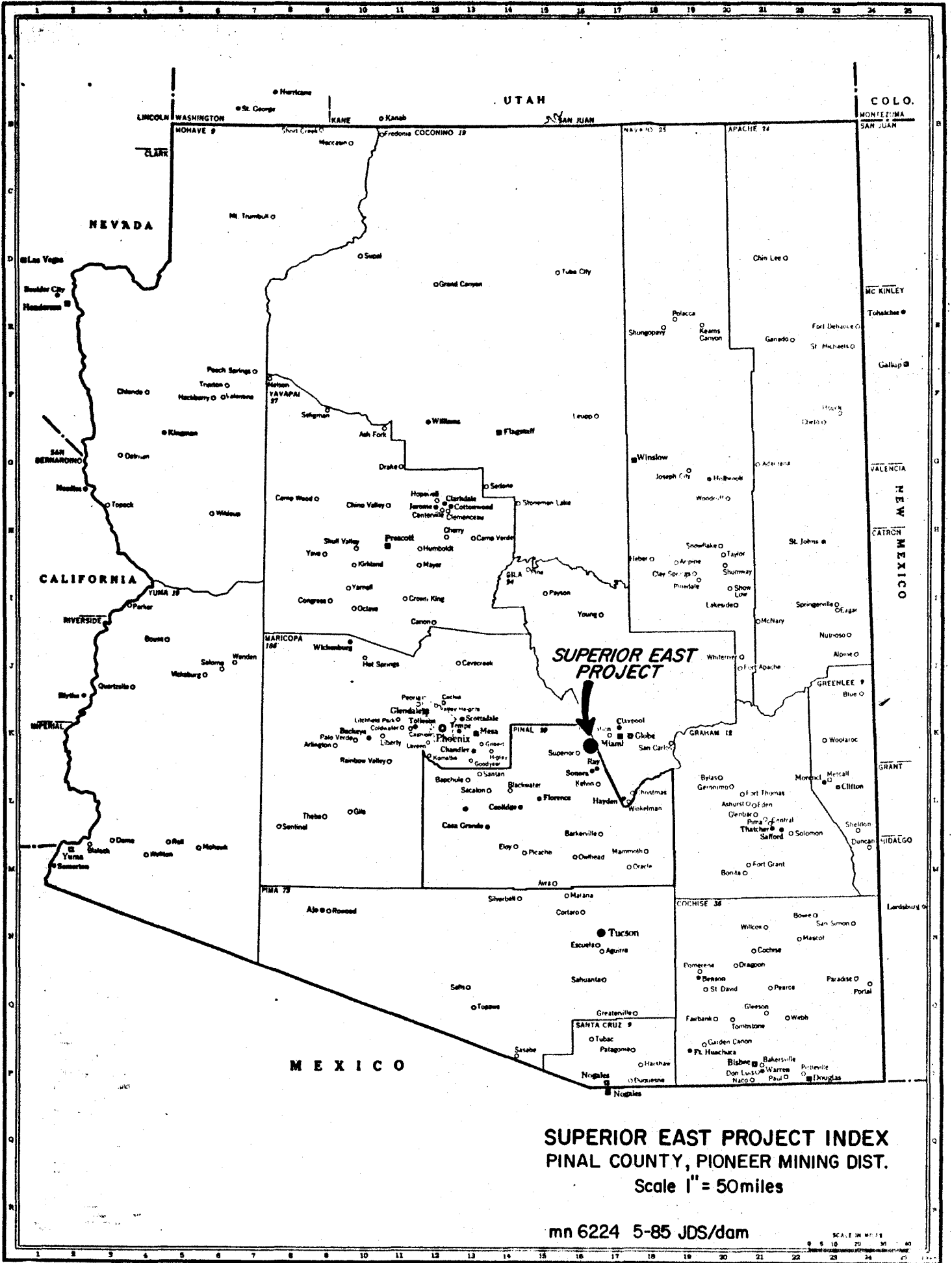
Approved by ..... VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

19.....

19.....



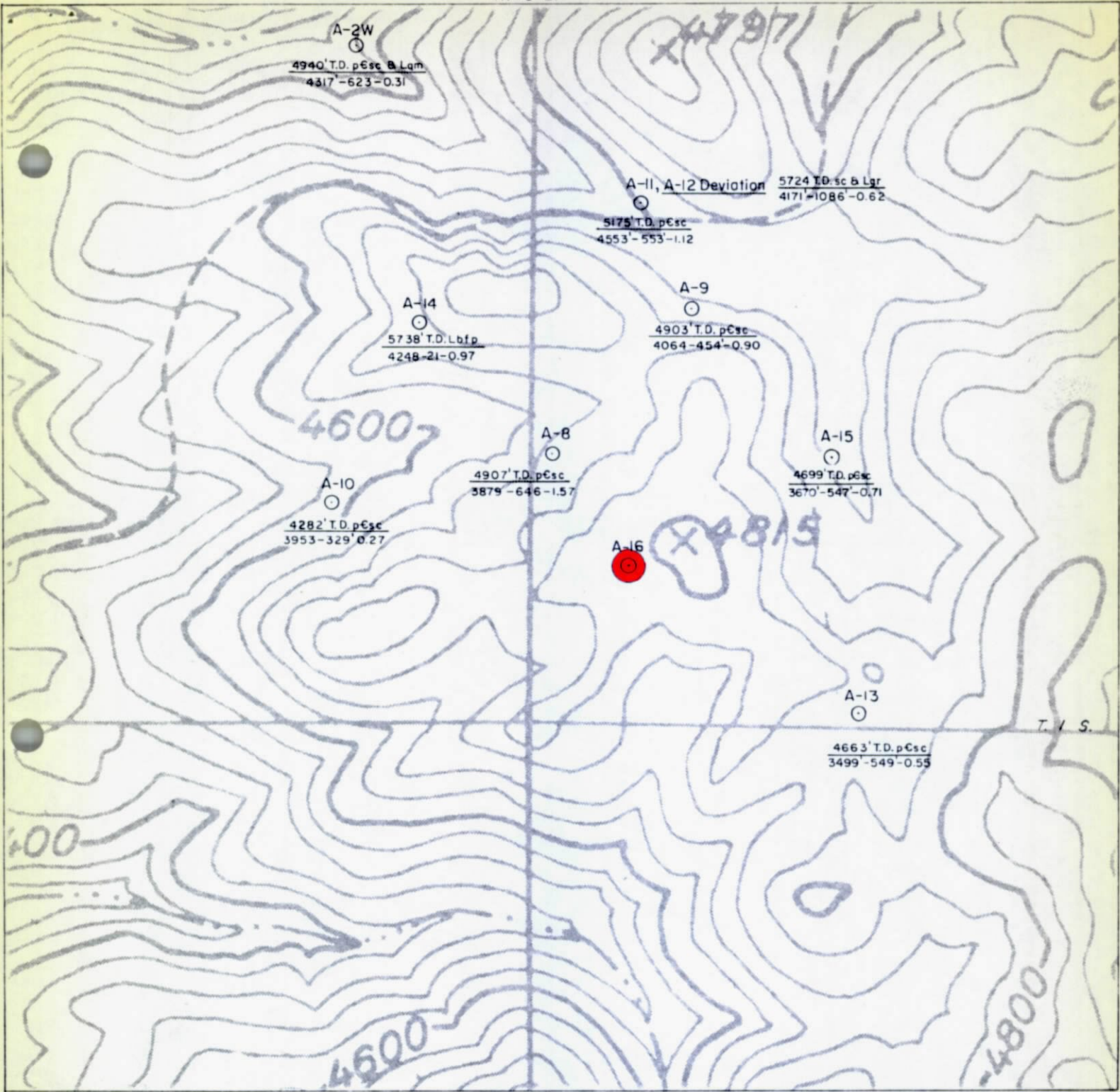
**SUPERIOR EAST PROJECT**

**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

SCALE IN FEET  
 0 5 10 20 30 40





BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

N



EXPLANATION

POST-MINERAL ROCK UNIT

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

PRE-MINERAL ROCK TYPE

- Lbx-Breccia
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-B



ASARCO Hole B Designation

4907' T.D. pCsc  
3879-646-1.57

Total Depth - Rock Type  
Depth - Length - % Cu



Proposed Drill Site



Drill Site

DRILLING PROGRESS MAP

SUPERIOR EAST PROJECT

PINAL COUNTY, ARIZONA  
SCALE: 1"=500'

J.D.Sell

# ASARCO

JDS

Exploration Department  
R. L. Brown  
Vice President

June 17, 1988

Mr. J. D. Sell  
Tucson Office

Superior East Project  
Arizona

Dear Mr. Sell:

I attach hereto a copy of Form 302-MB for the Superior East Project. Please note that this form has been processed by the Controllers Department and that the approval by Mr. T. C. Osborne is indicated.

Yours very truly,



R. L. Brown

RLB:mc  
Att.

cc: E. J. Franko (w/att.)  
W. L. Schoonmaker (w/att.)

cc: C.L. Snow (w/att. 6/24/88)

ASARCO Incorporated

JUN 23 1988

SW Exploration



APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

April 25 19 88

Originating Office Tucson, SWED

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA 0010 Superior East, Arizona

Present total Estimated Cost ( <del>FORM 302-MB ATTACHMENT</del> )	\$ 3,861,500
Amount previously authorized (date 6/11/87) EA-0010-22	\$ 3,827,000
Balance for which Authorization is now requested	\$ 34,500

ADDITIONAL WORK CONTEMPLATED:

Reenter cased rotary hole #A-16 and diamond drill for yearly assessment work on 146 unpatented claims.

EXPLANATION OF INCREASED COST:

1987-1988 Assessment work on unpatented mining claims. Clearing of previous years overruns.

Reviewed by *C. L. Knowlton*  
ACCT MGR OR CHIEF ACNT

Approved by R.J. O'KEEFE  
CONTROLLER

Account Chargeable to EXPLORATION EXPENSE  
TO BE FILLED IN BY CONTROLLER

Recommended by *James D. Sell*  
SUPERVISOR

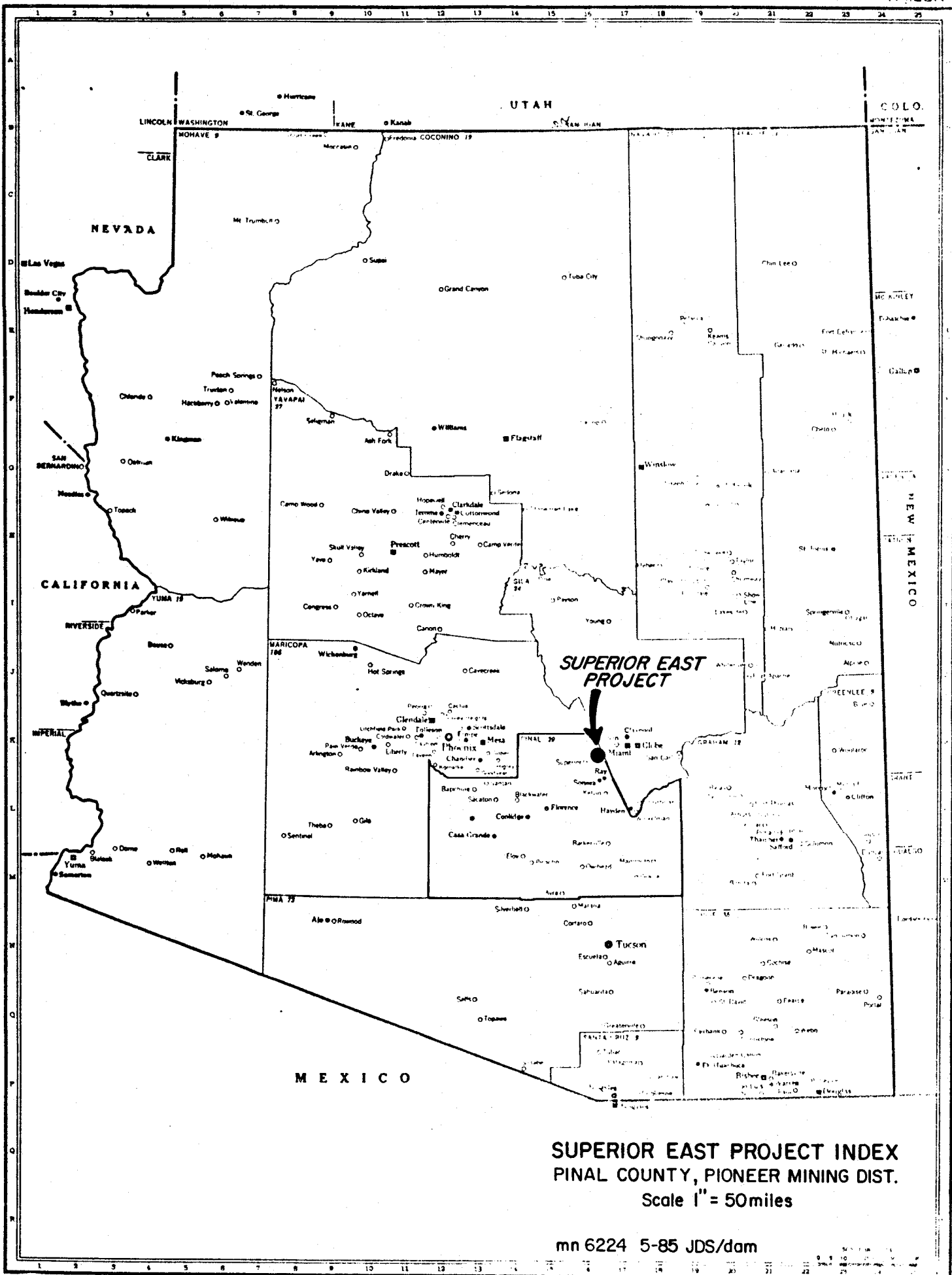
Approved by *J. T. Grayheal*  
VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

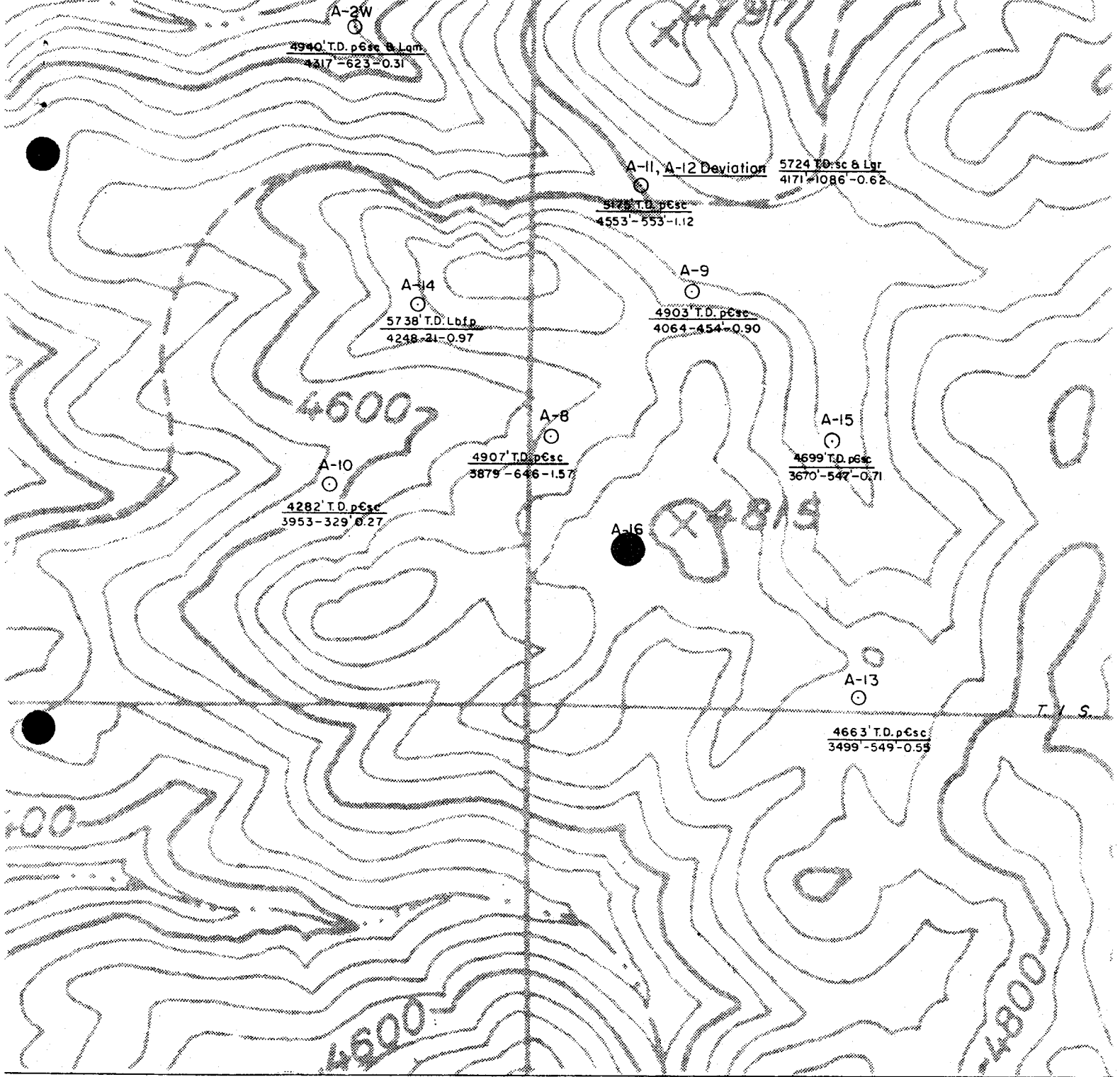
*[Signature]*

19



**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50 miles

mn 6224 5-85 JDS/dam



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

**EXPLANATION**

**POST-MINERAL ROCK UNIT**

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

**PRE-MINERAL ROCK TYPE**

- Lbx-Breccia
- Lbfp-Laramide Biotite Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8  
○

4907' T.D. pCsc  
3879'-646'-1.57

ASARCO Hole & Designation  
Total Depth -Rock Type  
Depth-Length-% Cu

⊕

●

Proposed Drill Site  
Drill Site



**DRILLING PROGRESS MAP**

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA  
SCALE: 1"=500'

J.D.Sell

# ASARCO

Southwestern Exploration Division

JDS

July 10, 1989

R.L. Brown  
New York Office

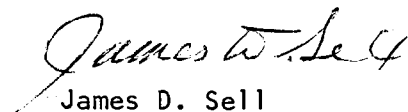
Supplemental Exploration  
Appropriation  
Superior East Project  
Pinal County, AZ

Attached is the SEA Form 302-MB for the appropriation to reenter hole A-16, which is presently in dacite at a depth of 1380 feet.

Drilling will start in mid-August and continue into September to accomplish the assessment work on 146 unpatented mining claims in back-to-back assessment.

Hole A-16 will add to the mineral reserve in this deeply buried, high-grade, porphyry copper system.

JDS:mek  
Att:

  
James D. Sell

cc: W.L. Kurtz  
W.D. Gay  
C.L. Snow

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

July 10, 1989

Originating Office SWED, Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010 Superior East, Arizona

Present total Estimated Cost (Form 302-MB attached) \$ 3,911,500

Amount previously authorized (date 4/25/88) EA-0010-23 \$ 3,861,500

Balance for which Authorization is now requested \$ 50,000

ADDITIONAL WORK CONTEMPLATED:

Reenter cased rotary hole A-16 and diamond drill for the yearly assessment work on 146 unpatented claims in back-to-back assessment year work requirements.

EXPLANATION OF INCREASED COST:

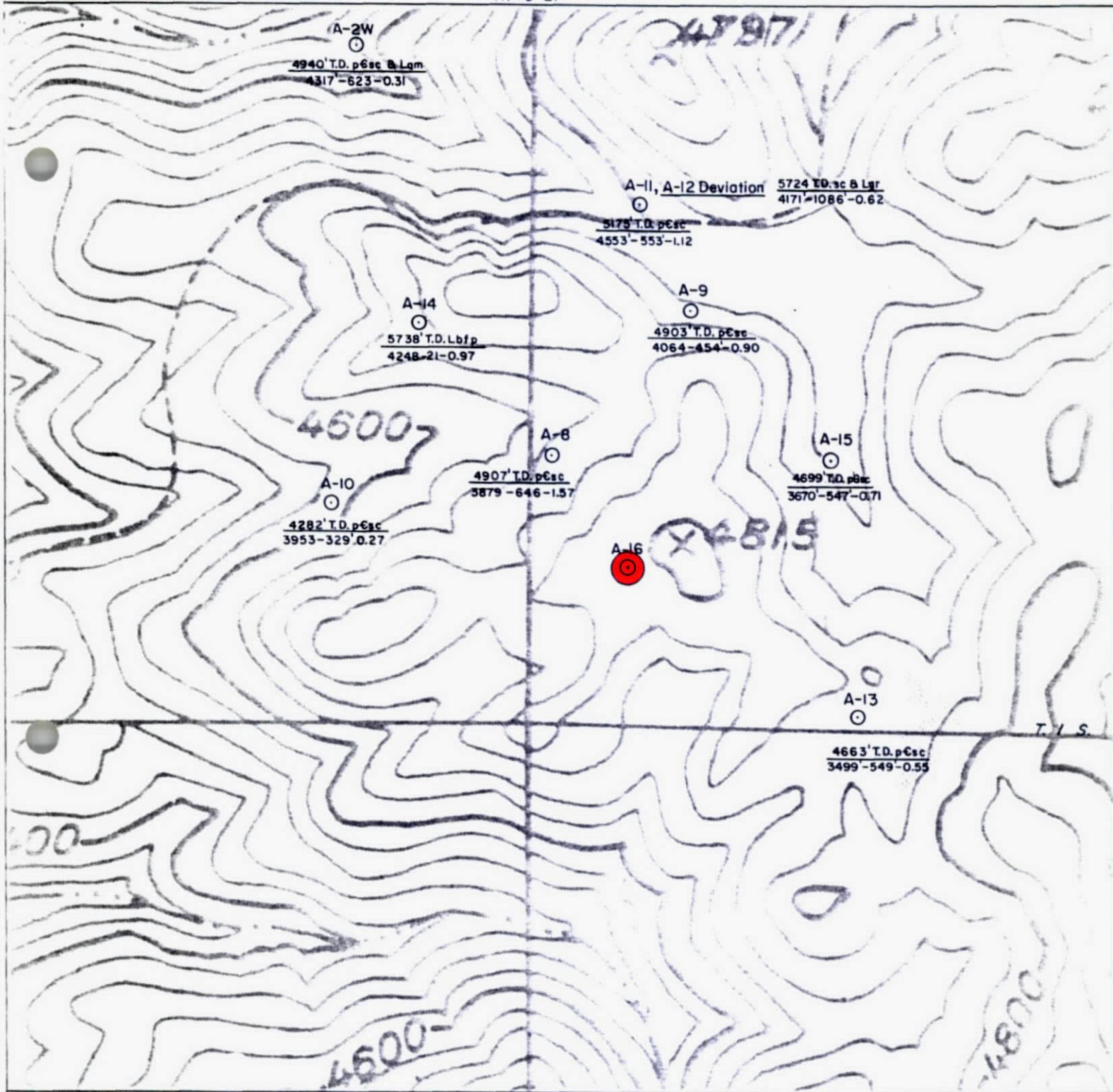
1988-1989 and 1989-1990 Assessment work on unpatented mining claims.

Reviewed by [Signature] ACC'T. MGR. OR CHIEF ACCNT.
Approved by ..... CONTROLLER
Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Recommended by [Signature] SUPERVISOR
James D. Sell
Approved by ..... VICE PRESIDENT

Approved by Advisory Committee
..... 19.....

Approved by Board of Directors
..... 19.....



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

**EXPLANATION**

**POST-MINERAL ROCK UNIT**

- Td-Dacite
- Tev-Early Volcanics
- Tw-Whitetail

**PRE-MINERAL ROCK TYPE**

- Lbx-Breccia
- Lbfp-Laramide Biotite  
Feldspar Porphyry
- Lqm-Quartz Monzonite
- Lgr-Granite
- pCsc-Schist

A-8  
○

4907' T.D. pCsc  
3879'-646'-1.57

⊕  
●

ASARCO Hole & Designation

Total Depth-Rock Type  
Depth-Length-% Cu

Proposed Drill Site

Drill Site

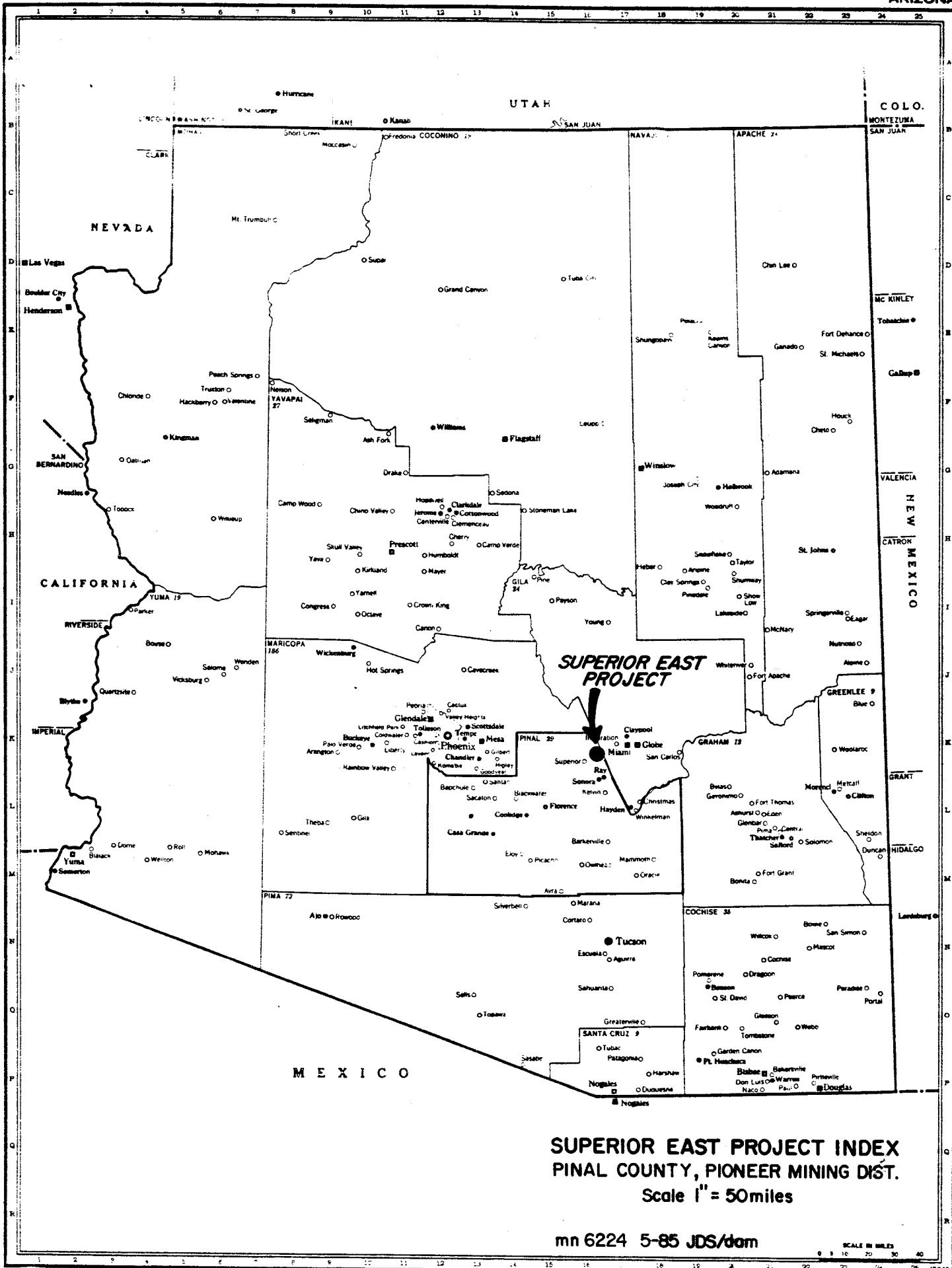
**DRILLING PROGRESS MAP**

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1"=500'

J.D.Sell



**SUPERIOR EAST PROJECT**

**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

SCALE IN MILES  
0 5 10 20 30 40

Seymour East (8,891) in debt

June 1989 account

\$ 15,000/ per annum year

+2

30,000 for drilling

9000 for back debt

39,000

11,000 for expenses etc.



# ASARCO

JDS

Exploration Department

Frederick T. Graybeal  
Chief Geologist

July 27, 1989

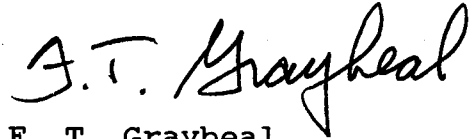
Mr. J. D. Sell  
Tucson Office

Superior East Project  
Arizona

Dear Mr. Sell:

I attach hereto a copy of Form 302-MB and the request for the above-captioned project. Please note that this form has been processed by the Controllers Department and by Mr. T. C. Osborne .

Very truly yours,



F. T. Graybeal

FTG:mc  
Att.

cc: E. J. Franko (w/att.)  
W. L. Kurtz (w/att.)  
W. L. Schoonmaker (w/att.)

cc: C.L. Snow (7/31/89)

ASARCO Incorporated

JUL 31 1989

SW Exploration



APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

July 10, 1989. Originating Office SWED, Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010 Superior East, Arizona

Table with 2 columns: Description and Amount. Rows include Present total Estimated Cost (\$3,911,500), Amount previously authorized (\$3,861,500), and Balance for which Authorization is now requested (\$50,000).

ADDITIONAL WORK CONTEMPLATED:

Reenter cased rotary hole A-16 and diamond drill for the yearly assessment work on 146 unpatented claims in back-to-back assessment year work requirements.

EXPLANATION OF INCREASED COST:

1988-1989 and 1989-1990 Assessment work on unpatented mining claims.

Reviewed by [Signature]
Approved by [Signature]
Account Chargeable to [Signature]
ACCT. MGR. OR CHIEF ACCT.
CONTROLLER
TO BE FILLED IN BY CONTROLLER

Recommended by [Signature]
James D. Sell
SUPERVISOR
Approved by [Signature]
VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

May 7, 1990

R.L. Brown  
New York Office

Supplemental AR  
Superior East Project  
Arizona

The Superior East porphyry copper project located between Superior and Miami, Arizona, was started in the 1970's to explore for porphyry copper beneath post-mineral dacite. A deposit was discovered albeit at much greater depth than hypothesized. The original huge claim position has been cut back to 146 claims, and for the past several years project work has been limited to assessment by starting and deepening a single drill hole.

Mr. Sell now recommends completing this drill hole, which should place a greater confidence on the indicated resource of 250 million tons averaging 0.74% copper, at a cost of \$96,000.



W.L. Kurtz

WLK:mek  
Enc.: J.D. Sell's SEA  
w/attachments.

cc: J.D. Sell

May 7, 1990

W.L. Kurtz

Authorization Request  
Superior East Project  
Pinal County, Arizona

The Superior East Project, in central Arizona, is covered by 146 unpatented mining claims.

This porphyry copper project presently has completed five drill holes within a sulfide zone where the drilling has indicated in excess of 250 million tons averaging 0.74% copper, including a core area of 50 million tons averaging 0.95% copper. Several holes of lesser mineralization are within the mineralized halo of this deposit.

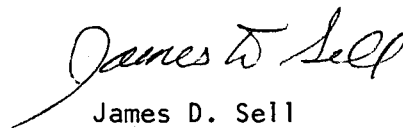
The hole, A-16, to be completed in this year's request, was started several years ago. A-16 is presently at a depth of 2446 feet in Whitetail Conglomerate in the southeast portion of the mineralized zone.

The Supplemental Exploration Appropriation requests \$96,000 to reenter drill hole A-16 and complete the hole to the final depth of 5400 feet. This drilling will intercept a column of mineralization of plus 500 feet in thickness with an expected assay of plus 1% copper.

I submit for approval Form 302-MB, a location map, a land status map, an assay-model map, and a cross-section showing the projected position of the drill hole A-16 intercept.

JDS:mek  
Atts.

cc: C.L. Snow  
R.L. Brown

  
James D. Sell

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

May 7, 1990. Originating Office SWED, Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010, Superior East, AZ

Present total Estimated Cost (Form 302-MA attached) \$4,007,500

Amount previously authorized (date 7/10/89) EA-0010-24 \$3,911,500

Balance for which Authorization is now requested \$96,000

ADDITIONAL WORK CONTEMPLATED:

Reenter and complete cased rotary hole A-16 to a final depth of 5400 feet.

EXPLANATION OF INCREASED COST:

Continued evaluation of significant copper mineralization.

Reviewed by [Signature] ACCT. MGR. OR CHIEF ACCT.

Recommended by [Signature] James D. Sell SUPERVISOR

Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

Approved by ..... VICE PRESIDENT

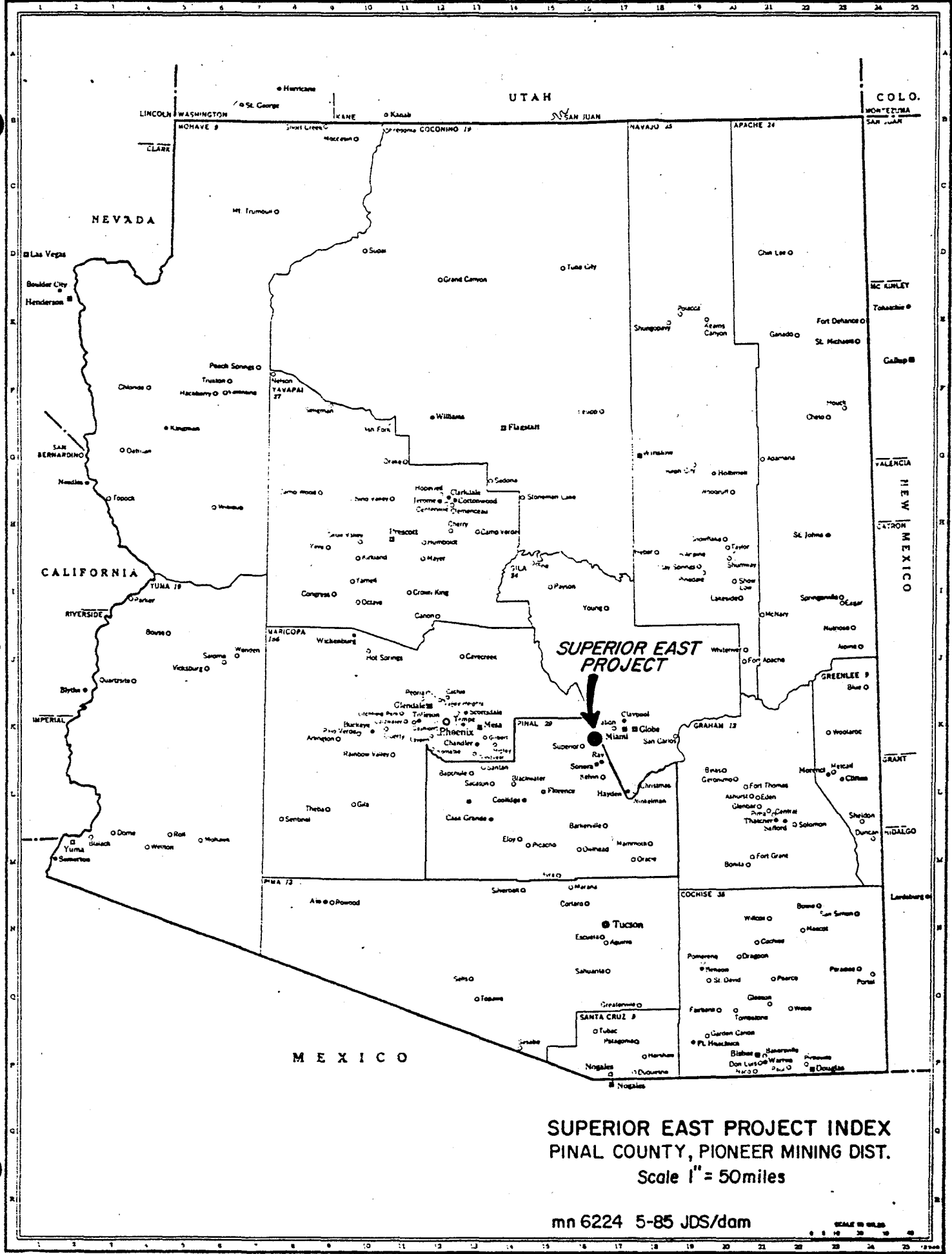
Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

..... 19.....





**SUPERIOR EAST PROJECT**

**SUPERIOR EAST PROJECT INDEX**  
PINAL COUNTY, PIONEER MINING DIST.  
Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

SCALE IN MILES

FIGURE 2

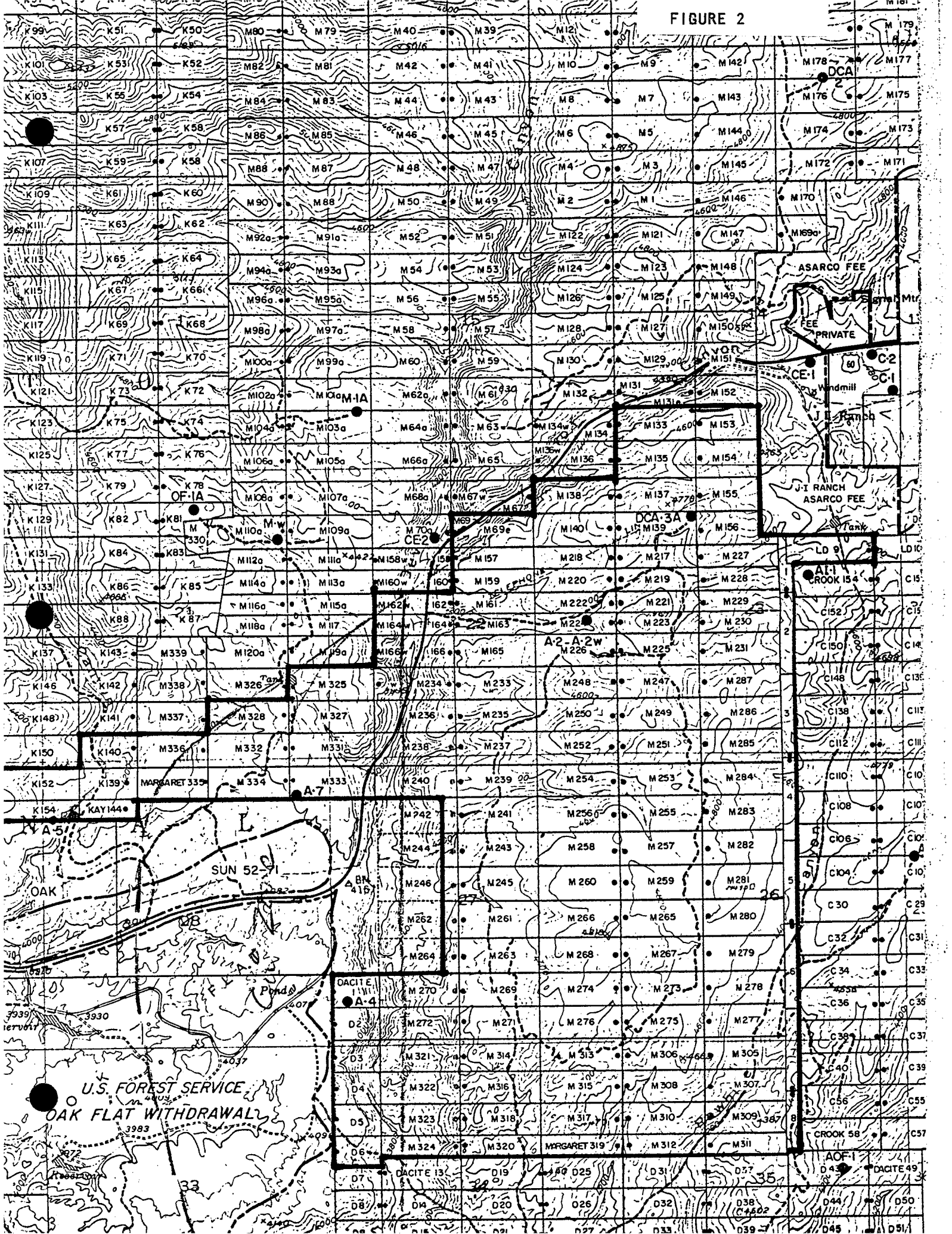
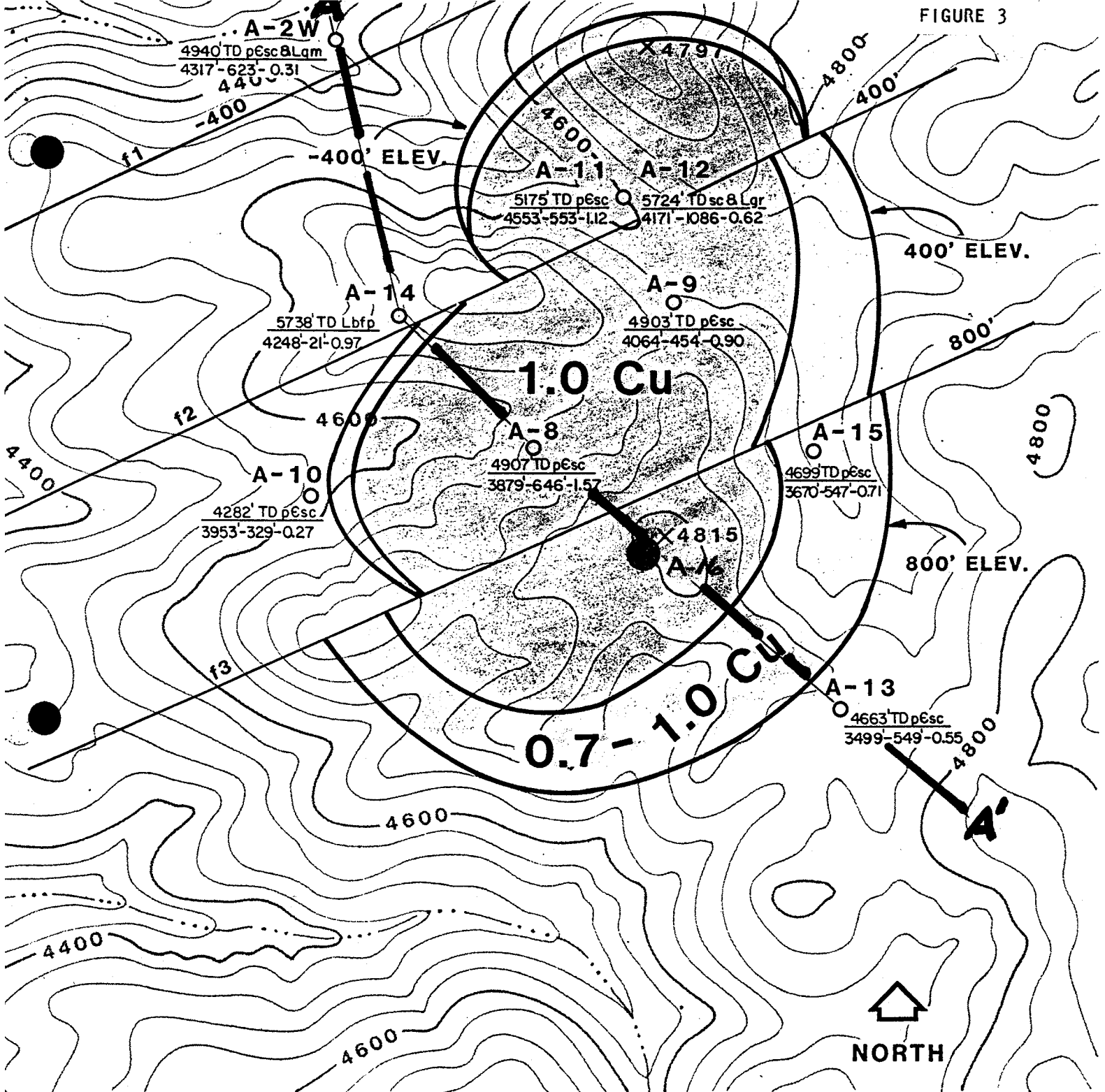


FIGURE 3



- A-8 ASARCO hole & designation
- total depth rock type
- 4907' TD pEsc depth-length-%copper
- 3879-646-1.57
- PRE-MINERAL ROCK TYPE
- Lbfp Laramide biotite feldspar porphyry
- Lqm Quartz monzonite
- Lgr Granite
- pEsc Schist

T. 1 S., R. 13 E.

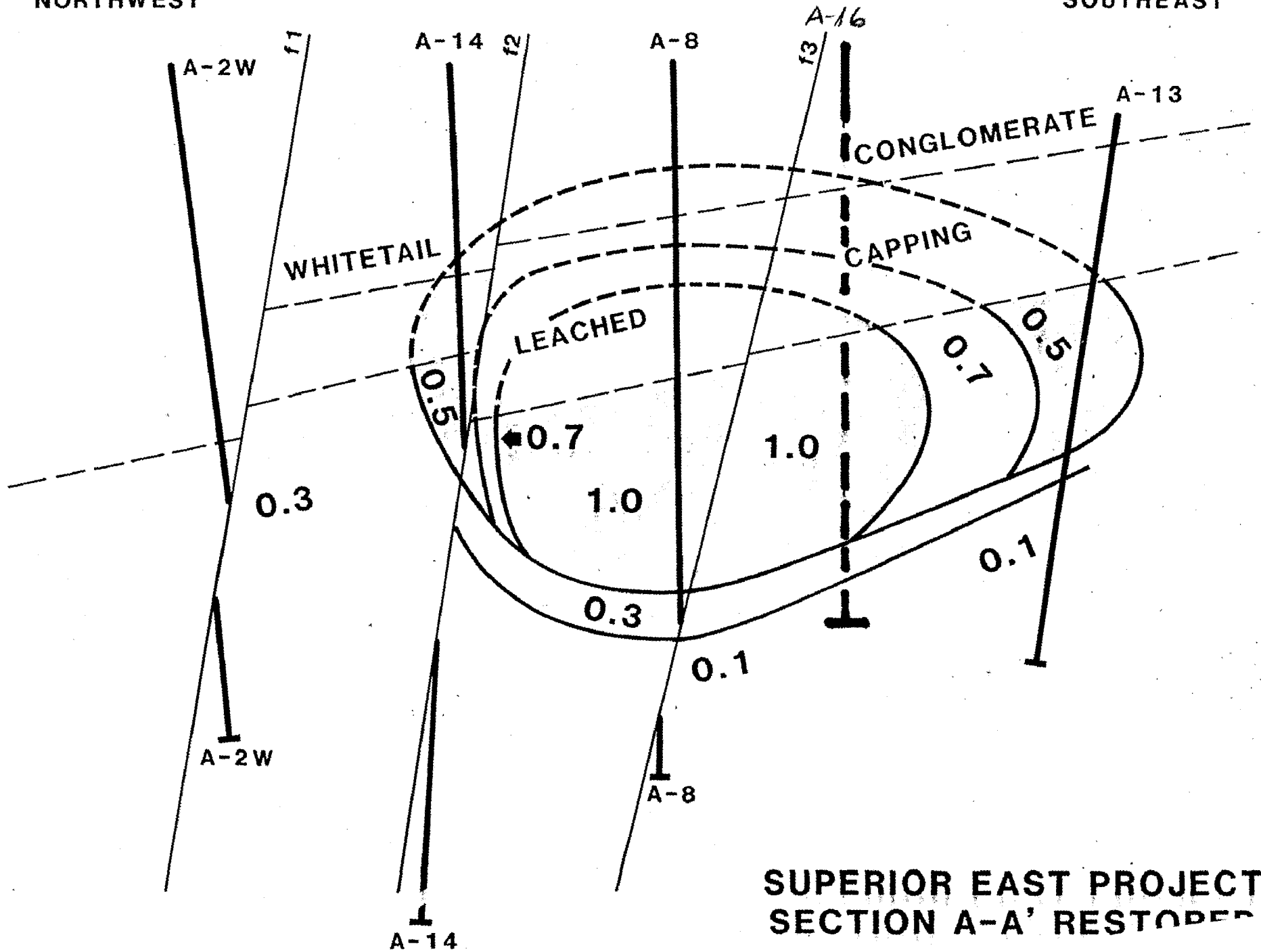
**MODELED  
MINERAL ZONE OUTLINE**

**SUPERIOR EAST PROJECT  
PINAL COUNTY, ARIZONA**

1" = 500'

NORTHWEST

SOUTHEAST



SUPERIOR EAST PROJECT  
SECTION A-A' RESTORED

FIGURE 1

# ASARCO

JDS

## Exploration Department

Frederick T. Graybeal  
Chief Geologist

May 30, 1990

ASARCO Incorporated

JUN 4 1990

SW Exploration

Mr. J. D. Sell  
Tucson Office

Superior East Project  
Arizona

Dear Mr. Sell:

I attach hereto a copy of Form 302-MB and the request for the above-captioned project. Please note that this form has been processed by the Controllers Department and by Messrs. R. de J. Osborne and T. C. Osborne.

Very truly yours,



F. T. Graybeal

FTG:mc  
Att.

cc: E. J. Franko (w/att.)  
W. L. Schoonmaker (w/att.)  
C. L. Snow (w/att.)

R.L.E.

72

New York, May 15, 1990

MEMORANDUM FOR: T. C. Osborne

*really quite close to lay.*

Superior East Project  
Arizona

*direct expenditure*

During the past few years diamond drill hole A16 has been deepened a few hundred feet each year in order to cover the annual \$15,000 assessment work requirement.

Drilling problems in this hole are developing and we now recommend that the hole be completed to its final depth in the mineralized zone when it is next entered, hopefully during the late summer, in order to perform back-to-back assessment work.

*direct + indirect.*

The cost of completing the hole is \$96,000, and authority to spend this money is requested.

*R. L. Brown*

R. L. Brown

MAY 15 1990

*OK*  
*T.C.O.*  
*[Signature]*

RLB:mc  
Att.

*OK*  
*[Signature]*

RECEIVED

MAY 23 1990

EXPLORATION DEPT.



APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

May 7, 1990 Originating Office SWED, Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010, Superior East, AZ

Present total Estimated Cost (Form 302-MA attached) \$4,007,500

Amount previously authorized (date 7/10/89) EA-0010-24 \$3,911,500

Balance for which Authorization is now requested \$...96,000

ADDITIONAL WORK CONTEMPLATED:

Reenter and complete cased rotary hole A-16 to a final depth of 5400 feet.

EXPLANATION OF INCREASED COST:

Continued evaluation of significant copper mineralization.

Reviewed by C. L. Snow ACCT. MGR. OR CHIEF ACCNT.

Recommended by James D. Sell SUPERVISOR

Approved by R.J. O'KEEFE CONTROLLER

Account Chargeable to EXPLORATION EXPENSE TO BE FILLED IN BY CONTROLLER

Approved by P. H. Brown VICE PRESIDENT

Approved by Advisory Committee [Signature] 1990

Approved by Board of Directors 19.....

SECRETARY

JDS

~~SEA~~ Note:

Superior East

SEA Requested: May 7, 1990      Approved: EA-0010-25 May 15

ADWR Requested: May 31, 1990      Approved: 6/7/90

Notified FS: May 30, 1990      Approved: waiting

Joy CBC bid received: 5/18/90

December 4, 1991

Mr. R. L. Brown  
New York Office

Supplemental Exploration  
Appropriations  
Southwestern Exploration Div.

Several on-going projects have overrun debits against the present appropriations.

To clear the end-of-the-year books, I submit SEA's for the following projects:

- |  |          |
|--|----------|
| 1. Freeport - Santa Cruz, The Lands, AZ<br>EA-0075 | \$95,000 |
| 2. Gold Hill, UT, EA-0413                          | 38,000   |
| 3. Superior East, AZ, EA-0010                      | 85,000   |
| 4. Three R, AZ, EA-0040                            | 1,000    |
| 5. Yellow Jacket, UT, EA-0477                      | 2,000    |

JDS:mek  
Atts.

*James D. Sell*  
James D. Sell

cc: W.L. Kurtz  
C.L. Snow

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

December 4, 1991

Originating Office SWED - Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010, Superior East, AZ

Present total Estimated Cost

\$ 4,092,500

Amount previously authorized (date 5/15/90 EA-0010-15 <sup>25</sup>)

\$ 4,007,500

Balance for which Authorization is now requested

\$ 85,000

ADDITIONAL WORK CONTEMPLATED:

Clearing of overrun.

98,200 Walloway marks  
1,500 Coy April  
99,700

Not acted upon  
delete from  
file  
Submit new one  
to include  
this job

EXPLANATION OF INCREASED COST:

"Bad rock" charges incurred during drilling with extra reduction in hole size, loss of parts of three casing sets, and close-down of warehouse and removal of core storage to Tucson.

Reviewed by [Signature] ACCT. MGR. OR CHIEF ACCT.

Recommended by James D. Sell SUPERVISOR

Approved by ..... CONTROLLER

Account Chargeable to ..... TO BE FILLED IN BY CONTROLLER

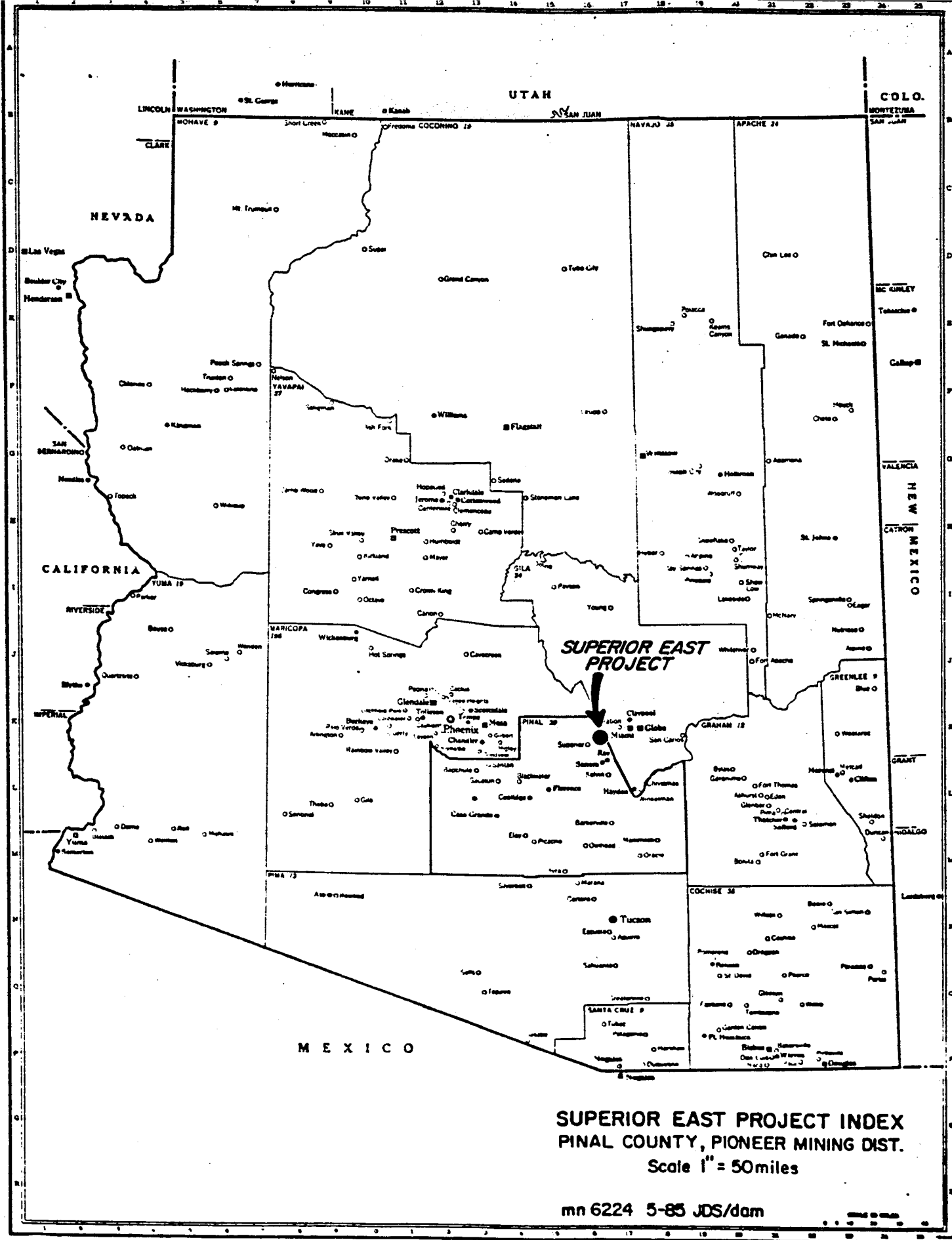
Approved by ..... VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

..... 19.....



**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

May 14, 1992

G.D. Van Voorhis  
New York Office

SEA - EA-0010  
Superior East Project  
Pinal County, Arizona

Attached is an application for Supplemental Exploration Appropriation at the Superior East Project.

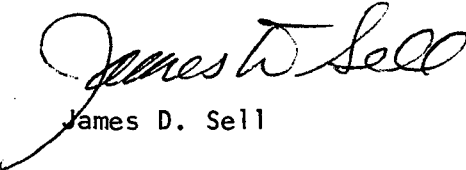
The cost includes the overrun from the 1990-1991 drilling of hole A-16, and the close-down of the Miami core building with the moving of the material to Tucson (\$99,700).

The remainder of the appropriation request (\$22,000) is for the 1992 yearly assessment expenditure covering 204 claims.

Recommended expenditure on assessment is for a road building of several hundred feet with a new drill pad located approximately 800 feet north-northeast of hole A-15. Remaining monies will be expended on lowering a steep grade on portion of the access road.

Authorization for the total of \$121,700 is requested.

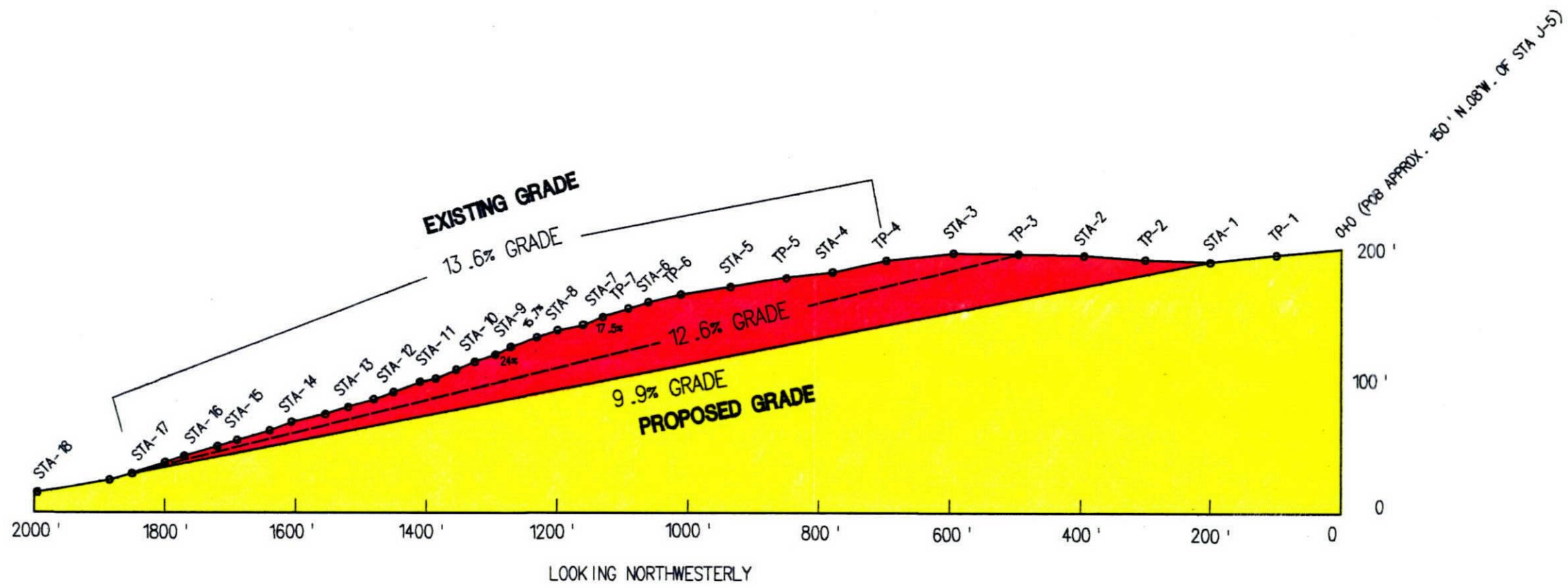
JDS:mek  
Att.



James D. Sell

cc: W.L. Kurtz  
C.L. Snow

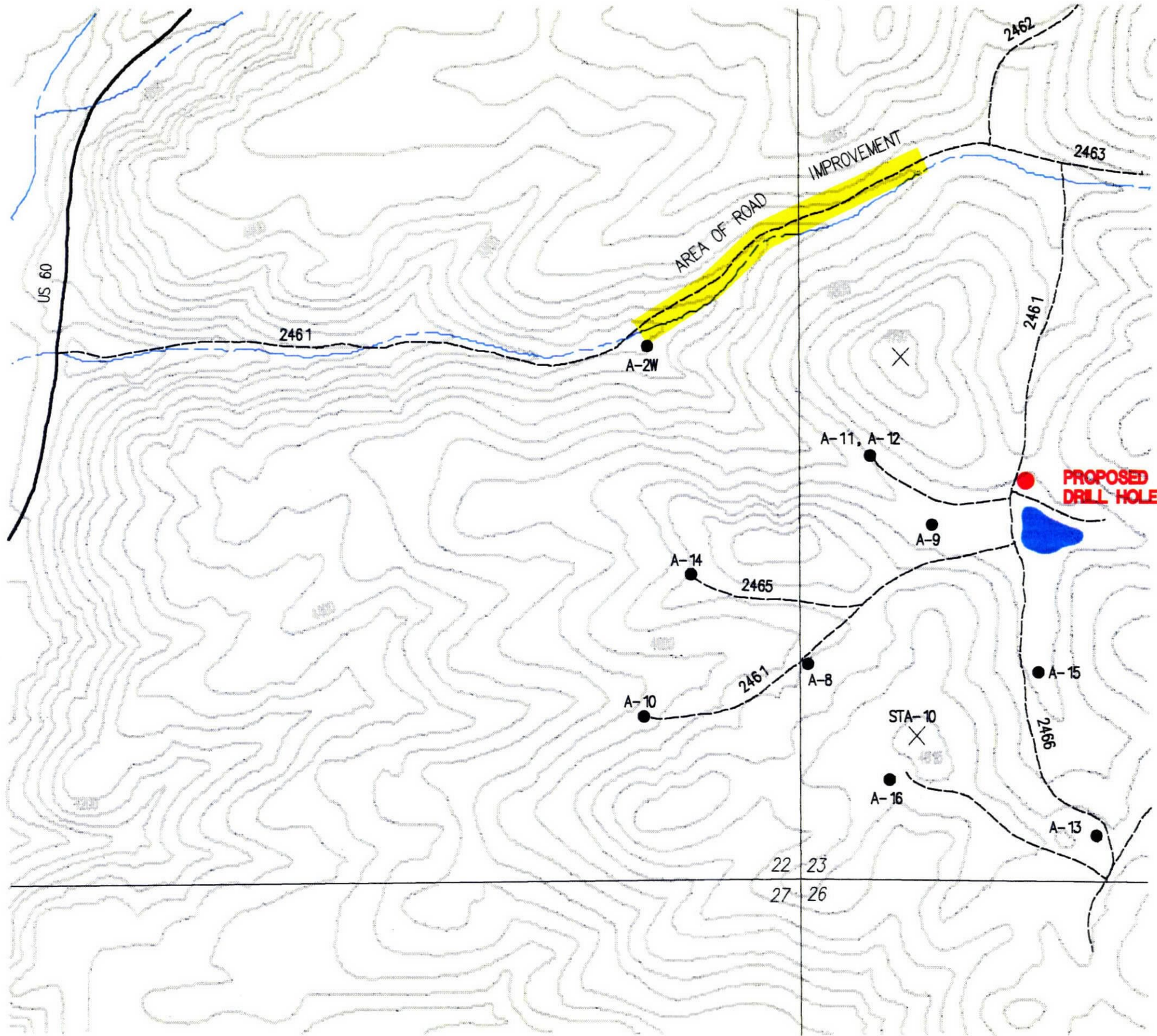




**ASARCO** SOUTHWESTERN  
EXPLORATION  
SUPERIOR EAST PROJECT  
PROPOSED GRADE IMPROVEMENT  
USFS 2461  
PINAL CO., ARIZONA

JDS/WDG/DAM

05/92



TOPOGRAPHY FROM USGS SUPERIOR 7.5 MIN QUAD.

T. 1 S., R. 13 E.

**ASARCO** SOUTHWESTERN  
EXPLORATION

**SUPERIOR EAST PROJECT**  
**1992 DRILLING & ROADWORK**  
PINAL CO., ARIZONA  
1"500'

mn SE920503 JDS-WDG/DAM 05/15/92  
PLOT : SP8-10  
SP9-10/.7



# ASARCO

JDS

Exploration Department  
Frederick T. Graybeal  
Chief Geologist

June 9, 1992

ASARCO Incorp

JUN 11 1992

SW Exploration

Mr. J.D. Sell  
Tucson Office

## Supplemental Appropriation Superior East Project

Dear Mr. Sell:

I attach a Supplemental Appropriation Form 302-MB regarding the above-captioned expenditure. Please note this form has been processed by the Controllers Department and approved by Mr. Van Voorhis.

Very truly yours,

*F.T. Graybeal*  
F.T. Graybeal

FTG/mev  
Attachment

cc: T. Hinckson (w/attach)  
W.L. Schoonmaker (w/attach)

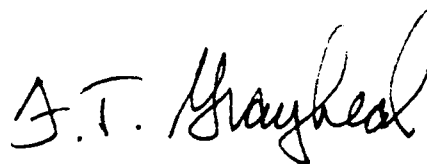
cc: C.L. Snow (6/11/92)

June 8, 1992

To: S.E. Dowd  
Controllers Dept.

Superior East Project  
Arizona

Attached please find form 302-MB Supplemental Appropriation Authorization which has been approved by Mr. Van Voorhis. After entry on your books please return the attached report and form to the Exploration Dept.



F.T. Graybeal

FTG/mev

ASARCO INC.

JUN 11 1992

SW EXPLORE

JUN 11 1992

New York No. 0010-26

SW Exploration

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

May 13 1992 Originating Office SWED, Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010, Superior East, AZ

Table with 2 columns: Description and Amount. Rows include Present total Estimated Cost (\$4,129,200), Amount previously authorized (date 5-15-90) EA-0010-25 (\$4,007,500), and Balance for which Authorization is now requested (\$121,700).

ADDITIONAL WORK CONTEMPLATED:

Extension of drill road and pad site for drill.

EXPLANATION OF INCREASED COST:

Clearing of overrun from 1990-1991 drilling, closing of Miami core storage building, moving core and materials to Tucson, and preparation of site for continued delineation of large porphyry copper system buried under post-mineral cover.

Reviewed by [Signature] ACCT. MGR. OR CHIEF ACCT.

Recommended by [Signature] SUPERVISOR

Approved by R.J. O'KEEFE CONTROLLER

Account Chargeable to EXPLORATION EXPENSE TO BE FILLED IN BY CONTROLLER

Approved by [Signature] VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

19.....

19.....

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

November 9, 1971

TO: W. L. Kurtz

FROM: J. D. Sell

Drill Hole Temperatures  
Drill Hole A-4  
Superior East Project  
Pinal County, Arizona

Two temperatures were recorded in drill hole A-4 using a Taylor Maximum Registering Thermometer with a range of 0° to 220°F.

The first measurement was taken by J. R. Cooksley using his down-the-hole acoustical probe wire. The thermometer was attached near the bottom of the probe and recorded 164°F. at 4500 feet below the collar. The measurement was taken on November 1, 1971, and the hole had set over the weekend.

The second measurement was taken with the thermometer inside the core retriever mechanism tube which is open to the drill fluid. The thermometer was left in the tube during two passes to retrieve core and had between 1-1/2 and 2 hours of retention time between the 5000 depth and the bottom of the hole. Thus, the temperature reading should be considered a minimum temperature. The temperature recorded was 184°F. at 6650 feet below the collar, and was taken during the night of November 4, 1971.

  
James D. Sell

JDS:lad

JOS

RECEIVED  
DEC 23 1971  
S. W. U. S. EXPL. DIV.

From the Desk of -

J. A. Snedden

John

Mr Kurtz

Tucson  
W. L. R.

DEC 20 1971

Superior East

Thanks for sending a copy of your report on this project. It is very interesting.

As drilling is continued I hope we can get information establishing the temperature gradient for the area. It may be higher than in other parts of the state and will be of real value in any planning.

Can you?

Jim - ① A-4 depth Temp

② Magmar Meri

③ A-5

J.A.S.  
DEC 21 1971

LOFTIN'S

JJC read  
DEC 21 1971



AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

January 28, 1972

Memorandum

TO: W. L. Kurtz

FROM: J. D. Sell

Temperature Gradients  
Superior East Project Area  
Pinal County, Arizona

As per your request, this will summarize our present knowledge of temperatures in the area.

Drill Hole DCA-1A

Surface elevation: 4760 feet.

At 5173-foot depth (-413 subsea) = 121°F after 4 passes on Dec. 20, 1971

At 5600-foot depth (-840 subsea) = 151°F after 4 passes on Jan. 11, 1972  
or 1° per 14 feet at the relative depths.

Note: First reading taken during relatively good consistent drilling, whereas second reading taken during period of high agitation of drill rods in hole.

Drill Hole A-4

Surface elevation: 4090 feet.

At 4500-foot depth (+400 above sea) = 164°F; geophysical probe on  
November 1, 1971

At 6650-foot depth (-1750 subsea) = 184°F after 2 passes on Nov. 4, 1971  
or 1° per 107 feet at the relative depths.

Magma Mine (Workings in central and western areas)

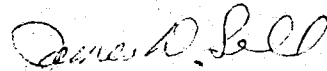
Surface elevation: 3834 feet. (Ariz. Bur. Mines Bull. 151, p. 107)

At 2000-foot level (+1834 above sea) = 109°F

At 4800-foot level (-966 subsea) = 152°F

or 1° per 65 feet over depth range.

Note: Relative temperature appears to increase eastward along same level as workings are extended under the dacite cap rocks.



James D. Sell

JDS:ltd

INVOICE



# EASTMAN OIL WELL SURVEY COMPANY

CONTROLLED DIRECTIONAL DRILLING — OIL WELL SURVEY SERVICE — BITS AND REAMERS

HOUSTON, TEXAS

ODESSA, TEXAS

LONG BEACH, CALIF.

ALL ACCOUNTS PAYABLE IN  
HOUSTON, TEXAS

MAIL PAYMENTS TO P. O. BOX 14609  
HOUSTON, TEXAS 77021

No. **P 17983**

CHARGE TO American Smelting & Refining Co.  
Box 5747  
Tucson, Arizona 85703

DATE 5-4-72

YOUR ORDER NO. T-10019

TERMS: NET 15TH PROX.

*K.V.D.S.  
MAY 8 1972*

403 11-070	SERVICE RENDERED	TICKET NO.	TOTAL
	Rental from 3-21-72 thru 4-28-72	20162	
	Inside Single Shot - MINING - 1st 5 days		75.00
	34 Additional days @	8.00	272.00
	2 - Aluminum Spacer Bars - 1st 5 days (each)	2.50	5.00
	34 Additional days @ (each)	.25	17.00
	Continental Air Freight		10.50
	39 Days Loss in Hole Coverage	1.00	<u>39.00</u>
			418.50
	Arizona Pitt		

*SP*



AMERICAN SMELTING AND REFINING COMPANY  
SOUTHWESTERN EXPLORATION DIVISION  
P. O. BOX 5747, TUCSON, ARIZONA 85703

1150 NORTH 7TH AVENUE  
TELEPHONE 602-792-3010

May 25, 1972

Mr. Paul M. Laird, Supervisor  
Century Geophysical Corporation  
Post Office Box 2907  
Milan, New Mexico 87020

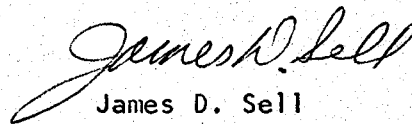
Dear Paul:

Your temperature log sheet has been shown to several of the staff and we are all still baffled by the rapid retrograde curve which you recently recorded.

I am sending you a copy of the part of the log showing the curve. It will be interesting to learn what your man thinks of it. As mentioned verbally to you, we do hold the information confidential at this time.

Hope to hear from you soon.

Regards,

  
James D. Sell

JDS:lad  
Enc.

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

June , 1972

TO: W. L. Kurtz

FROM: J. D. Sell

Temperature Survey  
Drill Hole A-2 and A-2W  
Century Geophysical Corporation  
Superior East Project  
Pinal County, Arizona

On May 22, 1972, the Century Geophysical Corporation ran a temperature probe in our drill hole A-2 and A-2W. At the time, the drill rods were stuck in the hole six feet off bottom and the hole had been left for three days. It was believed that the rock-fluid temperature would be stabilized over that time span. The probe was run inside the NX drill pipe from surface to a depth of 4900 feet. Total hole depth was 4940 feet.

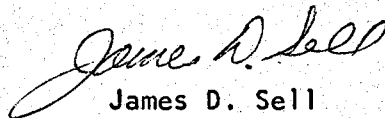
As shown on Figure 1, the surface rock temperature was 63°F and progressively increased to 126°F at 4000 feet. Shortly after that, circa 4100 feet, the temperature suddenly dropped to 40°F and slowly climbed up to 42°F at 4900 feet. Obviously such a change could not occur in nature (?), but the event was reproduceable both going down the hole and when pulling back up the hole. Two such runs (pulling up hole for true travel time) were recorded on paper and two other runs (down hole) were observed but not paper recorded. Attachment A is a reproduced portion of the temperature change area. The two originals are on file.

Mr. Paul Laird, of Century Geophysical, verbally reported on June 15 that their laboratory tests using a controlled water bath has proved that at about 125°F the internal circuitry of the probe breaks down causing an "electrical" drop in the temperature, even as the water bath temperature is increased. As the test temperature is cooled below 125°F, the circuitry kicks back in and records the correct temperature of the water bath. Thus, they have been able to reproduce the drill hole temperature log in the laboratory. Modification and correction of the probe circuitry is underway. Mr. Laird affirms that their probe correctly records the temperature up to about 125°F and, thus, the earlier temperatures are probably valid.

Taking the values from Figure 1, the surface rock temperature was 63°F and 126°F at 4000 feet. The internal rock straight-line temperature gradient computes to be 15.75°F per 1000 feet of depth. Projecting the temperature to 5000 feet would give a probable temperature of 142°F (63°F plus  $5 \times 15.75^\circ = 63 + 79 = 142^\circ\text{F}$ ).

Also recorded on Figure 1 is the temperature difference per 500 feet, the hole size, OD casing size, and formation contacts at the time of the test. It is interesting to note that higher temperature differences are recorded in the volcanic sequence, +5°, +7°, +11°, +12°, than in the conglomerate unit underneath, +10°, +7°, +6°, +5°. If we assume a temperature difference of +6° per 500 feet for the bedrock below the 4000 foot-depth, then the temperature at 5000 feet would be around 138°F.

Using either the straight-line or difference methods would suggest a temperature of around 140°F at a depth of 5000 feet in the area of drill hole A-2.

  
James D. Sell

JDS:lad  
Attachs.

A-2W TEMPERATURE SURVEY

May 22, 1972

DEPTH	° F	DIFFERENCE	HOLE SIZE		FORMATION
			OD	CASING	
Surface	63°	+5°			
500'	68°	+7°	8 3/4"	7"	Dacite
1000'	75°	+11°			
1500'	86°	+12°			1330'
2000'	98°	+10°	1863'	1863'	Eailier Volc.
2500'	108°	+7°			2020'
3000'	115°	+6°		4 1/2"	Whitetail
3500'	121°	+5°			
4000'	126°				3920'
~	average	~	6 1/4"		
4050'	126°			4043'	
4060'	126°				
4070'	124°				
4080'	100°		4076'	4076'	Tqm & pEpi
4090'	55°				
4100'	44°				
4110'	45°	Drill pipe free point at 4115' (McCullough)			
4120'	52°				
4130'	61°				
4140'	52°				
4150'	40°				
~	~	~			
4500'	40°	+2°			Oxides 4314' Sulfides
4900'	42°	Bottom of stuck drill pipe at 4934'	4940'		4940'

NQ (NX)  
2 63/64"

NX casing  
3 1/2"

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

June 30, 1972

TO: W. L. Kurtz

FROM: J. D. Sell

Temperature Survey  
Drill Hole A-2 and A-2W  
Century Geophysical Corporation  
Superior East Project  
Pinal County, Arizona

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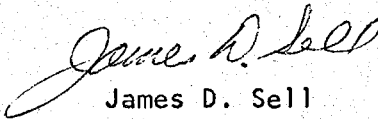
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James D. Sell

JDS:lad  
Attachs.

A-2W TEMPERATURE SURVEY

May 22, 1972

DEPTH	° F	DIFFERENCE	OD		FORMATION
			HOLE SIZE	CASING	
Surface	63°	+5°			
500'	68°	+7°			Dacite
1000'	75°	+11°	8 3/4"	7"	
1500'	86°	+12°			—1330'—
2000'	98°	+10°	—1863'	—1863'	Eailier Volc.
2500'	108°	+7°			—2020'—
3000'	115°	+6°		4 1/2"	Whitetail
3500'	121°	+5°		NX casing 3 1/2"	
4000'	126°				—3920'—
~	average	~	6 1/4"		
4050'	126°			—4043'	
4060'	126°				
4070'	124°				
4080'	100°		—4076'	—4076'	Tqm & pEpi
4090'	55°				
4100'	44°				
4110'	45°	Drill pipe free point at 4115' (McCullough)			
4120'	52°			NQ (NX) 2 63/64"	
4130'	61°				
4140'	52°				
4150'	40°				
~	~	~			Oxides —4314'
4500'	40°	+2°			Sulfides
4900'	42°	Bottom of stuck drill pipe at 4934'		—4940'	—4940'



3950

4000

4050

40 50 60 70 80 90 100 110 120 130

4100

4150

4200

4250

4300

JDS - let's get one for A-7; correct AEI be done also at that time.



AMERICAN SMELTING AND REFINING COMPANY  
EXPLORATION DEPARTMENT  
120 BROADWAY, NEW YORK, N.Y. 10005

RECEIVED  
DEC 3 1973  
S. W. U. S. EXPL. DIV.

JOHN J. COLLINS  
DIRECTOR OF EXPLORATION

W. L. K

DEC 3 1973

AIR MAIL

November 28, 1973

Mr. W. L. Kurtz  
Asarco  
Tucson Office

Deep Drilling

Dear Mr. Kurtz:

The Advisory Committee has requested that you record temperatures in the deep holes you drill, as the subject will affect future mining considerations. Please enlist professional aid and submit a program with costs. Hopefully additional appropriations will not be needed.

Very truly yours,

John J. Collins



STATION NO.	MEASURED DEPTH	COURSE LENGTH	DRIFT ANGLE	VERTICAL DEPTH	TRUE VERTICAL DEPTH	SECTION	COURSE DEVIATION	DRIFT DIRECTION	COORDINATE DIFFERENCES				RECTANGULAR COORDINATES				
									NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	
<i>TEMPERATURE SURVEY</i>																	
				<i>TEMP.</i>													
	0			67	-												
	700	700		87	-												
	1400	}		94	-												
	2100			102	-												
	2800		700	109	-												
	3000	200		112	-												
	3500	500		119	$\frac{1}{2}$												
	4000	}		128	-												
	4500		500	136	-												
	4925	425		142	$\frac{1}{4}$												

*Small: one 66ft/1°F or 1.52° per 100' of depth.*

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

November 5, 1970

TO: W. E. Saegart

FROM: J. D. Sell

Re: Recent Aeromagnetic Overflights  
Superior East Project  
Pinal-Gila Counties, Arizona

On Tuesday, October 20, 1970, it was noted that a silver and blue Cessna was flying east-west patterns between Globe and Superior over the dacite area.

It was flying between 5,000-5,500 feet elevation on half-mile spacings. When first noted they were just south of hole DCA-1 and terminated in a line over Castle Dome mine. The registration number could not be read.

A wing-tip extension was noted on the right wing which appears to be one of the new wing-tip aeromagnetic sensing instruments.

James D. Sell

JDS:mw



AMERICAN SMELTING AND REFINING COMPANY  
SOUTHWESTERN EXPLORATION DIVISION  
P. O. BOX 5747, TUCSON, ARIZONA 85703

W. E. SAEGART  
SUPERVISOR

W. L. KURTZ  
ASSISTANT SUPERVISOR

1150 NORTH 7TH AVENUE  
TELEPHONE 602-792-3010

March 5, 1971

Mr. C. K. Moss  
Geophysical Division  
3422 South 700 West  
Salt Lake City, Utah  
84119

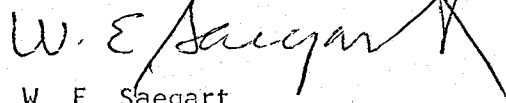
RE: I.P. Superior East  
Project

Dear Cal:

This is in reply to your letter of March 1st, requesting my opinion concerning possible I.P. penetration at the Superior East Project. My answer would have to be negative.

I have discussed previous I.P. applications on the Dacite Plateau with Gordon Wieduwilt and others in the past. All Geophysicists having prior experience on the Plateau unanimously agree that I.P. penetration to the pre-mineral surface is impossible. Apparently the Whitetail conglomerate is a very low resistivity medium. Gordon Wieduwilt believes that it is impossible to generate any meaningful current density beneath the Whitetail layer.

Yours very truly,

  
W. E. Saegart

WES:van

cc: RJLacy  
JJCollins  
WGFarley  
File copy. WLKurtz/Sell  
*W*

JDS -

Howard has price list. Better discuss with Schlumberger engineer what probes will give us the info, needed over and above the induction log.



**SCHLUMBERGER WELL SERVICES**

A DIVISION OF SCHLUMBERGER TECHNOLOGY CORPORATION

5000 GULF FREEWAY P. O. BOX 2175 HOUSTON, TEXAS 77001

April 1, 1971

RECEIVED  
APR 5 1971  
S. W. U. S. EXPL. DIV.

PLEASE REPLY TO  
P. O. BOX 250  
FARMINGTON, NEW MEXICO 87401

American Smelting & Refining Company  
P.O. Box 57474  
Tucson, Arizona 85703

Attn: William Kurtz

Gentlemen:

This is to confirm our telephone conversation of April 1, 1971, in regards to logging the wells at your Superior East project.

The charges will be as discussed with your engineering personnel and are in agreement with our price schedule. A current Rocky Mountain Price Schedule is attached for your information.

We look forward to serving your company when the wells are ready to be surveyed.

Yours very truly,

SCHLUMBERGER WELL SERVICES

*J. R. Ratliff*  
J. R. Ratliff  
District Manager

JRR:mm

Attachment



Date 4/8/71 Service Order No. 27915 Customer Order No. \_\_\_\_\_

To Schlumberger Well Services, A Division of Schlumberger Technology Corporation, Houston, Texas: You are hereby requested to perform or attempt to perform the following service(s) or furnish the following equipment: Induction Log & Density-GR Log

State ARIZONA Identification # 27915 COUNTY Pinal Offshore Zone  New Well  Workover  Rotary  Cable Tool   
 Location MOSE Well TIS 213E Well No. 2 Price Zone RPI Drilled for O & G  Wtr.  Stor.  Inj.  Min.   
 Company American Smelting & Refining Co. Field Superior East Log Prev. run None  Pri log  Other   
 Said well has been drilled to 1772 ft. and is in good condition Original hole sidetracked at \_\_\_\_\_ Driller TD 1712 Driller Casing Schl. Casing 37  
 Driller TD 1791 Driller Casing Schl. Casing 37

THE UNDERSIGNED, HEREINAFTER REFERRED TO AS CUSTOMER, AGREES TO PAY YOU FOR THE ABOVE SPECIFIED SERVICE(S) (INCLUDING LEASED EQUIPMENT), AND ANY ADDITIONAL SERVICE(S) REQUESTED, AT THE MAIN OFFICE OF SCHLUMBERGER WELL SERVICES, A DIVISION OF SCHLUMBERGER TECHNOLOGY CORPORATION, IN HOUSTON, HARRIS COUNTY, TEXAS, IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF YOUR CURRENT PRICE SCHEDULE.

IN CONSIDERATION OF THE PRICES AS ARE SET OUT IN YOUR CURRENT APPLICABLE PRICE SCHEDULE, WE CHOOSE TO BE BOUND BY THE TERMS AND CONDITIONS SET OUT ON THE REVERSE SIDE HEREOF, INCLUDING THE ASSUMPTION BY US OF THE LIABILITIES AND RESPONSIBILITIES CONTAINED IN THE HOLD HARMLESS AND EXCULPATORY CLAUSES, RATHER THAN ENTER INTO A DIFFERENT CONTRACT AND FURNISH YOU INSURANCE AGAINST THE LIABILITIES AND RESPONSIBILITIES HEREIN ASSUMED BY US.

IF SIGNED BY AN AGENT ON BEHALF OF CUSTOMER, SAID AGENT REPRESENTS THAT HE HAS FULL AUTHORITY FROM HIS PRINCIPAL TO EXECUTE SAME; IN THE ABSENCE OF AUTHORITY THE SIGNER AGREES THAT HE SHALL BE OBLIGATED HEREUNDER AS CUSTOMER.

Customer's Name (Print) American Smelting & Refining Co.  
 Invoice Mailing Address \_\_\_\_\_ (P.O. BOX OR STREET) \_\_\_\_\_ (CITY) \_\_\_\_\_ (STATE) \_\_\_\_\_ (ZIP CODE)  
 By [Signature] SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE (TITLE AND ADDRESS IF EXECUTED BY CUSTOMER'S REPRESENTATIVE)

THE ESTIMATED CHARGES AND DATA SHOWN BELOW ARE SUBJECT TO CORRECTION BY SCHLUMBERGER CONTROLLER'S DEPARTMENT

Loc Name	Unit No.	Standby Time	Total	Hr.	Time Charges	Left Dock		Ret Dock		Total Hours	Free Hours	Charged Hours		
						Date	Time	Date	Time					
Loc Code <u>4114</u>	<u>5625</u>		Allowed	Hr.	Crew									
Loc Terr Job in <u>ARIZONA</u>	Land <input type="checkbox"/> Offshore <input type="checkbox"/>		Charged	Hr.	Req Equipment									
Actual R.T. Mileage <u>250</u>	from <u>ARRIZ</u>		Drive Time	Hr.	Sp Eq									
Mileage Charged <u>250</u>	from _____		Marine Travel	Hr.										
Time Set by Client	Date	Time	Job Code	Job Type	Run No.	Item	Quantity	Unit Price	Amount	First Reading	Last Reading	Footage Delivered	Equipment	Serial Number
			<u>037</u>	<u>I</u>		Service Charge		<u>200</u>	<u>200.00</u>					
Left Hdqr.						Depth Charge	<u>1291</u>	<u>.13</u>	<u>250.00</u>	<u>MIN</u>				
						Operation Charge	<u>1291</u>	<u>.10</u>	<u>150.00</u>	<u>MIN</u>				
Loc <u>4/8</u>	<u>1900</u>		<u>1097</u>	<u>Log Distance Charge</u>					<u>61.00</u>					
Begin Operation	<u>2100</u>													
Finish Operation	<u>1100</u>													
Oper Time	<u>2</u>	Hr.												
Standby Time		Hr.	Open Hole Job <input type="checkbox"/>	Cased Hole Job <input type="checkbox"/>		Mileage	<u>500</u>	<u>.75</u>	<u>450.00</u>					
									State Tax					
									Estimated Chg	<u>1121.00</u>				
						Depth Charge	<u>1291</u>	<u>.15</u>	<u>300.00</u>	<u>MIN</u>				
						Operation Charge	<u>1291</u>	<u>.12</u>	<u>190.00</u>	<u>MIN</u>				
Begin Operation	<u>4/8</u>	<u>1400</u>	<u>1097</u>	<u>Log Distance Charge</u>					<u>75.00</u>					
Finish Operation	<u>1200</u>								<u>55.00</u>	<u>1091</u>	<u>Surf</u>	<u>1291</u>		
Oper Time	<u>2</u>	Hr.					<u>500</u>	<u>.75</u>	<u>450.00</u>					
Standby Time		Hr.												
									State Tax					
									Estimated Chg	<u>1260.00</u>				
						Depth Charge			<u>4381.50</u>					
Begin Operation														
Finish Operation														
Oper Time		Hr.	Open Hole Job <input type="checkbox"/>	Cased Hole Job <input type="checkbox"/>										
Standby Time		Hr.												
									State Tax					
									Estimated Chg	<u>2550.00</u>				
Begin Operation														
Finish Operation														
Oper Time		Hr.												
Standby Time		Hr.												
									State Tax					
									Estimated Chg					
Begin Operation														
Finish Operation														
Oper Time		Hr.												
Standby Time		Hr.												
									State Tax					
									Estimated Chg					
Lv Loc	<u>718</u>	<u>1500</u>	Open Hole Job <input type="checkbox"/>	Cased Hole Job <input type="checkbox"/>										
Lv Dock														
									State Tax					
									Estimated Chg					
Ret. Hdqr.														
									Special Agreement No.					
Total Trip Time		Hr.												
									ESTIMATED TOTAL CHARGE					
									Witnessed by					

3-CUSTOMER

The service(s) and/or equipment covered by this service order have been performed or received.

RECEIVED AT WELL

NO





INVOICE

# Schlumberger Well Services

A DIVISION OF SCHLUMBERGER TECHNOLOGY CORPORATION

CHECK MAILING ADDRESS — LOCK BOX 2183  
CORRESPONDENCE MAILING ADDRESS — P. O. BOX 2175  
HOUSTON, TEXAS 77001

THE HIGH PERFORMANCE COMPANY

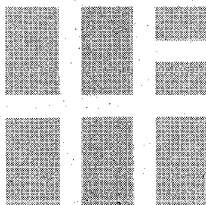
K.V.D.S.  
APR 23 1971

AMERICAN SMELTING & REFINING CO.  
BOX 5747  
TUCSON ARIZONA

TERMS  
NET CASH  
NO DISCOUNT ALLOWED

INVOICE DATE	SERVICE ORDER DATE	SERVICE ORDER NO.	YOUR ORDER NO.	INVOICE NO.	AMOUNT
01-08-71	04-08-71	27917		4-5357	
STATE	FIELD	LEASE			
ARI	SUPERIOR EAST	PCA			
	LOCATION	WELL	OFFSHORE ZONE		
	SEC 23 T1S R13E	1			

00	DEPTH DETERMINATION				
	SERVICE CHARGE				200.00
080	FT MIN DEPTH CHG				200.00
	OPER CHG				200.00
	10% DISTANT OPERATION				60.00
					660.00



## Schlumberger

# Thank You!

CUSTOMER	ENGINEER	LOCATION
02043	033268	4114

CHECK MAILING ADDRESS — LOCK BOX 2183  
CORRESPONDENCE MAILING ADDRESS — P. O. BOX 2175  
HOUSTON, TEXAS 77001

TOTAL CHARGE \$  
PAY THIS AMOUNT

5

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

April 12, 1971

TO: W. E. Saegart

FROM: J. D. Sell

Re: SCHLUMBERGER LOGGING RESULTS  
SUPERIOR EAST PROJECT  
PINAL COUNTY, ARIZONA

On April 8 and 9, Schlumberger logged three of the previous holes, namely DCA-2, DCA-3 and OF-1A. M-1 could not be logged, without excessive costs, due to the casing being in the hole and not removed prior to Schlumberger's return to Farmington.

The logs run include Induction (showing resistivity and conductivity) and the Formation Density Log (showing bulk density, gamma ray and caliper).

Total depth of hole and the depth reached by logging follows:

<u>Hole Number</u>	<u>Logged Depth</u>	<u>Drilled Depth</u>
DCA-2	1291	1772
DCA-3	680	3000 (no Log)
OF-1A	1859	2150

Formational units on previous logs include:

DCA-2	0 - 1095	T Dacite
	1095 - 1300(?)	T Early Volcanics
	1300(?) - 1460	T Whitetail Conglomerate
	(Note: No sample returns from 1270 - 1340)	
DCA-3	0 - 1400	Dacite
OF-1A	0 - 1635	T Dacite
	1635 - 1670	T vitrophyre
	1670 - 1790	T Dacite
	1790 - 1840	T vitrophyre
	1840 - 1875	T Dacite

Although several breaks may be picked out on the logging, they are not readily correlated with the geologic interpreted logs available. Unfortunately, the logging did not traverse the entire dacite unit.

Logging of M-1 was not undertaken for several reasons but primarily because the casing was not pulled, and to keep the logging crew over until

Tuesday (when the hole may have the casing removed) would involve as much money as it will cost to bring them back and log the deepened hole. The newly cored hole will give us much better control on the geologic parameters.

*James W. Sell*  
J. D. Sell ✓

JDS:sh

cc: WLKurtz w/logs

WRITE IT—DON'T SAY IT

DATE

4/14/71

TO

Jim Sell

FROM

Mike Marton

SUBJECT

Schlumberger Evaluation

Jim; Would you fill out the enclosed Service Evaluation forms when it is convenient for you. I will be looking forward to logging your next wells.

Thank you

Mike Marton

AVOID ORAL ORDERS

4/19/71

Oral Orders are often forgotten or misunderstood. Use this blank for all important instructions or requests.

Miko Martin

Schlumberger Well Services

Your packet arrived today & I appreciate the set of books. Hope to know a little more about things next time. Two rigs going so we should have some new info shortly. Will look forward to our meeting, again.

JD Almond  
Kent McKinney

Date

April 19, 1971

Signed

Jim Sell



AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

April 20, 1971

FILE MEMORANDUM

Schlumberger Logs  
Superior East Project  
Pinal County, Arizona

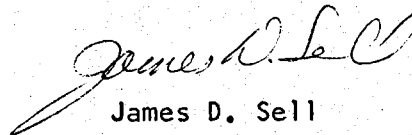
The final logs (ten copies), and the mylar master films for the Compensated Density Log (including caliper and gamma ray profiles) and the Induction Log for drill holes OF-1A and DCA-2 have been received from Schlumberger.

The Township designation on all logs should be corrected to T 1 S, NOT T 15.

The bore-hole bit record on DCA-2 (Density Log) should be 7-7/8" bit, not 9" bit.

These corrections have been made on the mylar masters.

Other than labeling the various curves, no changes have been made in the curves themselves nor was any written interpretation given.

  
James D. Sell

JDS:van

cc: WLKurtz

# GEOPHYSICAL DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

April 28, 1971

RECEIVED  
APR 29 1971  
S. W. U. S. EXPL. DIV.

Mr. Jim Sell  
Tucson Office

Dear Jim:

Attached find a drawing of the antenna support fixture which we discussed at Superior East.

If you have trouble getting these fabricated locally, let me know and we will make them up here.

Thanks.

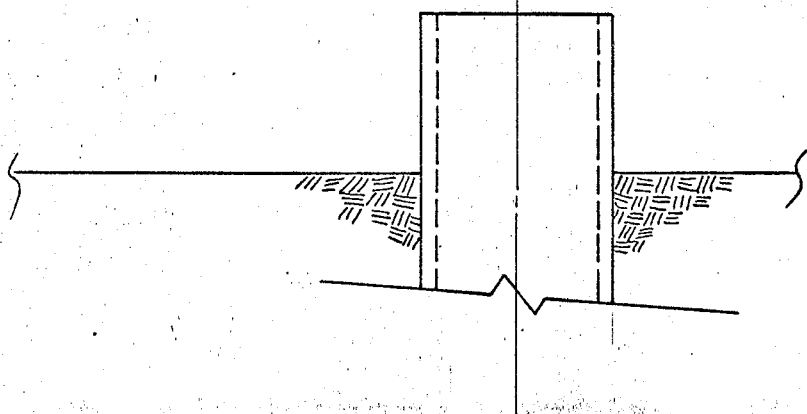
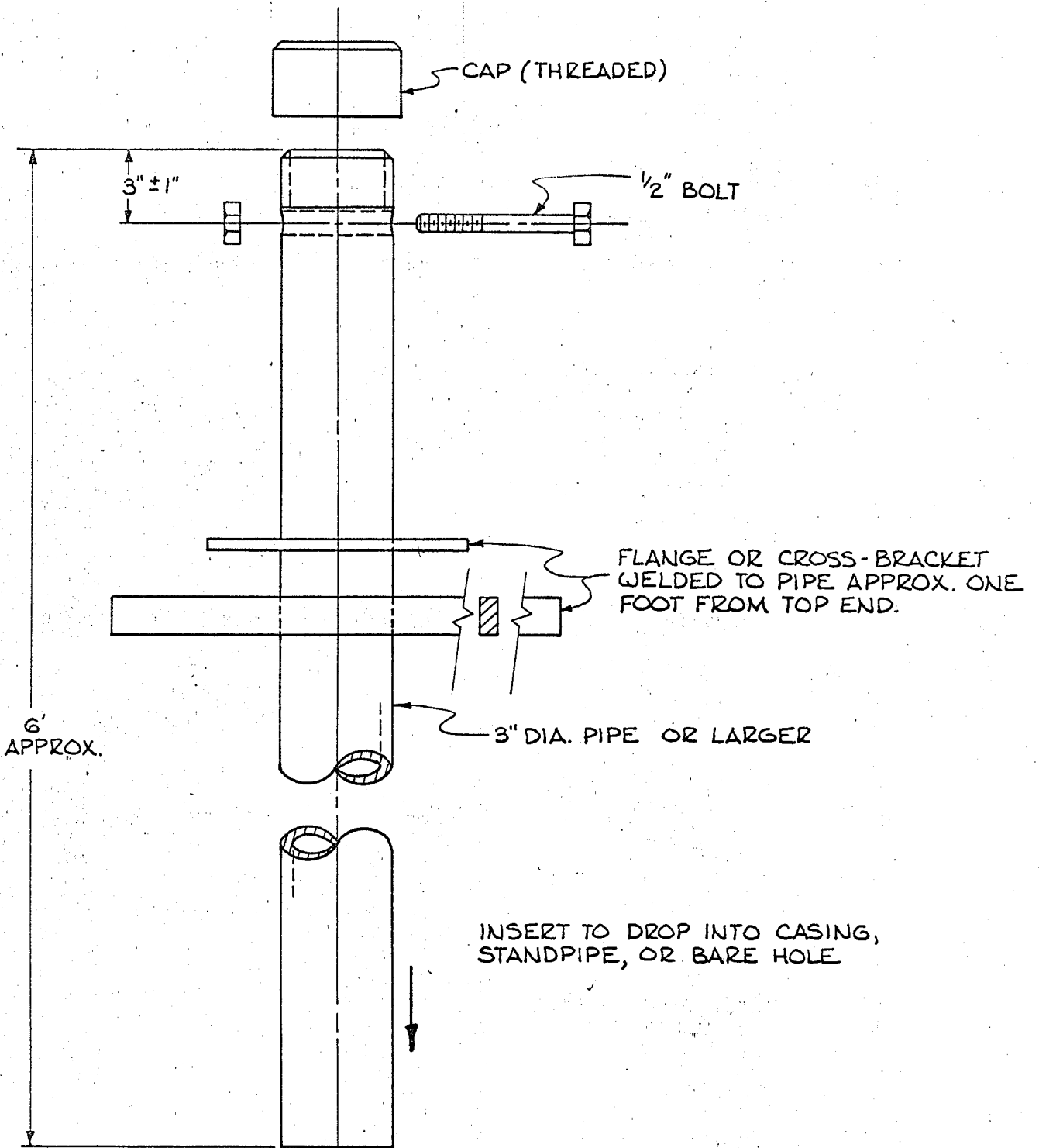
Yours very truly,



C. K. MOSS

CKM:am  
Enc.

cc: W. G. Farley, w/enc.  
R. Cummings, w/enc.



PIPE INSERT  
 TO SUPPORT AND  
 PROTECT ANTENNA  
 WIRES IN DRILL HOLE

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

August 6, 1971

TO: K. A. von den Steinen  
FROM: R. B. CummingsGeophysical Survey  
Distribution of Charges  
Superior East Project

On July 8, 1971, personnel from the Geophysical Division in Salt Lake City installed a geophysical electrode in drill hole M-1A at the Superior East Project. The Boyles Brothers drill rig and crew was utilized during the installation of the electrode and in preparation for its installation. At that time, the Boyles Brothers rig was working on an hourly rate of \$30. per hour. A total of 24 hours was consumed in the geophysical work. The Sale Lake City office has agreed to pay for the use of the drill rig and crew.

Will you please see that these charges (\$720.00) on the Boyles Brothers July billing are charged to the Geophysical Division of the Salt Lake City office.

*R. B. Cummings*  
R. B. Cummings

RBC:van

cc: CKMoss  
JDSell

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

November 22, 1971

TO: K. A. von den Steinen

FROM: R. B. Cummings

Geophysical Survey  
Distribution of Charges  
Superior East Project

On November 5, 10, and 11, 1971 Mr. Blackum from the Geophysical Division in Salt Lake City installed two geophysical electrodes in drill hole A-4 at the Superior East Project. The Boyles Brothers drill rig and crew were utilized for a total of 27 hours during the installation. During that time the Boyles Brothers rig was working on an hourly rate of \$30.00 per hour. The Geophysical Division has agreed to pay for the use of the rig.


Will you please see that these charges (\$810.00) on the Boyles Brothers November billing are charged to the Geophysical Division?

*R. B. Cummings*  
lad

R. B. Cummings

RBC:lad

cc: CKMoss

JDSell 



CENTURY GEOPHYSICAL CORPORATION

PAUL M. LAIRD  
SUPERVISOR - EXPLORATION LOGGING

PHONE (505) 287-2926  
TWX 910-982-1721

POST OFFICE BOX 2907  
MILAN, NEW MEXICO 87020

CENTURY GEOPHYSICAL CORPORATION

MINERALS LOGGING DIVISION

1730 Glenarm, Room 712  
Denver, Colorado 80202  
Phone: (303) 222-2689

*Paul M. Laird*  
Supervisor  
(Home ph. (505) 876-2348)

Area Offices

Grants, New Mexico  
Phone: (505) 287-2926  
TWX: 910 - 982-1721

Corpus Christi, Texas  
Phone: (512) 854-1114

Casper, Wyoming  
Phone: (307) 234-5321  
TWX: 910 - 949-4266

PRICE SCHEDULE

(Effective January 1, 1972)

I. BASIC ANALOG LOGGING: GAMMA RAY ("ACCUR-LOG" - CRYSTAL DETECTOR)  
RESISTANCE AND SELF POTENTIAL:

- A. Footage Rate - Minimum logging & hole charge for each trip to logging location \$ 45.00  
*Set-up per hole location* \$ 10.00
1. Shallow Holes (300 Ft. or less): \$ 1.00 per hole  
0.15 per foot
  2. Deeper Holes (300 Ft. or more): \$ 10.00 per hole  
0.115 per foot
  3. Mileage (Round trip from Area Office) \$ 0.25 per mile after first 50 miles
  4. Standby (Time in excess of normal interval required for pulling drill string.) \$ 10.00 per hour  
*(1 hr per 1000 ft - free time).*
- B. Term Rate: *Temperature \$0.10 ft. recorded; +0.03/ft for unrecorded portions*
1. Operation Location other than Area Offices \$ 12.00 per day
  2. Weekly (50 Hours) \$ 900.00  
0.035 per foot
  3. Monthly (216 Hours) \$2650.00  
0.035 per foot



CENTURY GEOPHYSICAL CORPORATION

MINERALS LOGGING DIVISION

1730 Glenarm, Room 712  
Denver, Colorado 80202  
Phone: (303) 222-2689

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Phone: (512) 854-1114

Casper, Wyoming  
Phone: (307) 234-5321  
TWX: 910 - 949-4266

---

PRICE SCHEDULE

(Effective January 1, 1972)

I. BASIC ANALOG LOGGING: GAMMA RAY (G.M. DETECTOR)  
RESISTANCE AND SELF POTENTIAL:

A. Footage Rate - Minimum logging & hole charge for each trip to logging location	\$ 40.00
1. Shallow Holes (300 Ft. or less)	\$ 1.00 per hole \$ 0.13 per foot
2. Deeper Holes (300 Ft. or more)	\$ 10.00 per hole \$ 0.10 per foot
3. Mileage (Round trip from Area Office)	\$ 0.25 per mile after first 50 miles
4. Standby (Time in excess of normal interval required for pulling drill string.)	\$ 10.00 per hour
B. Term Rate:	
1. Operation Location other than Area Offices	\$ 12.00 per day
2. Weekly (50 hours)	\$ 850.00 \$ 0.025 per foot
3. Monthly (216 hours)	\$2,500.00 \$ 0.025 per foot

II. DIGITAL INSTRUMENTATION:

Footage and gamma counts per second  
at one-half foot intervals:

- A. Perforated tape processed into punch card format (suitable for Century's "Grade" Program) with 80-80 listing.
- B. Numerical print-out on paper tape.

1. Footage Rate:

Set up - <del>Deep</del>	\$ 15.00	per hole	(Additional)
.. - Shallow	5.00	.. ..	.. ..
Digitized zones of interest	\$ 0.05	per foot	(Additional)

2. Term Rate:

a) Weekly (50 Hours)	\$250.00		
Digitized zones of interest	\$ 0.025	per foot	<u>G-M Detector</u>
	\$ 0.035	per foot	<u>Accur-log</u>
b) Monthly (216 Hours)	\$750.00		
Digitized zones of interest	\$ 0.025	per foot	<u>G-M Detector</u>
	\$ 0.035	per foot	<u>Accur-log</u>

III. DIRECTIONAL HOLE SURVEY:

- A. Directional Survey Only (Normal mileage and standby charges apply)
  - \$ 10.00 per hole
  - \$ 0.10 per foot
- B. Directional Survey in conjunction with basic logging:
  - 1. Footage Rate: \$ 0.10 per foot
  - 2. Term Rate: \$ 10.00 per hole  
\$ 0.10 per foot

IV. ADDITIONAL BORE HOLE SERVICES AVAILABLE.

Prices for these services quoted upon request.

GENERAL TERMS AND CONDITIONS APPLY



Nº 77431

# CORE LABORATORIES, INC.

Petroleum Reservoir Engineering  
Box 10185

DALLAS, TEXAS 75207

9 MARCH 1972

K.V.D.S.  
MAR 13 1972

SOLD TO

AMERICAN SMELTING & REFINING COMPANY  
ATTN: MR. W. L. KURTZ  
BOX 5747  
TUCSON, ARIZONA 85703

ORDER NO.  
DATE 2/5/72  
FIELD  
WELL NO.

COUNTRY & STATE  
722 JOB NO. 2528

CLIENT NO. 3182-3

SERVICE	QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1B	3	HORIZONTAL PERMEABILITY	4.00	12.00
	3	VERTICAL PERMEABILITY	4.00	12.00
	3	POROSITY	5.00	15.00
		4% NEW MEXICO SALES TAX		1.56
		APPROVED FOR PAYMENT		
		By: <u>[Signature]</u> (Signature)		
		<u>change to Superior East</u>		

## ORIGINAL

TOTAL \$ 40.56

ACCOUNT PAYABLE IN U.S. CURRENCY AT DALLAS, TEXAS

TERMS: NET CASH 30 DAYS

INVOICE Nº 7743

Retain This Invoice for Your Files; We Do Not Send Statements.

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

RECEIVED

MAY 8 1972

S. W. U. S. EXPL. DIV.

May 5, 1972

W. L. K.

MAY 8 1972

Mr. W. L. Kurtz  
Tucson Office

E. M. SURVEY  
SUPERIOR EAST, ARIZONA

Dear Bill:

As you know, our recent attempt to make an E. M. survey at Superior was unsuccessful.

Both of the holes were tried, and in each case arcing occurred between the wires in the hole at comparatively low power settings. It is apparent that the insulation of the wires breaks down under the conditions of suspension in the holes.

I doubt that the method, even with a sound antenna, would have much chance of giving significant exploration information, considering the depths involved. However, we would like to make one more try, using A-2.

This time we will use steel-reinforced wire to reduce stretching in the antenna. Also, prior to arranging for airborne coverage, we would plan to make measurements with a simple surface receiver to determine whether or not an adequate E. M. field is coming out of the ground.

Yours very truly,



C. K. MOSS

CKM:am

# EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

June 13, 1972

MEMO TO C. K. MOSS:




## SURFACE E. M. MEASUREMENTS AROUND SUPERIOR EAST DDH #A2

During the week June 5 to 9 an electrode was placed in A2 and surface measurements were taken along an east-west profile. Refer to location map and Figure 1.


### Loading of Electrode

The wire proceeded normally down the hole until the water table (?) was reached at 831 feet. From this point on progress slowed until at around 4,200 feet the downward rate was less than one foot per hour. The electrode settled in the hole from Tuesday to Friday morning when the surface measurements commenced. At this time the 100 foot long electrode was at a depth of 4,350' to 4,450'. The upper surface of the electrode was 235' below the uncased portion of the hole at this point.

### Antenna Specifications

Antenna Impedance - 52   
Wire Impedance - 43   
Dipole Impedance - 9   
Dipole Size - 39 feet

### Transmitter Output

Antenna Current - 15 AMPS  
Output - 750 VAC, 400 Hertz  
Power - 11,250 watts  
Power dissipated across wire - 9,288 watts  
Power dissipated across dipole - 1,962 watts  
Output Transformer tap - 64 

### Observations

The signal was very weak at the surface, being measurable only within 800 feet of the hole. Three possible reasons for the weak signal



are: (1) high current density in the immediate vicinity of the 39' dipole, (2) depth of the hole and corresponding attenuation of the signal by the time it reaches the surface, and (3) power being dissipated across the wire instead of into dipole.

One anomalous reading was recorded at 2,000' west of the hole. The source is the telephone line.

Higher afternoon background noise was noted and the source of this is probably atmospheric conditions prevailing this time of the year.

Recommendations

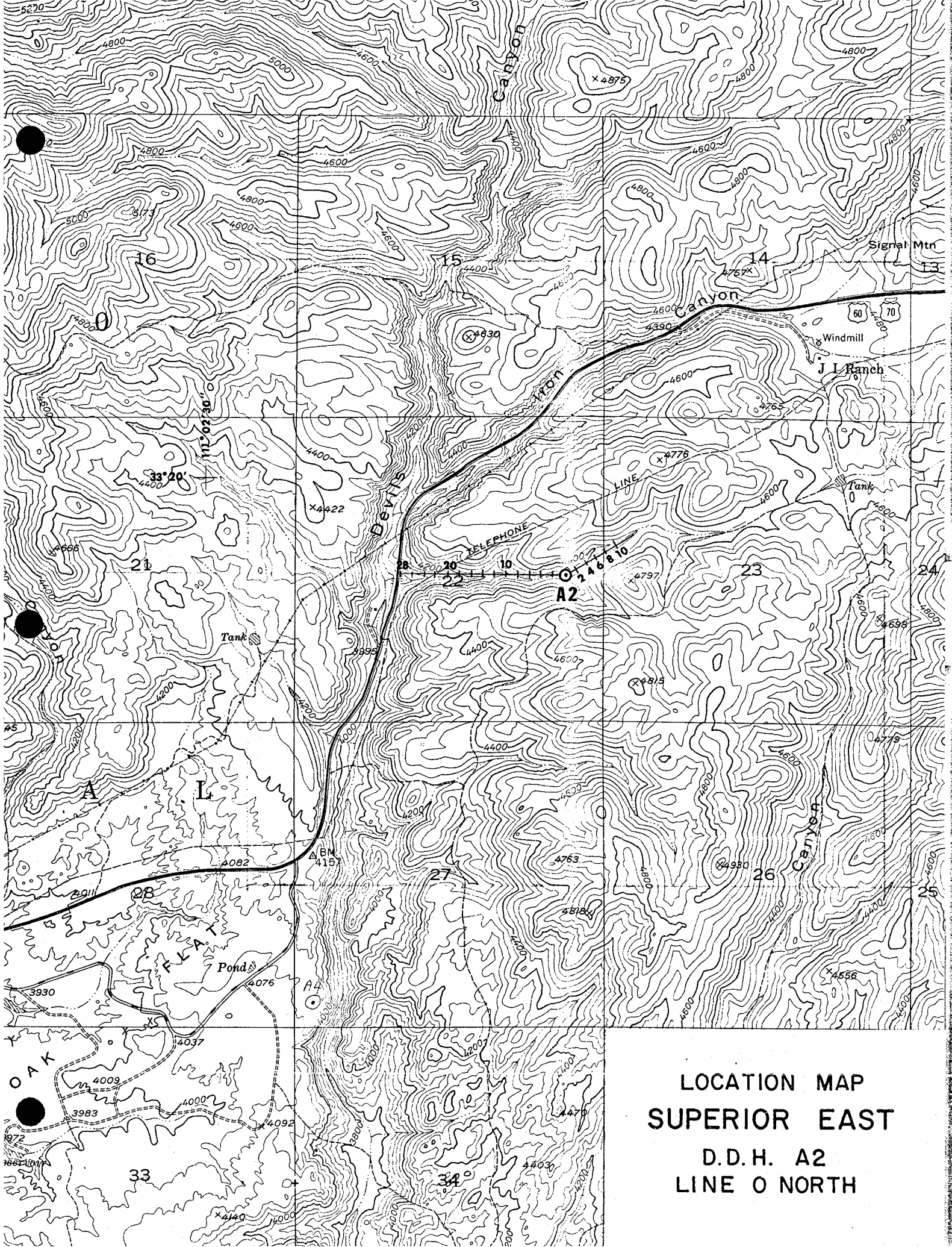
If surface E. M. around additional deep DDH's is undertaken in Arizona, a larger dipole and heavier wire could improve the signal strength at the surface.

Some initial E. M. measurements around drill holes could determine if the field strength was sufficient for airborne E. M. and to help verify the airborne results.

FB:am  
Encls.

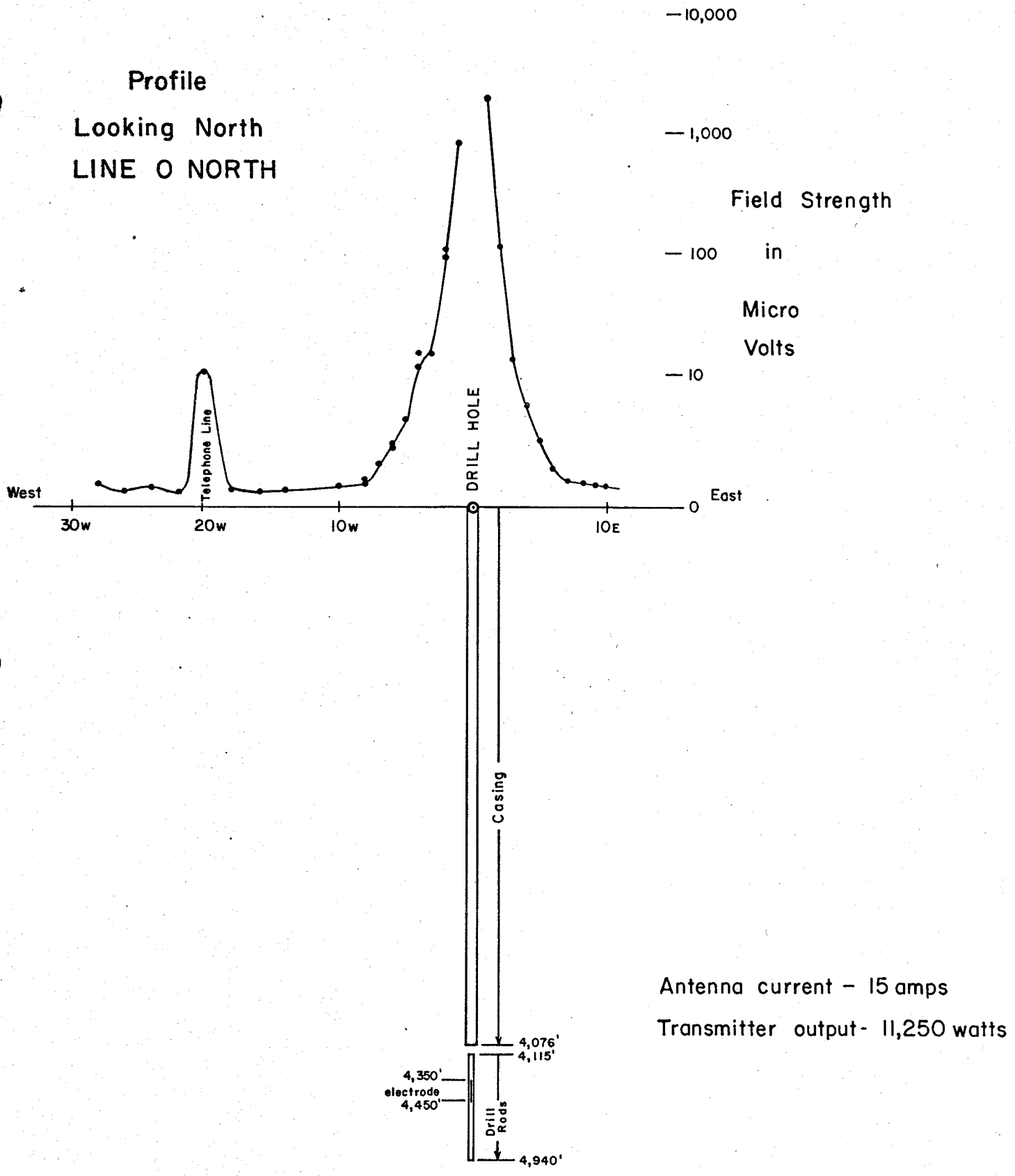
  
FRANK BLACKHAM

cc: W. L. Kurtz, w/enc.  
✓ J. D. Sells "



LOCATION MAP  
SUPERIOR EAST  
D.D.H. A2  
LINE 0 NORTH





E.M. FIELD STRENGTH TEST  
SUPERIOR EAST  
D.D.H. A2 - PROFILE LINE 0 NORTH  
SCALE 1" = 1000'  
JUNE 9, 1972

FIG. 1



AMERICAN SMELTING AND REFINING COMPANY  
SOUTHWESTERN EXPLORATION DIVISION  
P. O. BOX 5747, TUCSON, ARIZONA 85703

1150 NORTH 7TH AVENUE  
TELEPHONE 602-792-3010

May 30, 1973

Mr. Charles Elliot  
Elliot Geophysical Company  
4653 East Pima  
Tucson, Arizona 85716

Dear Chuck:

This letter is a request for a standard specific gravity determination on twenty-eight samples of core.

Please place the following Purchase Order number on all correspondence concerning the determination: PO# T-73-261.

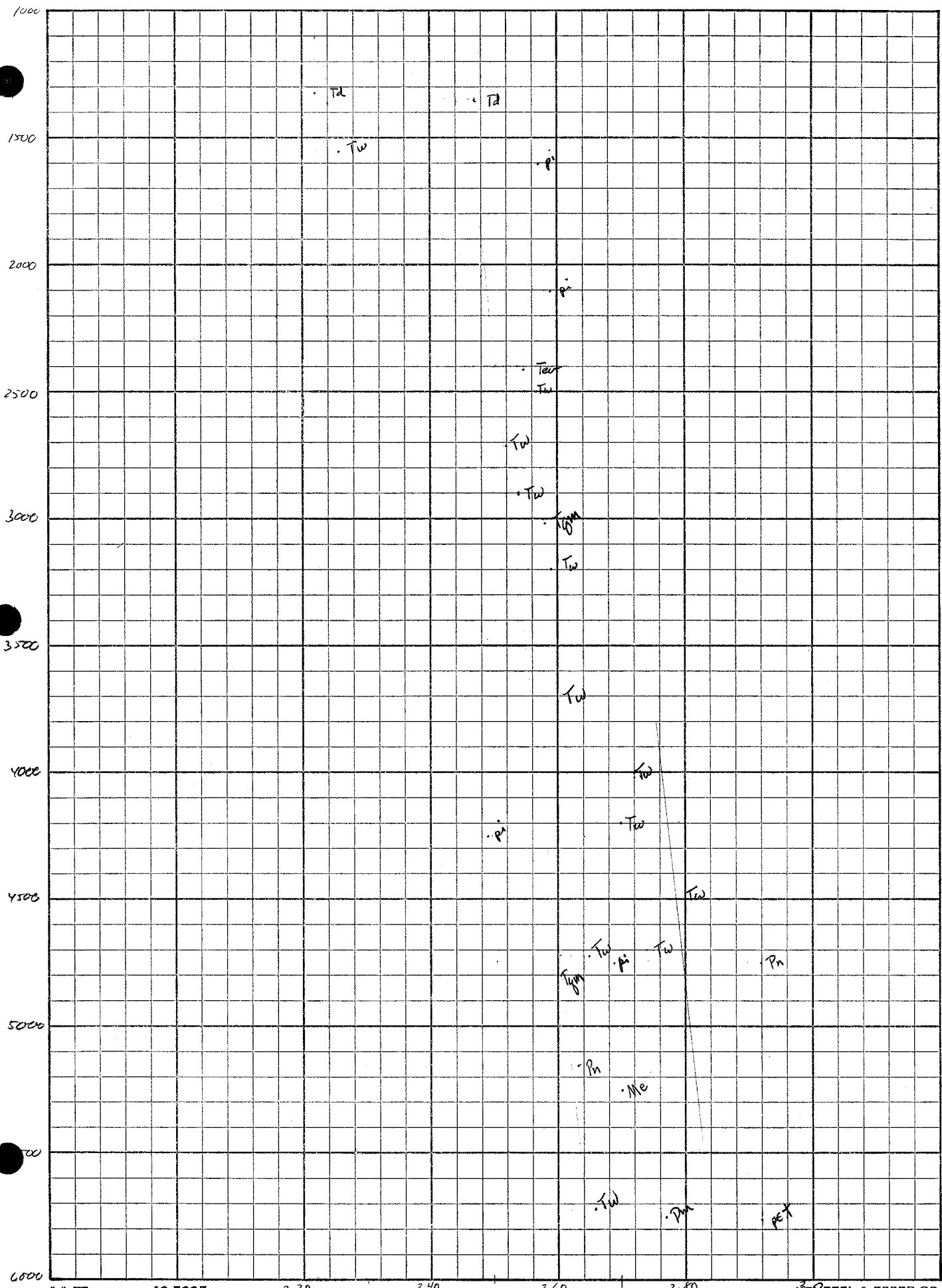
All core is to be returned.

Sincerely,

A handwritten signature in cursive script that reads "James D. Sell".

James D. Sell

JDS:1b



# ELLIOT GEOPHYSICAL COMPANY

*Mining Geophysical Engineers*

4653 EAST PIMA STREET

TUCSON, ARIZONA 85712

TEL. (602) 793-2421

May 30, 1973

AS2P

Mr. James D. Sell  
ASARCO  
Southwestern Exploration Division  
P. O. Box 5747  
Tucson, Arizona 85703

Dear Jim:

Re: Physical Property Determinations - Density

The 28 core samples received from you on May 30, 1973 (your PO#T-73-261), have been run in the physical property laboratory to determine their density.

The density determinations of these samples were determined following conventional laboratory procedures for determining rock densities utilizing a volumetric method. The results of the laboratory density determinations are reported in grams per cubic centimeter as shown on the attached table. The accuracy of this technique of measurement is to better than  $\pm 0.01$  grams per cubic centimeter.

The samples are being returned to you as requested.

Respectfully submitted,

ELLIOT GEOPHYSICAL COMPANY

*Charles L. Elliot*

Charles L. Elliot



CLE:bt  
attachment: report  
distribution: James D. Sell

ROCK PHYSICAL PROPERTY LABORATORY DETERMINATIONS

CORE SAMPLES

for

ASARCO  
Tucson, Arizona  
PO# T-73-261

<u>Sample Number</u>	<u>Density in gms/cc</u>
1	2.22
2	2.47
3	2.55
4	2.55
5	2.54
6	2.59
7	2.70
8	2.74
9	2.25
10	2.72
11	2.79
12	2.52
13	2.60
14	2.65
15	2.66
16	2.57
17	2.59
18	2.49
19	2.69
20	2.92
21	2.63
22	2.70
23	2.79
24	2.77
25	2.92
26	2.58
27	2.60
28	2.64



**ELLIOT GEOPHYSICAL COMPANY**

*Mining Geophysical Engineers*

4653 EAST PIMA STREET

TUCSON, ARIZONA 85712

TEL. (602) 793-2421

May 30, 1973

ASARCO  
Southwestern Exploration Division  
P. O. Box 5747  
Tucson, Arizona 85703  
Attention: James D. Sell

AS2P

May, 1973

Physical Property Laboratory Determinations  
(your PO# T-73-261)

Laboratory Services

\$ 67.20

*OK for Payment  
Superior East  
MA-0010  
530-25*

ALL ACCOUNTS DUE AND PAYABLE UPON RECEIPT

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

June 5, 1973

Mr. Jim Sell  
Tucson Office

GEOPHYSICS, DACITE PLATEAU

Dear Jim:

Jerry Montgomery and I have discussed the question of gravity on the Dacite Plateau in the light of the density determinations you have made. The respective rock density values seem to put a serious limit on the use to which gravity can be put there. However, we would like to give it more thought after you distribute more details on the subject. Can you also provide us with a sketch or two on hypothetical sections which you might expect on the Plateau?

We would like to suggest consideration of a different method which might be helpful in locating areas of shallower pre-mineral rock on the Plateau. This method is an outgrowth of the old magneto-telluric concept. You may be familiar with the latter which used heavy, bulky, equipment to make measurements of apparent resistivity down to tens of thousands-of-feet into the ground. The new equipment is designed to work to thousands-of-feet, only, and has been redesigned so as to be portable with one man.

This method would certainly not give depths to within a few percent, but it might well give a general picture of pre-mineral bedrock form.

Let us know if you would like to pursue this possible application further.

Yours very truly,



C. K. MOSS

CKM:am

cc: W. L. Kurtz  
J. R. Montgomery



AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

June 6, 1973

TO: W. L. Kurtz

FROM: J. D. Sell

Specific Gravity Determinations  
Diamond Drill Core  
Superior East Project  
Pinal County, Arizona

The following samples have been collected and were submitted to Mr. Charles Elliot of Elliot Geophysical Company for a Standard Specific Gravity determination. Only the Specimen Number was used as identification.

Specimen Number	Rock Type	Drill Hole Number	Footage	Core Comment	Specific Gravity
1	Dacite (Vitrophyric)	A-1	1310	NC	2.22
2	Dacite	A-5	1350	NX	2.47
3	Early Volcanics	M-1A	2405	NC	2.55
4	Whitetail, fine	M-1A	2500	NC	2.55
5	Whitetail, fine	M-1A	2902	NC	2.54
6	Whitetail, coarse	M-1A	3200	NX	2.59
7	Whitetail, coarse	M-1A	4202	NX	2.70
8	Whitetail, coarse	M-1A	4700	NX	2.74
9	Whitetail, tuffaceous	A-1	1551	NC	2.25
10	Whitetail, coarse	DCA-1A	4020	NX	2.72
11	Whitetail, coarse	DCA-1A	4500	NX	2.79
12	Whitetail, fine, muddy-grit	A-4	2716	NX (split)	2.52
13	Whitetail, coarse	A-4	3716	NX	2.60
14	Whitetail, coarse	A-4	4716	NX	2.65
15	Whitetail, gritty	A-4	5716	NX (split)	2.66
16	Pinal Schist	A-1	1603	NC	2.57
17	Pinal Schist	A-1	2113	NC	2.59
18	Pinal Schist	A-2W	4250	NX (split)	2.49
19	Pinal Schist	A-2W	4748	NX (split)	2.69
20	Naco Lms	DCA-1A	4753	NX	2.92
21	Naco Lms (shaley)	M-1A	5160	NX	2.63
22	Escabrosa Lms	DCA-1A	5250	NX	2.70
23	Escabrosa Lms	A-4	6360	NX (split)	2.79
24	Martin Lms	DCA-1A	5747	NX	2.77
25	Troy Qtzite	DCA-1A	5768	NX	2.92
26	Qtz Monzonite	M-1A	3015	NX	2.58
27	Qtz Monzonite	A-2W	4877	NX (split)	2.60
28	Qtz Monzonite	A-4	6663	NX (split)	2.64

June 6, 1973

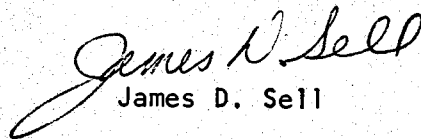
The reported values have been tabulated in three sections: Table 1 shows the rock unit, depth, and density value; Table 2 lists the rock unit, density value spread, and the arithmetic average of the density value; Attachment A plots the values in the drill hole cross-sections.

As noted, the values in the post-mineral units show a relative consistent increase in density value versus depth of sample until about 4500 feet, where the values show a reversal.

The value spread also suggests that any rock unit density value (except for the one high density value for Naco and one in Troy) could be within the spread of values determined for Whitetail Conglomerate and, thus, a gravity determination would be unable to separate the various units with a similar value.

The cross-sections suggest that bedrock in holes A-2W, A-4, DCA-1A, and M-1A would not have been picked by gravity measurements as known. Hole A-1 probably has sufficient density contrasts between dacite and schist and could be interpreted. However, as pointed out previously, the average or spread of schist values lie within the near spread and average of Whitetail samples and would be difficult to separate in most cases. Similarly, the light Whitetail tuff sample would suggest that it would be difficult to separate it from the dacite at any one point.

On the basis of the known reported density values, it is doubtful that any valid interpretation of surface gravity measurements can be suggested, nor could interpretations be made whereby values and units could be projected any distance.

  
James D. Sell

JDS:1b  
Attachs.

cc: CKMoss - w/attachs.

ROCK PHYSICAL PROPERTY LABORATORY DETERMINATIONS

CORE SAMPLES

for

ASARCO  
Tucson, Arizona  
PO# T-73-261

<u>Sample Number</u>	<u>Density in gms/cc</u>
1	2.22
2	2.47
3	2.55
4	2.55
5	2.54
6	2.59
7	2.70
8	2.74
9	2.25
10	2.72
11	2.79
12	2.52
13	2.60
14	2.65
15	2.66
16	2.57
17	2.59
18	2.49
19	2.69
20	2.92
21	2.63
22	2.70
23	2.79
24	2.77
25	2.92
26	2.58
27	2.60
28	2.64

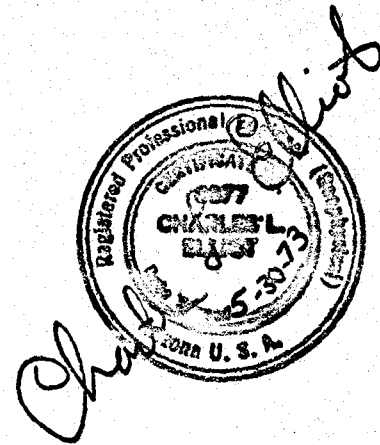
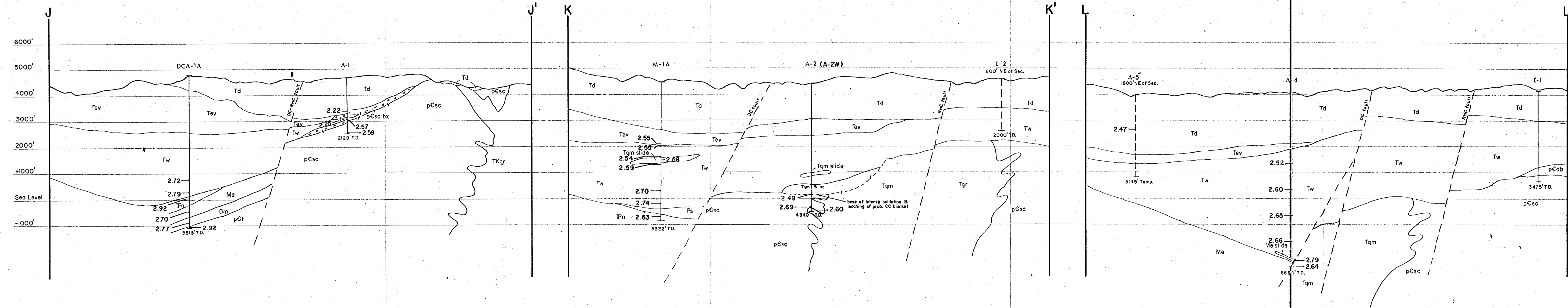


TABLE 1 -- Rock Unit: Depth vs. Density Value

<u>Unit</u>	<u>Depth</u>	<u>Value</u>
Td	1310	2.22
Td	1350	2.47
Tw	1551	2.25
pēpi	1603	2.57
pēpi	2113	2.59
Tev	2405	2.55
Tw	2500	2.55
Tw	2716	2.52
Tw	2902	2.54
Tqm	3015	2.58
Tw	3200	2.59
Tw	3716	2.60
Tw	4020	2.72
Tw	4202	2.70
pēpi	4250	2.49
Tw	4500	2.79
Tw	4700	2.74
Tw	4716	2.65
pēpi	4748	2.69
Pn	4753	2.92
Tqm	4877	2.60
Pn	5160	2.63
Me	5250	2.70
Tw	5716	2.66
Dm	5747	2.77
pēt	5768	2.92
Me	6360	2.79
Tqm	6663	2.64

TABLE 2 -- Rock Unit: Density Spread and Arith. Average

<u>Unit</u>	<u>No. of Samples</u>	<u>Spread</u>	<u>Arith. Average</u>
Td	2	2.22-2.47	2.35
Tev	1	2.55	2.55
Tw, tuff	1	2.25	2.25
Tw, fine	3	2.52-2.55	2.54
Tw, coarse	8	2.59-2.79	2.68
(Tw-All)	(12)	(2.25-2.79)	(2.61)
Tqm	3	2.58-2.64	2.61
Pn	2	2.63-2.92	2.78
Me	2	2.70-2.79	2.75
Dm	1	2.77	2.77
pēt	1	2.92	2.92
pēpi	4	2.49-2.69	2.59



**SPECIFIC GRAVITY VALUES**  
 (GRAMS PER CUBIC CENTIMETER)  
 C.L.E. - J.D.S.      JUNE 4, 1973

**CROSS SECTIONS THRU  
 DRILL HOLES**  
 (LOOKING NORTHEASTERLY)  
**SUPERIOR EAST  
 PINAL COUNTY, ARIZONA**  
 SCALE: 1" = 2000'  
 MARCH 1972      J.D. SELL

**EXPLORATION SERVICES DIVISION**

**3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119**

June 22, 1973

Mr. J. D. Sell  
Tucson Office

GRAVITY  
SUPERIOR EAST

Dear Jim:

After studying your data and sections of June 6, we, here, retain our skepticism that gravity would be of value to you on the Superior East Project.

Jerry Montgomery expresses his belief that you might obtain meaningful data for the Dacite and Early Volcanics, but from the top of the Whitetail downward conditions would be difficult to sort-out.

If you have man-power available you might carry out a survey in spite of the adverse information from densities. There is the possibility that the core samples do not give a true representation of bulk density. You have, at the same time, good section data with which to compare gravity results.

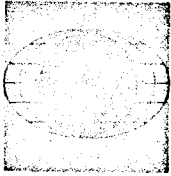
Yours very truly,



CKM:am

C. K. MOSS

cc: W. L. Kurtz  
J. R. Montgomery



HEINRICH'S GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA 85703. P. O. BOX 5964. PHONE: (602) 623-0578

November 13, 1973

Mr. Jim Sell  
American Smelting & Refining Co.  
P. O. Box 5747  
Tucson, AZ 85703

Dear Jim:

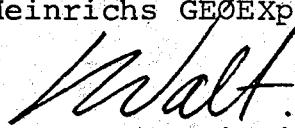
The enclosed technical data sheet is for your information and reference.

We just recently successfully completed an induced polarization resistivity <sup>survey</sup> utilizing this scheme in a drill hole approximately 3,000 feet deep.

This specific technique would not necessarily be the only one that might be applied in your post mineral dacite project, but it is one of the examples and I thought you might be interested in this sample for your personal files.

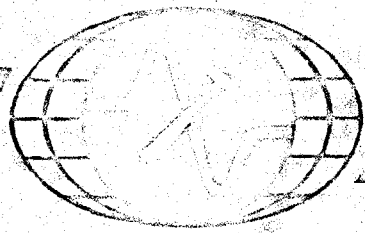
Best regards,

Sincerely,  
Heinrichs GEOEXploration Co.

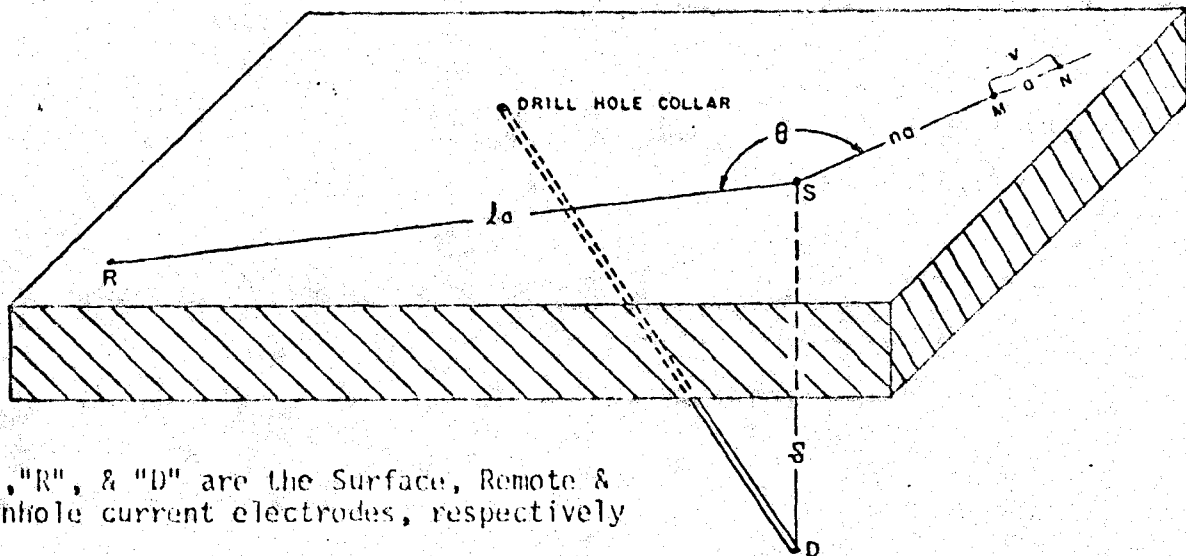
  
Walter E. Heinrichs, Jr.  
President

Encl: 1  
WEH:jh

P.S. More of these are available if desired.



DOWNHOLE RADIAL ARRAY GEOMETRY  
FOR  
INDUCED POLARIZATION-RESISTIVITY SURVEY



"S", "R", & "D" are the Surface, Remote & Downhole current electrodes, respectively

$$\rho_a / 2\pi = \left| \frac{aV}{I} \left[ \frac{1}{\sqrt{n^2 + d^2}} - \frac{1}{\sqrt{(n+1)^2 + d^2}} - \frac{1}{\sqrt{n^2 + l^2 - 2nl \cos \theta}} + \frac{1}{\sqrt{(n+1)^2 + l^2 - 2(n+1)l \cos \theta}} \right] \right|^{-1}$$

Where I = current in milliamps through D-R, S-R or S-D current electrode pairs  
V = voltage in millivolts across dipole M-N  
a = voltage dipole M-N length in feet  
n, d, & l are dimensionless

Then  $\rho_a / 2\pi$ , the apparent resistivity, will be in units of ohm-feet

Note: Equation is explicit for a D-R electrode pair survey

For an S-R survey,  $d=0$

& For an S-D survey,  $l=0$

Also: Position "S" is the normal-to-surface projection of "D"  
(not, in general, the drill hole collar)

The percent frequency effect (PFE), and the metallic conduction factor (MCF), are computed as usual:

$$PFE = \left( \frac{\rho_L - \rho_H}{\rho_H} \right) 100 \quad \& \quad MCF = \frac{1000 PFE}{\rho / 2\pi}$$

Where  $\rho_L$  &  $\rho_H$  are the lower frequency and higher frequency resistivities, respectively.



EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

November 28, 1973

Mr. Wm. Kurtz  
Tucson Office

Dear Bill:

Chris Ludwig of Heinrichs advised us that they were successful in getting the electrode into the hole on the Plateau. He then asked about our plans for I. P. work around the hole, saying that they would like to bid on the job.

I know little about the setting of the hole or of your ideas for prime target locations around the hole; consequently, I could give Ludwig little information.

As I have mentioned before, I feel that a weakness of the standard survey approach (which Hauck espouses) is in interpretational ambiguities in predicting the location of mineralization near the hole. One defect in Hauck's published cases is his failure to show readings taken on the opposite side of the hole from his target. In some cases the anomaly can show there.

In considering work for your hole, I would emphasize the fact that greater credence could be given to anomalies lying more than three-quarters of a mile from the hole. For this reason I would stress the importance of covering as great a radius as practicable, say two miles or as far as reliable readings can be made, from the hole.

For a project such as this it would be rather difficult to pre-set the full survey specifications; it would be more appropriate to set guidelines and then adjust coverage according to the kind of results obtained as work progressed.

I would be interested in hearing your ideas as to areas of best potential for coverage. Also, what areas around the hole might be excluded because of property, topography, geology, etc. ?

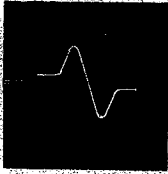
Yours very truly,



C. K. MOSS

CKM:am

cc: J. D. Sell ✓



## HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA 85703, P.O. BOX 5964, PHONE: (602) 623-0578

March 4, 1974

Mr. James D. Sell, Geologist  
S. W. Exploration Division  
American Smelting & Refining Company  
1130 N. 7th Avenue  
Tucson, Arizona 85705

Re: Downhole IP Survey  
Superior Area, Pinal County  
Arizona

Dear Mr. Sell:

In response to the telephone discussion with you last week, we herewith submit this proposal for conducting a downhole induced polarization survey in the two ASARCO drill holes near Superior, Pinal County, Arizona, in which we recently placed electrodes.

We propose using the downhole radial array technique as per the attached sheet, with GEOEX MK-4 multifrequency IP equipment capable of transmitting 10 amperes. A remote electrode would be placed, if logistically practical, at least 15,000 feet away from each drill hole. Radials would be run from the drill holes in at least four directions with a 1000 foot long dipole moved in 500 foot increments out to about 8,000 to 10,000 feet from the hole.

This IP coverage should give useful information about the distribution of deep sulfides and aid in the planning of future drilling. Because of the great depth involved and probably conductive thick section of post-mineral dacite and Whitetail conglomerate, this work would be somewhat experimental in nature. We would use several low IP frequencies to allow making a rough spectral analysis to help remove any adverse inductive coupling effects.

A four man crew is proposed to obtain this coverage. In that the terrain is quite rough and access somewhat limited, it is difficult to predict the rate of coverage but it is estimated that six or seven field days would be involved to handle the long wire and run four radials from each drill hole.

Our charges would be based on the following schedules:

Four man crew plus equipment at \$300.00/work day.

- Expenses: -- 4 wheel drive vehicle at \$15.00/day plus \$0.20/mile each and likely two vehicles would be used.
- Crew living costs at \$18.00/day each for professionals and \$15.00/day each for helpers.
  - Directly incidental job expenses (communications, reproductions, special fees, permits, insurance, taxes, expendable field and drafting supplies, routine sub-contracting, assays, and analyses, etc.), at cost plus 15% of our invoiced costs.
  - Property permits, line preparation liability and trespass liability, and related costs incurred on projects are chargeable as expenses at our cost plus 15%.
  - Standby time due to inclement weather or client request at one half the applicable daily base rate plus the expenses as above.
- Tucson office - final data compilation, computation and drafting at \$10.00/hour.
- final interpretation and written report preparation at \$150.00/day.

Our normal work schedule is based on a five day week and an eight hour work day. Travel time up to one hour per day each way between job site and crew base is not charged. Overtime is sometimes desirable or necessary to expedite the job, and can in fact result in a saving for the client. Such overtime is charged at the rate of \$45.00/hour for the four man crew. Extra helpers if necessary and mutually agreed upon, are charged at \$50.00 per day each plus expenses as above and overtime at \$7.50/hour.

If both drill holes are run with four radials each and 12 field days total are involved, we estimate the total project cost, not including interpretation and final report, at about \$5850.00. A final interpretational report, if desired, would add about \$550.00 to the project cost.

We would be pleased to modify the above technical specifications to whatever the ASARCO geophysics department advises to best fit their needs. Our crew availability at this time, upon notice would be one or two weeks depending on prior commitments.

Your understanding and approval of the above may be indicated by signing as provided below on the attached copy of this letter and returning it to us, or by submitting a purchase order.

Date: \_\_\_\_\_

Accepted by: \_\_\_\_\_

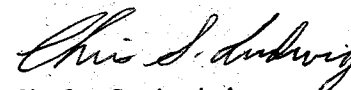
Title: \_\_\_\_\_

CSL:mt

Enclosure : Technical Sheet

Sincerely yours,

Heinrichs GEOEXploration Company



Chris S. Ludwig  
Chief Geophysicist

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

April 8, 1974

RECEIVED  
APR 9 1974  
S. W. U. S. EXPL. DIV.

Mr. W. L. Kurtz  
Tucson Office

Downhole I. P. Proposal  
Heinrichs Geoexploration Co.  
Superior East Project  
Pinal County, Arizona

Dear Bill:

In comment on Jim Sell's letter to you of March 14, the general outline of Heinrichs' proposed work sounds reasonable, however I would make a couple of observations.

As we have agreed before, it would be desirable first to have in-hole I. P. measurements (a log) of a hole on the project with which to better determine the potential value of "Downhole Radial" work.

Second, when dealing with such great depths as are expected there, I would be more favorably disposed toward the employment of pulse I. P. equipment (Newmont design), or of variable frequency equipment which yields the phase parameter, (such as McPhar offers.) The large electrode spreads required for the problem at Superior East invite trouble from inductive coupling, particularly from standard variable frequency measurements.

Yours very truly,

*Cal*

C. K. MOSS

CKM/mb

cc: R. J. Lacy ✓  
J. D. Sell ✓

AMERICAN SMELTING AND REFINING COMPANY  
TUCSON ARIZONA

March 14, 1974

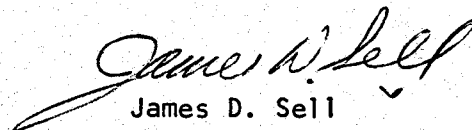
TO: W. L. Kurtz  
FROM: J. D. Sell

Downhole IP Survey Proposal  
Heinrichs GeoExploration Co.  
Superior East Project  
Pinal County, Arizona

In anticipation of utilizing the downhole electrodes implanted in drill hole AI-1 (at 3967 feet) and hole A-7 (at around 5000 feet), I have requested Heinrichs GeoEx to submit a proposal for such work.

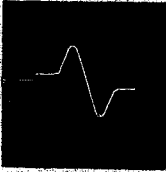
Figure One shows the access for the two holes, the major highway, and the telephone and power lines. This information was not supplied to Heinrichs but would be needed in any evaluation of the practicability of a program. Both holes have been surveyed for deviation.

Attached is the submittal by Heinrichs. Perhaps Mr. Moss, SLC, would comment on the proposal.

  
James D. Sell

JDS:1b  
Attachs.

cc: C. Moss - w/attachs.



## HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA 85703, P.O. BOX 5964, PHONE: (602) 623-0578

March 4, 1974

Mr. James D. Sell, Geologist  
S. W. Exploration Division  
American Smelting & Refining Company  
1130 N. 7th Avenue  
Tucson, Arizona 85705

Re: Downhole IP Survey  
Superior Area, Pinal County  
Arizona

Dear Mr. Sell:

In response to the telephone discussion with you last week, we herewith submit this proposal for conducting a downhole induced polarization survey in the two ASARCO drill holes near Superior, Pinal County, Arizona, in which we recently placed electrodes.

We propose using the downhole radial array technique as per the attached sheet, with GEEX MK-4 multifrequency IP equipment capable of transmitting 10 amperes. A remote electrode would be placed, if logistically practical, at least 15,000 feet away from each drill hole. Radials would be run from the drill holes in at least four directions with a 1000 foot long dipole moved in 500 foot increments out to about 8,000 to 10,000 feet from the hole.

This IP coverage should give useful information about the distribution of deep sulfides and aid in the planning of future drilling. Because of the great depth involved and probably conductive thick section of post-mineral dacite and Whitetail conglomerate, this work would be somewhat experimental in nature. We would use several low IP frequencies to allow making a rough spectral analysis to help remove any adverse inductive coupling effects.

A four man crew is proposed to obtain this coverage. In that the terrain is quite rough and access somewhat limited, it is difficult to predict the rate of coverage but it is estimated that six or seven field days would be involved to handle the long wire and run four radials from each drill hole.

Our charges would be based on the following schedules:

Four man crew plus equipment at \$300.00/work day.

Mr. James D. Sell, Geologist  
March 4, 1974  
Page Two

- Expenses: -- 4 wheel drive vehicle at \$15.00/day plus \$0.20/mile each and likely two vehicles would be used.
- Crew living costs at \$18.00/day each for professionals and \$15.00/day each for helpers.
  - Directly incidental job expenses (communications, reproductions, special fees, permits, insurance, taxes, expendable field and drafting supplies, routine sub-contracting, assays, and analyses, etc.), at cost plus 15% of our invoiced costs.
  - Property permits, line preparation liability and trespass liability, and related costs incurred on projects are chargeable as expenses at our cost plus 15%.
  - Standby time due to inclement weather or client request at one half the applicable daily base rate plus the expenses as above.
- Tucson office - final data compilation, computation and drafting at \$10.00/hour.
- final interpretation and written report preparation at \$150.00/day.

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If both drill holes are run with four radials each and 12 field days total are involved, we estimate the total project cost, not including interpretation and final report, at about \$5850.00. A final interpretational report, if desired, would add about \$550.00 to the project cost.

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Date: \_\_\_\_\_

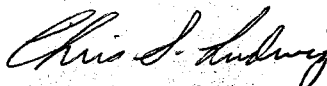
Accepted by: \_\_\_\_\_

Title: \_\_\_\_\_

CSL:mt  
Enclosure : Technical Sheet

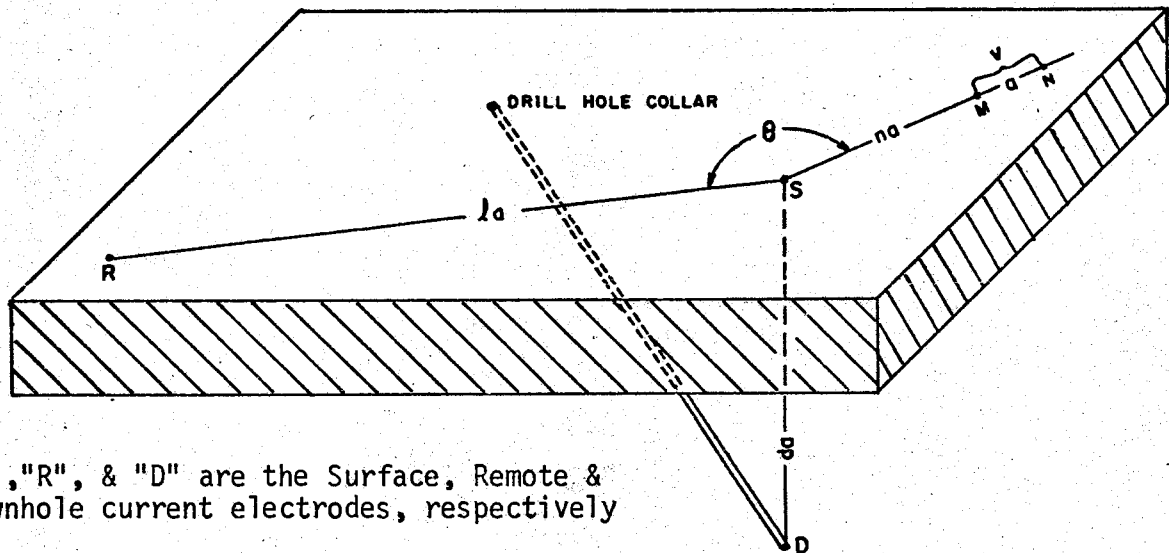
Sincerely yours,

Heinrichs GEOEXploration Company



Chris S. Ludwig  
Chief Geophysicist

DOWNHOLE RADIAL ARRAY GEOMETRY  
FOR  
INDUCED POLARIZATION-RESISTIVITY SURVEY



"S", "R", & "D" are the Surface, Remote & Downhole current electrodes, respectively

$$\rho_a / 2\pi = \left| \frac{aV}{I} \left[ \frac{1}{\sqrt{n^2 + d^2}} - \frac{1}{\sqrt{(n+1)^2 + d^2}} - \frac{1}{\sqrt{n^2 + l^2 - 2nl \cos \theta}} + \frac{1}{\sqrt{(n+1)^2 + l^2 - 2(n+1)l \cos \theta}} \right] \right|^{-1}$$

Where I = current in milliamps through D-R, S-R or S-D current electrode pairs  
 V = voltage in millivolts across dipole M-N  
 a = voltage dipole M-N length in feet  
 n, d, & l are dimensionless

Then  $\rho_a / 2\pi$ , the apparent resistivity, will be in units of ohm-feet

Note: Equation is explicit for a D-R electrode pair survey

For an S-R survey,  $d=0$

& For an S-D survey,  $l=0$

Also: Position "S" is the normal-to-surface projection of "D"  
 (not, in general, the drill hole collar)

The percent frequency effect (PFE), and the metallic conduction factor (MCF), are computed as usual:

$$PFE = \left( \frac{\rho_L - \rho_H}{\rho_H} \right) 100 \quad \& \quad MCF = \frac{1000 PFE}{\rho / 2\pi}$$

Where  $\rho_L$  &  $\rho_H$  are the lower frequency and higher frequency resistivities, respectively.

Added Reference: ANALYTICAL MODELS FOR THE INTERPRETATION OF ELECTRICAL SURVEYS USING BURIED ELECTRODES, By Donald D. Snyder & Richard M. Merkel, Geophysics, Vol. 38, No. 3, June 1973. pp 513-529.



**EXPLORATION SERVICES DIVISION**

**3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119**

May 15, 1974

Mr. James Sell  
Tucson Office

DRILL HOLE  
I. P. LOGGING  
DACITE PLATEAU

Dear Jim:

In our last phone conversation you indicated that a hole would be available in the fairly near future in which we could do I. P. logging. Can you, at this time, give an up-dated estimate of when this hole will be finished?

Yours very truly,



C. K. MOSS

CKM:am

AMERICAN SMELTING AND REFINING COMPANY  
TUCSON ARIZONA

May 30, 1974

Mr. C. K. Moss  
ASARCO  
Salt Lake City Office

Drill Hole DCA-3A  
I.P. Logging  
Dacite Plateau  
Pinal County, Arizona

Dear Cal:

Your letter of May 15, 1974 has been found.

Unfortunately, no valid up-dated estimate can be given on when we will have hole DCA-3A ready for logging. The rig presently on the Bohme Project hole will be the one to do the coring. A loose estimate of three weeks might be the time prior to moving to DCA-3A plus a number of weeks coring.

I will notify you upon our moving to DCA-3A and also upon intercepting bedrock, so as to better guide your activities.

Sincerely,

*James D. Sell*  
James D. Sell

JDS:lb

cc: WLKurtz

*Telephoned Moss on June 25, that we  
were moving to DCA-3A.*

*JDS*

# Rocky Mountain Well Log Service Co.

1753 Champa Street

266-0588 Area Code 303

DENVER, COLORADO

80202

BOB ANDREWS, Division Manager



June 6, 1974

CASPER, WYOMING

BOB FITZGERALD

PETR. BLD., ARCADE

PHONE 234-1921

American Smelting & Refining Company  
1805 South Bellaire  
Denver, Colorado 80206

MIDLAND, TEXAS

DAVID CLARK

105 WEST WALL

PHONE 682-0591

Gentlemen:

May we release the Electrical, Sonic and Radioactivity surveys run on the:

# 1A - OF	DCA -2
21-1S-13E	11-1S-13E
Pinal, Arizona	Pinal, Arizona

If these surveys are satisfactory to release, please sign the authorization below and return in the enclosed envelope. Two reduced scale complimentary copies of each log released will be sent you immediately.

Thank you for your cooperation.

Very truly yours,

Rocky Mountain Well Log Service Co.

By: Ted Strickland

Logs Released to:  
Rocky Mountain Well Log Service Co.

(Signature of authorized official)  
Manager of Exploration  
American Smelting and Refining Company  
P.O. Box 5747  
Tucson, Arizona 85703

Logs on the above were run by:

<input checked="" type="checkbox"/> Schlumberger	<input type="checkbox"/> Dresser-Atlas	<input type="checkbox"/> Other _____
<input type="checkbox"/> McCullough	<input type="checkbox"/> Wireline	<input type="checkbox"/> No logs run
<input type="checkbox"/> Welex	<input type="checkbox"/> OWP	

**EXPLORATION SERVICES DIVISION**

**3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119**

July 5, 1974

MEMO TO JIM SELL:

Received your message regarding the drill move to DCA-3.

After all our attempts to get an in-hole logging survey arranged at Superior, it appears now that we might not be able to meet your schedule.

Most of our people and equipment are on outside jobs. I will be out myself for the next two weeks, and then out again shortly later.

Please keep us advised of your best guess for the hole termination. With a little luck, someone will be here to handle the job.

Leave messages with Agnes if I am out.

*Cal*

CKM:am

Cal

cc: W. L. Kurtz

FROM: W. L. KURTZ

TO: JJ Collins

Oct. 3, 1974

Sup East  
Seismic

We had planned to update  
Selli's '72 summation report  
before year end.

We will be sure to  
cover all points in your  
letter of Oct 1, 1974

ck

cc: JDS ✓

JDS



AMERICAN SMELTING AND REFINING COMPANY  
EXPLORATION DEPARTMENT  
120 BROADWAY, NEW YORK, N.Y. 10005

RECEIVED  
OCT 3 1974  
S. W. U. S. EXPL. DIV.

JOHN J. COLLINS  
DIRECTOR OF EXPLORATION

OCT 3 1974  
W.L.K.

AIR MAIL

October 1, 1974

Mr. W. L. Kurtz  
Southwestern United States Division  
Tucson Office

Superior East, Arizona  
Seismic Survey

Dear Mr. Kurtz:

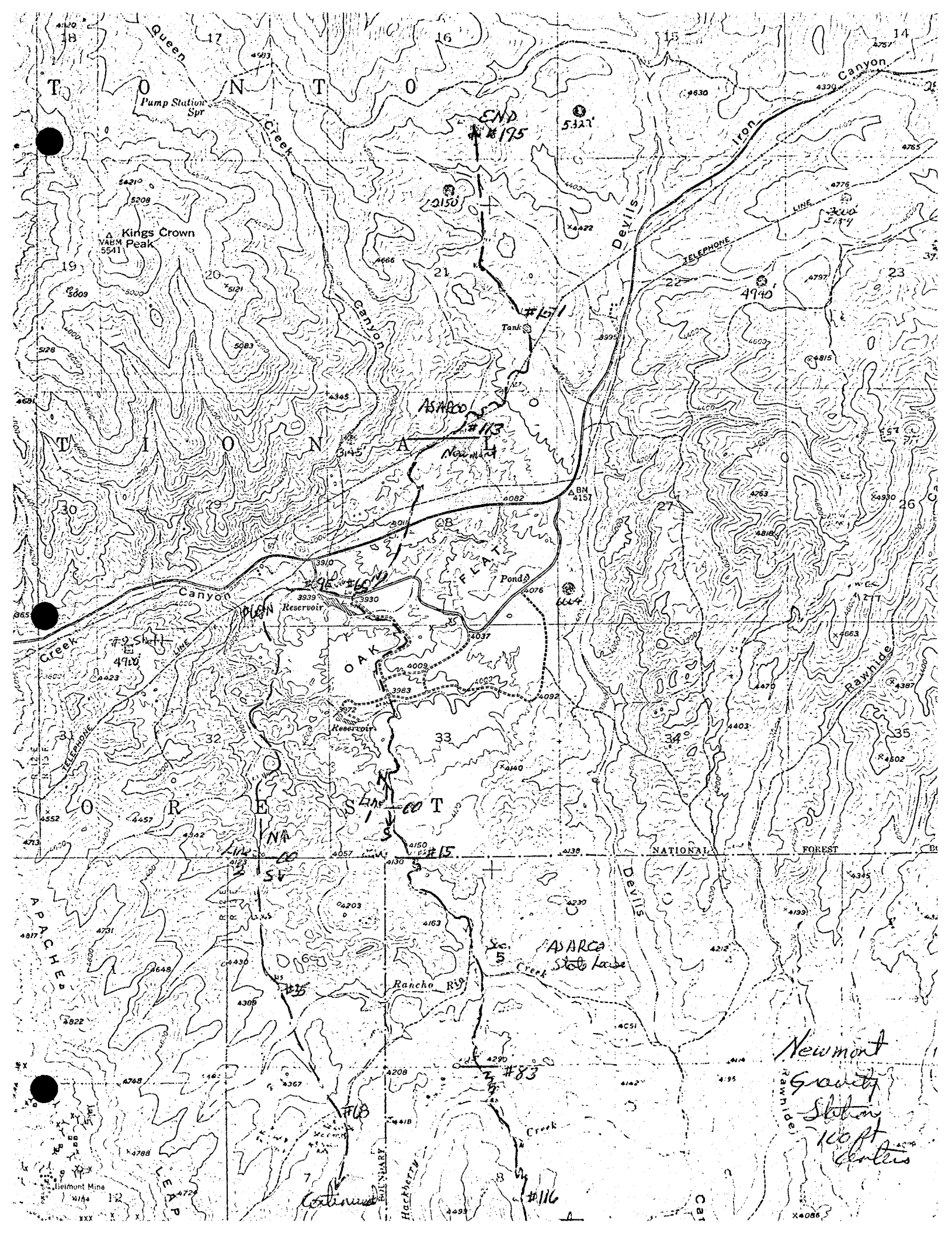
I am amazed by the structure contours and isopach pattern on Cal Moss' maps of September 27th. I suppose his reference data are the sections Jim Sell prepared in August 1972, but I wonder if Jim would not draw the plan view of the Whitetail differently from Cal. Ordinarily faults control the contours, and this will ask Jim to draw his version of structure contours and isopachs of the Whitetail conglomerate, with copies to Cal and to me.

I see some data on Cal's maps that are new to me, i.e., holes B-3, B-5, and KC-1 showing relatively shallow depths for the bottom of the Whitetail. Perhaps it is time for Jim to bring his excellent 1972 maps and report up to date? Have our drill holes been surveyed for vertical angle? If not, at least one deep one (probably A-4) should be done as soon as convenient. Please advise what possibilities exist. Also report on the temperature measurements previously requested and comment on ground water quality and quantity in our drill holes. Has Halpenny reviewed this project?

Very truly yours,

John J. Collins

cc: CKMoss



Queen

Pump Station Spr

Kings Crown Peak  
5541

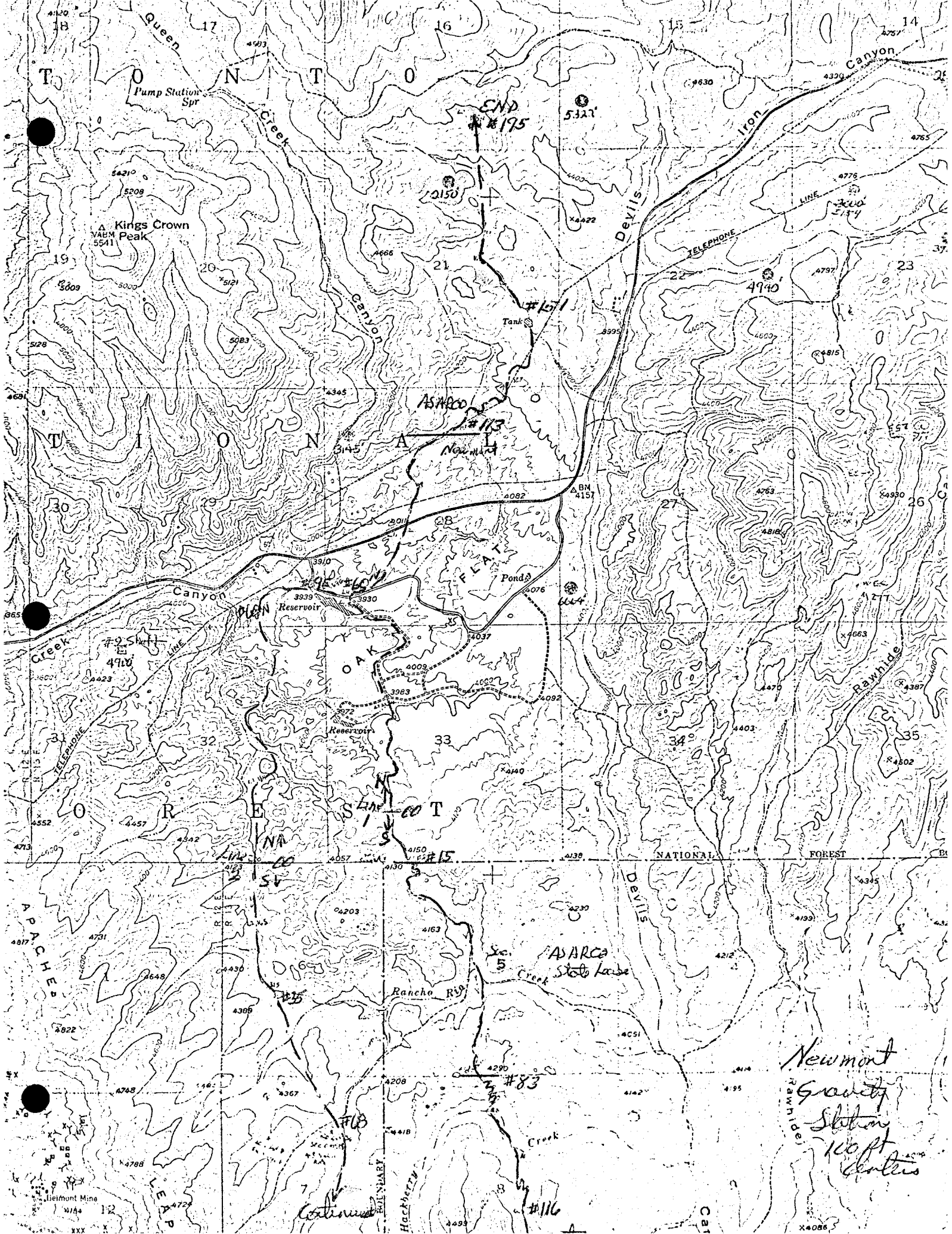
END #175

Asarco

Newmont

Asarco State Lease

Newmont Gravity Station  
100 ft below



Newmont gravity. Stations @ 100 foot spacing.

Line 1, zero point. On South boundary of Cok Flat recreation area follow trail road going to Section 5.

Line 1 - North - 1 thru 195.

North to big Cok <sup>(25N)</sup> following road, continue north thru camp grounds to junction with paved road to Magnum's No. 9, hence northeast to main U.S. 60 <sup>(40N)</sup> following road. Hence cross road to north following <sup>(82N)</sup> trail on top sheet to gate (99N), north-northeast to N side of <sup>(113N)</sup> Magnum's sunclains at jct of trail-power line-dull road; hence follow dull road to M-1A site; at turn off to A-7 (pt 127N), continue north to stock tank on map, northern tank is point 151N with END printed on stake. Hence north-northwest up main dike to meadow (pt. 147N); hence northward, cross rd. to OF-1A at pt 199N; hence north to point 195N, marked END on flagging. Point is now 400-500' south of E-W powerline (S 1/4 of sec. 14).

pt 113  
↓ 82 ft  
195  
is on  
ASARCO  
claims.

Line 1 - South 1 thru 116 +

Starting at 21:00 on south boundary of Cok Flat on walk trail, hence south to gate into Section 5 (pt. 15S); hence down road to Panchos Creek hence south to bottom section line of Sec. 5 (pt. 83S), hence south on trail to Hackberry Creek & road to KC-1 at large stock tank (pt. 67S), hence south to pass (pt 114S), hence further south unknown distance.

pt 15S  
thru 83S  
on ASARCO  
Stake line 5

7150 ft



## Newmont gravity stations.

Line 2, Zero Point on road to KC-1, on south boundary of Sec. 32, (N boundary of Sec. 6). (NEEC Sec 12 & WEC Sec 13)  
Line 2 North 1 thru 60+.

From 00, going N to gate & fence line along paved road to Maxima No 9 (pt. 18N), hence north following paved road to US 60 and at last curve right on Maxima's ground (pt 60N) hence east to dam of reservoir (pt 24, 69E) hence east to get with dirt road south into oak flat area (North side of intersection one stake with 24, 70E & 21, 60N)  
Tie in with Line 1 at junction.

Line 2 South 1 thru 685+.

Going south down road to KC-1 to point in middle of Section 3, at point 35S, cut across country south & eastward to road going to B-3 (point 68S.) line continues up drainage to south in E 1/2 of Sec. 7.

Los Acton, new 5.21 pm 5m

AIUC

Mineral to S of shaft is "some distance underground" but "not very far if going by car". Verbal 11/19 AIUC. Still drilling on it. Apparently not good enough? or questionable to drift south & look at it at this time.

Gravity Points

- L1, 80' at top of section at flat
- L1, 94N at side canal N of collier's Bay 2, 94N but ones on each side, say L1, 1).
- L1, 113N at parallel and just onto Key claim.
- L1, 127N rd N & jet to A-7. No flag to A-7, but truck tracks <sup>seemly w/ rd</sup> flags: for measurement
- L1, 151N (End) <sup>on both</sup> at upper stock tank post A-7. Numerous tire tracks to here - 30 days
- L1, 152N, west on edge of stock tank.
- L1, 167N west in 1st drainage meadow. Line known North
- L1, 172N north on ridge line
- L1, 179N at road to OF-1A (30' E of SE corner of Key 81). <sup>Continues N to power line</sup> L1, 183N on ridge to N of OF-1A
- Using cut-off at ground level of OF-1A. Open to 200' (150'?)
- L1, 195N End. <sup>400's of barrels</sup> END on tape. <sup>keep this track to here on power line</sup>

- L2, 00 ~~at~~ On S of S @ REC Sun 12, WEC Sun 15. <sup>EW</sup> ~~±~~ on section line between 32 & 6
- L2, 18N Jet Magnum #9 pump & dirt rd to KC-1.
- L2, 60H On paved area on west side of flat going to K-9

- L2, 15 going S from L-00
- L2, 14 going N from L-00
- L2, 165 at first pass south.
- L2, 315 @ SE corner rd jet to Rancho Rio creek
- L2, 355 pasture area. line into meadow
- \*60 in pass N/E of Maghole B-7, same ridge
- L2, 685 in canyon jet & road to B-7. line continues S to main canyon.
- tracks to B-7 but no flag.
- L1, 815 on pass on trail 600' N of B-5.
- L1, 735 on second pass on trail N of B-5. line continues N to confluence of creek jet.
- L1, 935, at creek upper end of reservoir & rd to K-9.
- L1, 1035, just S of tank on side of creek, rd fork to S of S.
- L1, 1165 at pass to south of tank, line continues S.
- L1, 25N at big collier rd jet to upper reservoir in collier flat
- L1, 1N jet N & S boundary of OP on lead to Sec 5
- L1, 00 on boundary of OP Res.
- L1, 15, jet S of OP on trail to Sec. 5 (sun claim).
- L1, 1525 at gate to Sec. 5. on wells trail,

WEC Sun 42A road just N of Township corner  
near S.W.

- L4, 69E @ old rd, near rd of OF reservoir
- at Magnum #9 rd & dirt rd S to collier reservoir
- NE end of D = L1, 160N, 24, 76E
- NE " " D = L4, 77E
- SE " " D = L1, 81N
- SW " " D = L1, 59N

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

October 24, 1974

Mr. W. L. Kurtz  
Tucson Office

J. R. PORTER MEMO  
IN-HOLE I. P. SURVEY  
SUPERIOR EAST, ARIZONA

Dear Mr. Kurtz:

Attached is Jeff Porter's brief report covering results of recent work conducted by Jeff and Glen Cressman of this office. In general, this work helps to allay fears that the Whitetail could give such strong I. P. reaction that any I. P. exploration in the area for sulfides would be futile.

The I. P. units (ms) should not be confused with the units (mv/V), which Farley used in his surveys. For comparison, the "clay" response at Casa Grande would give about 45 ms, using the units of the present survey, versus about 13 mv/V in Farley's results.

We here do not know what you encountered in DCA-3A in terms of sulfides, and admittedly the 1000 feet of Whitetail section found in the hole may not be representative of the overall Whitetail formation, however, I would consider the results of the survey to be encouraging enough that I would recommend down-hole radial surveys (I. P.) be conducted on the project. Targets would be large deeply buried "porphyry" deposits.

Yours very truly,

*Cal Moss*

C. K. MOSS

CKM:am  
Attch.

cc: J. J. Collins, w/enc.

✓ R. J. Lacy "

✓ J. D. Sell "

# EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

October 24, 1974

MEMO TO C. K. MOSS:

IN-HOLE I. P. SURVEY  
SUPERIOR EAST  
PINAL COUNTY, ARIZONA

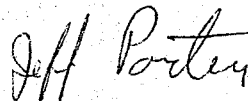
## Introduction

To determine the feasibility of using "down-hole radial" I. P. surveys in the Superior East area, an in-hole I. P. survey was conducted to test the I. P. response of the geologic sections intercepted by drill hole DCA-3A. A 20' pole-pole sonde was employed in the survey. In addition, a 200' electrode was lowered to a depth of 4800' for future use in the "down-hole radial" work.

## Results

Figure 1 shows the results of the survey. The response of the Whitetail conglomerate is low to moderate, generally increasing with depth to a high of 24 ms. Average response through this section is 12.6 ms. The sharp I. P. anomaly at 4150' is probably caused by the drill steel cemented at that depth masking the effect of the Pinal schist. Of interest is the large anomaly (40 ms), with an average of 32 ms, associated with the Schultze granite. If this anomaly is associated with a large zone of mineralization it might provide a high enough contrast, compared with the Whitetail, to be detected by the "down-hole radial" survey.

Unfortunately we were not able to test the lower section of the Pinal schist due to blockage of the hole.

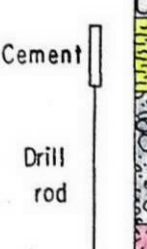
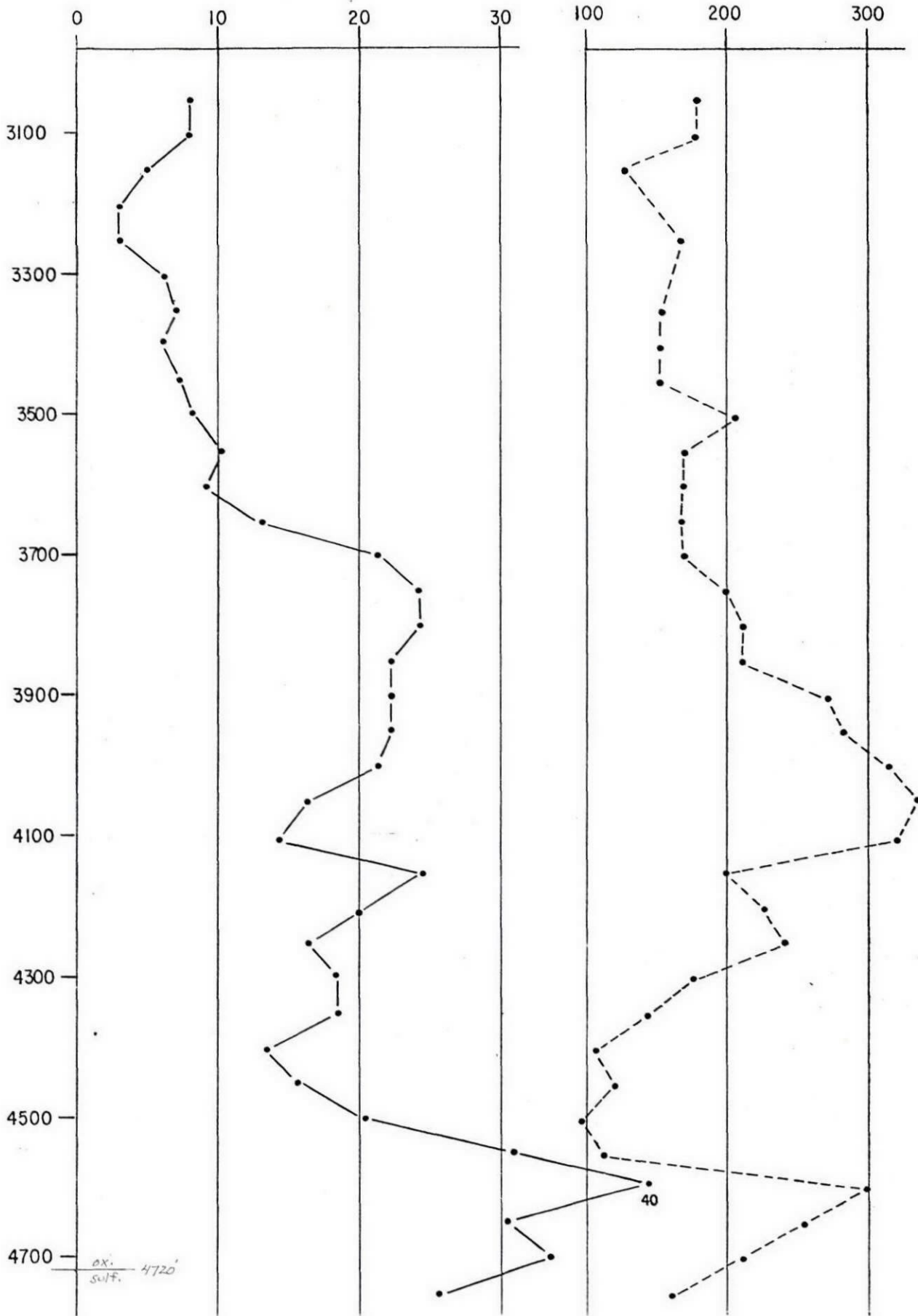


J. R. PORTER

JRP:am  
Attch.

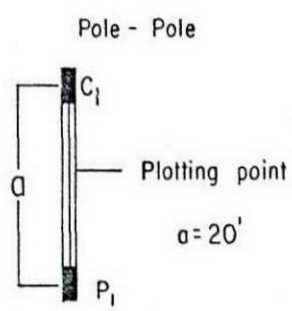
I.P. (ms)

$\rho_a (\Omega')$



- Whitetail Conglomerate
- Schultze Granite
- Pinal Schist
- Fault gouge

(after J.D. Sell)

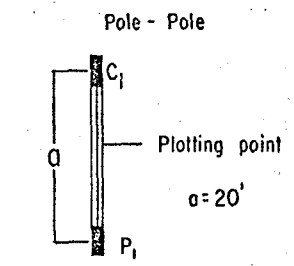
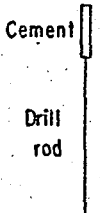
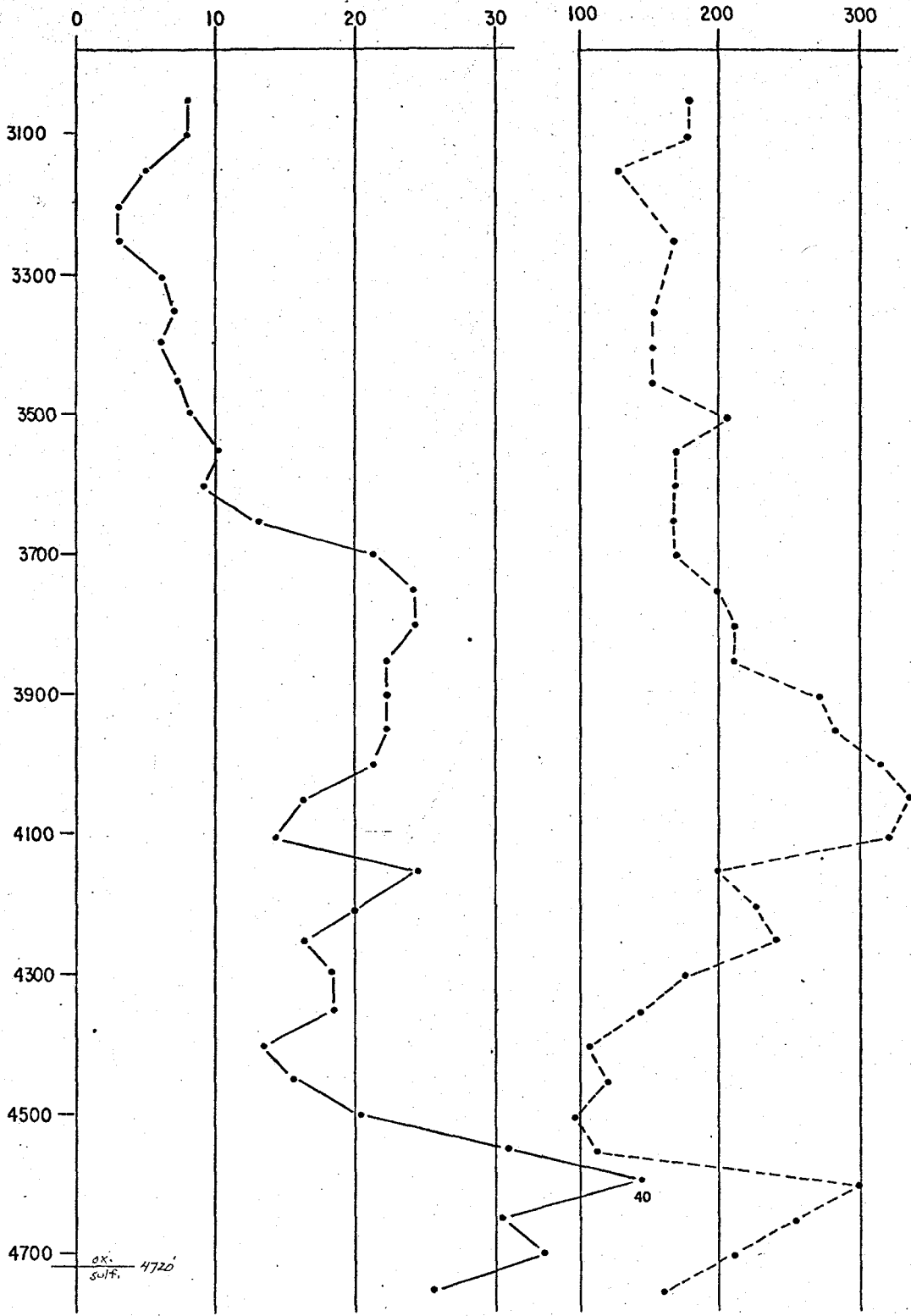


DRILL HOLE I.P. SURVEY  
 DCA-3A  
 SUPERIOR EAST  
 PINAL CO., ARIZONA  
 J.R.P. Oct 1974

FIG. 1

I.P. (ms)

Po (Ω)

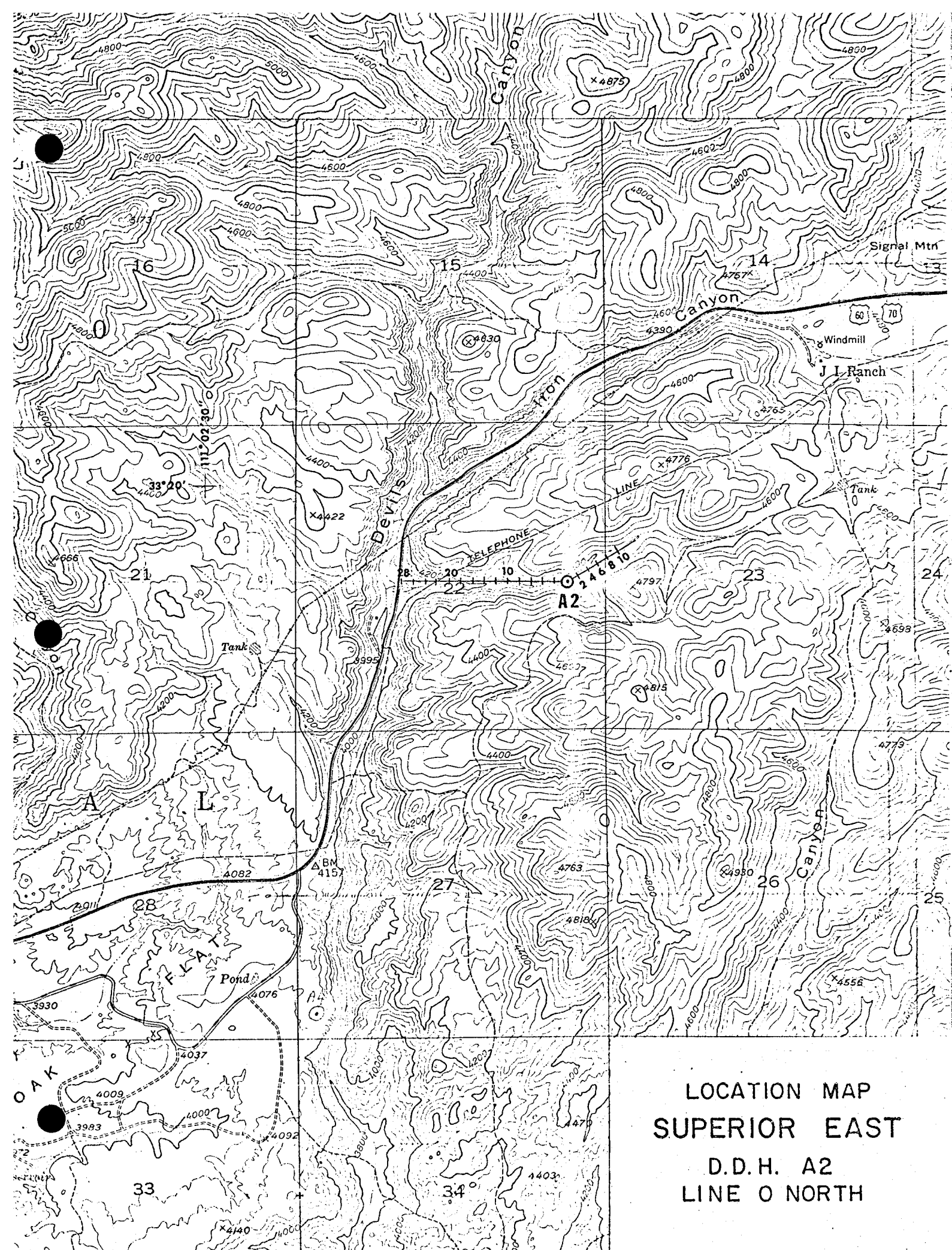


- Whitetail Conglomerate
- Schultze Granite
- Pinal Schist
- Fault gouge

(after J.D. Sell)

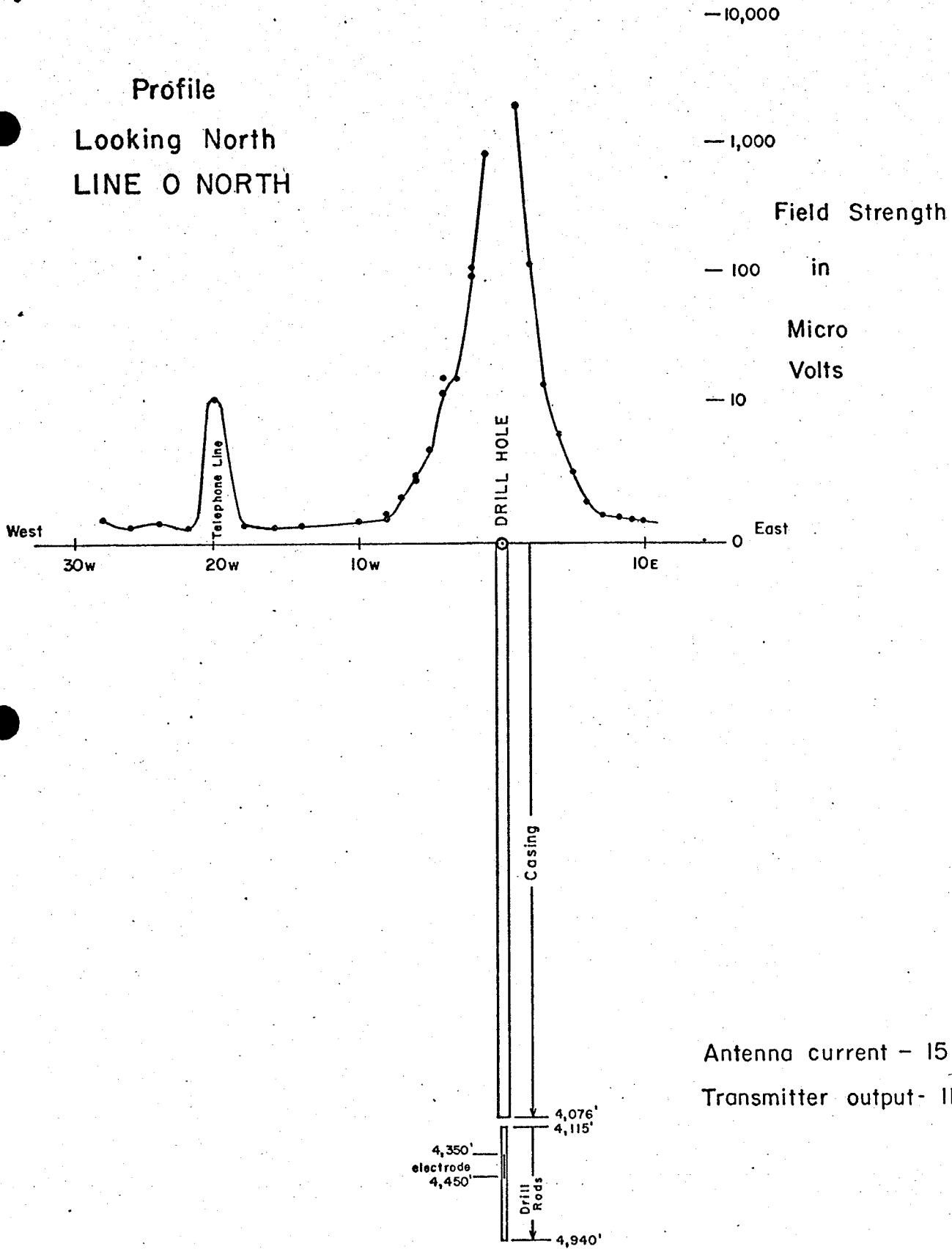
DRILL HOLE I.P. SURVEY  
 DCA-3A  
 SUPERIOR EAST  
 PINAL CO., ARIZONA  
 J.R.P. Oct 1974

FIG. 1



LOCATION MAP  
SUPERIOR EAST  
D.D.H. A2  
LINE 0 NORTH

Profile  
Looking North  
LINE 0 NORTH



Antenna current - 15 amps  
Transmitter output - 11,250 watts

E.M. FIELD STRENGTH TEST  
SUPERIOR EAST  
D.D.H. A2 - PROFILE LINE 0 NORTH  
SCALE 1" = 1000'

JUNE 9, 1972

FIG. 1



AMERICAN SMELTING AND REFINING COMPANY  
TUCSON ARIZONA

October 25, 1974

TO: W. L. Kurtz

FROM: J. D. Sell

Geophysics - Newmont  
Superior East Area  
Pinal County, Arizona

At last night's USGS-SMEA meeting I inquired of Dave McLean (Newmont Geophysics) as to where the geophysical data was on their overrun and he replied that he "was about to call me up to discuss the matter." Specifically, he would like permission to expand the lines further into the ASARCO ground. Dave stated that Dr. A. A. Brandt (who is retiring at the end of the year) will soon be out and Dave would like to bring Brandt and the data over for a discussion.

I told him that I felt ASARCO would be open for discussion.

Since Newmont is very desirous to do more work, perhaps one possible approach would be to suggest that further work be on a joint-venture basis. I would think that, since they desire to run over our ground, they might be agreeable to the exchange of Section 4-5 drill hole geologic data for their holes further south and west. Also, perhaps we should push for having our own gp man as an observer-participant in the work and interpretation of the data. Probably we would have to contribute our man's time and expenses since they would be paying for all the survey.

If no agreement can be reached and we do not feel they should run over the ground, then this should be cleared with the legal people and Mr. Lockhart notified to check those areas on a regular basis.

  
J. D. Sell

JDS:lb

AMERICAN SMELTING AND REFINING COMPANY  
TUCSON ARIZONA

November 25, 1974

TO: W. L. Kurtz

FROM: J. D. Sell

Newmont Gravity Survey Stations  
Superior East Project  
Pinal County, Arizona

Attached is a plan map of the Oak Flat and surrounding area in which Newmont ran a gravity survey. The survey was contracted to an outside company (probably Gordon Weidwilt of Mining Geophysical Surveys), and the lines were put in during early November 1974.

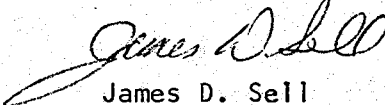
Line One started on the south boundary of the Oak Flat Withdrawal in Section 33. The north segment followed the roads in the area to their interception of the paved road to Magma's #9 Shaft (Line 1, point 60N). It then continued following the road northward to the north boundary of the Magma Sun claim group (Line 1, point 113N), at which time the line continued northward on ASARCO claims to the south-center of Section 16 (Line 1, point 195N).

Line One, south segment, crossed the Magma claims south of Oak Flat and entered the ASARCO state lease, Section 5 (Line 1, point 15S), continued south across Section 5 and left at Line 1, point 83S. The line continued south for an unknown distance.

Line Two started at the township line southwest of Oak Flat. Line Two north followed the road northward and at the sweeping curve just west of the reservoir the point was 60N. At the reservoir dam the point is 69E and changed to line 4. (I did not check each point, but it appears the points are consecutive from 60N to 69E.) The survey ends with point 76E, which is identical to Line 1, point 60N.

Line Two south follows the road for some distance, then cuts cross-country. The last point visited was 68S and more flags were noted to the south.

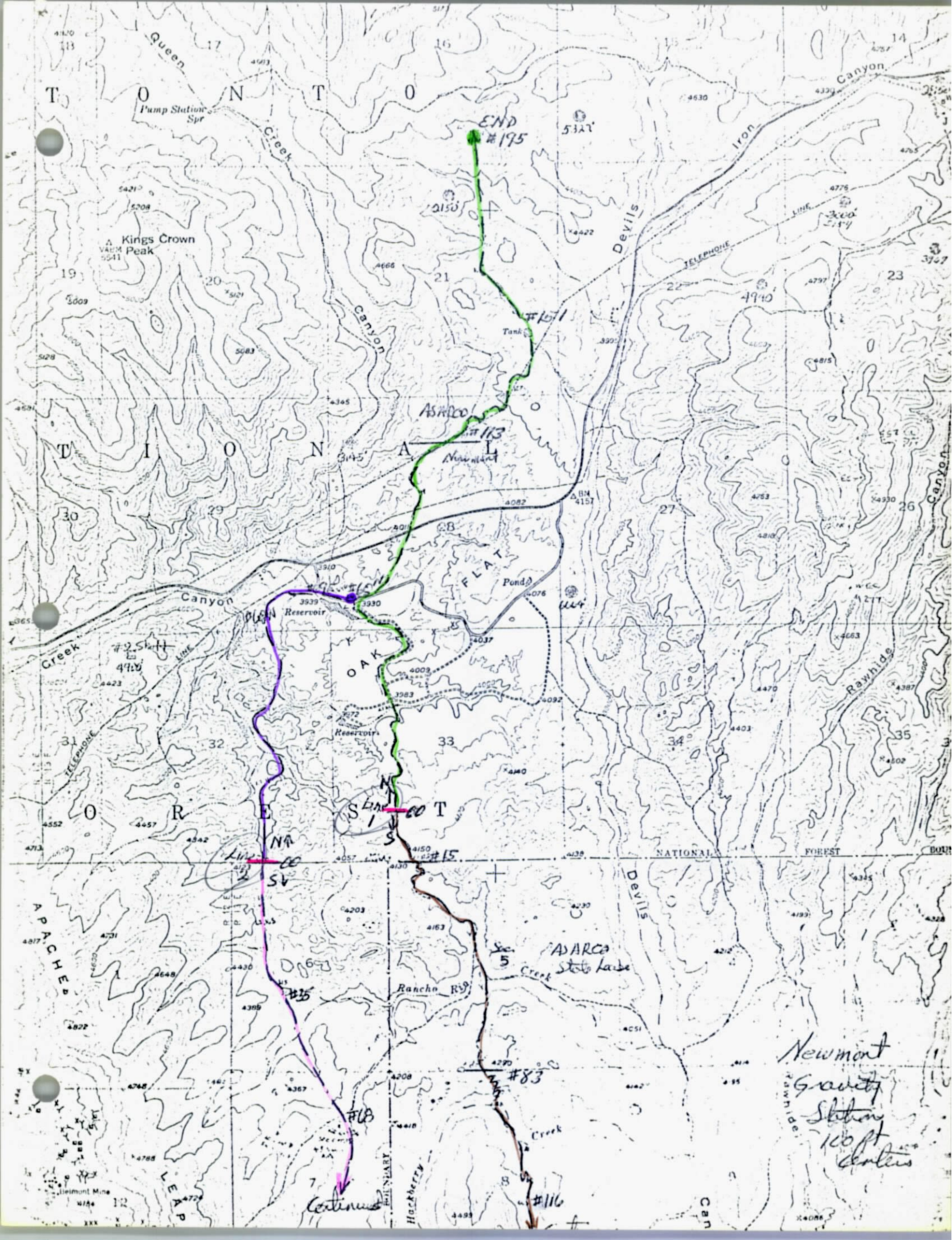
I suspect they tie together somewhere on the south end of Magma's claim and State Lease options.

  
James D. Sell

JDS:1b  
Attach.

*Note: although line went near drill holes, no State  
or flag went to the hole. ? on if they did  
side step to drill hole & occupied them ?*





END #195

Tank #171

Asarco #113

OAK Reservoir

S #15

S #7

Newmont Gravity Station  
100 ft contours

Continued



JAN 15 1975 → File

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

RECEIVED  
JAN 16 1975  
S. W. U. S. EXPL. DIV.

January 14, 1975

JAN 14 1975

Mr. W. L. Kurtz  
Tucson Office

W. L. K.

DRILLHOLE-RADIAL I. P. TESTS  
SUPERIOR EAST, ARIZONA

Dear Bill:

During the week of January 5, members of the Geophysical Section carried out test measurements on the Superior East project using the drillhole-radial I. P. technique.

Unfortunately, they were unable to obtain the required electrical signal strength needed to make I. P. measurements. The lack of signal strength is a consequence of the extreme depth of the holes involved, and the high conductivity of the cover rocks. Tests were made from drill holes AI-1, DCA-3A, and A7.

It is my belief that surveys of this kind cannot be made under such conditions using the currently available commercial I. P. equipment. The requirements exceed the performance of the equipment.

Yours very truly,



C. K. MOSS

CKM:am

cc: J. J. Collins  
R. J. Lacy

AMERICAN SMELTING AND REFINING COMPANY  
TUCSON ARIZONA

February 20, 1975

Mr. Cal Moss  
ASARCO  
Salt Lake City Office

Gravity  
Superior East

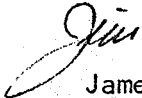
Dear Cal:

Enclosed is the Newmont gravity data and survey points as supplied by Dave McLean of the Newmont, Tucson, office. The data submitted is in response to our confrontation to them on the large amount of overrun by their survey on land claimed by ASARCO.

As noted, the data was originally on cards and tape and if either would be more amenable to you for processing then Mr. McLean would secure it for you in the form you request.

Otherwise, this office would appreciate your reviewing the data and seeing if any use can be gained.

Sincerely,

  
James D. Sell

JDS:lb  
Enc.

**EXPLORATION SERVICES DIVISION**

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

March 18, 1975

Mr. James D. Sell  
Tucson Office

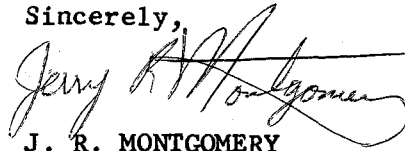
GRAVITY  
SUPERIOR EAST

Dear Jim:

In response to your request to review the gravity data for Superior East, Cal asked me to try an interpretation in this area. In order to facilitate this task I would appreciate receiving the data on computer cards.

The data you received from Newmont was not a complete set of principle facts for these gravity stations. If possible, we would like a complete set of principle facts for each station on computer cards along with a key explaining the format of the data cards.

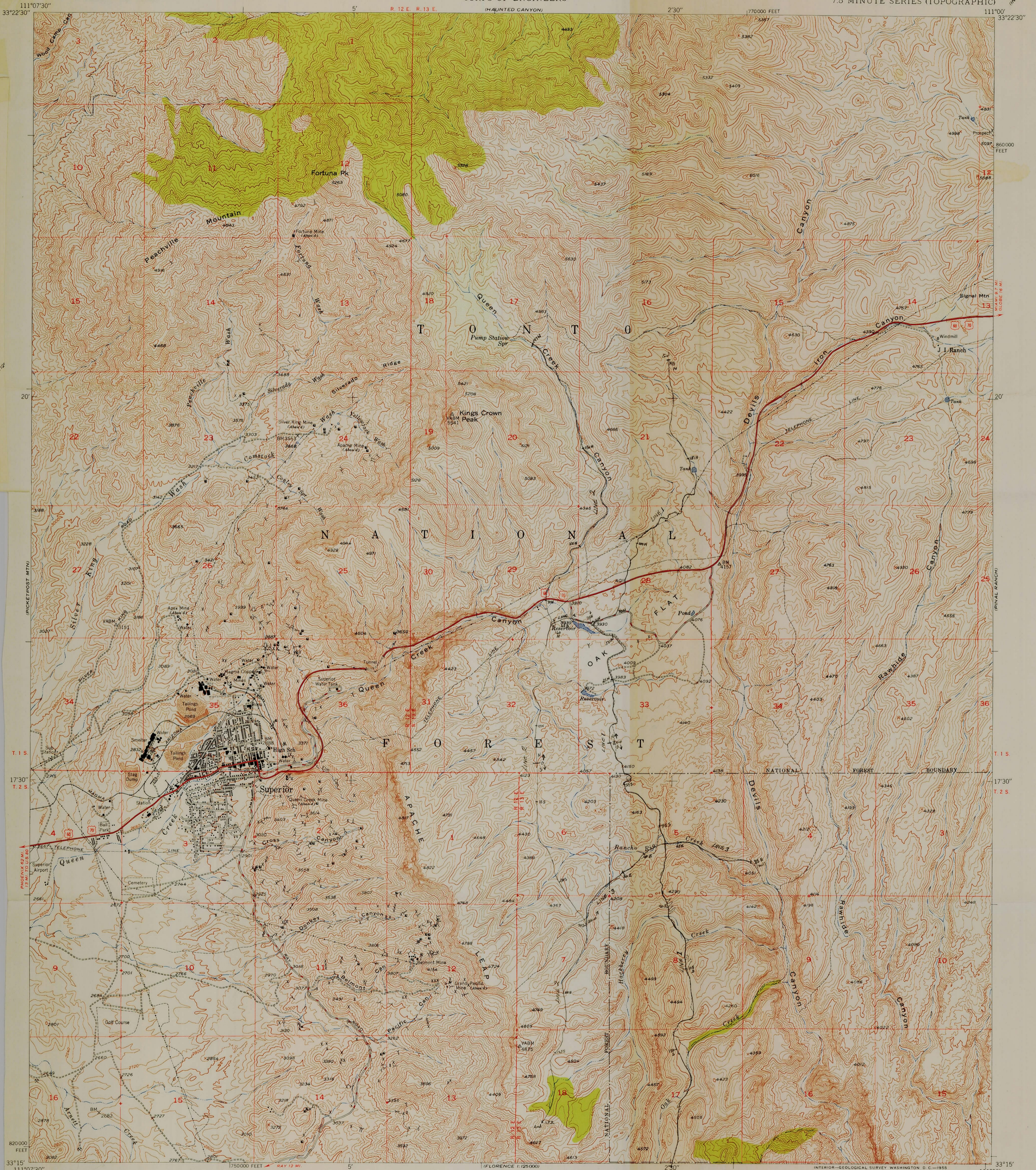
Sincerely,

  
J. R. MONTGOMERY

JRM:am

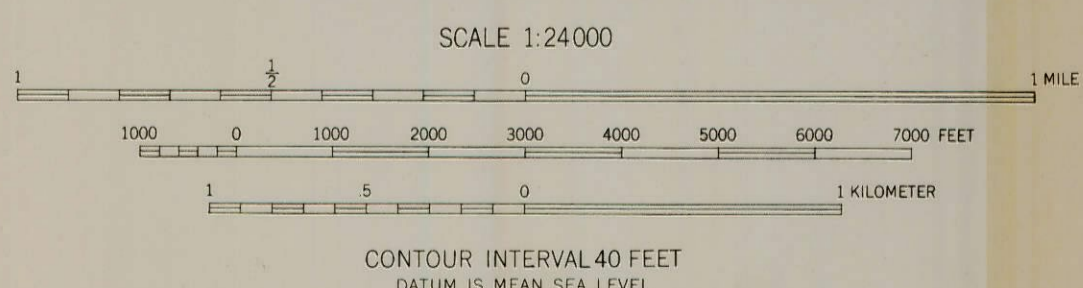
*Dave McLean*  
*Newmont* 297-1142





Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography from aerial photographs by multiplex methods  
Aerial photographs taken 1945. Field check 1948  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on Arizona coordinate system,  
central zone  
Unchecked elevations are shown in brown

TRUE NORTH  
MAGNETIC NORTH  
APPROXIMATE MEAN  
DECLINATION, 1948



ROAD CLASSIFICATION  
HARD SURFACE ALL WEATHER ROADS DRY WEATHER ROADS  
Heavy-duty Improved dirt   
Medium-duty Unimproved dirt   
Loose surface, graded, or narrow hard-surface   
U. S. Route State Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO OR WASHINGTON 25, D. C.  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Nearest  
Gravity Lines  
100 stations  
SUPERIOR, ARIZ.  
N3315-W11100/7.5  
1948



DRIVE	CART SPEC	CART AVAIL	DRIVE
0000	1000	0000	0000
		1000	0000

ACTUAL 32K CONFIG 32K

// XFR FLIST

TO: MISAC HABIGIAN, MEL DANBURY  
 FROM: CARLOS AIKEN, H. O. MACLEAN, MEL TUCSON  
 SUBJECT: SUPEROIRO GRAVITY STUDY

ENCLOSED IS THE DATA CARDS FOR THE SUPERIOR PROJECT,  
 INCLUDED IS THE PREVIOUS AND THE NEW DATA MERGED TOGETHER.  
 ALL ARE TERRAIN CORRECTED EXCEPT FOR L1-61N TO L1-195N.ER.  
 YOU HAVE THE TERRAIN DATA FOR THAT INTERVAL ALREADY.  
 USUALLY THE NEW DATA CAN BE DIFFERENTIATED BY THE LACK OF THE PREFIX  
 INDICATING LINE NUMBER WITH THE STATION NUMBER.  
 FOR INSTANCE A STATION NAME INDICATED BY L2-61N IS A NEW STATION.  
 STATION -60N WOULD BE A STATION WITH A VALUES DERIVED FROM THE WORDEN SURVEY.

LINE ONE	✓	G <sub>r</sub>		LINE 1
767548.	819426.	105.17	<i>for Az Data Base</i>	-200S
767563.	819523.	105.09		-199S
767585.	819635.	105.17	<i>value</i>	-198S
767608.	819755.	105.27		-197S
767633.	819882.	105.60		-196S
767662.	820004.	105.57	<i>V = G<sub>r</sub> - 235.3 m/s</i>	-195S
767679.	820109.	105.54		-194S
767736.	820222.	105.61		-193S
767772.	820334.	105.68		-192S
767809.	820446.	105.59		-191S
767801.	820558.	105.59		-190S
767800.	820663.	105.35		-189S
767784.	820760.	105.83		-188S
767776.	820850.	105.77		-187S
767768.	820969.	105.64		-186S
767758.	821051.	105.55		-185S
767751.	821171.	105.48		-184S
767765.	821275.	105.24		-183S
767737.	821365.	105.21		-182S
767831.	821470.	105.27		-181S
767845.	821582.	105.25		-180S
767845.	821664.	105.36		-179S
767844.	821769.	105.63		-178S
767851.	821874.	105.32		-177S
767850.	821956.	105.29		-176S
767894.	822061.	105.37		-175S
767954.	822113.	105.33		-174S
767993.	822161.	105.38		-173S
768050.	822249.	105.78		-172S
768109.	822324.	105.66		-171S
768158.	822414.	105.77		-170S
768175.	822519.	105.65		-169S
768220.	822623.	105.41		-168S
768291.	822721.	105.38		-167S
768293.	822833.	105.34		-166S
768300.	822923.	105.20		-165S
768292.	823005.	105.27		-164S
768354.	823072.	105.17		-163S
768208.	823146.	105.30		-162S
768153.	823221.	105.25		-161S
768035.	823295.	105.28		-160S
768038.	823392.	105.29		-159S



767898.	823146.	105.30	-162S
767855.	823221.	105.25	-161S
767809.	823295.	105.28	-160S
767834.	823342.	105.28	-159S
767922.	823459.	105.29	-158S
767931.	823533.	105.41	-157S
767937.	823622.	105.63	-156S
767837.	823719.	105.67	-155S
767799.	823801.	105.66	-154S
767768.	823905.	105.69	-153S
767745.	824010.	105.66	-152S
767714.	824092.	105.48	-151S
767691.	824188.	105.31	-150S
767655.	824270.	105.26	-149S
767622.	824375.	105.26	-148S
767592.	824464.	104.63	-147S
767576.	824539.	105.11	-146S
767542.	824649.	104.81	L1-145S
767593.	824758.	104.44	L1-144S
767641.	824850.	104.27	L1-143S
767693.	824939.	103.99	L1-142S
767732.	825032.	103.37	L1-141S
767806.	825092.	103.29	L1-140S
767904.	825148.	103.34	L1-139S
767996.	825185.	103.34	L1-138S
768107.	825215.	103.41	L1-137S
768198.	825259.	103.51	L1-136S
768289.	825332.	103.39	L1-135S
768361.	825425.	103.13	L1-134S
768363.	825517.	102.95	L1-133S
768372.	825612.	102.82	L1-132S
768371.	825717.	102.78	L1-131S
768357.	825825.	102.73	L1-130S
768337.	825916.	102.77	L1-129S
768335.	826008.	102.82	L1-128S
768328.	826123.	102.76	L1-127S
768308.	826212.	102.69	L1-126S
768291.	826290.	102.57	L1-125S
768277.	826395.	102.60	L1-124S
768255.	826460.	102.58	L1-123S
768239.	826575.	102.54	L1-122S
768222.	826654.	102.40	L1-121S
768201.	826746.	102.36	L1-120S
768174.	826854.	101.87	L1-119S
768134.	826958.	102.17	L1-118S
768097.	827067.	102.12	L1-117S
768080.	827181.	102.18	L1-116S
768043.	827289.	102.03	L1-115S
768032.	827368.	101.95	L1-114S
768018.	827460.	102.10	L1-113S
767985.	827552.	102.02	L1-112S
767964.	827643.	102.01	L1-111S
767963.	827774.	103.30	L1-110S
767962.	827879.	102.15	L1-109S
767971.	827958.	102.13	L1-108S
767970.	828037.	102.05	L1-107S
767970.	828125.	102.00	L1-106S
767979.	828218.	102.13	L1-105S
767936.	828352.	102.10	L1-104S
767933.	828484.	101.98	L1-103S
767934.	828511.	102.08	L1-102S
767955.	828715.	101.83	L1-101S
767957.	828813.	102.52	-102S
767956.	828717.	102.50	-101S

767359.	828717.	102.50	-101S
767798.	828836.	102.28	-100S
767745.	828948.	102.13	-099S
767707.	829037.	102.24	-098S
767654.	829141.	102.07	-097S
767536.	829231.	102.04	-096S
767510.	829305.	102.10	-095S
767450.	829364.	102.08	-094S
767391.	829427.	101.81	L1- 93S
767322.	829499.	101.73	L1- 92S
767288.	829606.	101.49	L1- 91S
767261.	829728.	100.88	L1- 90S
767234.	829813.	100.72	L1- 89S
767217.	829891.	100.48	L1- 88S
767183.	829983.	100.55	L1- 87S
767149.	830072.	100.71	L1- 86S
767090.	830150.	100.69	L1- 85S
767032.	830254.	100.57	L1- 84S
767009.	830375.	100.55	L1- 83S
767034.	830477.	100.44	L1- 82S
767059.	830606.	100.54	L1- 81S
766967.	830697.	100.55	L1- 80S
766940.	830798.	100.59	L1- 79S
766972.	830904.	100.21	L1- 78S
767020.	830982.	100.18	L1- 77S
767065.	831105.	100.21	L1- 76S
767090.	831183.	100.22	L1- 75S
767120.	831273.	100.36	L1- 74S
767115.	831387.	100.03	L1- 73S
767104.	831466.	99.96	L1- 72S
767127.	831542.	99.85	L1- 71S
767168.	831621.	99.49	L1- 70S
767204.	831700.	99.94	L1- 69S
767203.	831772.	100.05	L1- 68S
767167.	831844.	100.14	L1- 67S
767100.	831922.	100.09	L1- 66S
767175.	832002.	100.27	L1- 65S
767174.	832103.	100.47	L1- 64S
767164.	832179.	100.57	L1- 63S
767156.	832287.	100.25	L1- 62S
767136.	832379.	100.91	L1- 61S
767105.	832480.	100.81	L1- 60S
767052.	832572.	100.64	L1- 59S
767005.	832637.	100.52	L1- 58S
766949.	832729.	100.56	L1- 57S
766912.	832843.	100.26	L1- 56S
766901.	832951.	100.15	L1- 55S
766900.	833050.	100.12	L1- 54S
766896.	833102.	100.07	L1- 53S
766899.	833207.	100.24	L1- 52S
766921.	833299.	100.125	L1- 51S
766933.	833378.	99.722	L1- 50S
766933.	833451.	99.88	L1- 49S
766909.	833516.	99.93	L1- 48S
767060.	833468.	100.07	L1- 47S
766903.	833607.	100.11	L1- 46S
766718.	833606.	100.11	L1- 45S
766636.	833598.	100.17	L1- 44S
766551.	833604.	100.13	L1- 43S
766485.	833662.	100.14	L1- 42S
766537.	833717.	100.20	L1- 41S
766386.	833796.	100.07	L1- 40S
766221.	833868.	100.09	L1- 39S
766051.	833930.	100.09	L1- 38S

766253.	833930.	99.92	L1- 39S
766217.	833989.	99.88	L1- 38S
766167.	834037.	100.03	L1- 37S
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766048.	834145.	99.98	L1- 35S
765985.	834187.	99.94	L1- 34S
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765812.	834248.	99.95	L1- 32S
765742.	834248.	100.00	L1- 31S
765681.	834257.	99.99	L1- 30S
765632.	834305.	99.99	L1- 29S
765526.	834409.	99.76	L1- 28S
765527.	834504.	99.83	L1- 27S
765484.	834590.	99.68	L1- 26S
765463.	834655.	99.71	L1- 25S
765482.	834718.	99.27	L1- 24S
765515.	834777.	99.48	L1- 23S
765573.	834833.	99.27	L1- 22S
765638.	834883.	98.98	L1- 21S
765634.	834900.	98.90	L1- 20S
765638.	834943.	98.96	L1- 19S
765536.	834929.	99.29	L1- 18S
765480.	834970.	99.22	L1- 17S
765460.	835033.	99.21	L1- 16S
765429.	835153.	99.22	L1- 15S
765429.	835226.	99.35	L1- 14S
765392.	835347.	99.54	L1- 13S
765306.	835438.	99.11	L1- 12S
765213.	835503.	99.06	L1- 11S
765134.	835594.	99.09	L1- 10S
765123.	835633.	99.16	L1- 9S
765122.	835804.	99.20	L1- 8S
765131.	835926.	99.18	L1- 7S
765117.	836040.	99.24	L1- 6S
765044.	836089.	99.25	L1- 5S
765005.	836122.	99.24	L1- 4S
764958.	836180.	99.22	L1- 3S
764849.	836271.	99.24	L1- 2S
764879.	836339.	99.46	L1- 000
764902.	836486.	99.45	-001M
764902.	836598.	99.47	-002M
764880.	836703.	99.38	-003M
764907.	836797.	99.11	-004M
764973.	836889.	99.64	L1- 5M
765068.	836941.	99.24	-006M
765165.	836978.	99.50	-007M
765188.	837083.	99.21	-008M
765172.	837170.	99.12	-009M
765133.	837270.	99.03	L1- 10M
765091.	837344.	98.99	-011M
765045.	837412.	98.93	-012M
764987.	837494.	98.93	-013M
765006.	837589.	98.84	-014M
765039.	837688.	98.94	L1- 15M
765069.	837785.	98.89	-016M
765070.	837905.	98.85	-017M
765025.	838009.	98.86	-018M
764987.	838104.	98.70	-019M
765018.	838211.	98.82	L1- 20M
765071.	838315.	98.72	-021M
765116.	838427.	99.03	-022M
765071.	838584.	98.69	-023M
764982.	838685.	98.52	-024M
			L1- 25M

837589.	98.84	L1- 15M
837688.	98.94	-016M
837785.	98.89	-017M
837905.	98.85	-018M
838009.	98.86	-019M
838104.	98.70	L1- 20M
838211.	98.82	-021M
838315.	98.72	-022M
838427.	99.03	-023M
838584.	98.69	-024M
838685.	98.52	L1- 25M
838816.	98.83	-026M
838928.	98.50	-027M
839018.	98.44	-028M
839122.	98.26	-029M
839211.	98.41	L1- 30M
839294.	98.22	-031M
839376.	98.21	-032M
839481.	98.07	-033M
839556.	97.95	-034M
839594.	97.73	L1- 35M
839652.	97.62	-036M
839704.	97.46	-037M
839756.	97.46	-038M
839786.	97.37	-039M
839841.	97.37	L1- 40M
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839987.	97.22	-042M
840077.	97.23	-043M
840137.	97.29	-044M
840188.	97.83	L1- 45M
840272.	98.00	-046M
840332.	98.04	-047M
840414.	98.36	-048M
840488.	98.236	L1- 49M
840519.	98.28	-051M
840519.	98.33	-052M
840527.	98.88	-053M
840549.	98.88	-054M
840591.	98.46	L1- 55M
840669.	98.62	-056M
840737.	98.57	-057M
840789.	98.54	-058M
840845.	98.64	L1- 60M
841016.	97.75	L1- 61M
841059.	97.60	L1- 62M
841106.	97.46	L1- 63M
841149.	97.41	L1- 64M
841180.	97.37	L1- 65M
841200.	97.28	L1- 66M
841257.	97.09	L1- 67M
841274.	96.97	L1- 68M
841305.	96.88	L1- 69M
841417.	96.75	L1- 70M
841506.	96.78	L1- 71M
841597.	96.77	L1- 72M
841890.	96.73	L1- 73M
841805.	96.71	L1- 74M
841897.	96.70	L1- 75M
841923.	96.60	L1- 76M
842000.	96.58	L1- 77M
842000.	96.40	L1- 78M
842000.	96.30	L1- 79M
842000.	96.20	L1- 80M

765332.	842329.	96.29	L1- 80M
765369.	842414.	96.25	L1- 81M
765368.	842509.	96.24	L1- 82M
765396.	842601.	96.17	L1- 83M
765432.	842694.	95.85	L1- 84M
765447.	842782.	95.97	L1- 85M
765483.	842868.	96.37	L1- 86M
765504.	842990.	96.32	L1- 87M
765513.	843098.	96.34	L1- 88M
765555.	843161.	96.30	L1- 89M
765604.	843240.	96.27	L1- 90M
765629.	843355.	96.25	L1- 91M
765618.	843434.	96.27	L1- 92M
765588.	843525.	96.18	L1- 93M
765535.	843597.	96.24	L1- 94M
765551.	843696.	96.16	L1- 95M
765625.	843779.	96.15	L1- 96M
765713.	843848.	96.12	L1- 97M
765752.	843950.	96.10	L1- 98M
765741.	844058.	96.10	L1- 99M
765714.	844163.	96.06	L1-100M
765713.	844265.	95.96	L1-101M
765791.	844302.	95.87	L1-102M
765886.	844329.	95.77	L1-103M
765967.	844376.	95.32	L1-104M
766039.	844438.	95.54	L1-105M
766114.	844488.	95.39	L1-106M
766189.	844561.	95.35	L1-107M
766254.	844605.	95.36	L1-108M
766342.	844665.	95.32	L1-109M
766420.	844695.	95.46	L1-110M
766492.	844715.	95.51	L1-111M
766557.	844775.	95.44	L1-112M
766619.	844838.	95.46	L1-113M
766694.	844930.	95.74	L1-114M
766725.	845059.	95.45	L1-115M
766747.	845131.	95.40	L1-116M
766835.	845204.	95.39	L1-117M
766921.	845192.	95.38	L1-118M
767023.	845156.	94.87	L1-119M
767074.	845249.	95.19	L1-120M
767103.	845315.	95.14	L1-121M
767178.	845375.	95.02	L1-122M
767250.	845402.	95.00	L1-123M
767352.	845340.	94.89	L1-124M
767427.	845373.	94.86	L1-125M
767479.	845453.	94.75	L1-126M
767544.	845532.	94.71	L1-127M
767635.	845622.	94.71	L1-128M
767644.	845736.	94.70	L1-129M
767653.	845828.	94.57	L1-130M
767681.	845927.	94.58	L1-131M
767707.	846029.	94.56	L1-132M
767758.	846102.	94.51	L1-133M
767817.	846171.	94.48	L1-134M
767905.	846225.	94.42	L1-135M
768020.	846212.	94.37	L1-136M
768088.	846289.	94.31	L1-137M
768110.	846368.	94.28	L1-138M
768156.	846427.	94.26	L1-139M
768181.	846519.	94.26	L1-140M
768180.	846611.	94.32	L1-141M
768180.	846699.	94.34	L1-142M
768119.	846811.	94.34	L1-143M



768180.	845611.	94.32	L1-141M
768160.	846699.	94.34	L1-142M
768119.	846811.	94.34	L1-143M
768075.	846883.	94.41	L1-144M
768015.	846951.	94.42	L1-145M
767953.	847045.	94.47	L1-146M
767946.	847134.	94.54	L1-147M
767950.	847213.	94.53	L1-148M
767944.	847288.	94.51	L1-149M
767921.	847367.	94.66	L1-150M
767910.	847456.	94.70	L1-151M
767847.	847576.	94.37	L1-152M
767791.	847638.	94.56	L1-153M
767754.	847726.	94.58	L1-154M
767717.	847802.	94.51	L1-155M
767660.	847909.	94.46	L1-156M
767614.	847988.	94.52	L1-157M
767564.	848073.	94.66	L1-158M
767521.	848151.	94.72	L1-159M
767454.	848243.	94.74	L1-160M
767378.	848314.	94.75	L1-161M
767315.	848372.	94.79	L1-162M
767213.	848440.	94.79	L1-163M
767147.	848493.	94.89	L1-164M
767061.	848561.	94.92	L1-165M
766995.	848632.	94.98	L1-166M
766968.	848734.	94.98	L1-167M
766993.	848833.	95.02	L1-168M
767042.	848921.	94.86	L1-169M
767033.	849040.	94.75	L1-170M
767105.	849129.	94.71	L1-171M
767141.	849228.	94.63	L1-172M
767153.	849320.	94.72	L1-173M
767155.	849409.	94.77	L1-174M
767164.	849530.	94.80	L1-175M
767170.	849635.	94.90	L1-176M
767169.	849724.	94.97	L1-177M
767136.	849815.	94.94	L1-178M
767086.	849877.	94.86	L1-179M
767012.	850027.	94.88	L1-180M
766996.	850057.	94.94	L1-181M
766982.	850159.	95.10	L1-182M
766994.	850270.	94.90	L1-183M
767009.	850359.	94.80	L1-184M
767028.	850470.	94.71	L1-185M
767034.	850572.	94.66	L1-186M
767043.	850681.	94.54	L1-187M
767032.	850785.	94.46	L1-188M
767015.	850894.	94.42	L1-189M
767000.	851009.	94.42	L1-190M
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766989.	851166.	94.25	L1-192M
766988.	851281.	94.12	L1-193M
766971.	851403.	94.05	L1-194M
766973.	851501.	94.02	L1-195M

LINE TWO

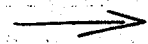
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762691.	821648.	106.71	-149S
762736.	821716.	106.85	-148S
762773.	821743.	106.83	-147S

LINE 2

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752778.	823121.	105.23	-1328
752747.	823233.	105.07	-1318
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752693.	823464.	105.21	-1298
752677.	823583.	105.25	-1288
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753270.	825351.	104.69	-1098
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744063.	828816.	103.53	L2- 73S
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743943.	828986.	103.49	L2- 71S
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742730.	831293.	103.36	L2- 45S
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742635.	831623.	103.22	L2- 40S
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742548.	831836.	103.24	L2- 38S
742505.	831895.	103.28	L2- 37S
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742071.	832718.	103.53	L2- 27S
			L2- 26S

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762007.	833699.	102.84	L2- 16S
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761920.	835716.	102.53	L2- 4M
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761918.	835923.	102.41	L2- 6M
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761916.	836215.	102.27	L2- 9M
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762005.	836912.	101.99	L2- 16M
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762019.	837116.	101.81	L2- 18M
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762070.	837310.	101.51	L2- 20M
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762114.	839444.	100.96	L2- 43N
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762347.	840417.	100.56	L2- 53N
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762472.	840787.	100.27	L2- 57N
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763543.	848529.	99.00	-156N
763518.	848634.	99.04	-157N
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763347.	849442.	99.07	-165N
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763252.	849598.	99.42	-167N
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763192.	849762.	99.45	-169N
763169.	849822.	99.86	-170N
763138.	849889.	99.32	-171N
763105.	849971.	99.17	-172N
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761689.	851921.	99.12	-196N
			-197N

LINE THREE

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764036.	829122.	103.29	-002E
764058.	829234.	103.35	-003E
764072.	829331.	103.17	-004E
764071.	829451.	103.16	-005E
764093.	829548.	103.04	-006E
764099.	829675.	103.07	-007E
764121.	829787.	103.05	-008E
764130.	829863.	103.27	-009E
764147.	829945.	103.00	-010E
764119.	830021.	102.90	-011E
764130.	830103.	102.91	-012E
764132.	830178.	102.71	-013E
764199.	830246.	102.65	-014E
764551.	830356.	102.48	-015E
764588.	830381.	102.43	-016E
764647.	830441.	102.26	-017E
764700.	830494.	101.64	-018E
764753.	830539.	102.06	-019E
764804.	830592.	102.02	-020E
764856.	830660.	101.92	-021E

764804.	830592.	102.02	-020E
764856.	830660.	101.92	-021E
764893.	830705.	101.84	-022E
764960.	830750.	102.34	-023E
765027.	830810.	102.05	-024E
765101.	830863.	101.93	-025E
765184.	830909.	102.07	-026E
765265.	830969.	102.05	-027E
765437.	831075.	101.63	-029E
765570.	831030.	101.75	-028E
765370.	831030.	101.75	-028E
765364.	831128.	101.53	-030E
765646.	831174.	101.50	-031E
765735.	831241.	101.21	-032E
765832.	831324.	101.15	-033E
765892.	831385.	101.18	-034E
765973.	831482.	101.25	-035E
766033.	831543.	101.27	-036E
766100.	831618.	101.33	-037E
766151.	831700.	101.05	-038E
766218.	831776.	101.45	-039E
766293.	831836.	101.39	-040E
766376.	831911.	101.30	-041E
766479.	831957.	101.08	-042E
766584.	832002.	101.19	-043E
766673.	832048.	100.86	-044E
766748.	832108.	100.70	-045E
766852.	832146.	100.61	-046E
766949.	832177.	100.60	-047E
767047.	832200.	100.71	-048E
767129.	832231.	100.66	-049E
767211.	832246.	100.76	-050E
767316.	832232.	100.14	-051E
767421.	832225.	99.98	-052E
767518.	832241.	100.03	-053E
767608.	832249.	99.83	-054E
767713.	832287.	100.10	-055E
767795.	832303.	99.57	-056E
767892.	832304.	99.56	-057E
767990.	832304.	99.52	-058E
768072.	832320.	99.70	-059E
768124.	832305.	99.80	-060E
768214.	832284.	99.84	-061E
768290.	832247.	99.73	-062E
768380.	832218.	99.54	-063E
768447.	832181.	99.40	-064E
768515.	832136.	99.31	-065E
768608.	832040.	99.09	-066E
768681.	831958.	99.27	-067E
768794.	831984.	99.22	-068E
768892.	831825.	99.24	-069E
768905.	831744.	99.45	-070E
768983.	831722.	99.44	-071E
769193.	831686.	99.51	-072E
769353.	831613.	99.20	-073E
769553.	831599.	98.96	-076E
769673.	831615.	98.94	-077E
769800.	831645.	98.90	-078E
769897.	831654.	98.99	-079E
770009.	831654.	98.96	-080E
770088.	831662.	98.92	-081E
770201.	831678.	98.81	-082E
770331.	831672.	98.73	-083E
770421.	831687.	98.66	-084E

769095.	831722.	99.44	-071E
769194.	831686.	99.51	-072E
769459.	831613.	99.20	-075E
769553.	831599.	98.95	-076E
769673.	831615.	98.94	-077E
769806.	831545.	98.90	-078E
769897.	831654.	98.99	-079E
770009.	831654.	98.96	-080E
770084.	831662.	98.92	-081E
770204.	831675.	98.81	-082E
770331.	831672.	98.73	-083E
770421.	831687.	98.66	-084E
770518.	831703.	98.55	-085E

LINE FOUR

762667.	841047.	99.85	-061E
762749.	841076.	99.84	-062E
762854.	841106.	99.82	-063E
762936.	841121.	99.80	-064E
763026.	841128.	99.71	-065E
763116.	841128.	99.61	-066E
763213.	841128.	99.51	-067E
763311.	841120.	99.48	-068E
763393.	841097.	99.41	-069E
763505.	841082.	99.38	-070E
763602.	841045.	99.33	-071E
763692.	841022.	99.14	-072E
763774.	841014.	99.04	-073E
763872.	840999.	98.98	-074E
763969.	840984.	98.92	-075E
764066.	840954.	98.75	-076E

LINE 4

PAGE 1

// JOB

LOG DRIVE	CART SPEC	CART AVAIL	PHY DRIVE
0000	1000	0000	0000
		1000	0000

MAP 009 ACTUAL 32K CONFIG 32K

// XEQ RLGCP

```

*****
* SITE- 10200 *
* JOB I.D.- NEWMONT *
* TUCSON *
* ENTERED BY- STAFF *
* DATE- 4 DEC 74 RWH 90 *
* *
* START STOP *
* 15 31 55 15 32 49 *
* *
* EXECUTION TIME 0.011 *
* CAPDS IN 865. *
* PRINT LINES 864. *
*****

```

```

* * * * * 01 JAN 4 DEC74 FOR SITE 10200 *
* JOB I.D. - NEWMONT /TUCSON *
* ENTERED BY - STAFF *
* TIME LIMIT - 2 MINUTES *
* RUN STARTED AT 15 33 53 *
* ,*****

```

TAPE 1 = SCRATCH IS ON DRIVE 3

PAGE 1

// JOB 1000

LOG DRIVE	CART SPEC	CART AVAIL	PHY DRIVE
0000	1000	0000	0000
		1000	0000

// 209 ACTUAL 32K CONFIG 32K

REG FTLST  
0030 4001

762520.	841132.	100.22
762501.	841222.	100.46
762454.	841311.	100.34
762415.	841393.	100.69
762399.	841475.	100.66
762390.	841543.	100.80
762374.	841632.	100.74
762357.	841730.	100.66
762341.	841812.	100.50
762332.	841894.	100.39
762315.	841984.	99.96
762298.	842009.	100.19

*Power?  
Same as previous*

PAGE 1

- 0610
- 0620
- 0630
- 0640
- 0650
- 0660
- 0670
- 0680
- 0690
- 0700
- 0710
- 0720



~~WLC~~

JDS

5/23/75

K. Coryall has some information that he thinks would be of some benefit without any conflict on his part.

His personal work on the E-W Gravity Survey (Hemrichs) south of SEC. 4 & 5 T. 25 R. 13E.

Feels that it outlines the Trough running SE from A-4

Kirby felt that their 3300' D.H. substantiates the GRAVITY work and gave him a good profile on the Whitetail & WACO LS.

He expects to be sitting on a drill all next week.

would appreciate a call back.

ABC.

K Conzall,  
verbal. telephone  
May 27, 1975

325-2075

Naco # 2900 in hole

I-1. similar depth to capoline.

N side of <sup>sec</sup> 8-9 gravity seems clear across plateau.

Segment 1 mile east of hole is between K-1 & I-1

Dipping <sup>downward</sup> S side base axis prior to tilting.

He feels that the drainage patterns may have been employed prior to tilting of the basin area.

? in Td also?

Rejected offer of his to let ASARCO look & copy data. (inc WLR).

February 3, 1976

TO: F. T. Graybeal

FROM: J. D. Sell

Newmont Gravity Survey  
Superior East Project  
Pinal County, Arizona

The SLC recommendation three could easily be accomplished and is worthy of being added to the project case history. The value of determining the basin configuration is appreciable based on the suggestion of mineral distribution in holes A-4 and A-7 but, as shown in hole A-3, the controlling parameters for the distribution of copper are apparently not the same as the basement configuration. However, only a relatively few stations would be needed to extend the coverage to the east perpendicular to the apparent north-south mgal trend lines. Roads are available to holes A-7, A-4, A-3, and KC-1, and thru Oak Flat, to connect with the Newmont stations. A long road east of Devils Canyon is available which connects hole A-2 with DC-1 on the south.

In reviewing J. R. Montgomery's map and C. K. Moss's cover letter of January 30, 1976, several points need to be brought out: 1) the SLC group was not specifically informed of our new work in hole A-3 and its terminated depth in Whitetail at minus 1883 feet below sea level, and 2) they were unaware that Newmont had reentered hole KC-1 and had penetrated the Naco Limestone, which had been called "basement", and were coring in Whitetail at an elevation of plus 600 feet above sea level. Newmont has also reentered hole DC-1 which had previously been terminated in Whitetail at plus 730 feet above sea level. Unfortunately, no verified hard data on units and contacts have been gleaned from the Newmont holes (B-3, B-5, KC-1, and DC-1), and the figures reported on maps should be treated as rumored approximations.

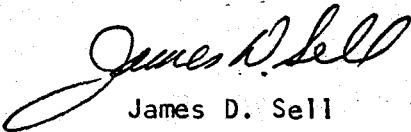
Based on Asarco hole A-3, the minus 2000-foot structural contour can be extended into a long oval between holes A-4 and A-3. Likewise, the change in depth of hole KC-1 shifts the sea level and other contours rapidly to the west. These changes are shown by my red line additions and extensions on the JRM-CKM map Figure 1.

Other points of interest: 1) Do the wild contortions in J.R.M.'s -10 mgal and -20 mgal lines west of hole A-4 reflect the slide block found in the hole, and 2) do the similar curls in the mgal lines further south suggest the same thing; i.e., does the little bloop west of the hole KC-1 in line zero mgal reflect the Naco slideblock encountered in hole KC-1?

February 3, 1976

As noted, J.R.M. did not interpret basement contours from the gravity data, but merely overlaid his contours over C.K.M's contouring of available depth to bedrock figures. It may be a more reasonable interpretation to suggest that the mgal lines as shown do reflect the general outline of the basin and, hence, "sea level" may be reflected by the minus 10 mgal contour, and the wild contortions reflect slideblocks up in the Whitetail or true horst blocks in the basement.

Specific gravity determinations were made on a number of core samples. The report was dated June 6, 1973 to W. L. Kurtz with a copy to C. K. Moss. Letters from Moss at that time, dated June 5 and 22, suggested some skepticism on being able to sort out the basement rocks through and under a thick sequence of variable Whitetail.



James D. Sell

JDS:lb

JDS - how do the A-3 results conform to the gravity interpret.? Is it worth further work?

RECEIVED

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

FEB 2 1976

S. W. U. S. EXPL. DIV.

January 30, 1976

F. T. G.  
FEB 2 1976

Mr. Fred Graybeal, Supervisor  
Tucson Office

J. R. Montgomery Memo-1/30/76  
Newmont Gravity Survey  
Superior East Project, Arizona

Dear Fred:

Attached find Jerry's memo.

I support Jerry's conclusion and recommendations.

In my own experience on the project, I have wondered whether the basin might not swing to the southeast, as suggested by the structural contours, rather than follow a southern trend as guided by faulting. Gravity might be used in the future to answer a question such as this, if further tests support the value of gravity on the basin problem.

Conceivably, gravity might also indicate some interior details of the basin in respect to faulting and basement lithology.

Yours very truly,



C. K. MOSS

CKM:am  
Enc.

cc: W. L. Kurtz, w/enc.

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

January 30, 1976

MEMO TO C. K. MOSS:

NEWMONT GRAVITY SURVEY  
SUPERIOR EAST PROJECT, ARIZ.

Introduction

Gravity data for a portion of the Dacite Plateau was obtained from Newmont by Mr. J. D. Sell of the Tucson office. Our office was requested to analyze the data and determine its usefulness as an interpretative aid in this environment.

Results

1. Contours of the gravity data, as shown in Figure 2, tend to outline that portion of the Whitetail basin, Figure 1, which is covered by this survey. (Figures 1 and 2 are attached.)
2. The present coverage is not sufficient to show definitely that gravity will outline the complete basin structure, however the contours indicate that it may do so if full coverage is made.
3. A conclusive test could be conducted by taking gravity readings at spot elevations on the topographic map that covers Asarco's ground.
4. Assuming that the above test supports the implications contained in the small strip of Newmont data, an adequate definition of the basin could be obtained by taking gravity readings on about a 1/3 mile grid. This grid could be adjusted to minimize terrain effects.
5. Terrain corrections were made for some of the Newmont gravity stations, however, in most cases the corrections proved to be unnecessary. The practice of placing stations no closer to cliffs than 500 to 1000 ft. would minimize terrain effects in future work.

RECOMMENDATIONS

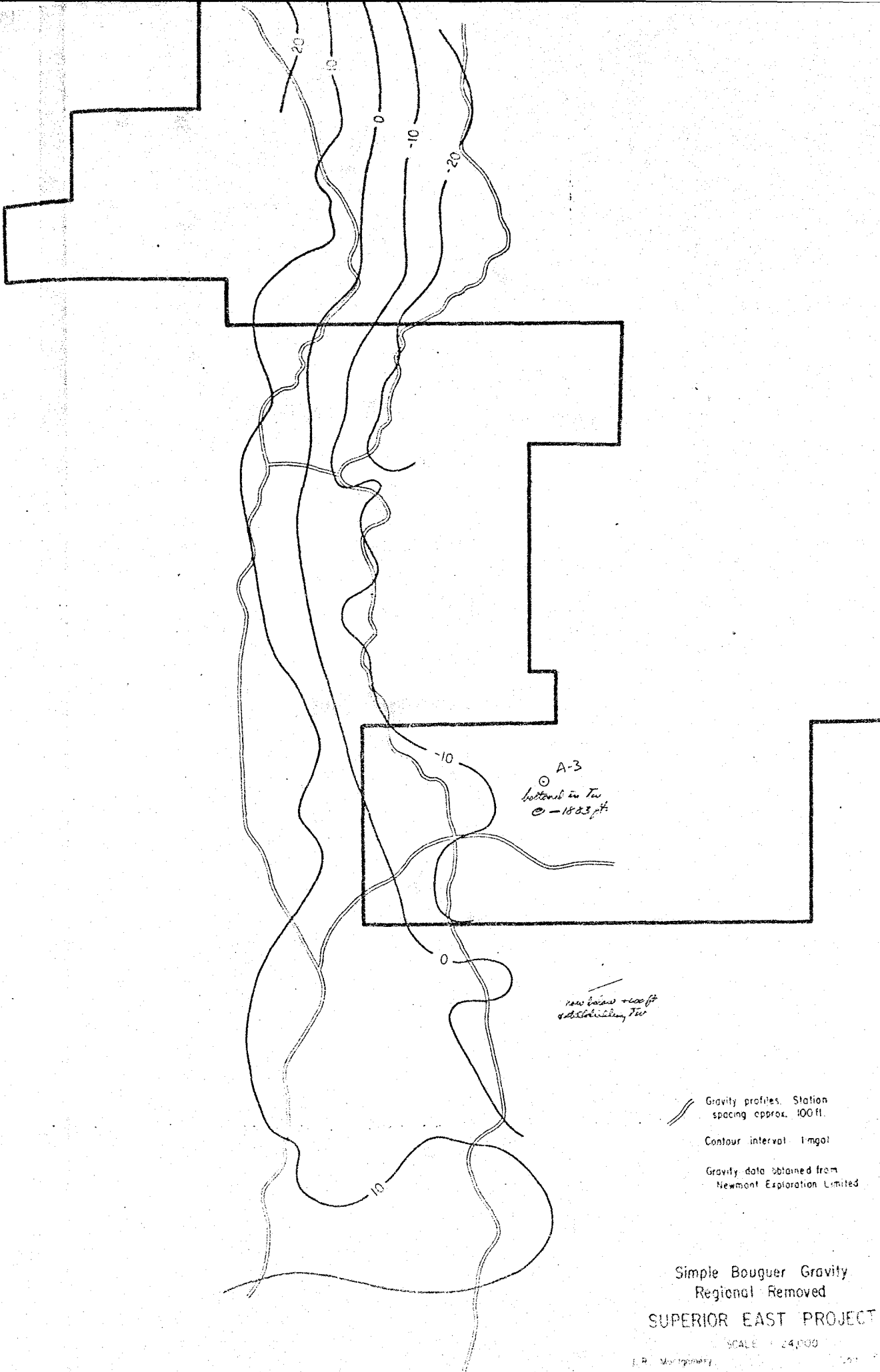
On the assumption that the Tucson office would be interested in the information which gravity might yield, I would recommend that work be followed as discussed in (3) and (4) above. About 50 stations would be involved in the test of (3), as indicated by the available elevation points on the Superior quadrangle.

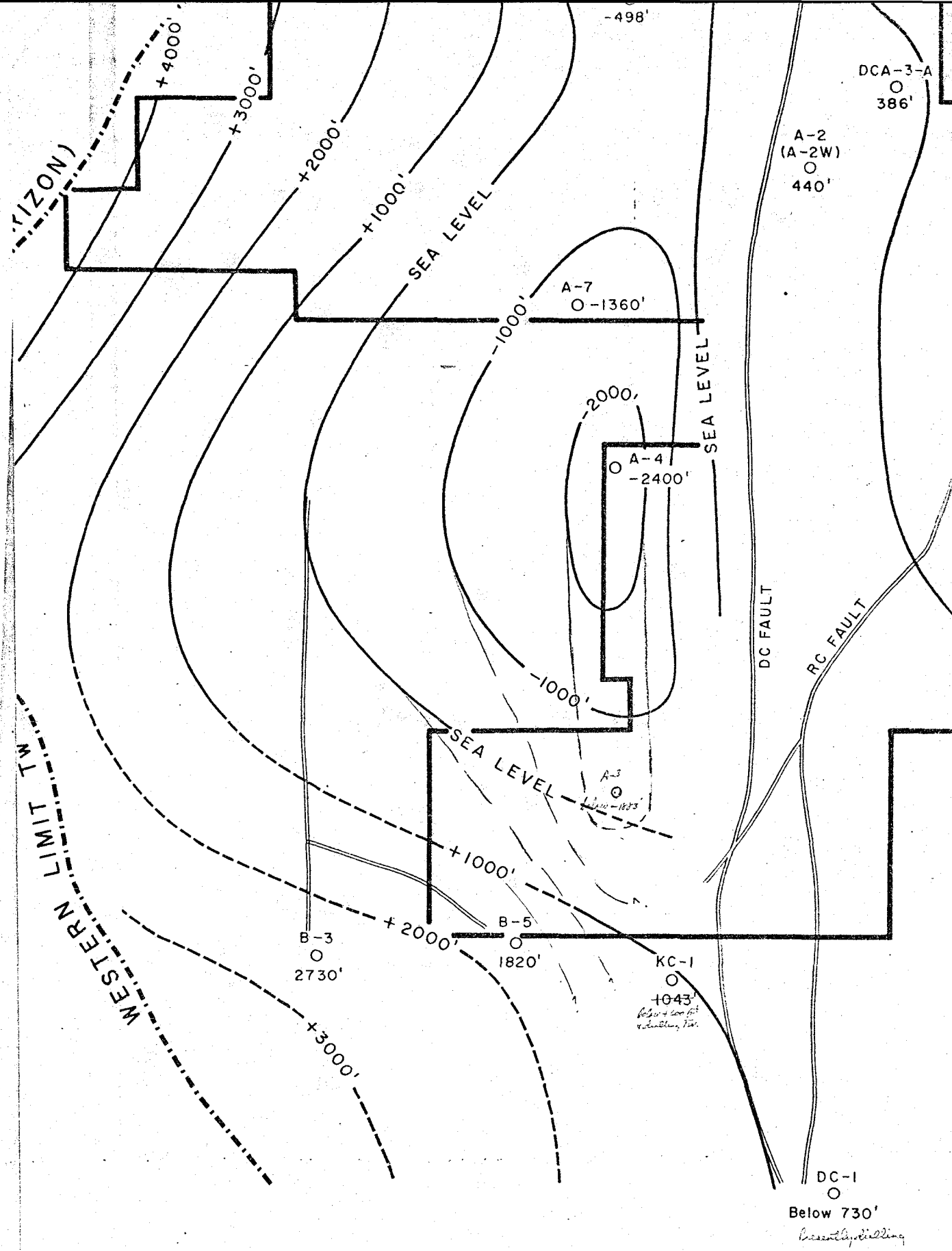
JRM:am  
Attchs.

*Jerry Montgomery*  
J. R. MONTGOMERY



EASTERN LIMIT TW





Generalized Structural Contours  
 on Base of Whitetail Conglomerate  
 SUPERIOR EAST PROJECT

SCALE 1/24,000

C.K. Moss Sept. 19  
 Prepared from sections of J.O. Sell

DCA-1A  
 ○  
 81' ← Denotes elevation of  
 base of Whitetail

JRM -

2/6/76

rebal.

Need to have elevations accurate to 1 ft or no more than 2 ft.

Believes that the old elevations would be good for the 1<sup>st</sup> test to see how it might be working.

Otherwise, leveling is the good method - but slow. Use of distance-measuring device is excellent & fast (& work done is directly proportional to how fast the meters can be moved from station to station).

Month:

<u>Project or Location</u>	<u>State</u>	<u>Type of Survey</u>	<u>No. of Line Miles or No. of Stations and spacing or array</u>	<u>Carried out by (Names)</u>	<u>Staff Field man/days</u>	<u>Staff Office man/day</u>
----------------------------	--------------	-----------------------	--	-------------------------------	-----------------------------	-----------------------------

Superior, East, Az. Gravity. A 40-50 station scatter is presently being taken by Beninovich & Oswald. If completed by 2/13. Reduced data will be sent to SCC for incorporation with Newmont data. If it looks encouraging then a comprehensive survey (3 line of 2 miles, 500 ft station (?)) will be recommended.

Lost Horse zone, Az. Gravity. Trl No. Aa B.M.D. 0 & 16A-0.0. Poor coverage by gravity and the relatively shallow IP penetration depths, suggests that additional gravity be run to tie in the recent pediment drill hole data. The one F.P. anomaly may reflect a possible remnant and more interpretive work is needed. Unfortunately much of the zone is within a military withdrawal which may not be accessible.

Three areas could use aeromagn as a base for future work:

- 1) Ash Peak area between Safford & Puerca. Very strong vein (s) occurrences with associated metals (Ash Peak Mine is noted for its silver shipments).
- 2) The entire E-W trend between Prescott & Bogard needs to be reevaluated.
- 3) The large area of NW Ariz from Kathleen-Columa north to Black Mt. Gold Bug & east to Music Mts and Lost Basin.

J. Sell

February 17, 1976

Mr. J. R. Montgomery  
Asarco  
Salt Lake City Office

Superior East Project  
Pinal County, Arizona

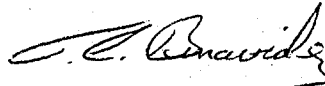
Dear Mr. Montgomery:

Enclosed are gravity data collected on the subject project as instructed by Messrs. F.T. Graybeal and J.D. Sell.

I assume you have been notified as to what procedures to take on reducing the data on the specified gravity stations; if not, please contact Mr. Graybeal or Mr. Sell. Also, if further coverage is necessary or desired, Mr. Sell and I have discussed the possibility of occupying known elevation points, drill sites, etc. north, south, and within the present survey for a more complete coverage rather than running level lines. Of course, this will depend on if these readings will be useful to you.

Whatever your decision is, please let us know.

Yours truly,



T. C. Benavidez

TCB:lb  
Encs.

AREA SUPERIOR, ARIZ						FOR BASES USED AND THEIR VALUE SEE OTHER SHEET								
OPERATOR <u>BENAVIDEZ, J.C.</u>						DATE <u>2-10-76</u>		GRAVITY METER CONSTANT <u>.0924 (5)</u>						
STATION	B	G	E	T	TIME	GRAVITY METER READING	LATITUDE		LONGITUDE		KNOWN ELEVATION	ALT #1 HI	ALT #2 ROD	S DISTANCE
							deg.	Minutes	deg	Minutes				
BASE		1	1		8:30	1123.0					4157			AND BM AGAD P&M 1966
SUP-1			2		9:05	999.1 <sup>0</sup>					4340			A-2 DRILL SITE
SUP-2			1		9:32	689.1 <sup>1</sup>					4776			ROCK MON.
SUP-3			2		9:53	782.0 <sup>1</sup>					4640			DCR-3 DRILL SITE
SUP-4			2		10:21	1219.5 <sup>4</sup>					3995			RD. JCT
BASE		1	1		10:28	1124.2 <sup>3</sup>					4157			AND BM
SUP-5			2	1	1:23	955.4 <sup>2</sup>					4422			ELE. POINT
SUP-6			2	1	2:00	1091.6 <sup>7</sup>					4210			A-7 DRILL SITE
SUP-7			2	1	2:36	1274.3 <sup>2</sup>					3983			RD. JCT.

AREA SUPERIOR, ARIZ						FOR BASES USED AND THEIR VALUE SEE OTHER SHEET								
OPERATOR <u>BENAVIDEZ, J.C.</u>						DATE <u>2-10-76</u>		GRAVITY METER CONSTANT <u>.0924 (5)</u>						
STATION	B	G	E	T	TIME	GRAVITY METER READING	LATITUDE		LONGITUDE		KNOWN ELEVATION	ALT #1 HI	ALT #2 ROD	S DISTANCE
							deg.	Minutes	deg	Minutes				
SUP-8			1	1	2:58	1185.5 <sup>4</sup>					4130			SEC. COR.
SUP-9			2	1	3:21	1171.3 <sup>3</sup>					4125			A-3 DRILL SITE
SUP-10			2	1	3:55	1181.7 <sup>6</sup>					4150			ELE. POINT (RD)
SUP-11			2	1	4:14	1178.8 <sup>7</sup>					4092			CURVE
SUP-12			2	1	4:22	1184.6 <sup>6</sup>					4076			RD. JCT.
SUP-13			2	1	4:32	1215.5 <sup>4</sup>					4037			RD. JCT.
BASE		1	1	1	5:04	1125.1 <sup>0</sup>					4157			AND. BM.









JDSM

3/3/76

SUPERIOR E

Jerry Montgomery and crew  
will be at trailer - Claypool -  
next Tuesday Mar. 9 at  
roughly 12:00 noon. They  
need somebody to meet  
them with

- 1.) key to trailer
- 2.) gravimeter.

Also, I would like to send  
a report along with  
#1 and 2.

FTG.

JDS ✓

LAB

WLK

2/17

Geophysics

Jerry Montgomery will  
arrive next Monday - (Feb 23)  
probably early afternoon.

Would like to spend  
one day looking at Dacite  
Plateau terrain, probably  
another day or so discussing  
speculative + controversial  
surveys.

JDS - can you arrange tour?

LAB - " " get motel?

WLK - any surveys you want?

FTG.

(any comments?)  
Senedhat

F. T. Graybeal

G E O P H Y S I C A L   O F F I C E   -   E X P L O R A T I O N   D E P A R T M E N T  
3422 South 700 West  
Salt Lake City, Utah 84119

April 19, 1976

F. T. G.  
APR 19 1976  
RECEIVED

APR 21 1976

S. W. U. S. EXPL. DIV.

Mr. T. C. Osborne, Director of Exploration  
New York Office

COOKSLEY SEISMIC SURVEY  
SUPERIOR EAST, ARIZONA

Dear Tom:

Attached is Cooksley's interpretation of the seismic profile which he made across the "Whitetail basin" at Superior East. Field work was completed last year.

This survey was made at Collins' request; it was to serve as a test to determine whether seismics might be used to outline the basin in advance of drilling.

Also attached is a structural contour map of the basin. This map is an interpretation based on Jim Sells' drill sections.

There is only one drill hole which has reached the base of the Whitetail that is near enough to Cooksley's profile to provide a check on Cooksley's interpretation. This hole is A-7. The depth to the base of the Whitetail in A-7 shows that Cooksley's interpretation is reasonably good for this location.

One significant feature of the seismic interpretation is the indication that the deeper part of the basin (below minus 1000 ft.) extends farther east than has been interpreted from drilling. A favorable implication from such a condition is that much more of the "native copper section" of the Whitetail will exist under this profile than would have been expected.

I believe everyone would agree that Cooksley's seismics would be valuable elsewhere on the Plateau providing that the results were reliable. Probably, we who have been concerned with Cooksley's work in the past, share the fear that subsequent drilling will show his present interpretation to be in error.

Cooksley has been paid in full for his work. His bill was \$16,000.00. The authorization (E. A. 0076-00, New York Office) allowed for an expendi-



ture of \$30,000.00, leaving \$14,000.00. The Tucson group may have reason to want additional coverage by Cooksley. For my part, I would consider that any additional work should await confirmation (by drilling) of his present interpretation.

Yours very truly,

*Cal Moss*

C. K. MOSS

CKM:am  
Enc.

cc: W. L. Kurtz, wo/enc.  
✓ F. T. Graybeal, wo/enc.

NOTE TO T. C. O.

The Southwest has previously received a copy of Cooksley's interpretation.

CKM

As all we (all) have seen in the cross-section preliminary which Cal sent down March 10, and that section did not have Cooksley's points for A-5 + A-7 (Cal had put them on), it might be early to second-guess Cooksley's final major sections.

As I recall, we did give him the formation depths in A-7 so that he could correlate events as he picked them & thus hopefully present a better picture toward A-5 and to the east across Devil's Canyon.

Using the section submitted, Cooksley was some 100 feet too high in picking the top of T<sub>2</sub> in both A-5 + A-7, but is within a 100 feet of the base of T<sub>2</sub> in A-7. Cooksley's thought in separating out 3 types of T<sub>2</sub> is interesting, as is his area of "probably contain slick slides of pre-T<sub>2</sub>" area.

We need his final report, seismicograms etc.

*J. D.*

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

March 25, 1976

Mr. Fred Graybeal, Manager  
Tucson Office

COOKSLEY SEISMIC SECTION  
SUPERIOR EAST

Dear Fred:

On March 10, I transmitted Cooksley's seismic section for Superior East to you. On this section I showed the positions of drill holes A5 and A7 -- and I indicated that these holes were projected into the section. Jim Sell recently called my attention to the fact that these holes are actually in the section.

Please take note of my error -- I was too hasty in checking the maps.

Yours very truly,



C. K. MOSS

CKM:am

cc: W. L. Kurtz  
J. D. Sell ✓

JDS - WLK → SE seismic

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

March 10, 1976

RECEIVED  
MAR 15 1976  
S. W. U. S. EXPL. DIV.  
F. T. G.  
MAR 15 1976

Mr. Fred Graybeal, Manager  
Tucson Office

COOKSLEY SEISMICS  
SUPERIOR EAST, ARIZONA

Dear Fred:

Attached is Jim Cooksley's interpretation for his seismic line on the Dacite Plateau. Jim has yet to submit his final report, but he states that this will be the interpretation he will stand by.

In general, this interpretation must be considered as being reasonably consistent with the results from A-7, (projected). If his interpretation is correct, then there will be more of the native copper horizon to be prospected on the east of A-7 than previous interpretations have allowed. *(Geologist's interpretation)*

Cooksley plans to pass through Tucson either the 17 or 18th, or between the 26th and 29th (March). He will call your office with the objective of setting up a discussion with Jim Sell or others of your staff.

Yours very truly,



C. K. MOSS

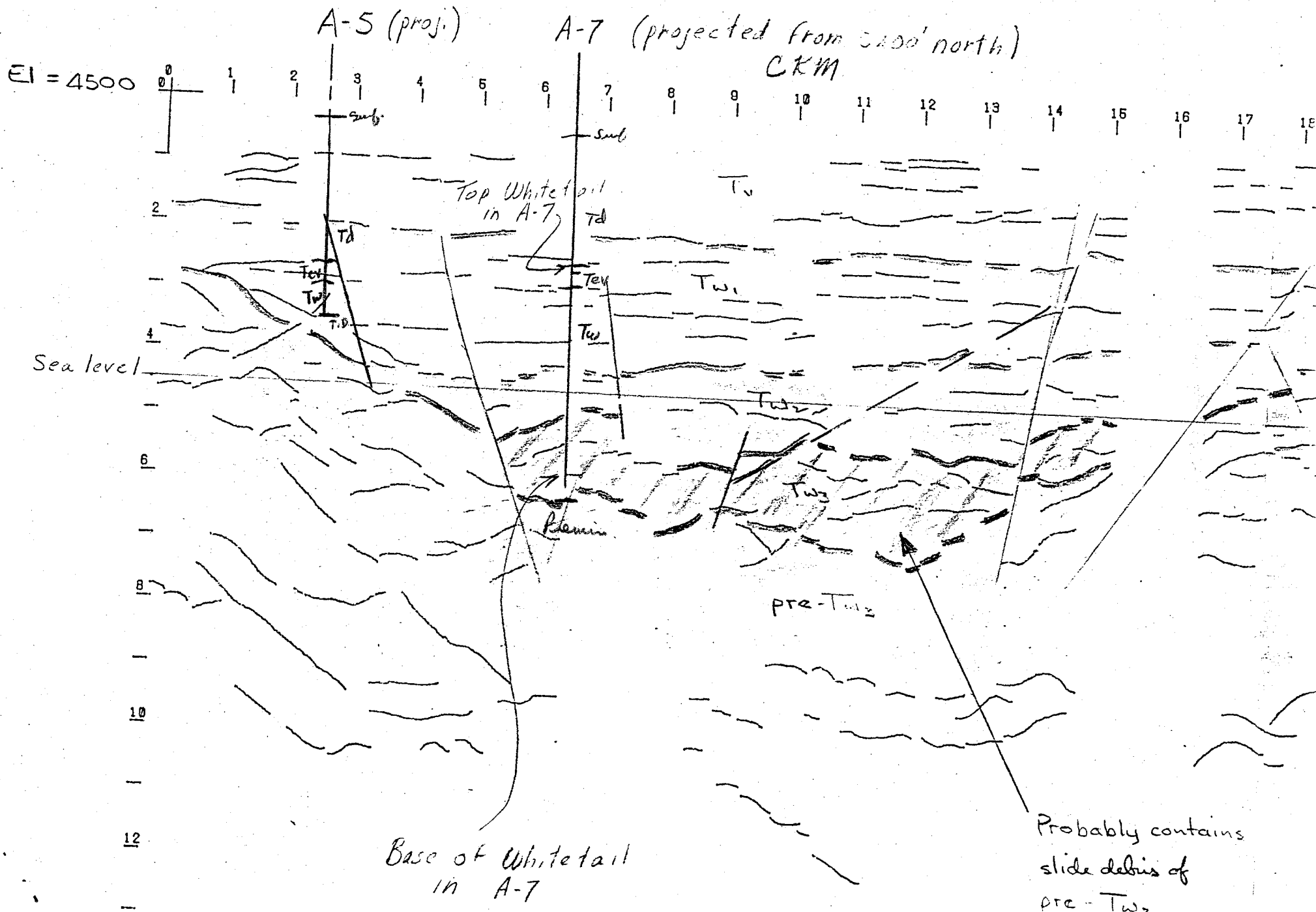
CKM:am  
Enc.

cc: W. L. Kurtz, wo/enc.  
T. C. Osborne "

JOB 272

1" = 2000'

Looking north



1" = 2000'

Look North

JOB 272

5 (proj.)

A-7 (projected from 5200' north)

CKM.

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23



Base of Whitetail  
in A-7

CKM

Probably contains  
slide debris of  
pre-Tw3

JWC

NOTE: Tw<sub>1</sub>, Tw<sub>2</sub>, Tw<sub>3</sub>  
are Whitetail G<sub>3</sub>.

JWC.

FROM: W. L. KURTZ

12/22

TO: Cal Moss

Cooksey  
Setzman

Let's stay within the  
budget (\$3,000) which  
I think was too much  
\$ anyway

FTG original  
cc TD Sell ✓



Monday, December 15

FTG  
JDS

Cooksley called - re Miami Superior project.

He is going through every trace of what he calls CDP gathers - parametrically, consisting of about 2 to 5 traces per gather. It is taking about 15 to 20 minutes per gather and there are 412 gathers. He has been working 75% of his time during the past 2 weeks towards getting this completed, and he will complete it successfully. The job is becoming a challenge - noise situation was rough -- takes real hard concentration.

He is now in Redding and has to take care of the other 25% of his business the next two days. He will be back on the job Wednesday.

Bill Kurtz:

The above phone message from Cooksley was taken by the Secretary.

Cooksley is distrustful of the computer service work on his seismic data, and is tackling the job personally.

Cal Moss

RECEIVED

DEC 22 1975

S. W. U. S. EXPL. DIV.

JDS  
JHe

RECEIVED  
OCT 30 1975  
S. W. U. S. EXPL. DIV.

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

October 28, 1975

W.L.K.  
OCT 31 1975

Mr. W. L. Kurtz  
Tucson Office

SEISMICS  
SUPERIOR EAST, ARIZONA

Dear Bill:

Enclosed is a depth section prepared by Cooksley from his recent seismic work at Superior East. Cooksley is not satisfied that this interpretation is the best that he can get from his field data, and does not want us to consider this as final. He is having problems (as before) at the processing center. The present interpretation was sent at my request, in order that we might have some idea of his state of progress.

I have made notes on the section to call attention to discrepancies which I see in comparing the section with results from drilling.

Unfortunately, the discrepancies at this point are serious.

Yours very truly,



C. K. MOSS

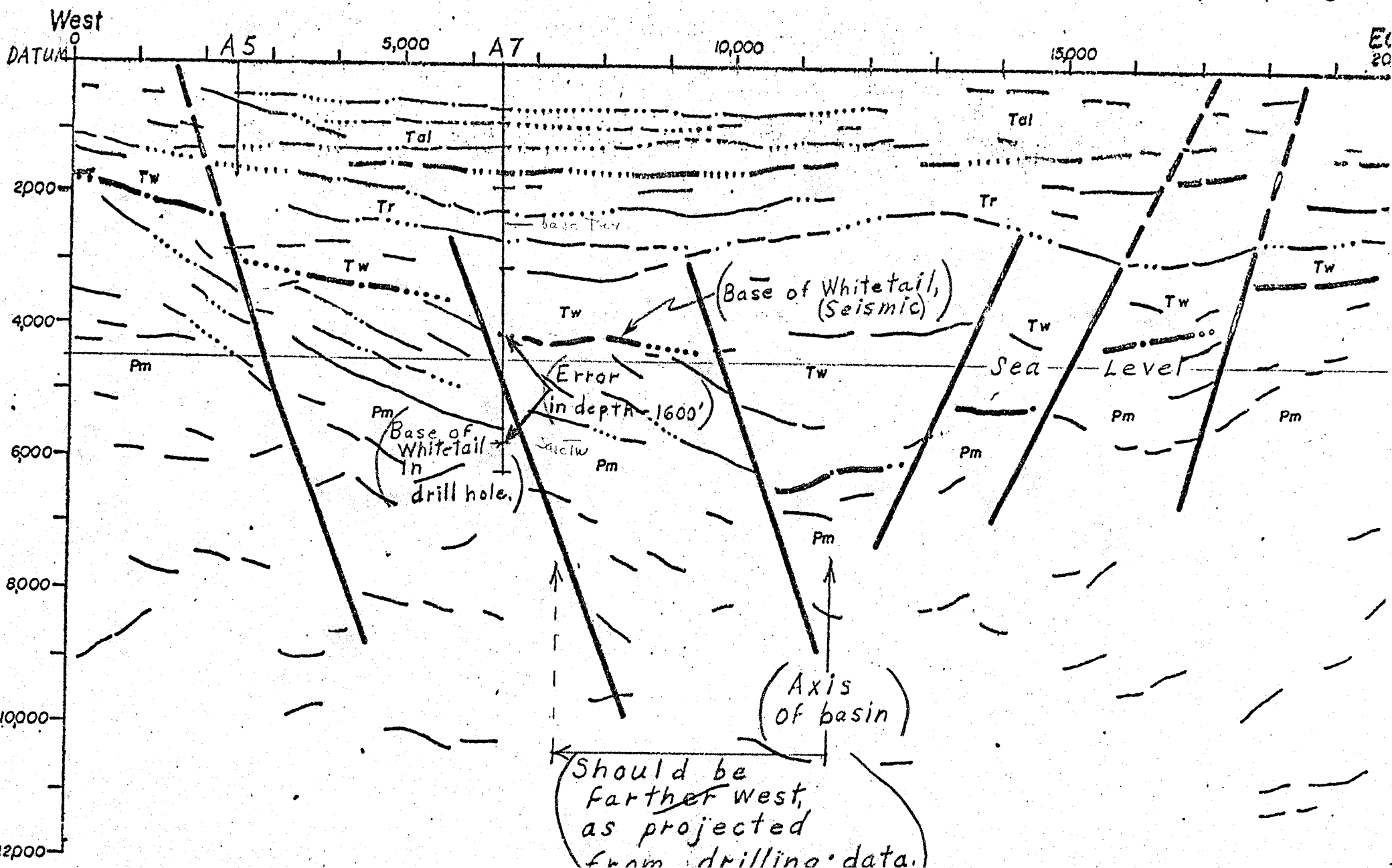
CKM:am  
Enc.

cc: J. J. Collins, w/enc.

# SUPERIOR EAST, ARIZONA

1" = 2000'

## SEISMIC DEPTH SECTION -- J.W. COOKSLEY 1975



JDS  
JHC

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT **RECEIVED**  
3422 South 700 West  
Salt Lake City, Utah 84119

SEP 18 1975  
S. W. U. S. EXPL. DIV.

September 16, 1975

W. L. K  
SEP 19 1975

Mr. John Collins  
New York Office

COOKSLEY SEISMIC SURVEY  
SUPERIOR EAST, ARIZONA

Dear John:

Needless to say, Cooksley's report on his seismic survey is far behind schedule. I have talked periodically with him regarding his progress; generally, he expresses his problem as one where he is unable to get results from the computer people which are as clear as they should be considering the good quality of his field data.

I have asked Cooksley to provide us with the best interpretation which he can make, considering a delivery date in the first week of October. This should give me something to show you on your next visit here.

Yours very truly,

*Cal Moss*

C. K. MOSS

CKM:am

cc: W. L. Kurtz ✓

# J.W. COOKSLEY COMPANY

APPLIED EARTH SCIENCES

engineering  
geology • geophysics

24 July 1975

American Smelting & Refining Company  
3722 South 700 West  
Salt Lake City, Utah 84119

Attention: Mr. Calvin Moss

Reference: Progress on processing of seismic data near Superior, Arizona.

At this time our office has received one six-fold stacked section of the data from Superior, and one section of one-fold coverage. Throughout the data there are many strong diffractions which interfere with the desired reflection signals.

Currently a velocity filtering technique is being employed in hopes of improving the signal-to-noise ratio. Reports during a telephone conversation today with the processing center in Dallas, Texas indicate that a marked improvement has been achieved through this process, and our office should be supplied with the velocity filtered data toward the end of next week.

I anticipate that we will be able to have a preliminary geologic interpretation of the data available to your firm within approximately 10 days of our receipt of the data. Upon examination of the velocity filtered profiles judgements will be made concerning any additional processing of the data. The time for completion of a final section will be dependent on these decisions.

If you have any further questions concerning progress on this job or the data interpretations, please contact our Tucson office.

Sincerely,

*Gregory D. Lazear*  
Gregory D. Lazear

GDL/ksk

*This far charges  
\$15,000 by Cooksley*

REPLY TO: 2610 East Grant Road/Tucson, Arizona 85716/(602) 795-9790  
P.O. Box 1602 Redding, California 96001/(916) 241-3167

# J.W. COOKSLEY COMPANY

## APPLIED EARTH SCIENCES

engineering  
geology • geophysics

ORIGINAL  
PAY THIS ONLY

Invoice Date: 13 May 1975

Project No: 272/575

Client: American Smelting and Refining Company  
Exploration Services Division  
3422 South 700 West  
Salt Lake City, Utah 84119

Attention: Calvin Moss

Reference: Billing for Reflection Seismic Survey being conducted at  
the Superior East Project, Arizona 3 March - 21 April 1975

### DATA ACQUISITION

#### Personnel:

1) Junior Geophysicist	120/day for 12.5 days	\$ 1500.00
2) Field Assistants	70/day for 77 man/days	5390.00

*Holder*  
*OK Moss* → Per Diem 8.00 man/day for 91.0 days 728.00

Lodging at cost 1309.03

#### Equipment:

1) DFS/10,000 Digital Field System, including operator	9 days at 495.00/day	4455.00
--	----------------------	---------

2) Auxiliary Vehicles	20.00/day for 25.0 days 0.25/mile for 740 miles	500.00 185.00
-----------------------	--	------------------

3) Atlas-Copco Drill	10.00/day for 19 days	190.00
----------------------	-----------------------	--------

4) Trailer mounted compressor and drill	35.00/day for 5 days	175.00
---	----------------------	--------

Explosives: at cost plus 10% 242.83

\$ 14,674.86

Please remit to: P. O. Box 1602  
Redding, CA  
96001

*O.K. C. K. Moss*

*Chg - nyoy - MA: 0076-00*

REPLY TO: 2610 East Grant Road/Tucson, Arizona 85716/(602) 795-9790  
P.O. Box 1602/Redding, California 96001/(916) 241-3167



EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

April 24, 1975

W. L. K.  
APR 30 1975

RECEIVED  
APR 28 1975  
S. W. U. S. EXPL. DIV.

Mr. J. J. Collins  
New York Office

SEISMICS  
SUPERIOR EAST, ARIZONA

Dear John:

I spent the day of April 22 with Jim Cooksley in connection with his seismic survey at Superior East. Jim showed me his field set-up at Superior, and we examined the seismic records they are obtaining in the work.

At this point, the field operation is proceeding efficiently, and the seismic records appear to be much improved over those from past work on the Plateau.

Cooksley hopes to finish the field work in about ten days. His initial look-see at the reduced results can be expected about two weeks thereafter.

All-in-all I received a favorable impression from my visit.

Yours very truly,

*Cal*

C. K. MOSS

CKM:am

CC: W. L. Kurtz ✓

CPJ TDS ✓  
EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

February 24, 1975

RECEIVED  
FEB 26 1975  
S. W. U. S. EXPL. DIV.

W. L. K.

MAR 5 1975

Mr. J. W. Cooksley  
J. W. Cooksley Company  
2610 E. Grant  
Tucson, Arizona 85716

SEISMICS-SUPERIOR EAST

Dear Jim:

Attached herewith is your copy of the agreement covering the coming work at Superior East. Mr. John Collins, Director of the Exploration Department, has signed for ASARCO.

Also enclosed is a sketch map showing the preferred routing of the initial two profiles, #1 and #2. You may find the respective eastern segments of each profile difficult or impractical to cover with your work. However, since the eastern-most holes afford us a control on depth, your reaching the vicinity of them would be important, give it due consideration.

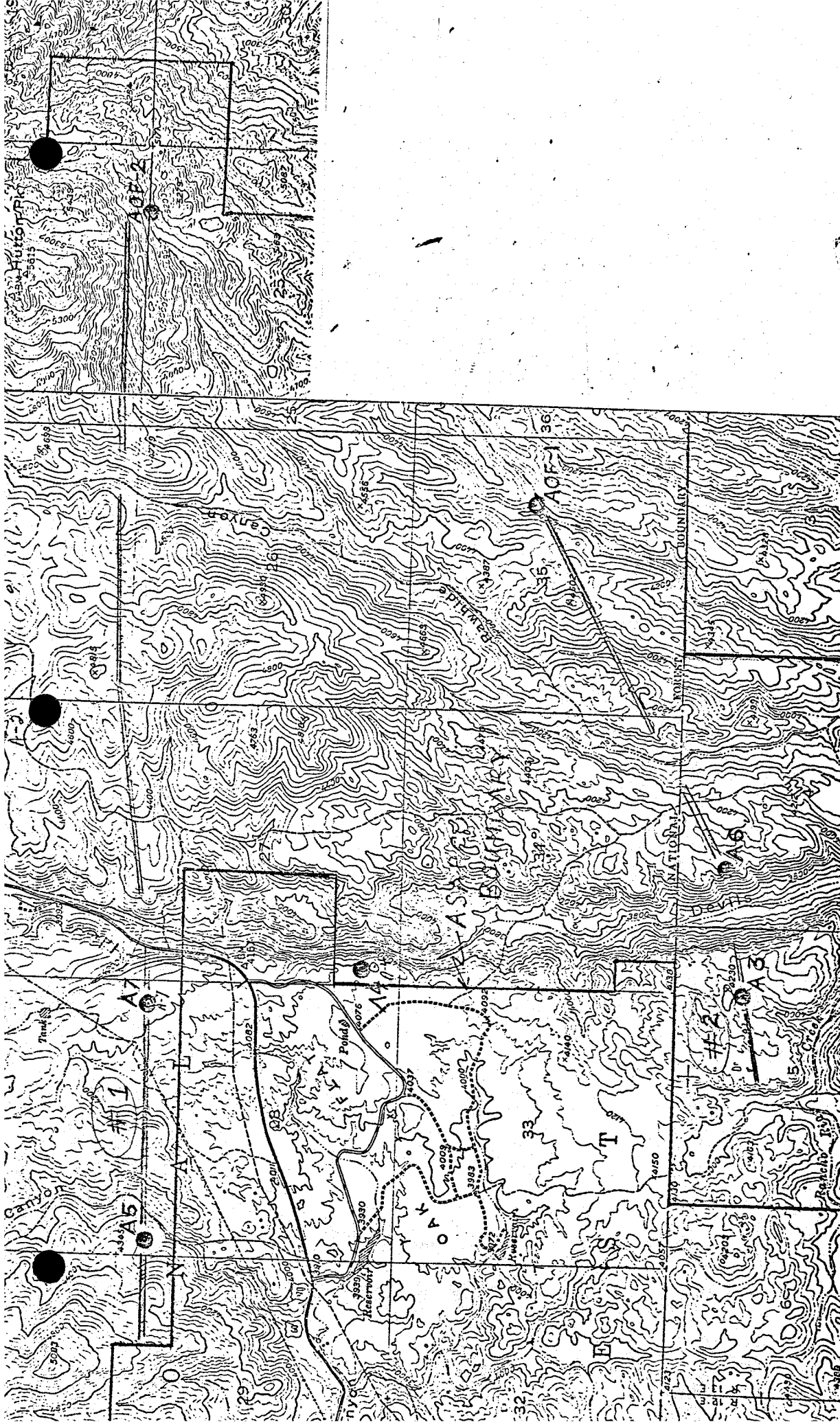
Yours very truly,

*Cal*

C. K. MOSS

CKM:am  
Attchs.

cc: R. J. Lacy  
W. L. Kurtz, wenc/map ✓



CPT JDS ✓  
RBL - see last paragraph

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

February 14, 1975

RECEIVED

FEB 18 1975

S. W. U. S. EXPL. DIV.

W. L. R.  
FEB 18 1975

Mr. Wm. Kurtz  
Tucson Office

SEISMICS  
SUPERIOR EAST

Dear Bill:

Following our phone conversation of today, I talked with John Collins regarding the forthcoming seismic survey at Superior East.

The contract with Cooksley has been approved, although some minor points regarding insurance need further attention.

The initial seismic profile is to span ASARCO ground, passing near holes A-5 and A-7, thence to continue eastward across the Rawhide ground, passing near AOF-2.

A second profile is tentatively planned in the south, to pass near A-3, A-6 and onward to AOF-1.

Cooksley has expressed some concern as to whether he can negotiate the terrain on the eastern ends of each of these proposed profiles. The terrain might force some detouring or shortening on the east end of each.

In relation to the possibility of a later profile passing east-west near A-4, John has requested that your office make some initial, cautious inquiries regarding a permit to cross the Oak Flat ground. As you will appreciate, caution is required to minimize disclosure of our interest or plans to the competition.

Yours very truly,

*Cal*

C. K. MOSS

CKM:am

cc: J. J. Collins  
R. J. Lacy

EXPLORATION SERVICES DIVISION

3422 SOUTH 700 WEST  
SALT LAKE CITY, UTAH 84119

February 7, 1975

CF JPS ✓  
FEB 12 1975

RECEIVED  
FEB 11 1975  
W.L.K.  
S. W. U. S. EXPL. DIV.

Mr. John Collins  
New York Office

SEISMICS  
SUPERIOR EAST, ARIZONA

Dear John:

Enclosed for your approval and dating are two copies of the agreement which Cooksley is submitting to cover the proposed seismic work at Superior East. Also enclosed is ASARCO's insurance certificate which has been executed by Cooksley's insurance company.

Yesterday, by phone, Cooksley informed me that he would probably be able to start work in two weeks if the job is authorized.

Yours very truly,

*C. K. Moss*

C. K. MOSS

CKM:am  
Attch.

cc: R. J. Lacy  
W. L. Kurtz ✓

JOS - have you caught  
the FEVER 2 -> file

Received a call at 2:45 PM 4/24/76  
from Cooksley, & he says more stuff  
is being sent today to this office.  
JOS.

RECEIVED  
APR 26 1976  
S. W. U. S. EXPL. DIV.  
F. T. G.  
APR 26 1976

AIR MAIL

April 22, 1976

Mr. C. K. Moss  
ASARCO Incorporated  
Salt Lake Office

Arizona  
Superior East Project  
Seismic Survey

Dear Mr. Moss:

In reply to your letter of April 19, I think we all agree that Mr. Cooksley has done a competent job and that any problems with his interpretations are a result of the substantial geological complexity. I am inclined to agree with you that further seismic work will be best postponed until we have had some further drill hole confirmation of Cooksley's interpretations. Therefore, unless our Tucson colleagues have caught seismic fever, which I somehow think rather unlikely, we can leave the matter rest for the time being but please remind us all after the next drill information is available.

Very truly yours,

Original Signed By  
T. C. Osborne

T. C. Osborne

U. C. OSBORNE  
ORIGINAL SIGNATURE

cc: WJKurtz  
✓ FTGraybeal



April 26, 1976

TO: F. T. Graybeal


FROM: J. D. Sell

Seismic Geologic Sections  
Cooksley Geophysics, Inc.  
March 1976  
Superior East Project

Salt Lake City has sent the attached "Seismic Geologic Section with Overlay" by Cooksley Geophysics, Inc. No text was sent, nor was the individual trace of the shot points submitted.

I have plotted the location of drill holes A-5, A-7, AOF-2, and AOF-5 on both the plan map and the section. I am assuming that his end point on the plan map is at the zero point of the vertical section.

Although the seismic line did not apparently go over our two drill holes, it is apparent that his interpretation did not pick the elevations for the volcanic-Whitetail contact. His premineral depth in A-5 may be close, as the hole is temporarily stopped in Whitetail. Until the hole is deepened we will be unable to correlate the two. Hole A-7 premineral pick is within several hundred feet but, as I recall, this information had been given to Cooksley so that he would be able to interpret the entire seismic line. Both AOF holes bottomed in Whitetail.

  
James D. Sell

JDS:lb  
Att.

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

RECEIVED  
MAY 7 1976  
S. W. U. S. LAND DIV.

May 3, 1976

Mr. Fred Graybeal, Manager  
Tucson Office

J. R. MONTGOMERY MEMO  
GRAVITY AND MAGNETIC PROFILES  
DACITE PLATEAU  
GILA AND PINAL COUNTIES, ARIZONA

Dear Fred:

Attached is the subject memo in which Jerry discusses the recent test gravity survey (with some attention given to magnetics) on the Plateau.

I agree with his conclusions that only weak hope exists that a full gravity survey would accurately outline the granite which projects under the dacite from the east. Considering the results from Tony Benavidez' data, which are modestly encouraging, perhaps the odds are a little better than Jerry's first paragraph of conclusions would indicate.

If you retain an interest in a full survey, considering the terms indicated by Jerry, we could plan to do the work from this office under a low priority time schedule. Expenses would be carried here.

Yours very truly,



C. K. MOSS

CKM:am  
Attch.

cc: T. C. Osborne, w/JRM Conclusions & Recommendations only.  
W. L. Kurtz       "       "       "       "       "

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

May 3, 1976

MEMO TO C. K. MOSS:

GRAVITY AND MAGNETIC PROFILES  
DACITE PLATEAU  
GILA AND PINAL COUNTIES, ARIZONA

Interest was expressed by the Southwestern U. S. Division in the possibility of tracing the extension of the Schultze granite under the Dacite Plateau. Earlier regional gravity surveys in the area suggested that gravity might be used to map the granite-schist contact. A test survey of thirty-eight stations was carried out in March by personnel of the Geophysical Office. Ground magnetic data were gathered simultaneously to test the viability of magnetics for detecting the contact.

Conclusions and Recommendations

A model study of the test survey indicates that the anomaly from the buried contact will be on the order of 1/2 milligals. Anomalies of 1 to 2 milligals on the Dacite Plateau could result from density variations in the conglomerate or dacite cover. Anomalies caused by topographic effects even after terrain corrections in this type of environment could be as high as 1 milligal.

Based on the above criteria I would estimate only a 50% chance exists for outlining the buried granite-schist contact under the Plateau, and such an outline would constitute only an approximation of the true condition.

A survey which would adequately cover the area of interest would require about one month's field work for three men, and an additional month for one man in the reduction and interpretation of the data.

Results

The test survey consisted of four profiles. The first three profiles were situated so as to test the geophysical response of the exposed Schultze granite and Pinal schist contact. The fourth profile crossed the projection of the contact where it was covered by the younger rocks. The magnetic data for the first three profiles are shown in Figure 3. Gravity data for these profiles are shown in Figure 4. Magnetic and gravity data for profile 4 are shown on Figure 6.

Anomalous magnetic effects are associated with the granite-schist contact, however the magnetic data are not completely definitive in mapping this contact. Magnetic data alone could not be used to outline the buried contact.

Gravity data for the first three profiles indicates that a gravity anomaly is associated with the granite-schist contact, where it is exposed. Computer models were used to gain a better understanding of the gravity anomaly associated with the contact. The model of the ground conforms with the exposed geology and the gravity data for this area. The gravity values computed from the models are shown as circles on Figure 4, where they are compared with the measured gravity data, shown as solid points. The models indicate that there are two phases of granite with different densities. The southern edge of the granite is slightly less dense than the center. The models shows that this lower density phase is narrower under profile 2 than it is under profile 1. The same model was used for both profiles 2 and 3.

To determine the feasibility of mapping the granite-schist contact at depth, the two previously mentioned models were used with different simulated depths of burial. This study indicates that the anomalies associated with the buried granite-schist contact under the Dacite Plateau will range around 1 or 2 milligals. The results of all model studies are graphically shown in Figure 5.

Profile 4 was taken near the eastern edge of the Dacite Plateau (see Figures 1 and 6). Rugged terrain exists in this locale, and the effects of the terrain show in the readings. Partial terrain corrections were made for the stations on profile 4. The difference in terrain effect between stations 27 and 28 which are 1000 feet apart is almost 3 milligals.

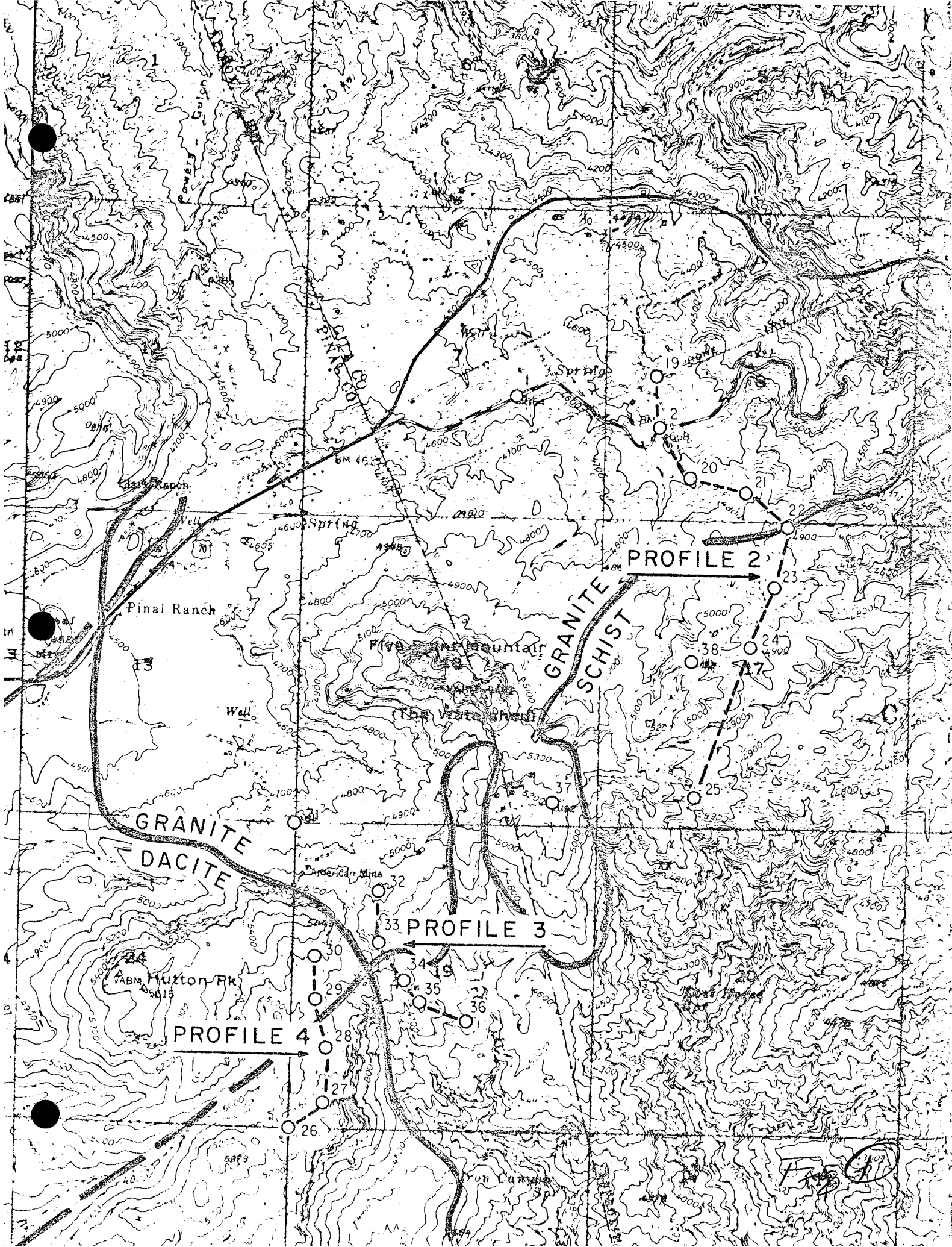
Gravity data taken on the Dacite Plateau will require terrain corrections before valid interpretations can be made. Comparing the relative gravity values between profiles 3 and 4 indicates that the dacite and conglomerate fill present under the Dacite Plateau is slightly less dense than the granite or schist. There are also indications from the contour map (Figure 2) and profile 4 (Figure 6) that the density of the fill material may not be uniform. These density variations could create anomalies that could mask the granite-schist contact. The models shown in Figure 5 were compared with the terrain corrected profile 4. The terrain corrected profile matches either model with 4000 to 5000 feet of cover. Station 26 is the exception, the deviant reading of this station could be the result of spurious terrain effects or local density variations.

Combining the results of the model studies and other observations, I would conclude that there is a 50% chance of mapping the buried granite-schist contact under the Dacite Plateau. This additional gravity work would require precise elevation control and terrain corrections for each station. The field

... take three men about three to five weeks to complete. An addi-  
... to four weeks would be required for data reduction and inter-

JRM:am  
Enc.

J. R MONTGOMERY



Pinal Ranch

GRANITE  
DACITE

GRANITE  
SCHIST

PINAL MOUNTAIN

New Water Sheds

American Mine

ABM Huxton Rk

Von Camp

PROFILE 2

PROFILE 3

PROFILE 4

F. J. [unclear]



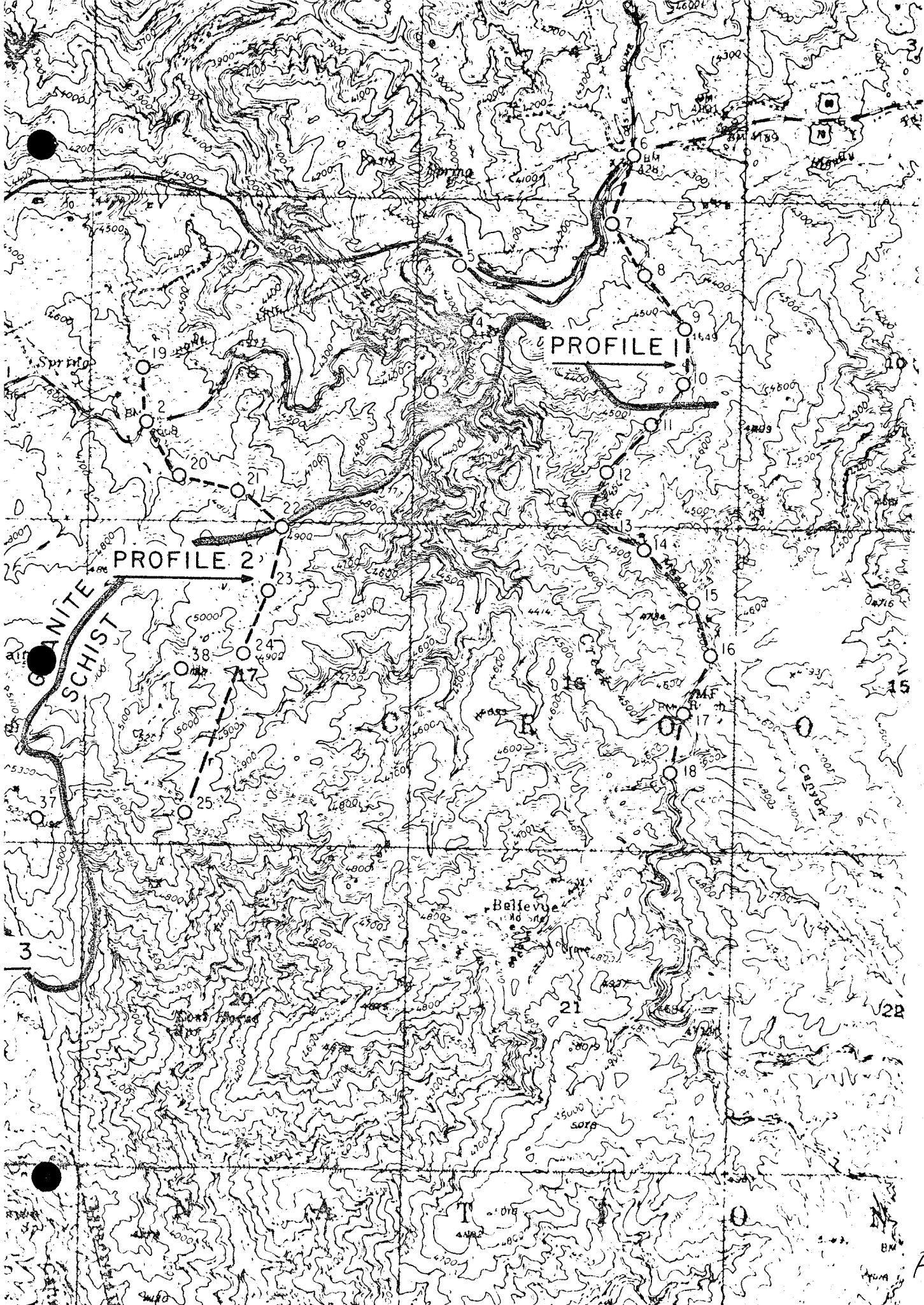


Fig 1

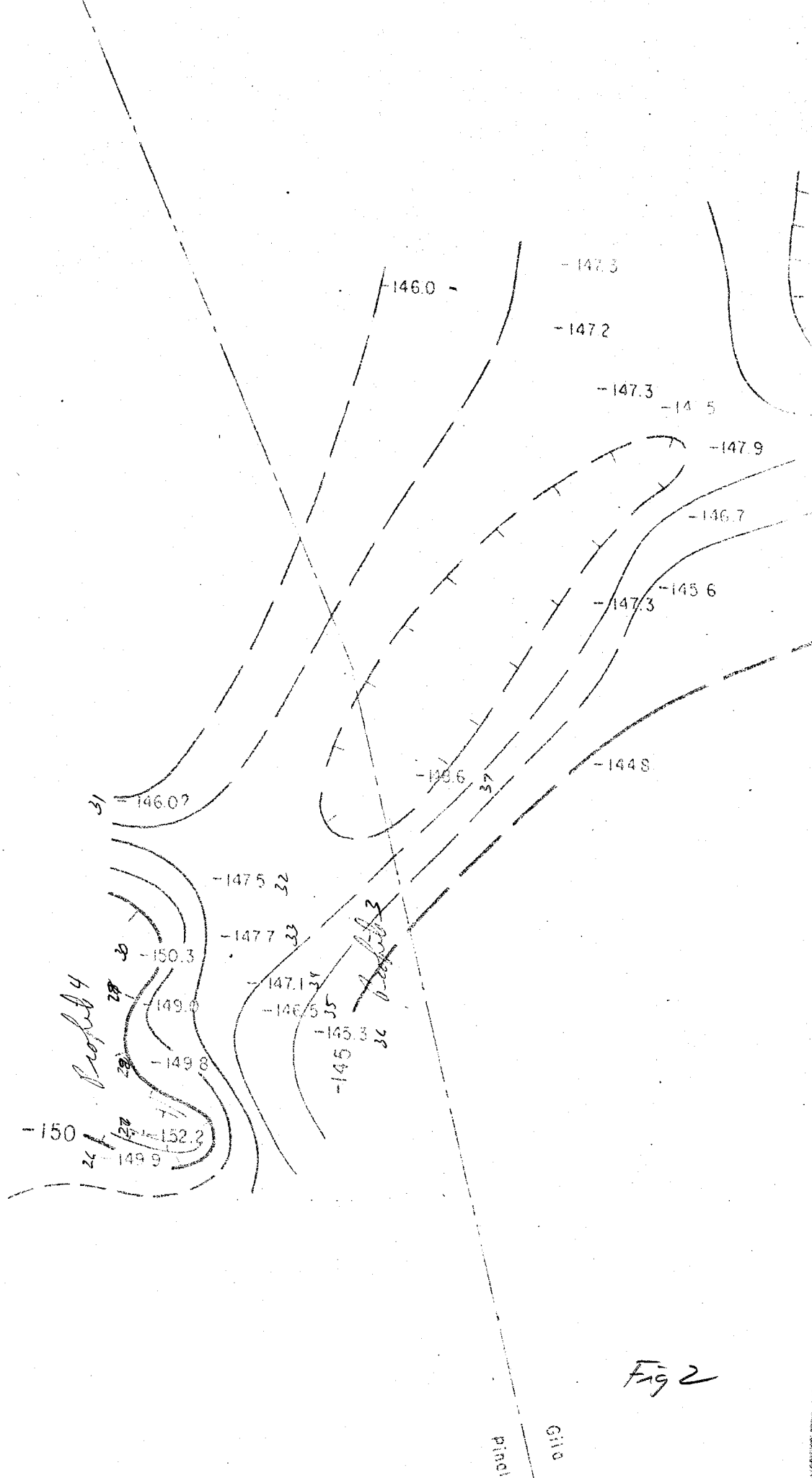


Fig 2

Gila C  
Pinal

-148.8

-148.8

-149.3

-148.7

-149.9

-148.7

-149.7

-148.9

-146.0

-147.3 19

-147.2 2

-147.3

-147.3 20

-147.5 21

-146.4

-147.9 22

-145.6

-145.4

-146.7 23

-144.9

-147.3 38

-145.6 24

-144.5

-146.6 31

-144.8 25

-143.6

-147.5 32

-147.7 33

-147.1 34

-146.5 35

-145.3 36

-143.0

Profile 3

Profile 2

Profile 1

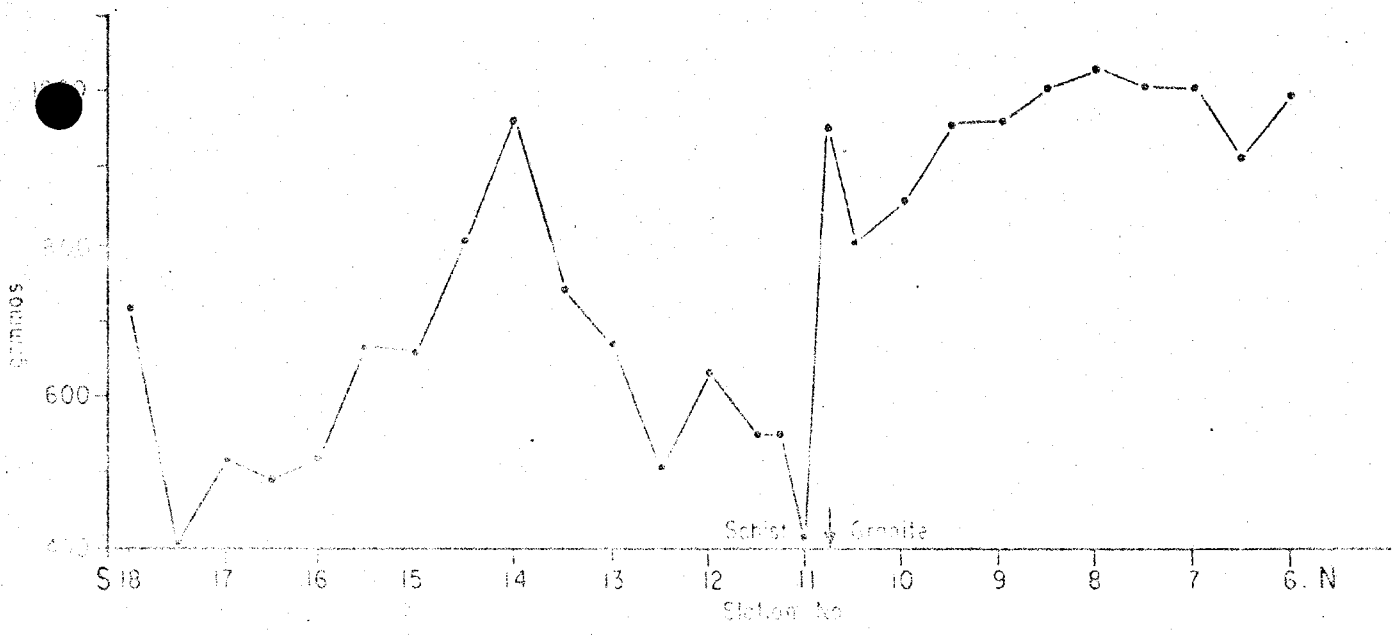
26

Fig 2

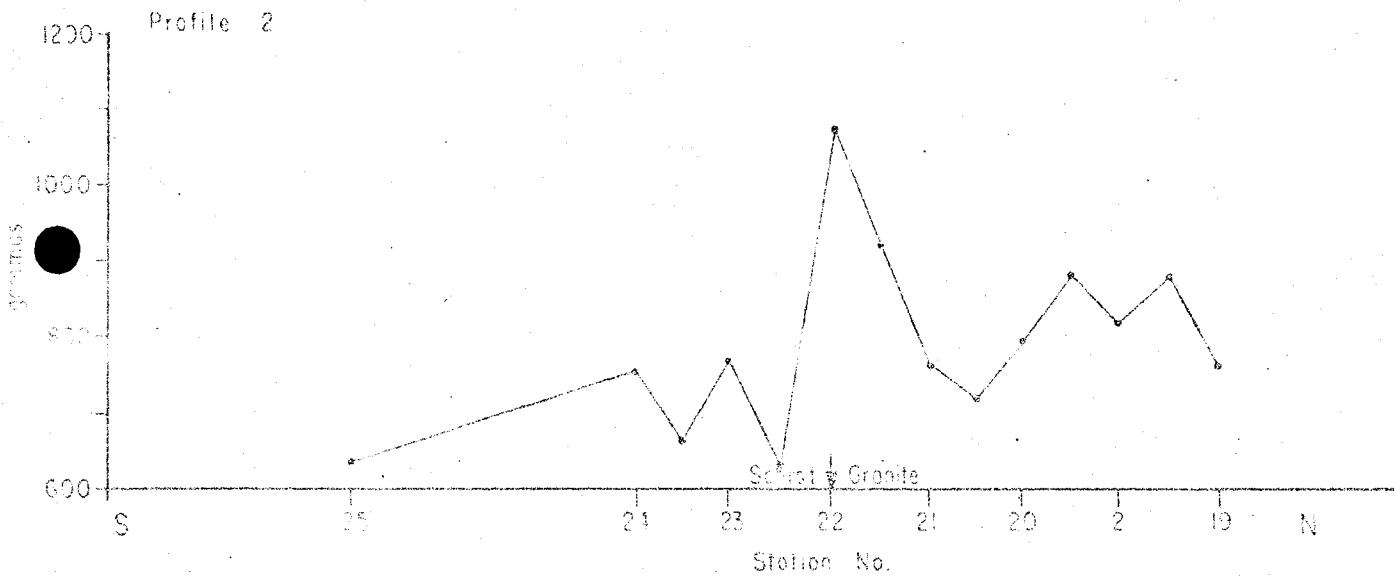
Pinac

Chic

Profile 1



Profile 2



Profile 3

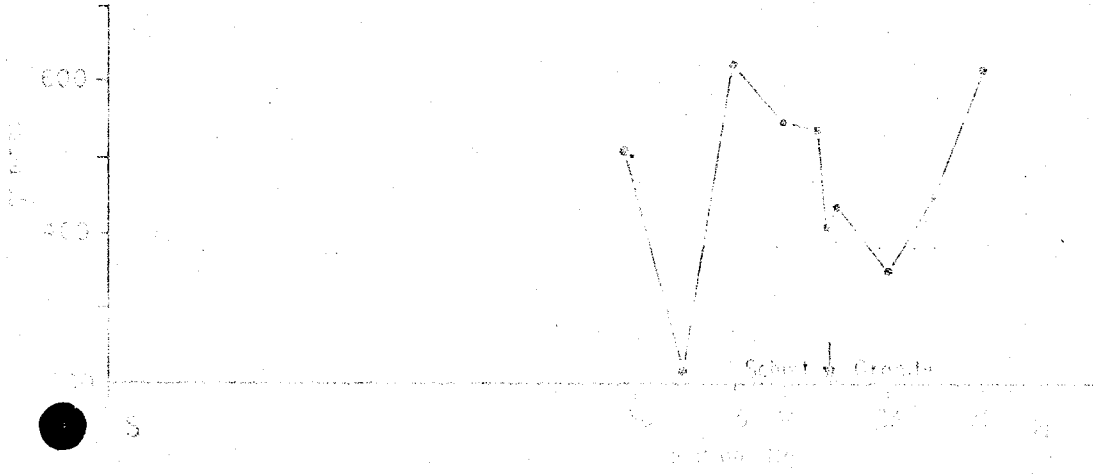


Fig 3  
 Magnetic Profiles  
 Gravity & Magnetic Survey  
 Superior West  
 Pinal & Gila Co., Arizona  
 Horizontal Scale 1:50,000  
 Salt Lake Geophysical Office  
 J. Montgomery April 1975

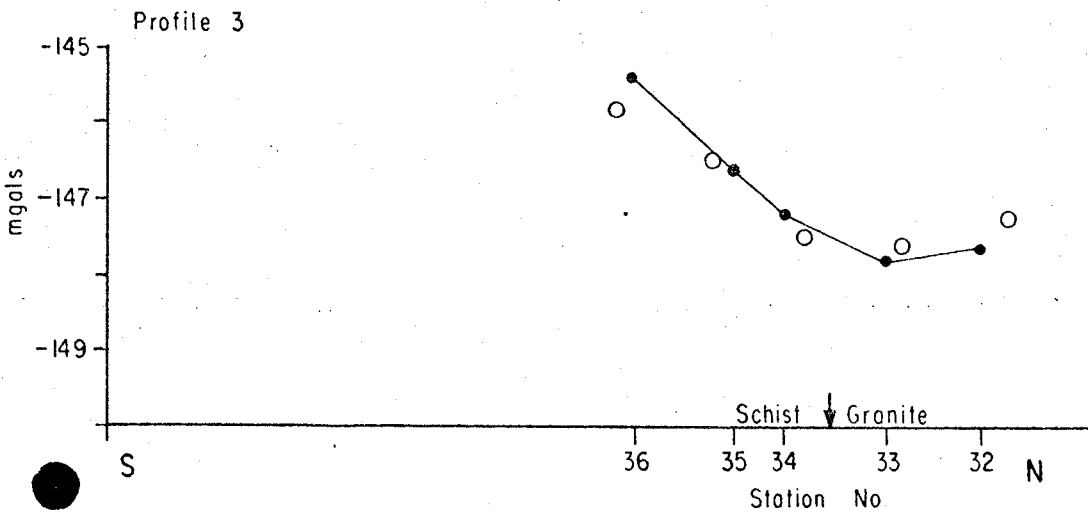
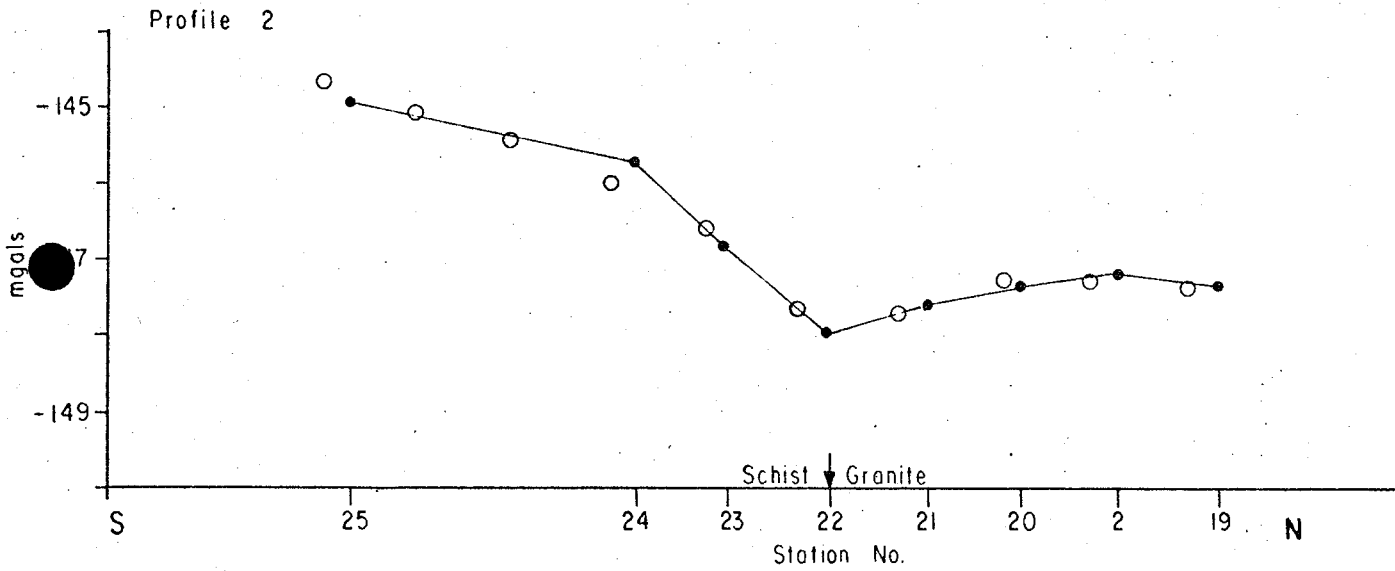
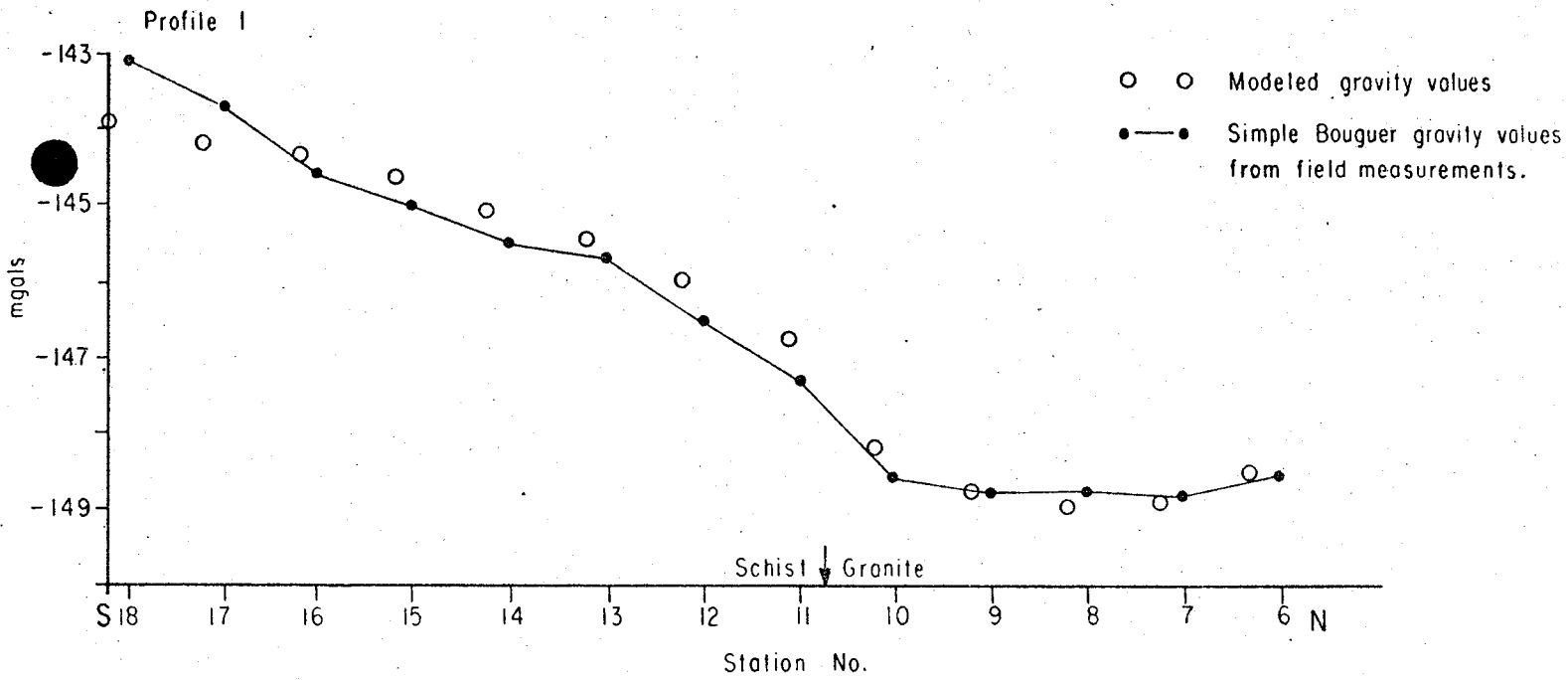
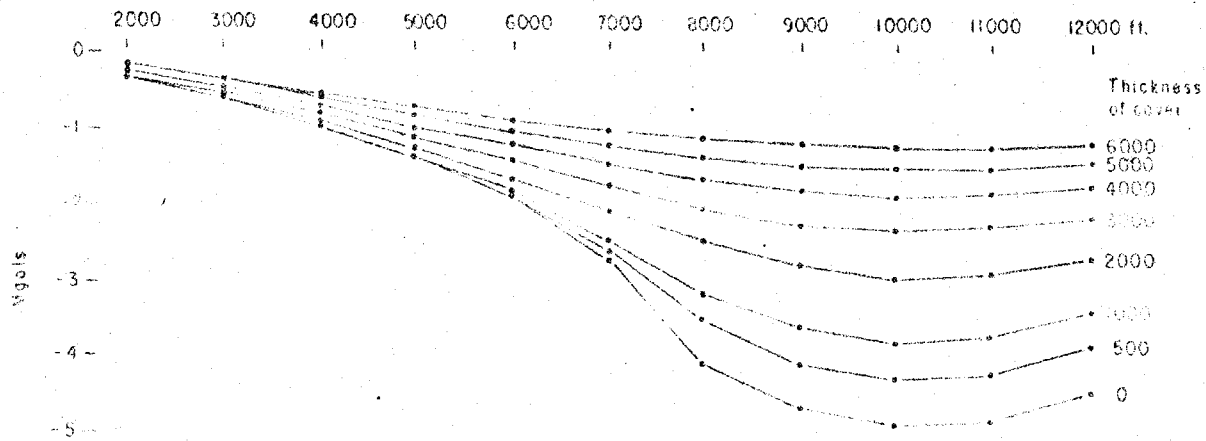
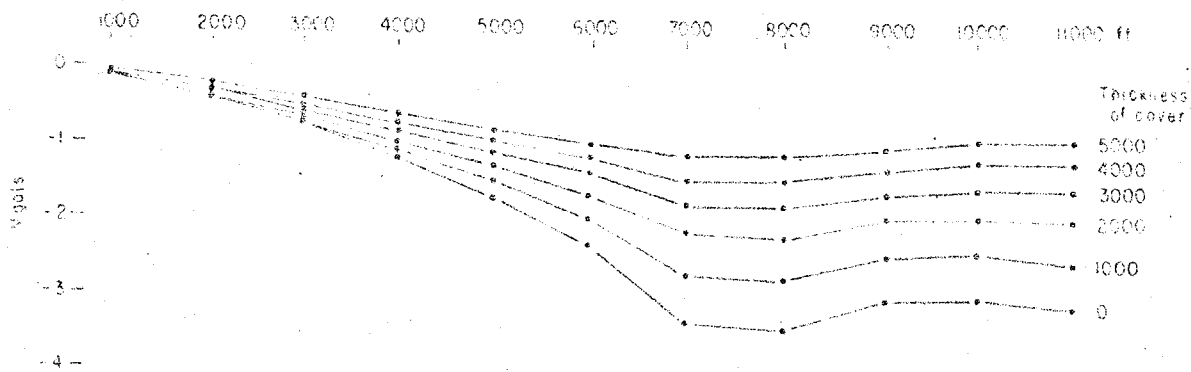
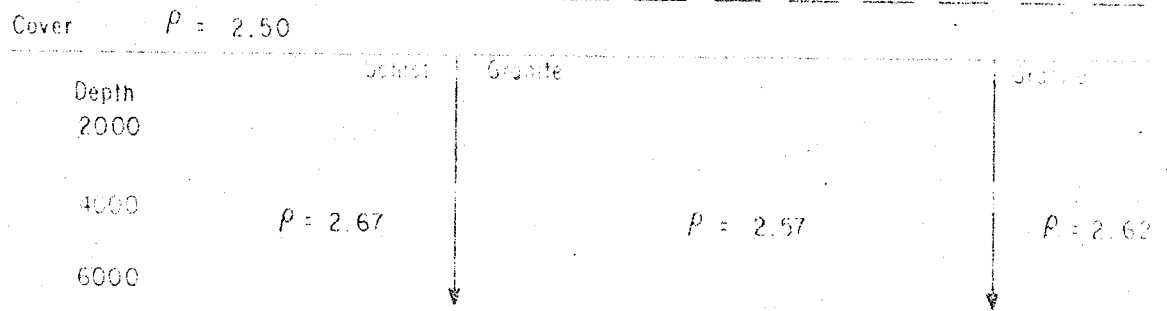


Fig. 4  
Gravity Profiles  
Gravity & Magnetic Survey  
Superior East  
Pinal & Gila Co., Arizona  
Horizontal Scale 1:24,000  
Salt Lake Geophysical Office  
J. Montgomery April 1976



Profile 1



Profiles 2 & 3

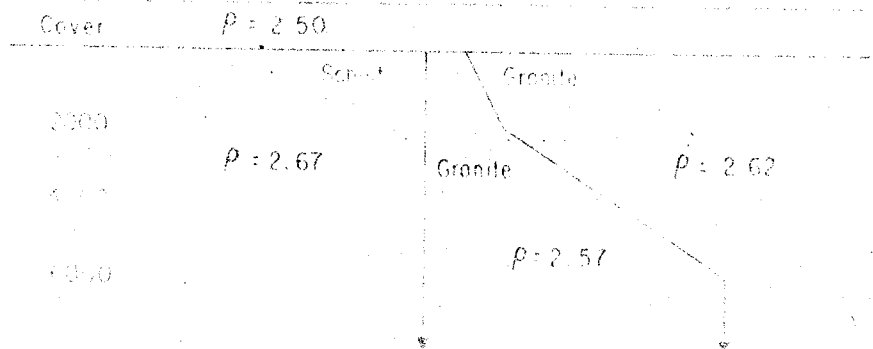


Fig 5

Theoretical Model  
Superior East

Dipol & GPO Co., Denver  
11401 E. 1st Ave.  
Soil Lake Geophysical Office  
J. Montgomery April 1975

Theoretical models showing successive depths of burial



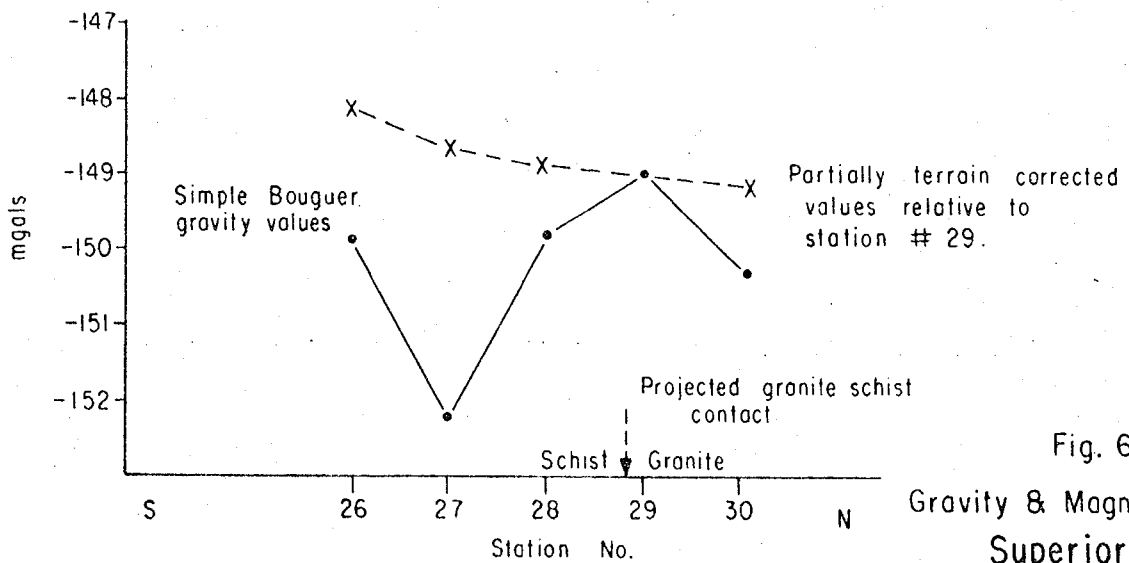
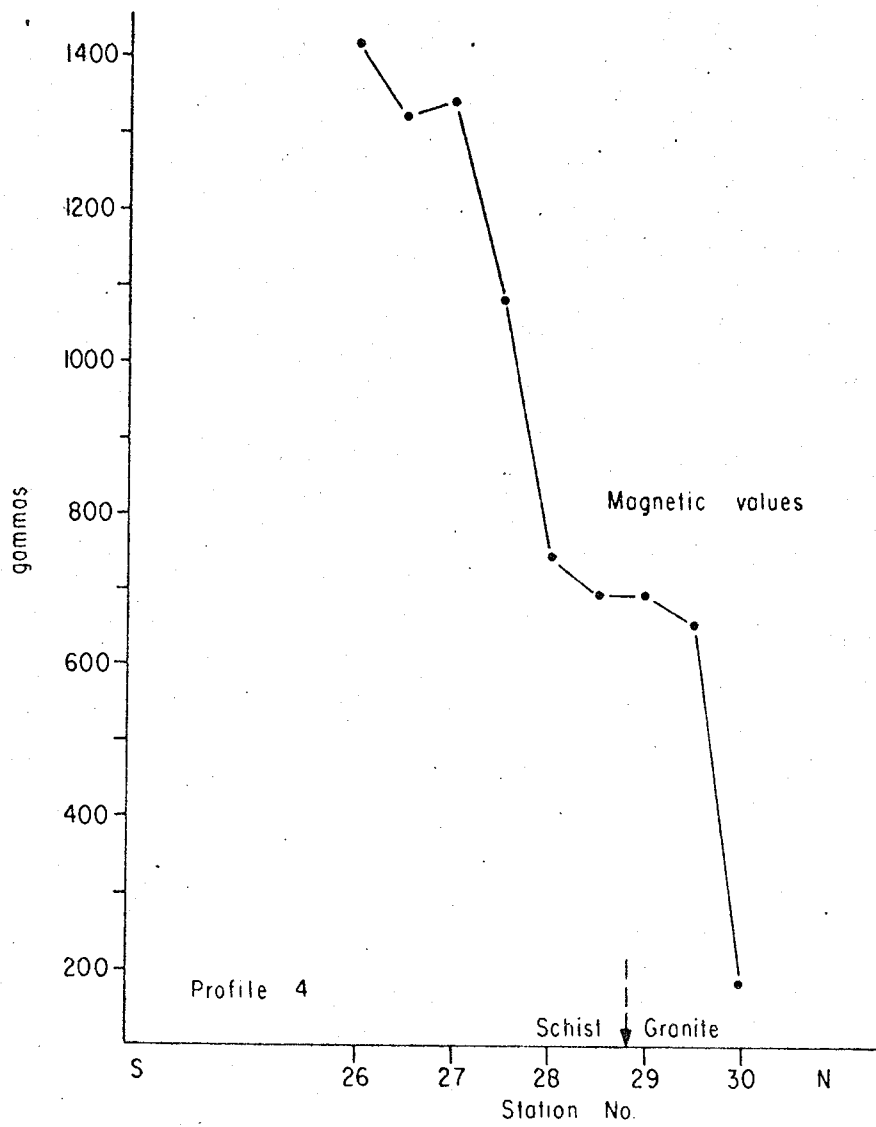


Fig. 6  
Gravity & Magnetic Profiles  
Superior East

Pinal & Gila Co., Arizona  
Horizontal Scale 1:24,000  
Salt Lake Geophysical Office  
J. Montgomery April 1976

JUD

RECEIVED  
JAN 24 1977  
EXPLORATION DEPARTMENT

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

January 19, 1977

Mr. Fred Graybeal  
Tucson Office

Drillhole/Surface E. M.  
Dacite Plateau

Dear Fred:

While Tom Osborne and Bill Kurtz were in Salt Lake last week we discussed the possibility of using our drillhole to surface E. M. system on the Dacite Plateau. The object of the work would be to obtain an indication of the direction of continuity for the mineralized zone intersected in DH A8.

My question now, is whether A8 might be open and clear enough that electrodes could be dropped into place. This would permit a survey in the near future.

If A8 is blocked, then consideration would be given to A9 for a survey after completion of that hole.

O-1583 TD  
Yours very truly, 1583-2213 TW  
2213-3220 TW  
Cal 3226-3774 SB & Sch 12g  
3774-3777 basal flat fault  
C. K. MOSS 3777-4907 pss + 2 btp

CKM:am

cc: T. C. Osborne  
W. L. Kurtz ✓

*drill to 1583 ft.  
mining interest  
starts at 3079 ft.*

*Summary of casing left in A-8.*

*4" Surface casing from surface to 11 ft. (11 ft)  
NX casing from 1448 ft to 1971 ft. (523 ft)  
BX casing from 2500 ft to 3197 ft (697 ft).*

*Probably no trouble for probe to bottom of NX casing. Cross fault open thru A-8 at & below the NX casing bottom. Probably 50-50 chance to get probe into BX casing. Questionable how much of BX hole below 3197 ft. would be open.*

GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

February 2, 1977

*-JDSell -> Gle*  
RECEIVED  
FEB 4 1977  
S. W. U. S. EXPL. DIV.

F. T. G.  
FEB 4 1977

Mr. T. C. Osborne  
New York Office

DH/S E. M. Survey  
DH A-8, Dacite Plateau  
Arizona

Dear Tom:

I have discussed with Jim Sell the question as to whether drill hole A-8 might be clear enough that electrodes could be placed into it. Jim is pessimistic, but does not rule out the possibility that the hole could be entered.

Jeff Porter and Glen Cressman of this office, will be going to Arizona in the near future to make gravity surveys. They will take electrodes and wire with them and install electrodes in the hole if they find that they can reach the necessary depth.

Yours very truly,

*Cal*

C. K. MOSS

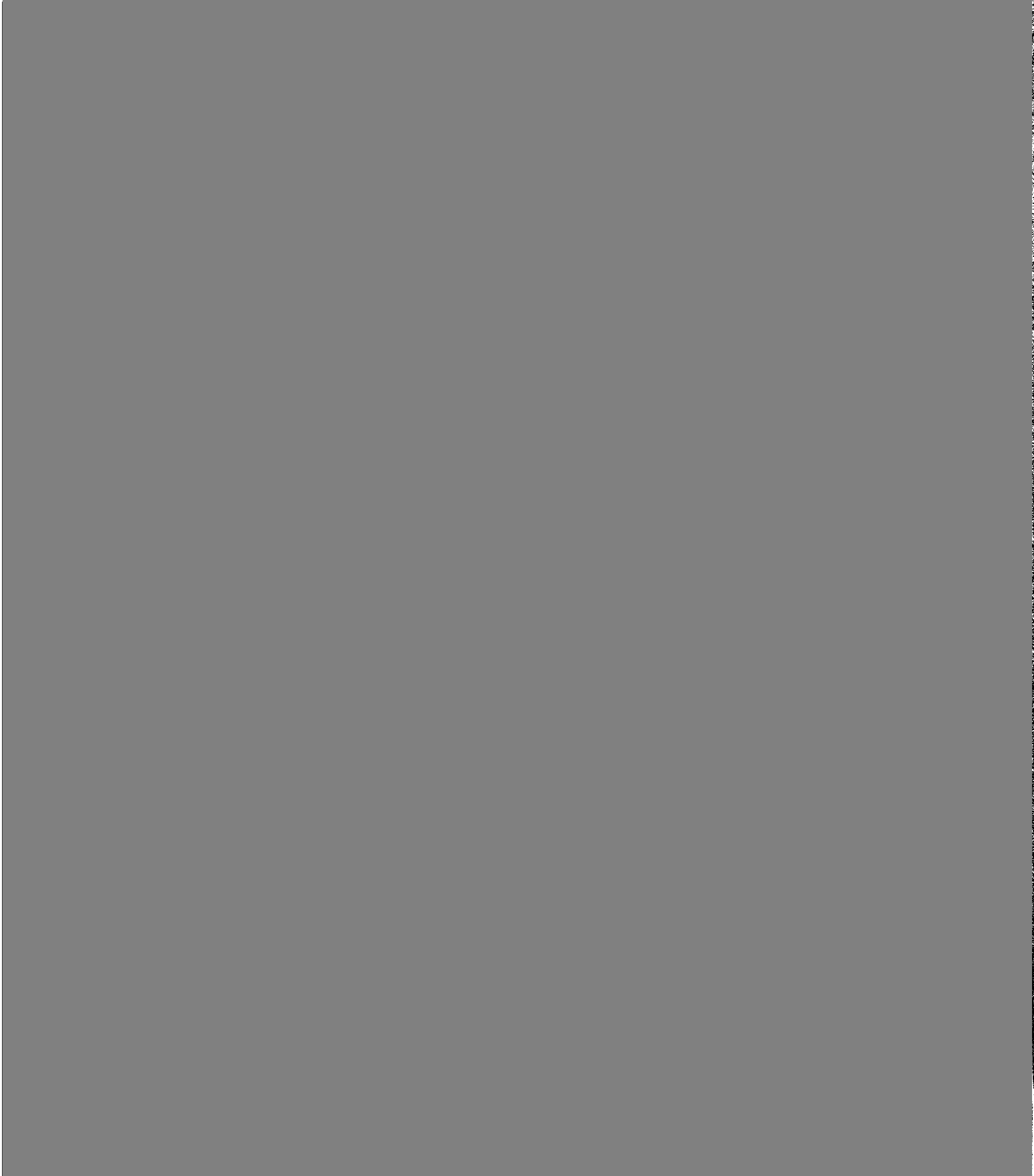
CKM:am

cc: F. T. Graybeal  
W. L. Kurtz

*Meet Jeff Porter at Highway Gate  
to A-8 at 1:00 PM - Wednesday  
afternoon Feb. 9,*

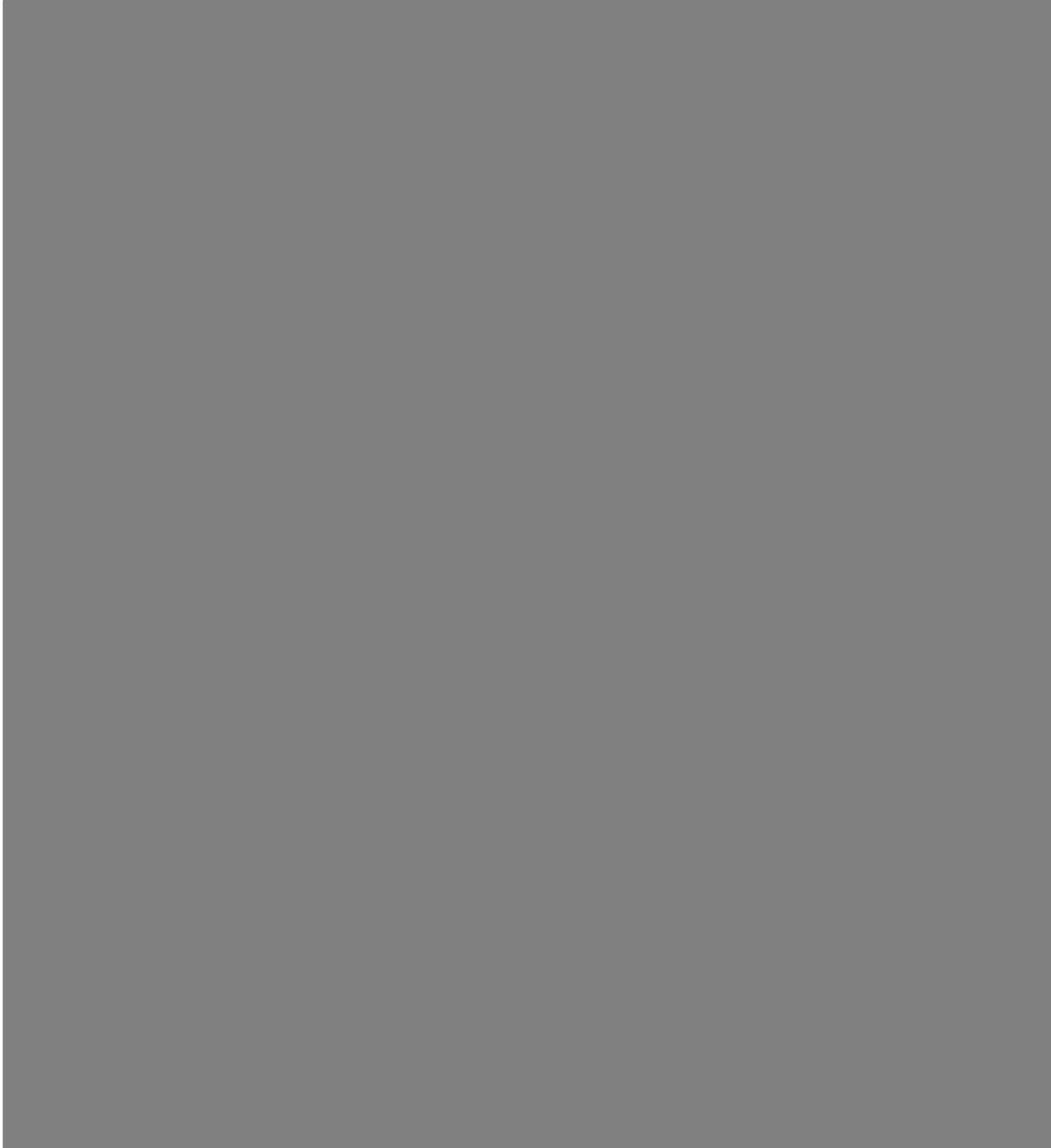
*They could get only 50 feet or so beyond the  
bottom casing left in hole. Above the  
zone of interest.*

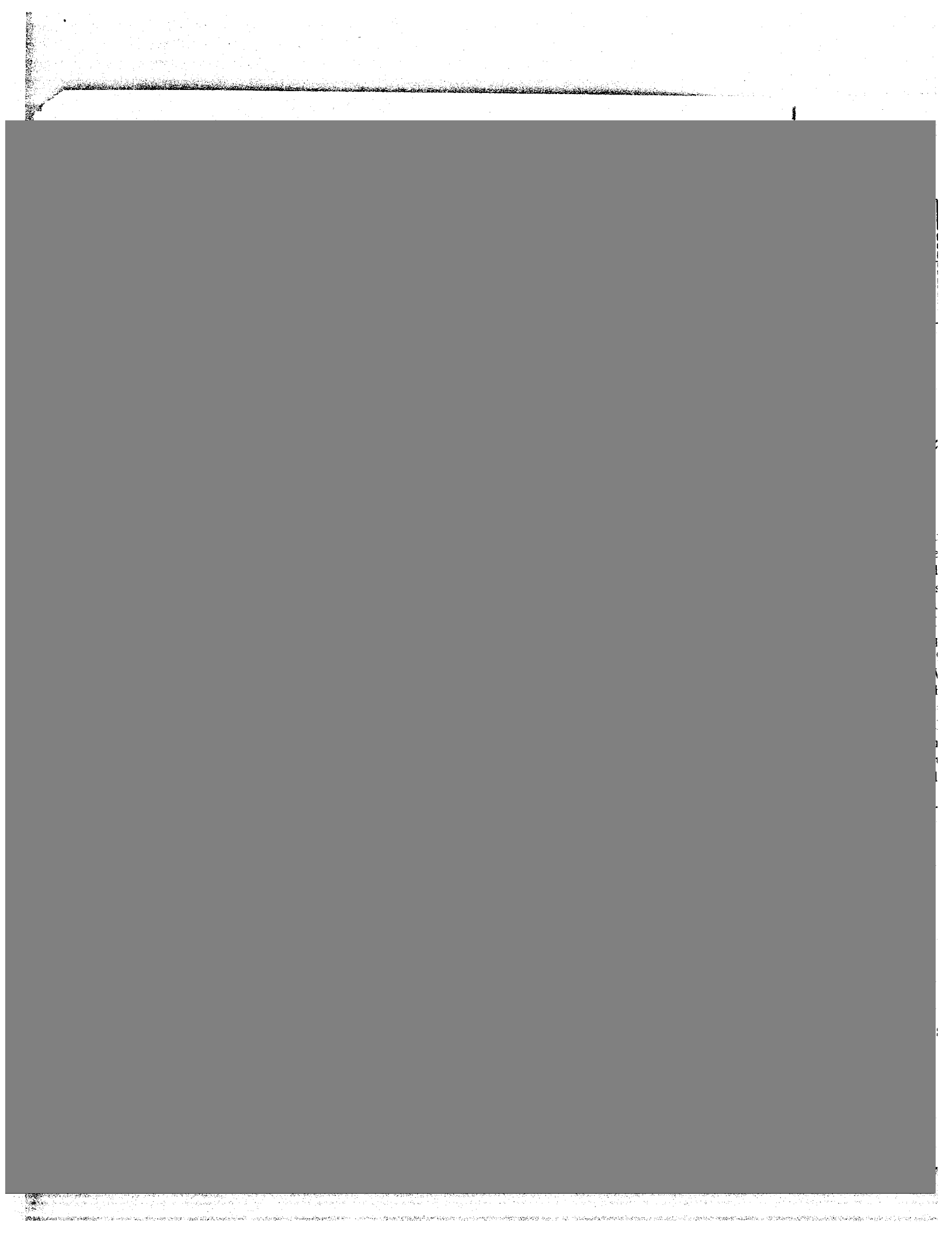








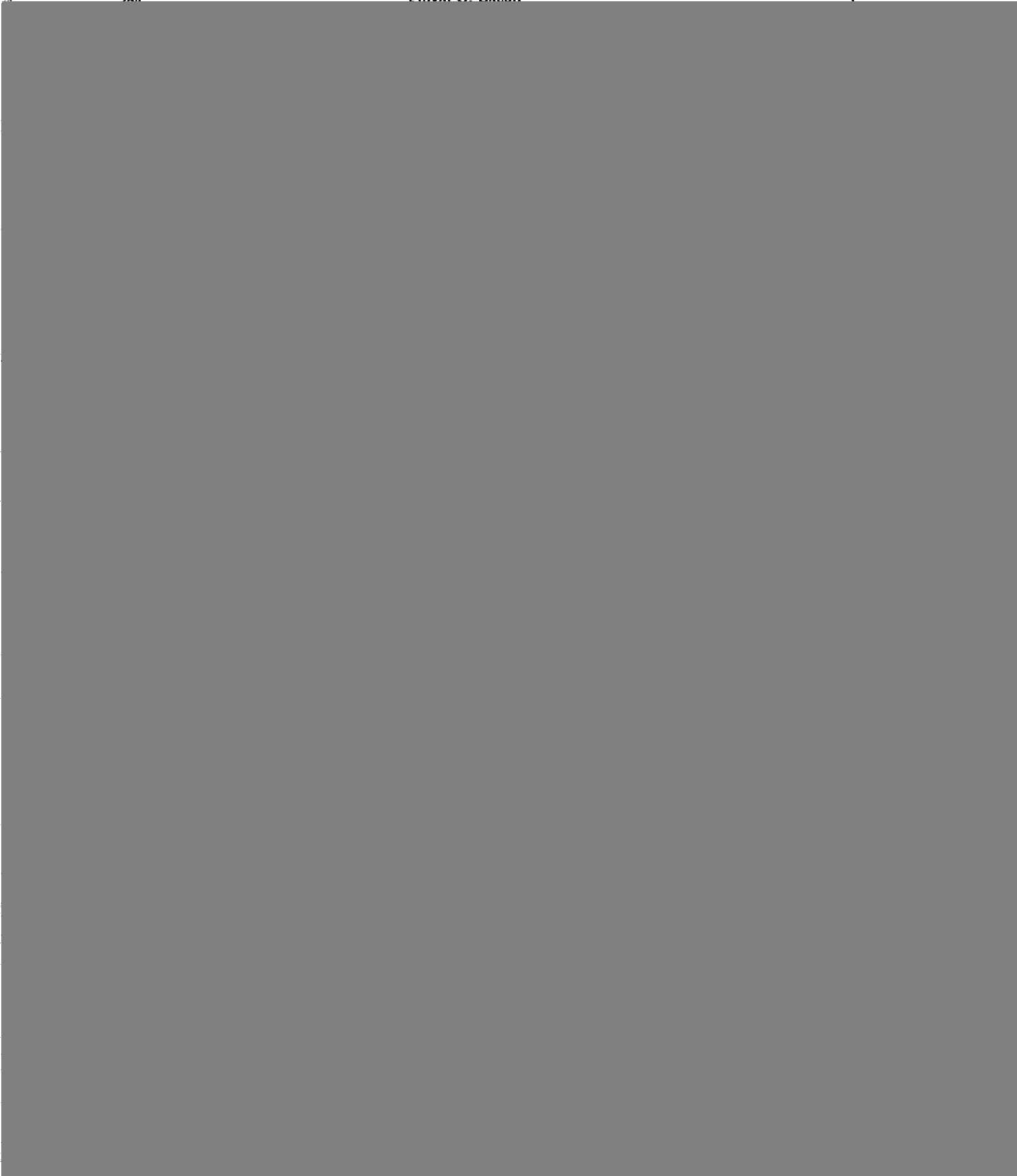


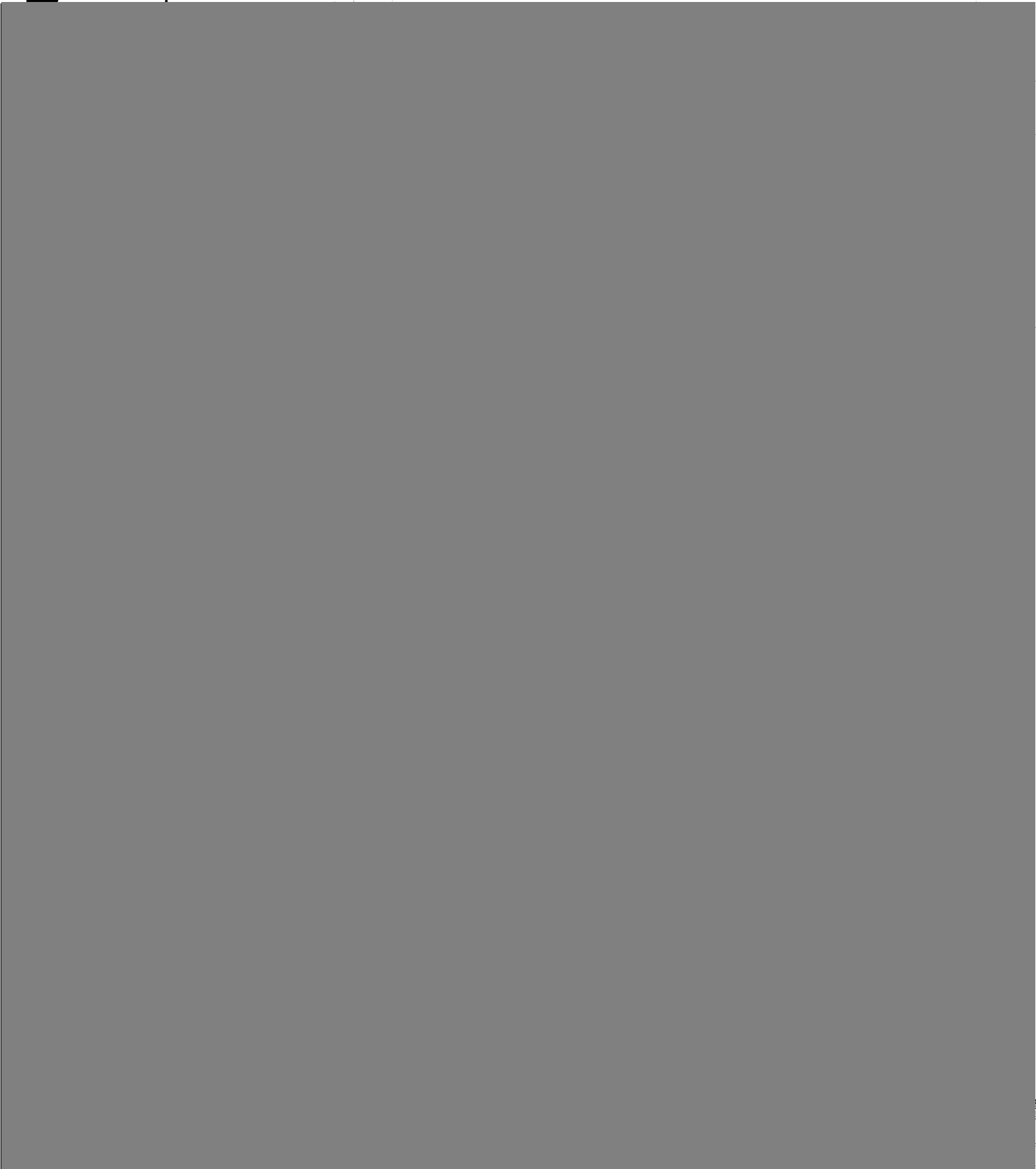
















GEOPHYSICAL OFFICE - EXPLORATION DEPARTMENT  
3422 South 700 West  
Salt Lake City, Utah 84119

RECEIVED

JUN 15 1977

F. T. G. & W. U. S. EXPL. DIV.

June 13, 1977

Mr. Fred Graybeal  
Tucson Office

Test of Drillhole/Surface  
E. M. Technique, DH-A9  
Dacite Plateau, Arizona

Dear Fred:

This will confirm my oral comments made to you last week concerning the subject work.

The test was set up to evaluate the E. M. technique as a possible method for tracing, from the surface, the direction of continuity of a mineralized zone found in the drillhole. The results were negative.

The E. M. field at the surface was too weak to be measurable-- the amplitude being below the threshold of detectability for our equipment. The great depth of cover (made up of conductive rocks) is the most sensible explanation for lack of surface field strength.

In view of these results, I do not recommend that the technique be considered for further use on the Plateau.

Yours very truly,

*Cal Moss*

C. K. MOSS

CKM:am

cc: TCOsborne/RLBrown

June 8, 1977

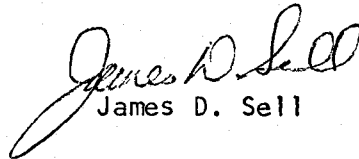
FILE MEMO

Geophysical Probe  
Drill Hole A-9  
Superior East Project  
Pinal County, Arizona

The SLC crew of Cal Moss and Glenn Chessman brought their equipment to A-9 on 6/6/77 and conducted tests. The probes were essentially at a depth of 4350 and 4850 feet and well below the last casing at 3624 feet.

No response was detected at the surface in a number of traverses around A-9 and Mr. Moss has concluded that depth is the major factor in attempting to get a response from the sulfides encountered.

All the double strand wire and the upper probe, plus about 350 feet of lower single wire, were recovered from the hole. No wire remains inside the casing string.

  
James D. Sell

JDS:lb

6/27/77

FROM: F. T. GRAYBEAL

To: J. D. Sell

Jerry Montgomery called and the gravity readings over the altered outcrop at Pioneer along with resistivity indicate very low density and suggest this may be a block sitting on alluvium.

Jerry will be calling sometime around the 5th of July concerning additional gravity work over the Pioneer outcrop.

FTG

cc: HGKreis  
DMSmith

Phone 715 @ 8:30 AM  
JM will leave SEC on July 11 (Monday),  
arrive at Casa Grande, Rwanda on  
Tues. evening, available for field  
on Wed. AM  
Will bring them lot. He wants to  
extend gravity coverage & pin down  
problem.

Have Bob call number Reed  
that GP crews

# ASARCO

Southwestern Exploration Division

JDS

April 26, 1979

TO: F. T. Graybeal

FROM: J. D. Sell

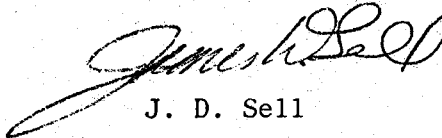
S. Parker Gay, Jr.  
Aerial Geophysics, Inc.

Parker stopped in to relate some of his experiences using helicopter-fixed wing surveys as noted in the attached fact sheets.

As noted under "magnetics" and "potassium" on the back side of the helicopter sheet, the application of techniques can be applied in our type of exploration.

The package consisting of appropriate topo sheet (enlarged USGS or other published), flight line stations plotted, AGI's standard profiles as shown on attachments (in 3 pen colored ink), staked profiles as shown on attachment, and contour plan map of your choice(s). For the helicopter, this is around \$30-\$35 per line mile, with about half that amount for the fixed wing.

Time for a 200 line mile survey is about two days with three-four weeks turn-around time for published material to you.



J. D. Sell

JDS:jlh  
attmts



aerial geophysics inc

675 SOUTH 400 EAST • (801) 328-8541 • SALT LAKE CITY, UTAH 84111

# Helicopter Geophysical Surveying (Radiometrics and Magnetics)

CONSULTANTS AND CONTRACTORS TO THE MINING INDUSTRY

S. PARKER GAY, JR.  
GEOPHYSICIST



applied geophysics inc

675 SOUTH 400 EAST • (801) 328-8541  
SALT LAKE CITY, UTAH 84111

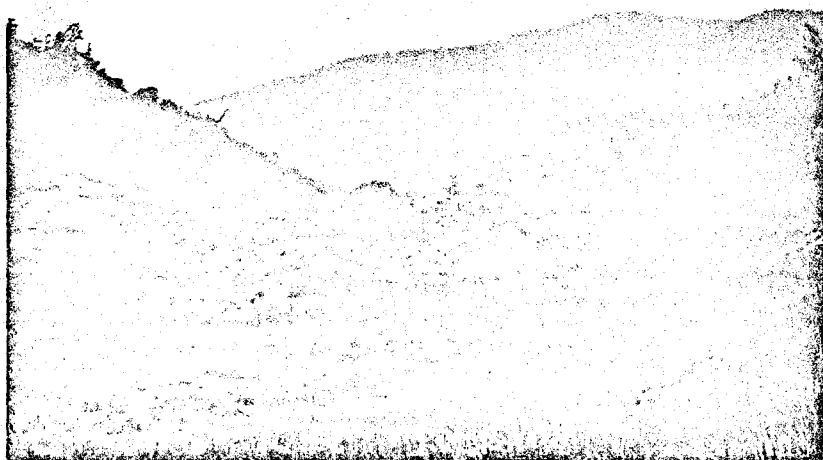


Photo by Jon Boyden

Helicopter geophysical surveying is truly becoming the exploration industry's most effective geophysical tool in the search for new ore deposits. Highly sophisticated digital instrumentation in high-performance jet helicopters that faithfully track even the roughest terrain at 100 to 200 feet clearance with line spacings as close as 100 meters provide direct or indirect indications of many different types of ore deposits.

## **SOME TYPES OF HELICOPTER MAGNETIC AND RADIOMETRIC SURVEYS AND INTERPRETATIONS WHICH AGI HAS CARRIED OUT SINCE 1974**

### **Magnetics**

1. Direct search for magnetic skarn-type deposits.
2. Highly discriminatory mapping of surface rock types in igneous and metamorphic environments.
3. Mapping of structure and lithology in rocks not commonly considered magnetic (using 2 and 5 gamma contour intervals) — especially effective when combined with American Stereo Map Company's stereo contour map interpretation and AGI's regional gradient removal techniques.

### **Potassium**

1. Direct indication of K-flooding and K-introduction for Cu and Mo porphyry exploration, tungsten, and other metals.
2. Direct indication of K-depletion and alteration for mapping structure in certain geologic environments.
3. General mapping of rock types in many geologic environments.

### **Thorium**

1. Direct indication of monazite and other types of thorium deposits.
2. Mapping of basic igneous rocks.

### **Uranium, U/Th ratio**

1. Uranium exploration in both sedimentary and igneous environments — our most common survey requirement.
2. Mapping of acid igneous rocks.

## **GEOPHYSICAL EQUIPMENT PACKAGE**

1. Geometrics G-803 fractional gamma magnetometer (sensor hangs on a 50 or 100 foot cable beneath helicopter).
- 2a. Exploranium 2000 digital gamma ray spectrometer with 540 cubic inch crystal package  
or
- 2b. Geometrics GR-800 256-channel gamma ray spectrometer with 1024 cubic inch crystal package.
3. AGI Commander 7000 digital data acquisition system for error-free readings at  $\frac{1}{2}$  or 1 second intervals.
4. Automax G-2 flight path camera for exact location of flight lines (where large to moderate scale recent air photography is provided).
5. Sperry or Bonzer radar altimeter for continuously recording ground clearance.
6. Encoding barometric altimeter for showing aircraft performance (in section view) and for combining with radar altimeter data to obtain terrain profile.

***Call or Write for Further Operational and Interpretational Details and Prices***



**aerial geophysics inc**

675 SOUTH 400 EAST • (801) 328-8541 • SALT LAKE CITY, UTAH 84111

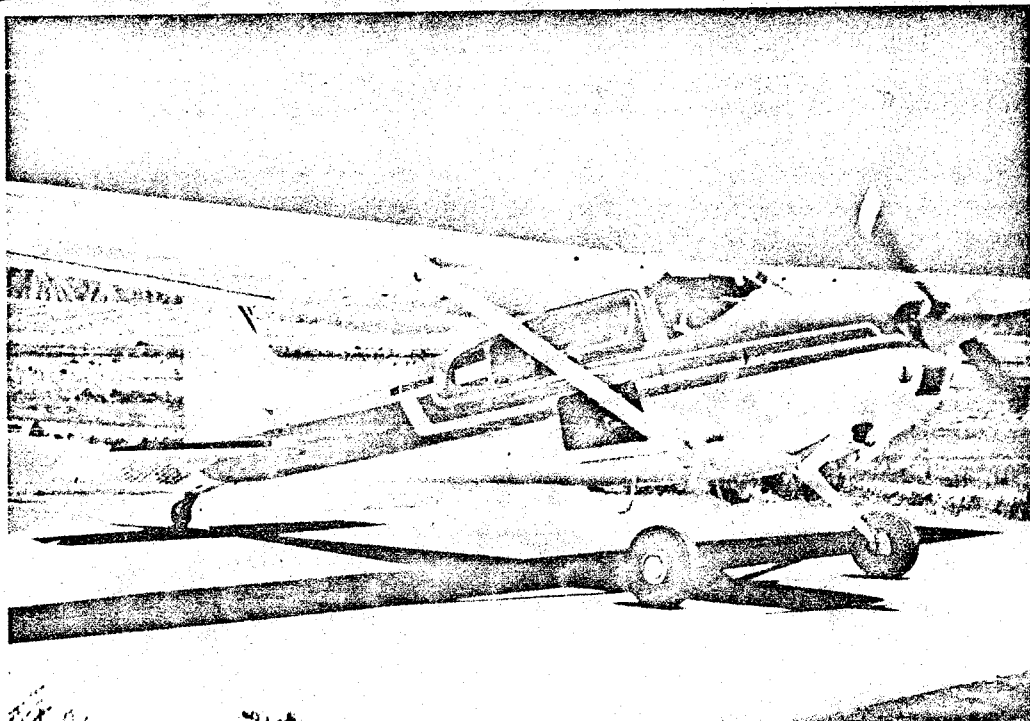




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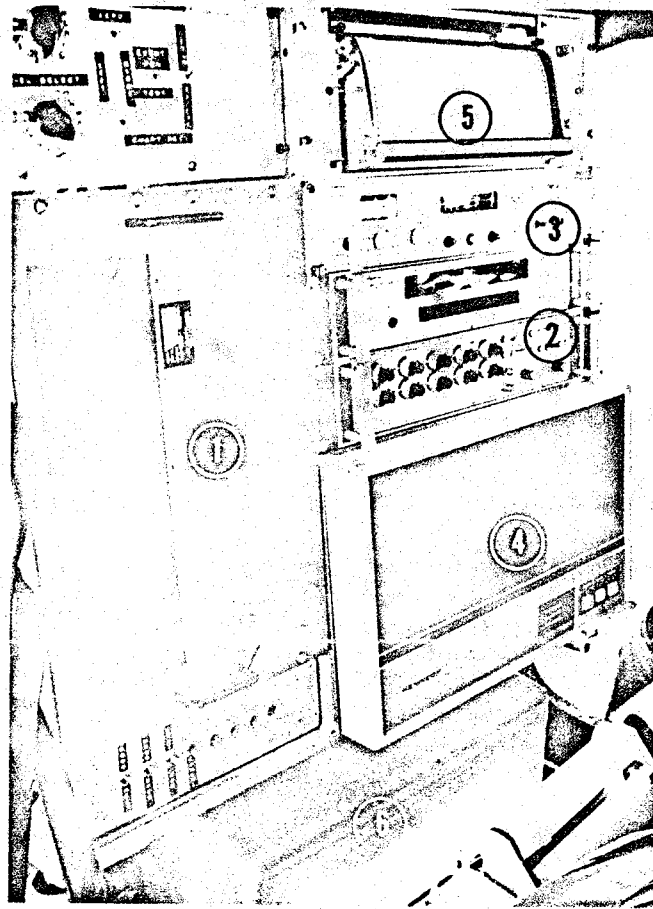
## Single-Engine Cessna 185 System for Low-Level Airborne Geophysical Surveying



Equipped with a 1024 cubic inch, 256 channel gamma-ray spectrometer, a fractional gamma magnetometer and a sophisticated digital acquisition system, this Cessna 185 installation is industry's most cost-efficient geophysical survey system. It fills the gap between truly low-level helicopter systems and the typical larger twin-engine survey aircraft. It is best suited for flying surveys 200-400 feet above the ground in flat, rolling or moderately rugged terrain.

A Robertson STOL kit, which lowers the stall speed and enhances the slow flight characteristics, plus long range gas tanks greatly enhance the survey effectiveness and safety of the system. Line-mile flying costs have proven to be the lowest of any geophysical platform of comparable sophistication now flying, in spite of the superior quality of the data due to the lower flying elevation and the slower flight speed.

36,000  
Survey  
line  
Miles  
Flown  
with  
this  
System  
in  
Last  
Semester  
of 1978



Call  
or  
Write  
AGI  
for  
Further  
Operational  
Details  
and  
Prices

### DESCRIPTION OF CESSNA 185 GEOPHYSICAL EQUIPMENT PACKAGE

Located immediately aft of the pilot and co-pilot's seats, the major components of the geophysical system are shown above:

- 1) AGI Commander 7000A on-board computer and intelligent digital data system.
- 2) Geometrics GR-800 256-channel gamma ray spectrometer and GR-900 Crystal Interface.
- 3) Geometrics G-803 fractional gamma magnetometer (sensor is located on wingtip).
- 4) Kennedy magnetic tape deck for recording and storage of geophysical data.
- 5) Hewlett-Packard 2-channel analog chart recorder.
- 6) Ex-square 1024 cubic inch NaI (TI) crystal package for gamma ray spectrometer.

In rear cabin and baggage compartment are also located:

- 7) Automax G-2 35mm flight path camera.
- 8) AC & DC power supply units.
- 9) Litton LTN-76 inertial navigation system (optional).

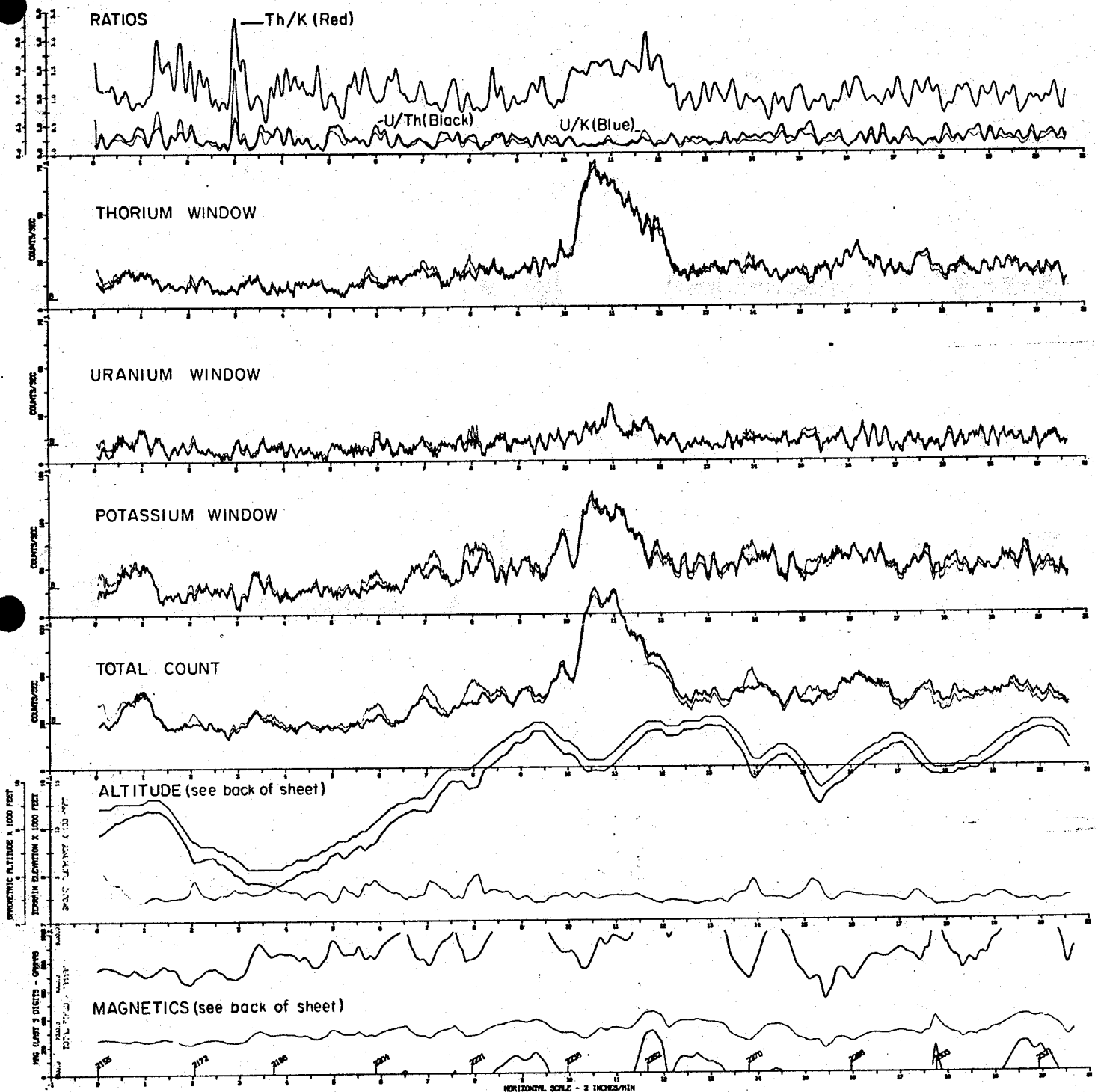
With the INS, AGI's Cessna 185 can survey precise lines in remote and jungle areas where no detailed maps are available. This aircraft is the smallest ship in which an INS installation has been made, and the improvement in flight path has been remarkable.



aerial geophysics inc

675 SOUTH 400 EAST • (801) 328-8541 • SALT LAKE CITY, UTAH 84111

# AGI'S STANDARD\* PROFILES FOR AIRBORNE RADIOMETRIC - MAGNETIC SURVEY



\*At 1/3rd Scale (But may be plotted at any horizontal or vertical scaled desired)



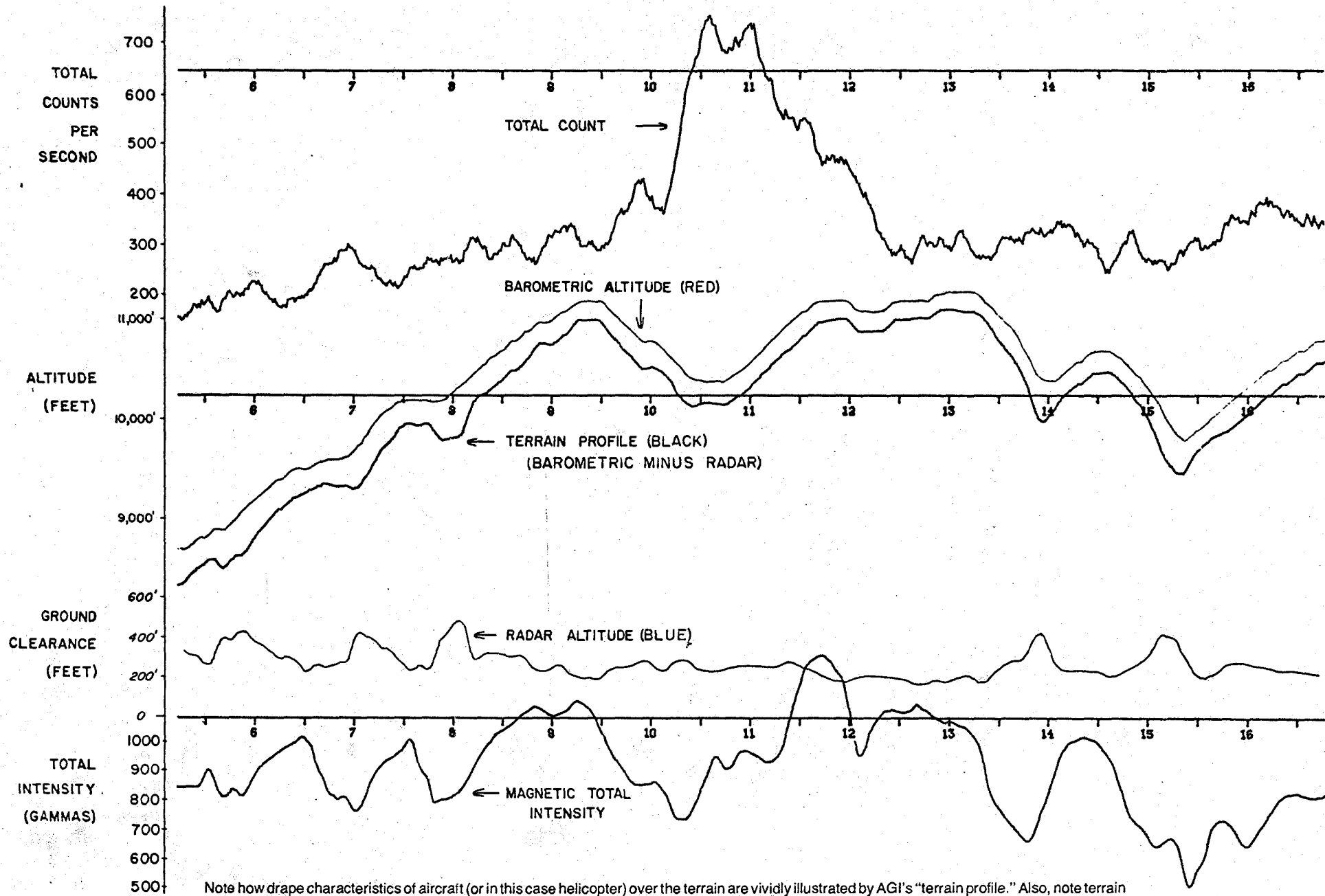
aerial geophysics inc

SALT LAKE CITY, UTAH 84111

Note: Spectrometer channels usually shown in two pen colors:  
Red or blue, corrected for altitude  
Black, uncorrected

(over)

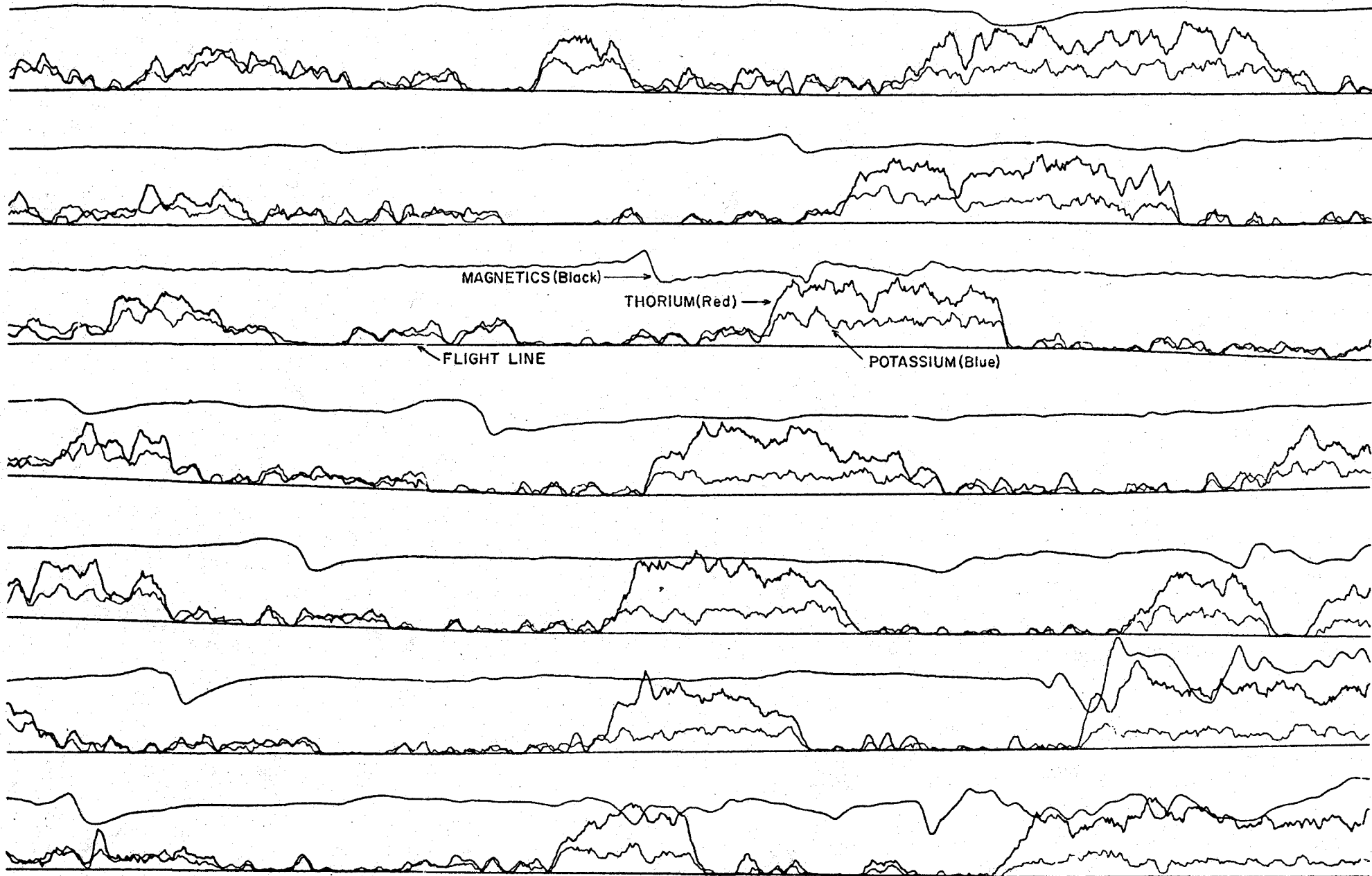
# DETAIL OF REVERSE SIDE, SHOWING TOTAL COUNT, 3 ALTITUDE PROFILES, AND MAGNETICS



Note how drupe characteristics of aircraft (or in this case helicopter) over the terrain are vividly illustrated by AGI's "terrain profile." Also, note terrain effects at some places on magnetic profile (above) and relationship of potassium and thorium anomalies to terrain (reverse).

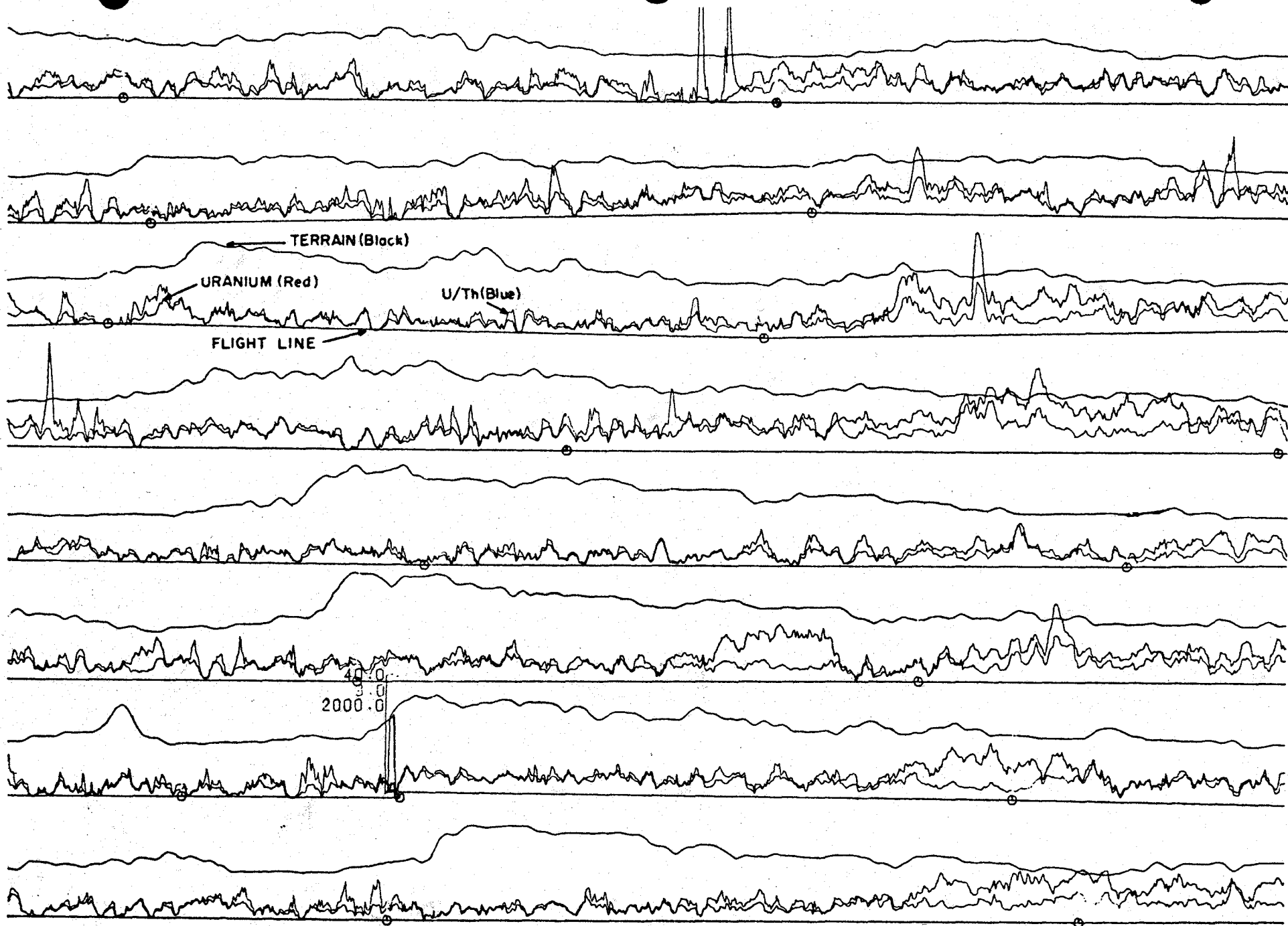
AGI'S STACKED\* PROFILES FOR AIRBORNE RADIOMETRIC - MAGNETIC SURVEY

GEOLOGY STACK: MAGNETICS, THORIUM, POTASSIUM



\*Multi Stack®: 1) multi-colored, and 2) multi-spectral

URANIUM STACK: URANIUM, U/TH RATIO, TERRAIN



aerial geophysics inc

SALT LAKE CITY, UTAH 84111

# ASARCO

Exploration Department  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

June 21, 1985

Mrs. Lois A. Burris, Executor  
J. R. deCordova Estate  
1637 East Catalina Drive  
Phoenix, AZ 85016

Lease Agreement  
Storage Building  
Superior East Project


Dear Mrs. Burris:

Enclosed is a check in the amount of \$2,400 as the annual rental for the period from July 1, 1985 through June 30, 1986.

This is in accordance with our Agreement dated May 18, 1976, amended to payments of \$200 per month.

Please acknowledge receipt of this letter by returning the extra copy to my attention.

Sincerely yours,

  
J. R. Stringham  
Assistant to the  
Manager, SWED

JRS:mek  
enc.

cc: J. D. Sell  
A. J. Robles



# ASARCO

Exploration Department  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

June 20, 1986

Mrs. Lois A. Burris, Executor  
J.R. deCordova Estate  
1637 East Catalina Drive  
Phoenix, AZ 85016

Lease Agreement  
Storage Building  
Superior East Project

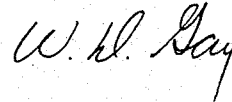
Dear Mrs. Burris:

Enclosed is a check in the amount of \$2,400 as the annual rental for the period from July 1, 1986 through June 30, 1987.

This is in accordance with our Agreement dated May 18, 1976, amended to payments of \$200 per month.

Please acknowledge receipt of this letter by returning the extra copy to my attention.

Sincerely yours,



W. D. Gay  
Land Engineer

WDG:mek  
enc.

cc: J. D. Sell  
A. J. Robles

RECEIVED: \_\_\_\_\_

DATE: \_\_\_\_\_

Voucher No. 6-119 Month June 19 86

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

Annual rental for the period from July 1, 1986  
through June 30, 1987 on building at 401 Live Oak St., Miami, AZ 2,400.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

91-2  
1221

THE VALLEY NATIONAL BANK OF ARIZONA  
Tucson, Arizona 85701

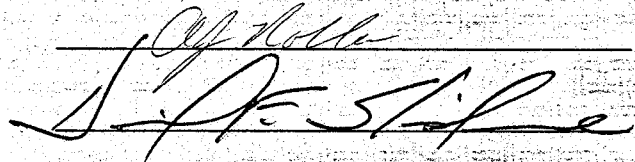
Check  
June 20 19 86 25074

PAY TO THE ORDER OF

The sum of \$2,400 and 00 cts Dollars \$ 2,400.00

ASARCO Incorporated

LOIS A BURRIS, Executor  
J. R. deCordova Estate  
1637 E. Catalina Dr.  
Phoenix, AZ 85016



⑆ 122100024 ⑆

2000 06 73 ⑈

DOCKET 402 PAGE 848

LEASE AGREEMENT

This agreement made this 18<sup>th</sup> day of MAY, 1976, between JOHNNIE MAE deCORDOVA, in her own right, and LOIS M. BURRIS, as personal representative of the estate of J. R. de Cordova, deceased, lessors, and ASARCO Incorporated, lessee,

## WITNESSETH:

WHEREAS, lessors are the sole owners of the premises described below, and desire to lease the premises to a suitable lessee for the storage of drill cores;

WHEREAS, Lessee desires to lease the premises for said purpose;

NOW THEREFORE, in consideration of the mutual covenants contained herein, the parties agree as follows:

1. Lessors lease to lessee, subject to the terms and conditions hereof, the premises located at 401 Live Oak, Miami, Arizona 85537, and more particularly described as follows: Lots 401, ~~402~~ and 403, block 20, Miami Townsite, Gila County, Arizona, together with all improvements located thereon.  
*R&D LAB.*
2. The term shall be one (1) year, commencing July 1, 1976, and terminating on June 30, 1977.
3. Rent for the term shall be fifteen hundred dollars (\$1,500.00), payable on execution of this lease.
4. Lessee is hereby granted an option to extend the term for an additional term of one (1) year at a rental of fifteen hundred dollars (\$1,500.00). Said option may be exercised at any time during the initial term by written notice, accompanied by check for fifteen hundred dollars (\$1,500.00), constituting the rent for the extended term.
5. Lessee shall surrender the premises at the expiration of the lease term or any extension thereof in as good a state and condition as the premises were at the commencement of the term, reasonable use and wear thereof and damages by fire, casualty and the elements excepted. Prior to surrendering possession, lessee shall remove the contents from all buildings.
6. All utility service requirements on the demised premises, including water, gas, electricity and telephone shall be the responsibility of lessee, and lessee shall be liable for all expenses incurred in the use of those utilities on the demised premises.
7. It is mutually agreed that the terms "lessors" and "lessee," wherever used in this lease agreement, shall include the heirs, executors, administrators, personal representatives, successors and assigns of the parties respectively the same as if each time fully expressed, and each of the provisions, covenants and conditions of this lease agreement shall inure to the benefit of and be binding upon the heirs, executors, administrators, personal representatives, successors, devisees, sublessees and assigns of said parties except as herein otherwise provided.
8. Lessors agree to clean out the building on the premises before transfer of possession thereof, and to deliver possession of the premises to lessee vacant of all personal property and debris.
9. Lessors shall have the option, at lessors' expense, to insure the building on the premises.
10. Lessee shall, at its expense, obtain and maintain any other insurance that lessee desires on its personal property on the premises.
11. The lessors agree to pay, on or before the date of delinquency there-of, all taxes which constitute a lien against the premises during the term and any extension.

# ASARCO

JDS

Exploration Department  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

June 19, 1987

Mrs. Lois A. Burris  
1637 E. Catalina Drive  
Phoenix, Arizona 85016

Lease Agreement  
Storage Building  
Superior East Project

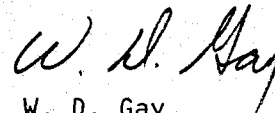
Dear Mrs. Burris:

Enclosed is a check in the amount of \$2,400 as the annual rental for the period from July 1, 1987 through June 30, 1988.

This is in accordance with our Agreement dated May 18, 1976, amended to payments of \$200 per month.

Please acknowledge receipt of this letter by returning the extra copy to my attention.

Sincerely yours,

  
W. D. Gay  
Land Engineer

WDG:mek  
Enc.

cc: J. D. Sell  
A. J. Robles

Voucher No.

Month

6-119

June

19 87

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

Annual rental for period July 1, 1987  
through June 30, 1988 on building at 401 Live Oak St., Miami, AZ \$2,400.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

THE VALLEY NATIONAL BANK OF ARIZONA  
Tucson, Arizona 85701

PAY  
TO THE ORDER OF

LOIS A BURRIS  
1637 E. Catalina Dr.  
Phoenix, AZ 85016

COPY

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

91-2  
1221

Check

June 19 19 87

26911

The sum of \$2,400 and 00 cts Dollars \$ 2,400.00

ASARCO Incorporated

*Al Rolfe*  
*[Signature]*

# ASARCO

JDS

Exploration Department  
Southwestern United States Division

Certified Mail  
Return Receipt

June 16, 1988

Mrs. Lois A. Burris  
1637 E. Catalina Drive  
Phoenix, Arizona 85016

Lease Agreement  
Storage Building  
Superior East Project

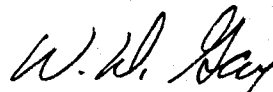
Dear Mrs. Burris:

Enclosed is a check in the amount of \$2,400 as the annual rental for the period from July 1, 1988 through June 30, 1989.

This is in accordance with our Agreement dated May 18, 1976, amended to payments of \$200 per month.

Please acknowledge receipt of this letter by returning the extra copy to my attention.

Sincerely yours,



W. D. Gay  
Land Engineer

WDG:mek  
Enc.

cc: J.D. Sell  
C.L. Snow

*Please note Change  
of Address.*

RECEIVED BY:

*Lois A. Burris*

DATE:

*June 30, 1988*

*144 East Missouri  
Phoenix Ariz  
Zip 85012*

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747  
1150 North 7th Avenue (602) 792-3010

cc C.L. Snow (6/22/88)

*Noted 6/22/88  
mek*

# ASARCO

Exploration Department  
Southwestern United States Division

Certified Mail  
Return Receipt

June 16, 1988

Mrs. Lois A. Burris  
1637 E. Catalina Drive  
Phoenix, Arizona 85016

Lease Agreement  
Storage Building  
Superior East Project


Dear Mrs. Burris:

Enclosed is a check in the amount of \$2,400 as the annual rental for the period from July 1, 1988 through June 30, 1989.

This is in accordance with our Agreement dated May 18, 1976, amended to payments of \$200 per month.

Please acknowledge receipt of this letter by returning the extra copy to my attention.

Sincerely yours,

  
W. D. Gay  
Land Engineer

WDG:mek  
Enc.

cc: J.D. Sell  
C.L. Snow



Voucher No.

6-107

Month

June 19 88

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

Annual rental for period July 1, 1988 through  
June 30, 1989 on building at 401 Live Oak St.,  
Miami, AZ

\$2,400.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

THE VALLEY NATIONAL BANK OF ARIZONA  
Tucson, Arizona 85701

PAY  
TO THE ORDER OF

LOIS A. BURRIS  
1637 E. Catalina Dr.  
Phoenix, AZ 85016

ASARCO Incorporated  
Tucson Office  
Tucson, Arizona 85703

91-2  
1221

Check

June 16 1988 28925

The sum of \$2,400 and 00 Cts Dollars \$2,400.00

ASARCO Incorporated

*C L Snow*

*SA Myers*

⑆122100024⑆

2000⑆0673⑆

# ASARCO

Exploration Department  
Southwestern United States Division

May 19, 1989

Mrs. Lois A. Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement  
Storage Building

Dear Mrs. Burris:

I regret to inform you that ASARCO Incorporated no longer has a need for your premises at 401 Live Oak, Miami Arizona.

Since the yearly lease expires on June 30, 1989, we expect to have the building vacated by that time. If for any reason we can not meet the June 30, 1989 date, could we extend the lease on a month-to-month basis?

We appreciate your being a graceful landlady.

Sincerely,



William D. Gay  
Land Engineer, SWED

WDG:mek

cc: J.D. Sell

cc: J.D. Sell  
W.D. Gay

Phoenix, Arizona  
May 29, 1989

Re - Superior East Project  
Lease agreement  
Storage Building  
Miami, Ariz

ASARCO

William D. Gay  
Lead Engineer, SWSB

Mr. William D. Gay

Thank you for informing me that  
you no longer need the warehouse  
at 401 Live Oak, Miami Ariz.

You may extend your lease on a  
monthly basis until you have completely  
vacated the building -

If you will let me know the days  
you are in Miami, I'll try to meet you  
there -

I have had inquiries about rental of  
the building - but I think I'll put the  
four lots up for sale when the market  
is better, I believe the Roosevelt Resub will  
be of some good to the district - Hope so -

ASARCO has been a good Tenant, always  
courteous and prompt with the Annual payment  
of rent.

Sincerely

Louis A. Buerie  
144 East Missouri  
Phoenix, Arizona 85012

Tel. 1-602-266-0505

June 26, 1989

FILE NOTE

Storage Building  
Monthly Renewal  
Superior East  
Pinal County, AZ

Our lease on the warehouse at 401 Live Oak, Miami, Arizona expires on June 30, 1989.

Asarco has received permission from

Lois A. Burris  
144 East Missouri  
Phoenix, Arizona 85012

to extend the lease monthly.

As the building has not been vacated, but is in the process, please send a check to Mrs. Burris for \$250.00 for the month of July 1989.

The \$250 is a \$50 advance over the prorated monthly which was in the lease rental and is added for the goodwill of Mrs. Burris in extending the rental.

We may have to pay a similar amount on July 30 for August. See Don Melhado/J.D. Sell for clean-up/transfer status.



James D. Sell

JDS:mek

cc: W.D. Gay  
D.A. Melhado  
M.E. Kavanagh  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

June 26, 1989

Mrs. Lois A. Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Thank you for allowing us to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, on a monthly basis.

Enclosed is Asarco's check of \$250 for the month ending July 31, 1989. The \$50 over the monthly rate of \$200 is a gesture of goodwill.

Sincerely,



WDG:mek  
enc.

William D. Gay  
Land Engineer, SWED

cc: J.D. Sell  
C.L. Snow

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

July 24, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, thru the month of August 1989.

Sincerely,

ORIGINAL SIGNED BY  
JAMES D. SELL

JDS:mek

James D. Sell

cc: W.D. Gay  
C.L. Snow

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

August 29, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of September 1989.

Sincerely,

*/s/ mek*

James D. Sell

JDS:mek

cc: W.D. Gay  
C.L. Snow



VOUCHER NO. 8-269

DATE Aug 1989

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

Lease Agreement Extension

\$250.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

DOWNTOWN OFFICE  
THE VALLEY NATIONAL BANK  
TUCSON, ARIZONA

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

91-2/1221

No. 0031683

August 29, 1989  
\$250.00

The sum of \$250 and 00 cts

BY

TO THE ORDER OF

MRS. LOIS BURRIS  
144 East Missouri  
Phoenix, AZ 85012

ASARCO INCORPORATED  
TUCSON OFFICE

*C. L. Shou*  
*Mildred C. Koeppe*

⑈031683⑈ ⑆122100024⑆

2000⑈0673⑈

Sharon Ayres  
Sept 3, 1989

Mr. James D. Sell  
Managers Exploration Dept.  
ASARCO

Rec'd check # 0031683 - <sup>4</sup>250<sup>00</sup>  
for rent on warehouse in Miami Arizona

Thank you.

Lisa A. Berrie  
7244 E. Missouri  
Phoenix Ariz 85012

ASARCO Inc.

SEP 16 1989

SW Exploration

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

September 22, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of October 1989.

Sincerely,

ORIGINAL SIGNED BY  
JAMES D. SELL

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

VOUCHER NO. 9-231

DATE Sept 1989

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

Lease Agreement Extension

\$250.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

DOWNTOWN OFFICE  
THE VALLEY NATIONAL BANK  
TUCSON, ARIZONA

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

91-2/1221

No. 0031854

PAY

TO THE ORDER OF

The sum of \$250 and 00 cts

September 22, 1989  
\$250.00

Mrs. Lois Burris  
144 East Missouri  
Phoenix, AZ 85012

ASARCO INCORPORATED  
TUCSON OFFICE

*W. Myers*  
*Wendred C. Koeppe*

⑈03 1854⑈ ⑆122100024⑆

2000⑈0673⑈

# ASARCO

JDS

Exploration Department  
Southwestern United States Division

James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

October 24, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mr. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of November 1989.

Sincerely,

ORIGINAL SIGNED BY  
J. D. SELL

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

# ASARCO

JDS

**Exploration Department**  
Southwestern United States Division  
James D. Sell  
Manager

**CERTIFIED MAIN  
RETURN RECEIPT**

November 22, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of December 1989.

Sincerely,

  
James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

# ASARCO

JDS

Exploration Department  
Southwestern United States Division

James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

December 20, 1989

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of January 1990.

Sincerely,

*James D. Sell, mek*

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow



# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

January 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of February 1990.

Sincerely,

JDS:mek  
Enc.

  
James D. Sell

cc: W.D. Gay  
C.L. Snow

VOUCHER NO. 1-237

DATE January 1990

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

Lease payment through  
February, 1990

\$250.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

DOWNTOWN OFFICE  
THE VALLEY NATIONAL BANK  
TUCSON, ARIZONA

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

91-2/1221

January 24, 1990

No. 0032835

PAY

The sum of \$250 and 00 cts

\$250.00

TO ORDER OF

ASARCO INCORPORATED  
TUCSON OFFICE

MRS. LOIS BURRIS  
144 East Missouri  
Phoenix, AZ 85012

*C. L. Shaw*  
*Mildred C. Koeppe*

⑈032835⑈ ⑆122100024⑆

2000⑈0673⑈

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

February 22, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of March 1990.

Sincerely,

ORIGINAL SIGNED BY:  
JAMES D. SELL

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

March 23, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of April 1990.

Sincerely,

ORIGINAL SIGNED BY  
**JAMES D. SELL**

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

VOUCHER NO.

3-237

DATE

Mar 1990

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

Lease agreement extension  
thru April 1990

\$250.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

DOWNTOWN OFFICE  
THE VALLEY NATIONAL BANK  
TUCSON, ARIZONA

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

91-2/1221

No. 0033291

The sum of \$250 and 00 cts

March 23, 1990  
\$250.00

TO THE ORDER OF

MRS. LOIS BURRIS  
144 East Missouri  
Phoenix, AZ 85012

ASARCO INCORPORATED  
TUCSON OFFICE

*C. L. Snow*  
*Mildred C. Koeppe*

⑈033291⑈ ⑆122100024⑆

2000⑈0673⑈

# ASARCO

Exploration Department  
Southwestern United States Division

CERTIFIED MAIN  
RETURN RECEIPT

April 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of May 1990.

Sincerely,

ORIGINAL SIGNED BY  
**JAMES D. SELL**

JDS:mek  
Enc.

James D. Sell  
Manager, SWED

cc: W.D. Gay  
C.L. Snow

VOUCHER NO. 4-244

DATE Apr 1990

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

Rent through May 1990

\$250.00

DETACH BEFORE PRESENTING FOR PAYMENT

**ASARCO**

DOWNTOWN OFFICE  
THE VALLEY NATIONAL BANK  
TUCSON, ARIZONA

ASARCO INCORPORATED  
TUCSON OFFICE  
TUCSON, ARIZONA 85703

91-2/1221

No. 0033536

PAY

The sum of \$250 and 00 cts

April 24, 1990  
\$250.00

TO THE ORDER OF

MRS. LOIS BURRIS  
144 East Missouri  
Phoenix, AZ 85012

ASARCO INCORPORATED  
TUCSON OFFICE

*Mildred C. Koeppe*  
*[Signature]*

⑈033536⑈ ⑆122100024⑆

2000⑈0673⑈



# ASARCO

JDS

EXPLORATION DEPARTMENT  
SOUTHWESTERN UNITED STATES DIVISION

JAMES D. SELL  
MANAGER

CERTIFIED MAIL  
RETURN RECEIPT

May 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of June 1990.

Sincerely,

ORIGINAL SIGNED BY  
JAMES D. SELL

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

June 22, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of July 1990.

Sincerely,

JDS:mek  
Enc.

  
James D. Sell

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

**Exploration Department**  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

July 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of August 1990.

Sincerely,

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

**CERTIFIED MAIL**  
**RETURN RECEIPT**

August 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of September 1990.

Sincerely,

ORIGINAL SIGNED BY  
**J. D. SELL**

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

October 24, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of November 1990.

Sincerely,

  
James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

November 21, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of December 1990

Sincerely,

ORIGINAL SIGNED BY  
**J. D. SELL**

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

**Exploration Department**  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

December 20, 1990

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of January 1991.

Sincerely,

ORIGINAL SIGNED BY  
**J. D. SELL**

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow



# ASARCO

**Exploration Department**  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

January 24, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of February 1991.

Sincerely,

ORIGINAL SIGNED BY  
**J. D. SELL**

James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

February 21, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of March 1991.

Sincerely,

ORIGINAL SIGNED BY  
J. D. SELL

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

March 22, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of April 1991.

Sincerely,

JDS:mek  
Enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

**ASARCO**

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

April 23, 1991

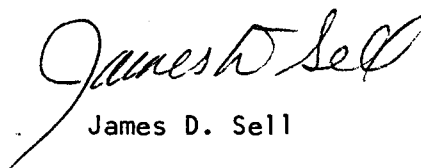
Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of May 1991.

Sincerely,

  
James D. Sell

JDS:mek  
Enc.

cc: W.D. Gay  
C.L. Snow

# ASARCO

Exploration Department  
Southwestern United States Division

CERTIFIED MAIL  
RETURN RECEIPT

May 23, 1991


Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of June 1991.

Sincerely,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
enc.

cc: J.D. Sell  
C.L. Snow

JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

June 24, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of July 1991.

Sincerely,

ORIGINAL SIGNED BY  
**J. D. SELL**

JDS:mek  
enc.

James D. Sell

cc: W.D. Gay  
C.L. Snow

**ASARCO**

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

July 24, 1991


Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of August 1991.

Sincerely,

  
James D. Sell

JDS:mek  
enc.

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

September 24, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

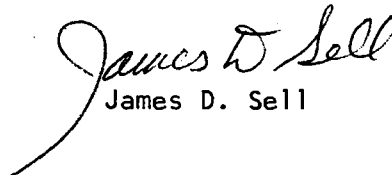
Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of October 1991.

Sincerely,

JDS:mek  
enc.

  
James D. Sell

cc: W.D. Gay  
C.L. Snow



# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

October 23, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of November 1991.

Sincerely,

JDS:mek  
enc.

  
James D. Sell

cc: W.D. Gay  
C.L. Snow

**ASARCO**

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

November 22, 1991

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of December 1991.

Sincerely,

ORIGINAL SIGNED BY  
J. D. SELL

James D. Sell

JDS:mek  
enc.

cc: W.D. Gay  
C.L. Snow

JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

December 20, 1991


Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Lease Agreement Extension  
Storage Building

Dear Mrs. Burris

Enclosed is Asarco's check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of January 1992.

Sincerely,

  
James D. Sell

JDS:mek  
enc.

cc: W.D. Gay  
C.L. Snow

J.D.S

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

CERTIFIED MAIL  
RETURN RECEIPT

January 24, 1992

Mrs. Lois Burris  
144 East Missouri  
Phoenix, Arizona 85012

Superior East Project  
Final Lease Agreement  
Extension  
Storage Building

Dear Mrs. Burris:

Enclosed is Asarco's final check of \$250 to extend the lease on the warehouse at 401 Live Oak, Miami, Arizona, through the month of February 1992.

Asarco is in the final moving phase of the material in storage and upon final cleaning we will notify you for final inspection and return the keys to the building.

Asarco thanks you for the use of the building on this long term arrangement.

Sincerely,

*James D. Sell*  
James D. Sell

JDS:mek

cc: W.L. Kurtz  
W.D. Gay  
C.L. Snow  
D.A. Melhado

DETAIL OF OUTCOME  
J.I. RANCH OPERATIONS

	<u>This Month</u>	<u>Year to Date</u>
<u>SALES</u>		
Rental Income	\$ .	120.00
Sale of Cattle	12,577.06	19,521.02
	<u>12,577.06</u>	<u>19,641.02</u>
<u>COST OF SALES</u>		
Operating Expenses:	\$	
Livestock Inventory Adjustment	(26,546.00)	(26,546.00)
Salaries	3,300.00	32,065.91
Additional Compensation		543.61
Additional Labor Expense	938.83	9,530.60
Memberships & Sp. Sub.		418.00
Equipment Repair		1,402.77
Travel Expense	352.60	3,884.60
Miscellaneous Services	204.00	5,241.25
Miscellaneous Supplies	5,023.32	9,259.32
Medical and Surgical (Outside Physicians)	86.50	456.50
Office Supplies		61.62
Equipment		2,423.55
Feed	730.75	11,688.42
Range Management Plan		
Grazing Fees	7,195.65	9,727.25
Building Repair and Maintenance	316.75	4,662.02
Auto Expense	283.50	6,882.50
Tools & Supplies		22.42
Taxes - Property	(272.18)	1,243.30
- State Sales	363.50	764.95
Electricity	120.70	1,507.59
Gas		1,417.55
Legal Expense		55.00
Interest Expense	69.47	857.51
Workmen's Compensation Insurance		(998.78)
	<u>\$(7,832.61)</u>	<u>76571.46</u>
<u>OPERATING PROFIT OR LOSS</u>	<u>\$20,409.67</u>	<u>56,930.44</u>
<u>DEPRECIATION</u>	<u>\$ (396.96)</u>	<u>(4,763.56)</u>
<u>NET PROFIT OR LOSS</u>	<u>\$20,012.71</u>	<u>(61,694.00)</u>

APPROVED: \_\_\_\_\_

Orig: FRMcAllister  
 cc: RJKupsch, RLBrown,  
 TEScartaccini, WDPayne,  
 RBCrist, File - 2

# ASARCO

T-4.19  
J1 Ranch

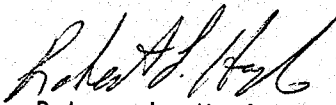
Southwestern Mining Department

December 4, 1984

To: T. E. Scartaccini  
W. L. Kurtz  
J. R. Stringham  
W. E. Lockhart  
J. D. Self

Attached tabulations summarize the J. I. Ranch livestock as of the fall 1984 round-up according to my interpretation of the livestock cards.

If you have any questions, I will be glad to discuss them.



Robert L. Hoyle

RLH/kh

J Ranch  
 Fall 1984 Round-Up  
Male Cattle

	<u>Tagged Bulls</u>	<u>Untagged Yearling Steers</u>	<u>Untagged Male Calves</u>	<u>Total</u>
Fall 1983	25	1	79	105
Purchased Per Vouchers	7			7
Reclassifications Per Cards		79	(79)	0
Branded Per Cards			68	68
Branding Miss. Per Cards		4		4
Butchered Per Cards		(1)		(1)
Died Per Cards	(1)			(1)
Sold Per Cards & Vouchers	(4)	(80)		(84)
Unaccounted Difference	* <u>2</u>	<u>—</u>	<u>—</u>	<u>2</u>
Fall 84 Per Cards	<u>29</u>	<u>3</u>	<u>68</u>	<u>100</u>
* Vouchers Indicate Purchase of	7			
Stock Cards Indicate Sales of	<u>8</u>			
Difference	<u>1</u>			
Tag 496 New Card w/o				
Explanation	<u>1</u>			
Net Difference	<u><u>2</u></u>			

J. I. RANCH  
Bull Tags  
Fall 1983 thru Fall 1984

<u>Tag No.</u>	<u>Fall 1983</u>	<u>Plus 1984 Purchases</u>	<u>Minus 1984 Dead</u>	<u>Minus 1984 Sales</u>	<u>Plus Unexplained New Tax</u>	<u>Fall 1984</u>
244	1					1
351	1					1
358	1					1
361	1					1
362	1					1
363	1					1
364	1					1
374	1					1
375	1					1
376	1					1
377	1					1
378	1	1		1		1
380	1					1
381	1					1
382	1					1
384	1					1
385	1					1
386	1					1
387	1	1				1
388	1			1		1
389	1			1		1
390	1	1		1		1
392	1					1
394	1		1			1
397	1					1
398	1					1
391-399	1					1
495		1				1
496					1	1
497		1				1
498		1				1
499		1				1
500		1				1
	<u>25</u>	<u>8</u> *	<u>1</u>	<u>4</u>	<u>1</u>	<u>29</u>

\* Vouchers show only 7 purchases

\*\* Origin of this tag unexplained



J I Ranch  
 Fall 1984 Round-Up  
Female Cattle

	<u>Tagged Cows &amp; Yearlings</u>	<u>Untagged Yearlings</u>	<u>Calves</u>	<u>Total</u>
Fall 83	300	9	86	395
Reclassified Per Group Cards " " " "	42	86 (42)	(86)	-
Branded			73	73
Died Per Group Cards		(4)		(4)
Missing Per Tag Cards	(7)			(7)
Sold Per Cards & Vouchers	(50)	(41)	(1)	(92)
Found Per Tag Cards	14			14
Unaccounted Difference	* <u>6</u>	<u>      </u>	<u>      </u>	<u>6</u>
	<u>305</u>	<u>8</u> **	<u>72</u>	<u>385</u>

\* Reclassified per Group Cards      42  
 Reclassified per Tag Cards        48  
 Difference                                6

\*\* Group card show balance of 4 yearling heifers; however,  
 4 results from an arithmetic error on the card.  
 Arithmetically correct balance is 8. Number of  
 female yearlings on hand is anybody's guess.

J. I. RANCH  
Fall 1984  
Untagged Stock

	<u>Fall 1983</u>	<u>Additions</u>	<u>Deductions</u>	<u>Fall 1984</u>
<u>Horses</u>				
Sunday	1			
Dobie	1		A 1	
Appy	1			
Poker Chip	1			
Pokie Joe	1			
Buck		B 1		
Lady		B 1		
	<u>5</u>	<u>2</u>	<u>1</u>	<u>6</u>
<u>Mules</u>				
Tamalie	1			1
Liz	1			1
Peggy	1		A 1	
Crickett	1			1
Kate		B 1		1
Molly		B 1		1
	<u>4</u>	<u>2</u>	<u>1</u>	<u>5</u>

A = Sale  
 B = Purchase

# ASARCO

Southwestern Exploration Division

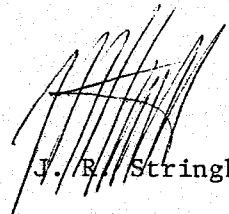
January 24, 1985

R. L. Brown  
New York Office

JI RANCH

I am attaching three original copies of Walt Armer's sales agreement with us. One of them has been reviewed and approved by John Lacy. Please sign them and return one to us for Walt.

After viewing the property, reviewing the land and water status, and consulting with W. Lockhart and Bob Crist, we set a price of \$800,000 on the fee land, the grazing leases and the animal inventory. We agreed to offer it at \$900,000 though, to allow flexibility. At Tom Osborne's suggestion, I told Walt to let us consider any offer involving terms as well. We would, of course, be free to refuse any such offer under our agreement with Walt.



J. R. Stringham

JRS:mek  
atts.

cc: W. L. Kurtz  
J. D. Sell

WALTER D. ARMER  
AND ASSOCIATES, REALTOR

WALTER D. ARMER, JR.  
M.A.I., S.R.P.A., A.R.A.  
4926 E. 13TH STREET  
TUCSON, ARIZONA 85711  
PHONE (602) 326-2356  
RES. (602) 749-1733

SALES  
APPRAISALS  
CONSULTING  
MANAGEMENT

January 14, 1985

Mr. Jim Stringham  
ASARCO, Inc.  
1070 North 7th Avenue  
Tucson, Arizona 85705

This letter shall serve as a listing agreement between Walter D. Armer, Broker, herein after called Agent and ASARCO, Inc., herein after called Owner.

Agent agrees to use due diligence in effecting a sale of that property near Superior, Pinal County, Arizona known as the JI Ranch. Said ranch contains approximately 432.14 acres deeded (fee) land, 7,371.32 acres State of Arizona Grazing Lease #G-1411 and those U. S. Forest Service lands in the Tonto National Forest included in the Devils Canyon Allotment.

The listed price will be NINE HUNDRED THOUSAND DOLLARS (\$900,000.00) and the terms will be cash. Price will include all fee lands, lease lands, improvements, live-stock, equipment and supplies (inventories to be provided by Owner as accurately as possible).

Upon consummating a sale Owner agrees to pay Agent a commission of 5% of the selling price if sold exclusively by Agent or 6% if co-brokered with another party.

It is hereby understood that the above is an Exclusive Listing and shall be binding for a period of one (1) year.

ASARCO, INC. by:

\_\_\_\_\_  
Date

\_\_\_\_\_  
*Walter D. Armer*  
Walter D. Armer, Broker

Approved as to form: *[Signature]*

*gas*

# WALTER D. ARMER

AND ASSOCIATES, REALTOR

4926 E. 13TH STREET  
TUCSON, ARIZONA 85711  
PHONE 326-2356 (602)  
OR 326-1784 (602)  
749-1733

SALES  
APPRAISALS  
CONSULTING  
MANAGEMENT

## JI RANCH

Superior, Arizona

### LOCATION

The JI Ranch headquarters is located 5 miles east of Superior, less than 70 miles from the Phoenix area.

### ACCESS

Access to the headquarters is excellent via U. S. Highway 60 and  $\frac{1}{2}$  mile of dirt ranch road. Access to the ranch interior is via ranch roads, many of which require 4-wheel drive.

### LAND TENURE

432.14	acres Deeded Land (Fee)
7,371.32	acres State of Arizona Grazing Lease
19,685 $\frac{1}{4}$	acres U. S. Forest Service
27,500 $\frac{1}{4}$	acres total or 43 sections

### IMPROVEMENTS

The headquarters has a very nice rock and frame house with three bedrooms, bath, livingroom, large kitchen with dining area, two fireplaces (one in master bedroom) and two open covered porches. There is also a metal shop/garage, a horse barn and a hay barn.

### WATER, FENCING AND CORRALS

The range improvements include shipping corrals at the headquarters, several sets of range corrals, 60 $\pm$  dirt stock tanks, 12 springs (developed), 25 wells, 2 horizontal wells,  $3\frac{1}{2}$ -4 miles of pipeline and several storage tanks and drinkers. Very few of the wells are currently being utilized but all water developments are registered with the State Department of Water Resources. The ranch is perimeter fenced (excluding natural boundarys) and cross fenced into numerous pastures and traps.

### TERRAIN, CLIMATE AND FORAGE

The ranch lies in the Pinal Mountains with elevations ranging from 3,600 feet on the south end to over 5,600 feet on the north. Terrain is generally quite rocky and rough. Climate is characterized by cool to warm summers and mild winters. Rainfall averages roughly 23 inches annually with some light snow.

The ranch has an excellent cover of native grasses and browse. Predominant types include black grama, bush muhly, sideoats grama, hairy grama, plains lovegrass, canebeard grass, Mountain mahogany and oak.

### LIVESTOCK

The Forest Service permit (Devils Canyon Allotment) calls for 420 head yearlong plus a 54 head yearling carryover for 5 months. This permit capacity covers all Forest, State and Deeded lands. As of January 1985 there were over 300 cows, 27 bulls, and some 140 calves on the JI Ranch. There are also 6 horses and 5 mules. All livestock on the ranch at the time of sale are included in the sale price.

### EQUIPMENT

Equipment on the ranch includes a 1978 4X4  $\frac{1}{2}$  Ton Pickup, a 1982 4X4 1 Ton Pickup, a 1964 4X4 2 $\frac{1}{2}$  Ton truck, an old TD6 Crawler Tractor, trailers, livestock handling equipment, well repair equipment and miscellaneous shop and hand tools and supplies. A complete inventory will be supplied at time of sale.

### TAXES AND FEES

Approximate current taxes and fees are:  
\$2,737 Real Estate taxes (1984)  
\$1,166 State Grazing Fee (1984)  
\$4,833 Forest Grazing Fee (1984)

### UTILITIES

The ranch has electricity and telephone service and Bu Gas is delivered to the headquarters by commercial distributor. Schools are available in Superior or Miami.

### GENERAL

This is a good sized ranch with a beautiful headquarters setting just over an hours drive from Phoenix. The range improvements are extensive and in excellent condition. They allow for a good management program. The forage is real strong and cattle do exceptionally well. No mineral rights included.

PRICE AND TERMS

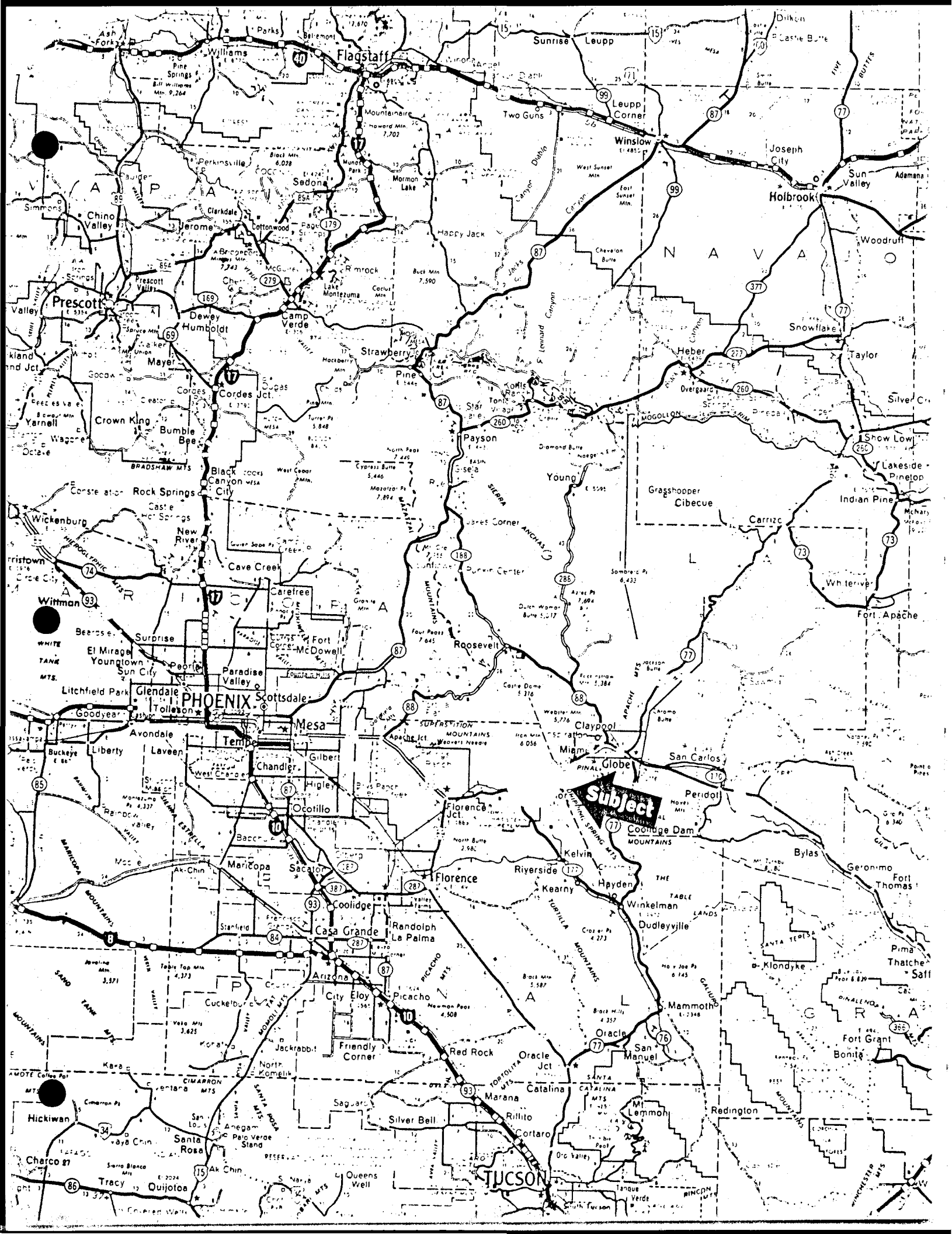
\$900,000.00 cash including all livestock and equipment.

CONTACT

Walter D. Armer  
(602)326-2356

or

Walter D. Armer, Jr.  
(602)749-1733





JI RANCH

Superior, AZ

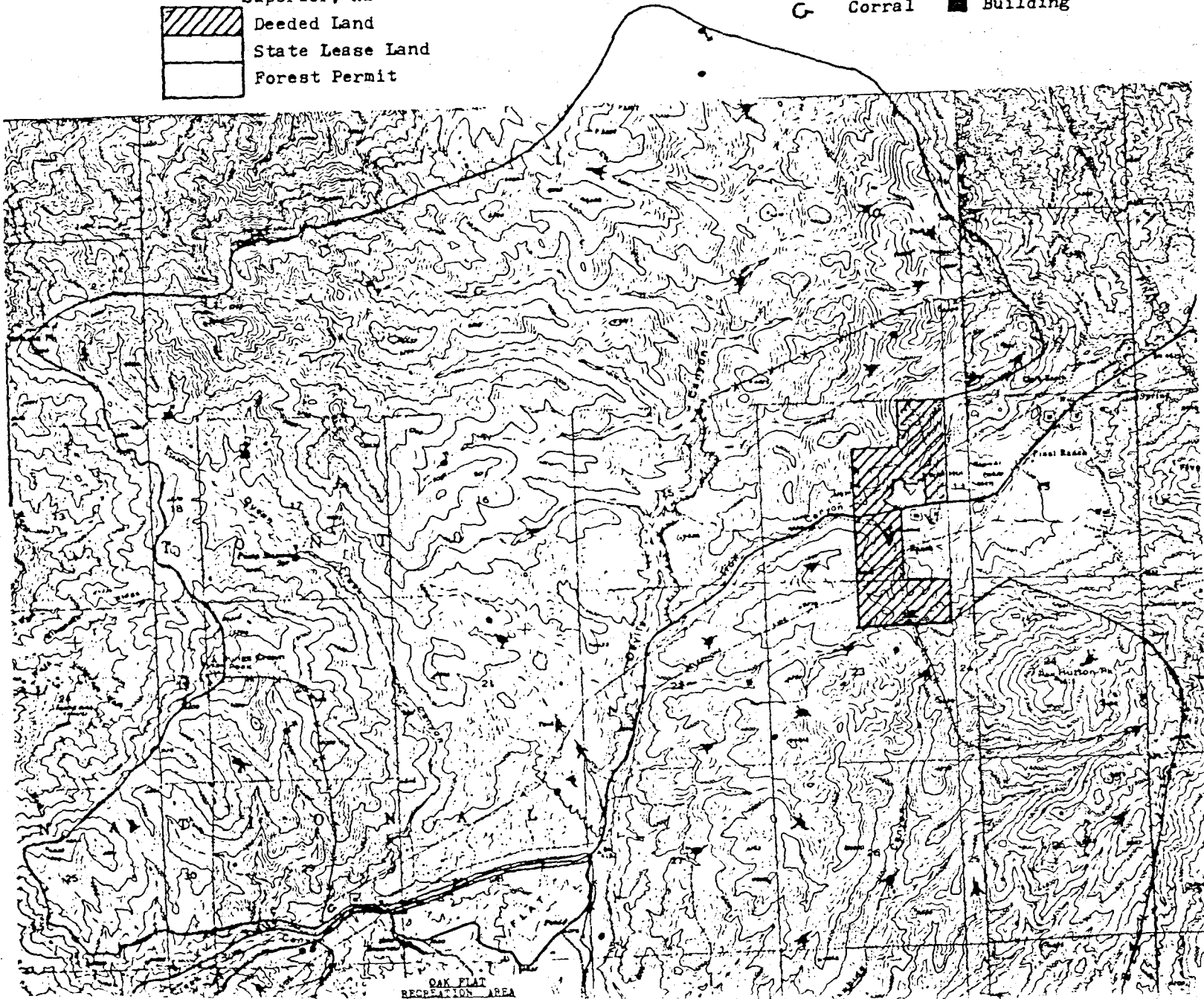


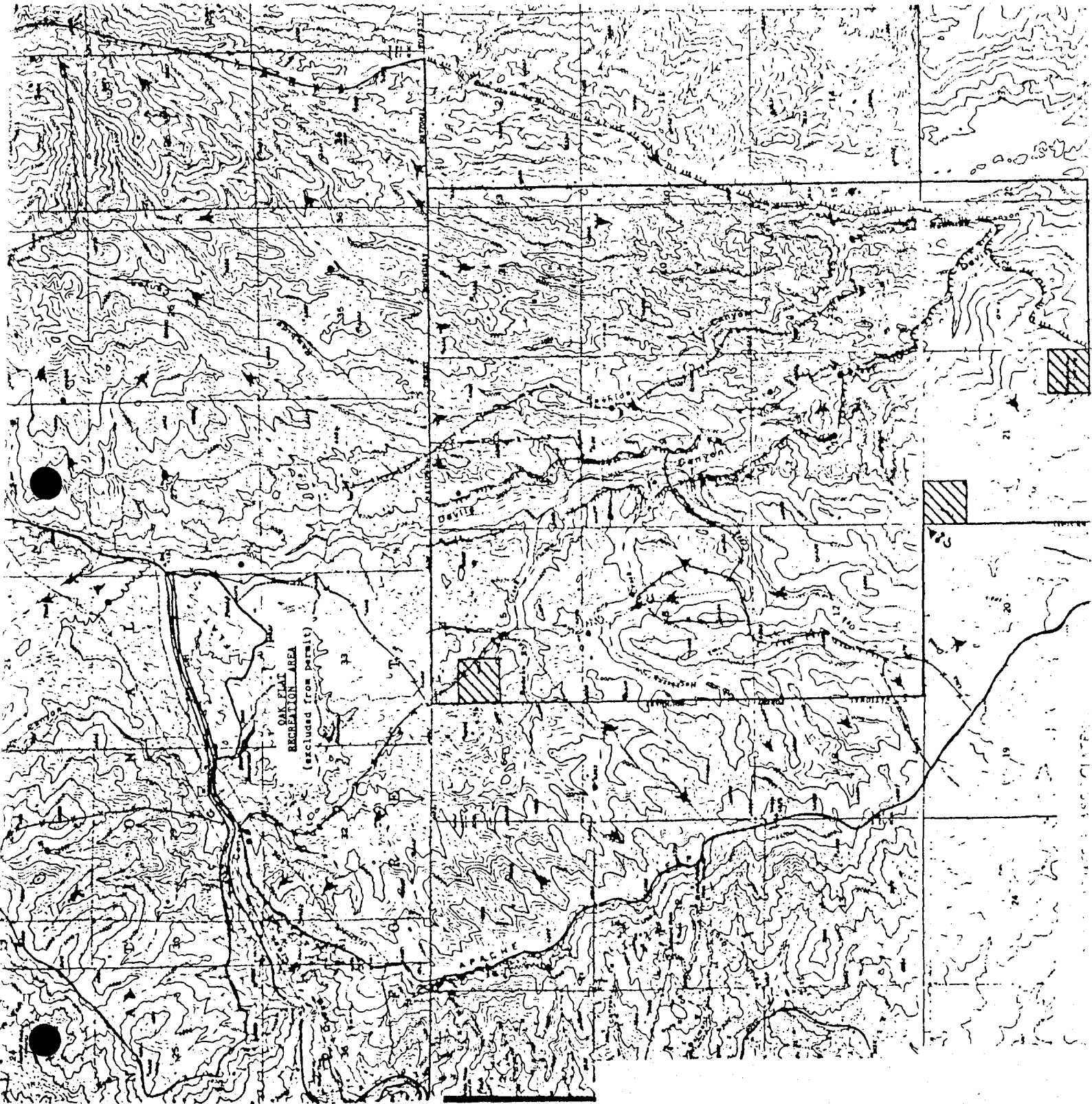
Deeded Land

State Lease Land

Forest Permit

- Well
- Horizontal Well
- Spring
- ▲ Dirt Stock Tank
- ⤵ Drinker
- Pipeline
- ✕ Fence
- ⤿ Natural Boundary
- ⊕ Corral
- Building





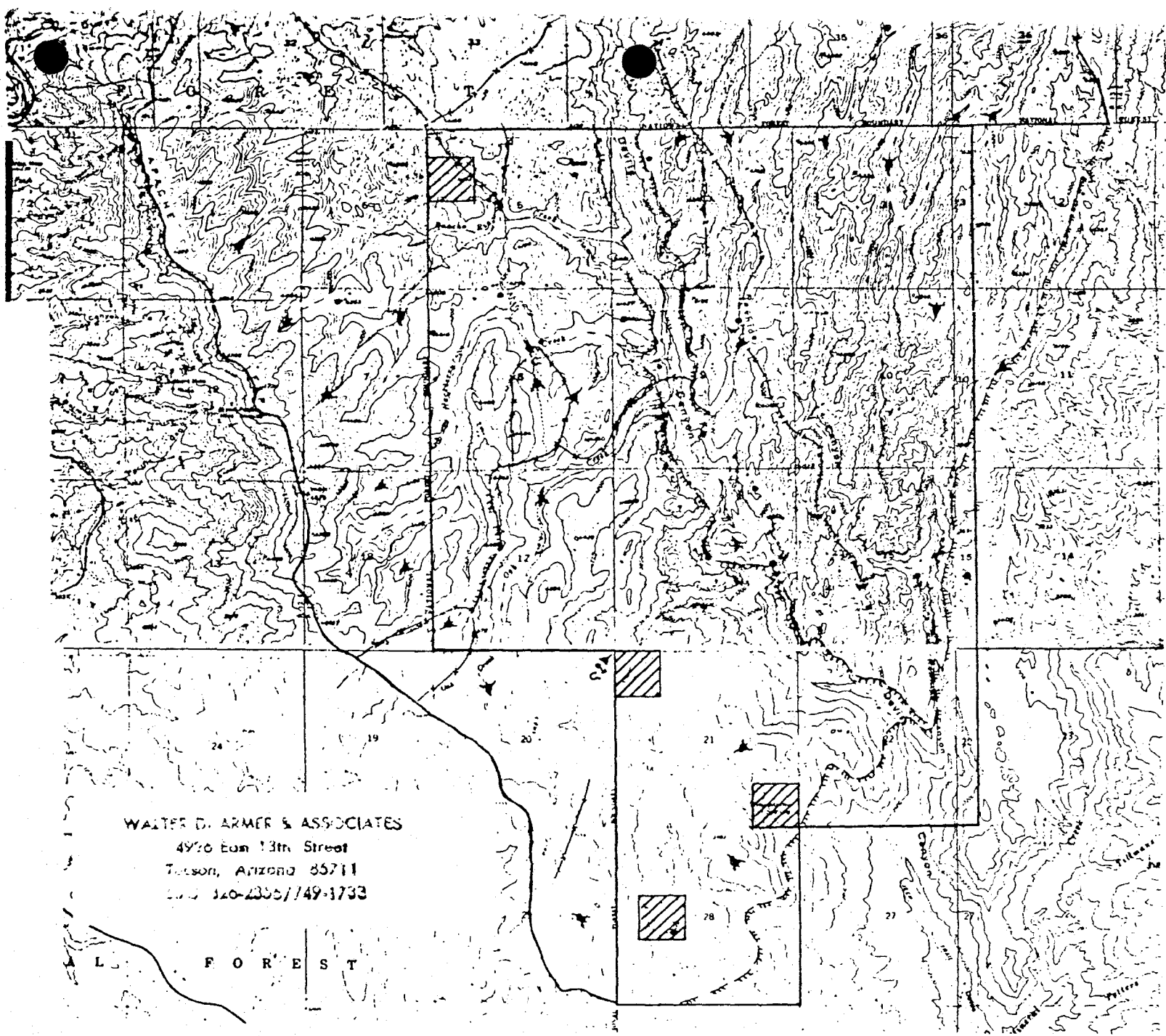
OAK FLAT  
RECREATION AREA  
(excluded from permit)

DEVIL

APACHE

MASON

SECTION 35



WALTER D. ARMER & ASSOCIATES  
4926 East 13th Street  
Tulson, Arizona 85711  
Tel. 360-2355/49-1733

L. FOREST

# ASARCO

Exploration Department  
Southwestern United States Division

February 4, 1985


Mr. Walter D. Armer  
4926 E. 13th St.  
Tucson, AZ 85711

JI Ranch  
Superior East Project

Dear Mr. Armer:

Enclosed is the letter agreement signed by R. L. Brown. I have also enclosed a copy of the revised animal inventory for your information.

Sincerely yours,



J. R. Stringham  
Assistant to the  
Manager, SWED

JRS:mek  
encs.

cc: W. L. Kurtz  
J. D. Sell

WALTER D. ARMER  
AND ASSOCIATES, REALTOR

WALTER D. ARMER, JR.  
M.A.I., S.R.P.A., A.R.A.  
4926 E. 13TH STREET  
TUCSON, ARIZONA 85711  
PHONE (602) 326-2356  
RES. (602) 749-1733

SALES  
APPRAISALS  
CONSULTING  
MANAGEMENT

January 14, 1985

Mr. Jim Stringham  
ASARCO, Inc.  
1070 North 7th Avenue  
Tucson, Arizona 85705

This letter shall serve as a listing agreement between Walter D. Armer, Broker, herein after called Agent and ASARCO, Inc., herein after called Owner.

Agent agrees to use due diligence in effecting a sale of that property near Superior, Pinal County, Arizona known as the JI Ranch. Said ranch contains approximately 432.14 acres deeded (fee) land, 7,371.32 acres State of Arizona Grazing Lease #G-1411 and those U. S. Forest Service lands in the Tonto National Forest included in the Devils Canyon Allotment.

The listed price will be NINE HUNDRED THOUSAND DOLLARS (\$900,000.00) and the terms will be cash. Price will include all fee lands, lease lands, improvements, live-stock, equipment and supplies (inventories to be provided by Owner as accurately as possible).

Upon consummating a sale Owner agrees to pay Agent a commission of 5% of the selling price if sold exclusively by Agent or 6% if co-brokered with another party.

It is hereby understood that the above is an Exclusive Listing and shall be binding for a period of one (1) year.

January 30, 1985  
Date

ASARCO, INC. by:

R. L. How

Walter D. Armer  
Walter D. Armer, Broker

Approved as to form: [Signature]

J I RANCH  
 Fall 1984 Round-Up  
 Male Cattle  
 Revised 1-30-85

	<u>Tagged Bulls</u>	<u>Untagged Yearling Steers</u>	<u>Untagged Male Calves</u>	<u>Total</u>
Fall 1983	25	1	79	105
Purchased Per Vouchers	7			7
Reclassifications Per Cards		79	(79)	0
Branded Per Cards			68	68
Branding Miss. Per Cards		4		4
Butchered Per Cards		(1)		(1)
Died Per Cards	(1)			(1)
Sold Per Cards & Vouchers	(4)	(80)		(84)
Fall 84 Per Cards	<u>27</u>	<u>3</u>	<u>68</u>	<u>98</u>

J I RANCH  
 Fall 1984 Round-Up  
 Female Cattle  
Revised 1-30-85

	<u>Tagged Cows &amp; Yearlings</u>	<u>Untagged Yearlings</u>	<u>Calves</u>	<u>Total</u>
Fall 83	300	9	86	395
Reclassified Per Goup Cards		86	(86)	-
" " " " "	50	(50)		-
Branded			73	73
Died Per Group Cards		(4)		(4)
Missing Per Tag Cards	(7)			(7)
Sold Per Cards & Vouchers	(50)	(41)	(1)	(92)
Found Per Tag Cards	<u>12</u>	<u>    </u>	<u>    </u>	<u>12</u>
	<u>305</u>	<u>0</u>	<u>72</u>	<u>377</u>

J. I. RANCH  
Fall 1984  
Untagged Stock

	<u>Fall</u> <u>1983</u>	<u>Additions</u>	<u>Deductions</u>	<u>Fall</u> <u>1984</u>
<u>Horses</u>				
Sunday	1			
Dobie	1		A 1	
Appy	1			
Poker Chip	1			
Pokie Joe	1			
Buck		B 1		
Lady		B 1		
	<u>5</u>	<u>2</u>	<u>1</u>	<u>6</u>
 <u>Mules</u>				
Tamalie	1			1
Liz	1			1
Peggy	1		A 1	
Crickett	1			1
Kate		B 1		1
Molly		B 1		1
	<u>4</u>	<u>2</u>	<u>1</u>	<u>5</u>

A = Sale  
 B = Purchase



# ASARCO

T-4.19  
JI Ranch

Southwestern Mining Department

January 31, 1985

TO: T. E. Scartaccini  
W. L. Kurtz  
J. D. Sell  
J. R. Stringham  
W. E. Lockhart

J I RANCH  
Fall 1984 Round-up - Revised

Enclosed are revised tabulations showing the J I Ranch stock on hand as reflected in the stock cards.

The revised tabulations reflect changes in the stock cards made by Mr. Lockhart and the undersigned after Mr. Lockhart clarified certain misleading entries in the stock cards as originally submitted.

Original Signed By  
ROBERT L. HOYLE

Robert L. Hoyle  
Accounting Manager

RLH/kh

Encls.

ASARCO Incorporated

JAN 31 1985

SW Exploration

J I RANCH  
 Fall 1984 Round-Up  
 Male Cattle  
Revised 1-30-85

	<u>Tagged Bulls</u>	<u>Untagged Yearling Steers</u>	<u>Untagged Male Calves</u>	<u>Total</u>
Fall 1983	25	1	79	105
Purchased Per Vouchers	7			7
Reclassifications Per Cards		79	(79)	0
Branded Per Cards			68	68
Branding Miss. Per Cards		4		4
Butchered Per Cards		(1)		(1)
Died Per Cards	(1)			(1)
Sold Per Cards & Vouchers	(4)	(80)		(84)
Fall 84 Per Cards	<u>27</u>	<u>3</u>	<u>68</u>	<u>98</u>

J I RANCH  
Bull Tags  
Fall 1983 Thru Fall 1984

<u>Tag No.</u>	<u>Fall 1983</u>	<u>Plus 1984 Purchases</u>	<u>Minus 1984 Dead</u>	<u>Minus 1984 Sales</u>	<u>New Tag Nos. Assigned</u>	<u>Fall 1984</u>
244	1					1
351	1					1
358	1					1
361	1					1
362	1					1
363	1					1
364	1					1
374	1					1
375	1					1
376	1				-1	0
377	1					1
378	1	1		1		1
380	1					1
381	1					1
382	1				-1	0
384	1					1
385	1					1
386	1					1
387		1				1
388	1			1		
389	1			1		
390		1		1		
392	1					1
394	1		1			
397	1					1
398	1					1
391-399	1					1
495					1	1
496					1	1
497		1				1
498		1				1
499		1				1
500		1				1
	<u>25</u>	<u>7</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>27</u>

J I RANCH  
 Fall 1984 Round-Up  
 Female Cattle  
Revised 1-30-85

	<u>Tagged Cows &amp; Yearlings</u>	<u>Untagged Yearlings</u>	<u>Calves</u>	<u>Total</u>
Fall 83	300	9	86	395
Reclassified Per Goup Cards		86	(86)	-
" " " " "	50	(50)		-
Branded			73	73
Died Per Group Cards		(4)		(4)
Missing Per Tag Cards	(7)			(7)
Sold Per Cards & Vouchers	(50)	(41)	(1)	(92)
Found Per Tag Cards	<u>12</u>	<u>    </u>	<u>    </u>	<u>12</u>
	<u>305</u>	<u>0</u>	<u>72</u>	<u>377</u>

J. I. RANCH  
Fall 1984  
Untagged Stock

	<u>Fall 1983</u>	<u>Additions</u>	<u>Deductions</u>	<u>Fall 1984</u>
<u>Horses</u>				
Sunday	1			
Dobie	1		A 1	
Appy	1			
Poker Chip	1			
Pokie Joe	1			
Buck		B 1		
Lady		B 1		
	<u>5</u>	<u>2</u>	<u>1</u>	<u>6</u>
 <u>Mules</u>				
Tamalie	1			1
Liz	1			1
Peggy	1		A 1	
Crickett	1			1
Kate		B 1		1
Molly		B 1		1
	<u>4</u>	<u>2</u>	<u>1</u>	<u>5</u>

A = Sale  
B = Purchase

WKK - JDS

# ASARCO

Exploration Department  
Southwestern United States Division

July 2, 1985

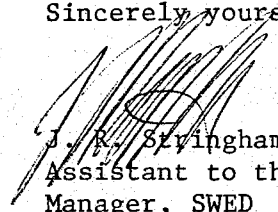
Mr. & Mrs. Gene Berry  
Box 134  
Superior, Arizona 85273

Dear Gene and Edith:

Due to the circumstances of our attempt to sell the JI Ranch, we wish to terminate the lease agreement which we have with you when the present lease year finishes on October 31, 1985. You will have over three months to make other arrangements for yourself and move your possessions from the premises.

We appreciate the efforts you have made in the area to control cattle rustling. We're sorry that we have to terminate what has been a mutually satisfactory arrangement.

Sincerely yours,



J. R. Stvingham  
Assistant to the  
Manager, SWED

JRS:mek

cc: W. Lockhart

bl.cc: W.L. Kurtz/J.D. Sell

# ASARCO

T-4.19  
(J I Ranch)

Southwestern Mining Department

WTK

Just who  
does Lockhart  
report to?

January 8, 1987

Exploration; acct  
JOS

By Hoyle/Post

J. D. Sell  
Building

J I RANCH  
FALL 1986 Round-Up

Attached are two sheets showing my tabulation of the 1986 changes in the J I Ranch livestock.

You will note that there are several unexplained differences between accounting vouchers, tag cards and summary cards.

The largest difference (See Note A) is the apparent failure to report the sale of 38 steers in the group card for steers. I suspect that the latest card, wherein the sale might have been recorded, is missing.

The milk cow purchased in 1986 is not reported in the stock cards either as tagged or untagged stock.

I have no explanation for the other differences. I suggest you try to impress upon Mr. Lockhart the importance of keeping accurate stock cards. As the cards were presented this year, I can express no confidence in their accuracy.



Robert L. Hoyle

RLH/kh

cc: TEsCartaccini  
WLKurtz  
WDGay  
WELockhart

ASARCO Incorporated

JAN 8 1987

SW Exploration

J I RANCH

FALL 1986  
Untagged Stock

	<u>Fall</u> <u>1984</u>	<u>Additions</u>	<u>Deductions</u>	<u>Fall</u> <u>1986</u>
<u>Horses</u>				
Sunday	1			1
Appy	1			1
Poker Chip	1			1
Pokie Joe	1			1
Buck	1			1
Lady	1			1
	<u>6</u>			<u>6</u>
<u>Mules</u>				
Tamalie	1		1 (Sold)	0
Liz	1			1
Crickett	1			1
Kate	1			1
Molly	1			1
	<u>5</u>		<u>1</u>	<u>4</u>
<u>Milk Cow</u>	<u>0</u>	<u>1</u> (Purchased)		<u>1</u>



J I RANCH  
CATTLE ROUND-UP  
FALL 1986

	MALE				FEMALE			
	Tagged Bulls	Untagged Yearlings	Untagged Calves	Total	Tagged Cows & Yearlings	Untagged Yearlings	Untagged Calves	Total
Fall 1985	39	38	-0-	77	304	88	-0-	392
Branded per stock cards			90	90			94	94
Reclassified per tag cards					E 36	(36)		-
Branding miss - per stock cards		1		1				
Sold per vouchers	B (7)	A (38)	(26)	(71)	D (26)	(37)	(18)	(81)
Died per tag cards	(1)			(1)	(5)			(5)
Found per tag cards	1			1	E 2			2
Missing					F (1)			(1)
Fall 86 Per above	<u>32</u>	<u>1</u>	<u>64</u>	<u>97</u>	<u>310</u>	<u>15</u>	<u>76</u>	<u>401</u>
Fall 86 per tag cards	C 30				311			
Fall 86 per summary cards	31	39	64		311	15	76	
Adjust books to:	C 30	1	64	95	311	15	76	402

(A) Sale not reported in stock cards  
Assumed to be last year's steers

(B) Tag cards show 9 sales  
Vouchers show only 7

(C) There are only 30 tag cards on hand for bulls

(D) Vouchers show sale of 26 cows. Only 25 are reported on cards.

(D) Vouchers show sale of 26 cows. Only 25 are reported in cards

(E) Tag cards for cows show 36 reclassified. Summary card for cows show 38 reclassified. Difference is 2 found cows, i.e. new tags

(F) Not reported in cow summary card

# ASARCO

T-4.17  
JI Ranch

Southwestern Mining Department

January 8, 1987

A. J. Robles  
Tucson Office

J I RANCH ROUND-UP  
Fall 1986

In January accounts, please make the following entry to reflect the results of the fall 1986 round-up of J I Ranch livestock.

A/C 1590 current balance	\$ 149,072
Dr. A/C 1590/ Cr. A/C 9300	<u>16,504</u>
A/C 1590 adjusted balance	<u>\$ 165,576</u>

Original Signed By  
ROBERT L. HOYLE

Robert L. Hoyle

RLH/kh

cc: WLKurtz  
JDSELL  
WDGay

ASARCO Incorporated

JAN 8 1987

SW Exploration

# ASARCO

Exploration Department  
Southwestern United States Division

February 19, 1987

Mr. Copeman  
P.O. Box 642  
Apache Junction, AZ 85217

JI Ranch

Dear Mr. Copeman:

Enclosed is information concerning our JI Ranch. This information was assembled with the best knowledge we have at this time.

As you might already know, the Forest Service allotment for the number of livestock is based on how well the range is managed. It is our understanding that if the ranch is sold, the allotment numbers will be reviewed and could be reduced. Presently we are allowed 420 head of livestock which should increase next year to 450 or 470 head of livestock. The allotment process is complex, and if you are interested, we can discuss it.

If you would like to visit the ranch, arrangements can be made to fit your schedule.

Very truly yours,

*William D. Gay*  
William D. Gay  
Land Engineer

WDG:mek  
enc.

cc: R.L. Brown  
W.L. Kurtz  
J.D. Sell

JI RANCH  
Superior, Arizona

LOCATION

The JI Ranch headquarters is located 5 miles east of Superior, less than 70 miles from the Phoenix area.

ACCESS

Access to the headquarters is excellent via U. S. Highway 60 and  $\frac{1}{2}$  mile of dirt ranch road. Access to the ranch interior is via ranch roads, many of which require 4-wheel drive.

LAND TENURE

432.14	acres Deeded Land (Fee)
7,371.32	acres State of Arizona Grazing Lease
<u>19,685</u>	<u>acres U. S. Forest Service</u>
27,500	acres total or 43 sections

IMPROVEMENTS

The headquarters has a very nice rock and frame house with three bedrooms, bath, livingroom, large kitchen with dining area, two fireplaces (one in master bedroom) and two open covered porches. There is also a metal shop/garage, a horse barn and a hay barn.

WATER, FENCING AND CORRALS

The range improvements include shipping corrals at the headquarters, several sets of range corrals, 60<sup>+</sup> dirt stock tanks, 12 springs (developed), 25 wells, 2 horizontal wells,  $3\frac{1}{2}$ -4 miles of pipeline and several storage tanks and drinkers. Very few of the wells are currently being utilized but all water developments are registered with the State Department of Water Resources. The ranch is perimeter fenced (excluding natural boundarys) and cross fenced into numerous pastures and traps.

### TERRAIN, CLIMATE AND FORAGE

The ranch lies in the Pinal Mountains with elevations ranging from 3,600 feet on the south end to over 5,600 feet on the north. Terrain is generally quite rocky and rough. Climate is characterized by cool to warm summers and mild winters. Rainfall averages roughly 23 inches annually with some light snow.

The ranch has an excellent cover of native grasses and browse. Predominant types include black grama, bush muhly, sideoats grama, hairy grama, plains lovegrass, canebeard grass, Mountain mahogany and oak.

### LIVESTOCK

The Forest Service permit (Devils Canyon Allotment) calls for 420 head yearlong plus a 54 head yearling carryover for 5 months. This permit capacity covers all Forest, State and Deeded lands. As of January 1987 there were over 300 cows, 30 bulls, and some 150 calves on the JI Ranch. There are also 6 horses and 4 mules. All livestock on the ranch at the time of sale are included in the sale price.

### EQUIPMENT

Equipment on the ranch includes a 1978 4X4  $\frac{1}{2}$  Ton Pickup, a 1982 4X4 1 Ton Pickup, a 1964 4X4 2 $\frac{1}{2}$  Ton truck, an old TD6 Crawler Tractor, trailers, livestock handling equipment, well repair equipment and miscellaneous shop and hand tools and supplies. A complete inventory will be supplied at time of sale.

### TAXES AND FEES

Approximate current taxes and fees are:

\$2930	Real Estate taxes (1986)
\$ 809	State Grazing Fee (1986)
\$5225	Forest Grazing Fee (1986)

### UTILITIES

The ranch has electricity and telephone service and Bu Gas is delivered to the headquarters by commercial distributor. Schools are available in Superior or Miami.

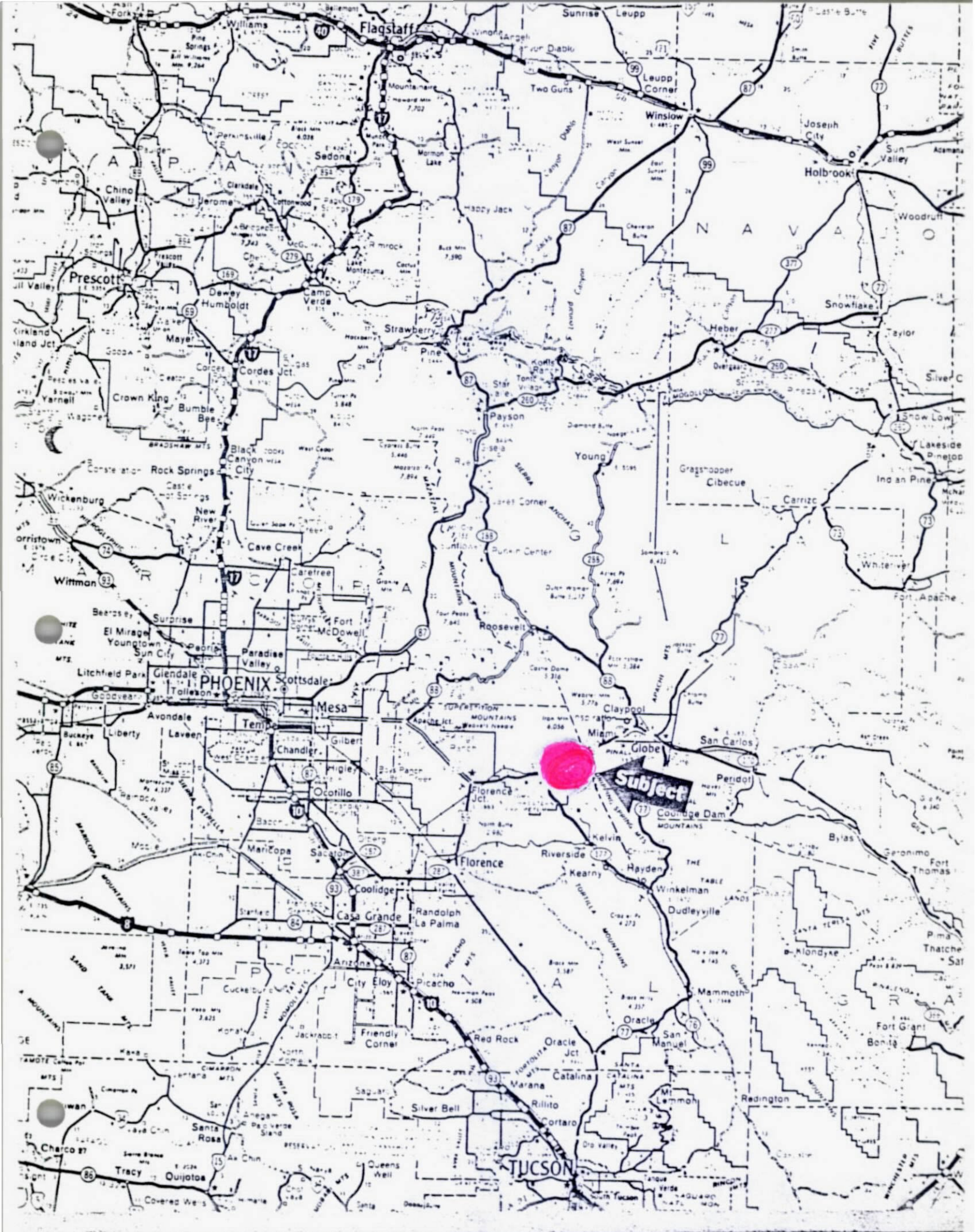
### GENERAL

This is a good sized ranch with a beautiful headquarters setting just over an hours drive from Phoenix. The range improvements are extensive and in excellent condition. They allow for a good management program. The forage is real strong and cattle do exceptionally well. No mineral rights included.

PRICE AND TERMS

\$900,000.00 cash including all livestock and equipment.


















**Subject**

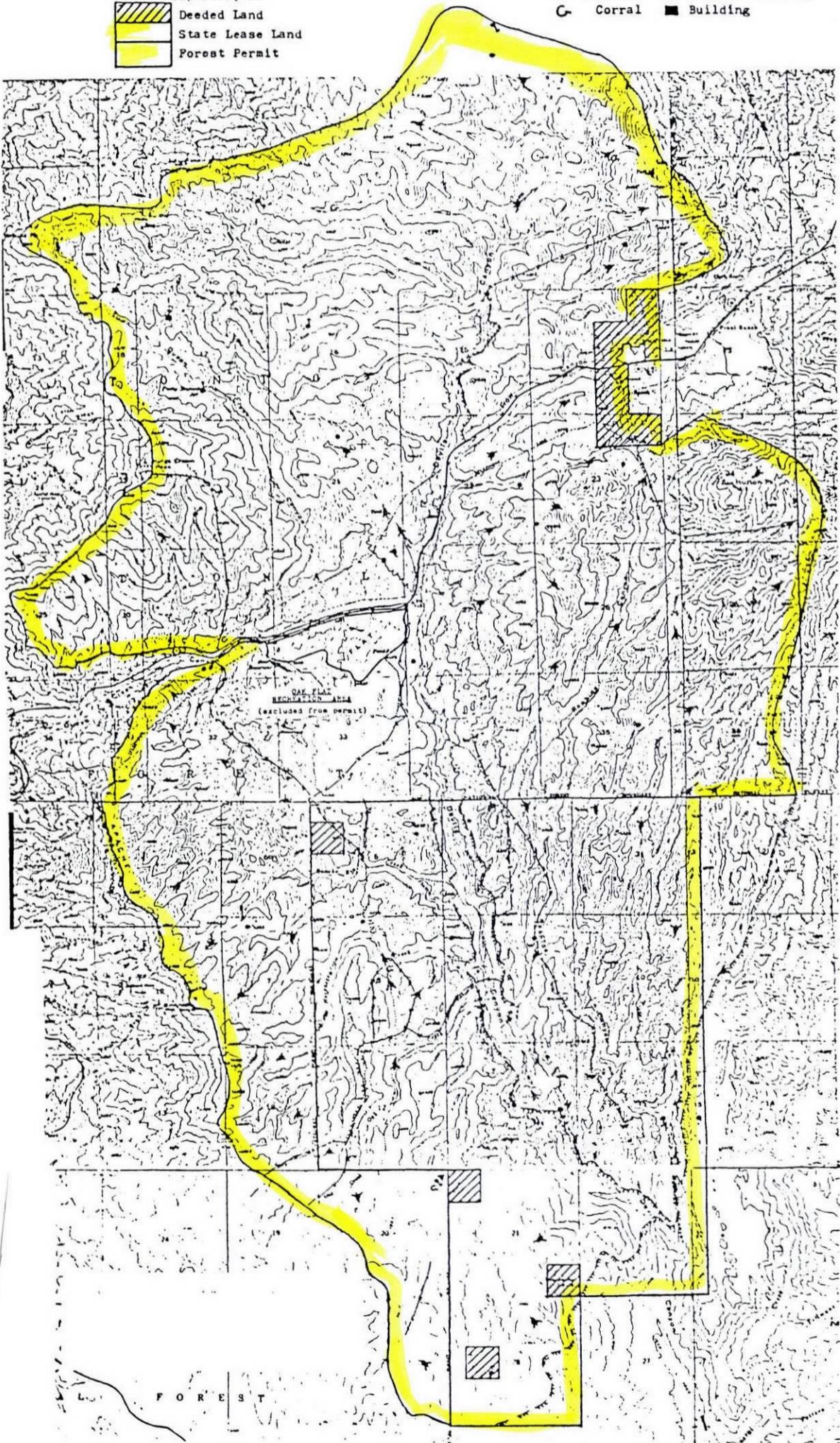


**JJ RANCH**

Superior, AZ

-  Deeded Land
-  State Lease Land
-  Forest Permit

-  Well
-  Horizontal Well
-  Spring
-  Dirt Stock Tank
-  Drinker
-  Pipeline
-  Fence
-  Natural Boundary
-  Corral
-  Building





# ASARCO

Exploration Department  
Southwestern United States Division

March 27, 1987

Mr. James W. Copeman  
Box 80  
Au-Train, Michigan 49806

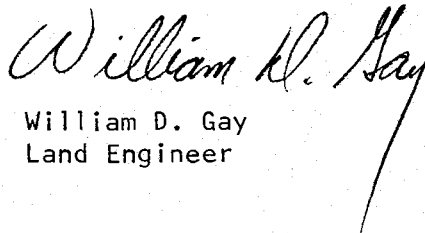
J.I. Ranch

Dear Mr. Copeman:

In reference to your letter of March 18, 1987, Asarco prefers to have a buyer for the ranch rather than enter into any other type of transaction.

We appreciate your interest and feel free to contact us at any time.

Very truly yours,



William D. Gay  
Land Engineer

WDG:mek

cc: R.L. Brown  
W.L. Kurtz  
J.D. Sell

# ASARCO

Exploration Department  
Southwestern United States Division

April 23, 1987

Mr. Bob Moon  
Century 21 Companion  
7070 N. Oracle Road  
Suite 102  
Tucson, AZ 85704

JI Ranch

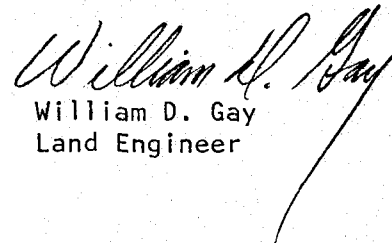
Dear Mr. Moon:

Enclosed is information concerning our JI Ranch. This information was assembled with the best knowledge we have at this time.

As you might already know, the Forest Service allotment for the number of livestock is based on how well the range is managed. It is our understanding that if the ranch is sold, the allotment numbers will be reviewed and could be reduced. Presently we are allowed 420 head of livestock which should increase next year to 450 or 470 head of livestock. The allotment process is complex, and if you are interested, we can discuss it.

If you would like to visit the ranch, arrangements can be made to fit your schedule.

Very truly yours,

  
William D. Gay  
Land Engineer

WDG:mek  
enc.

cc: R.L. Brown  
W.L. Kurtz  
J.D. Sell

# ASARCO

Exploration Department  
Southwestern United States Division

June 10, 1987

Mr. Walter E. Lockhart  
Route 1, Box 745  
Miami, AZ 85539

J1 Ranch Lease No. 05-1411

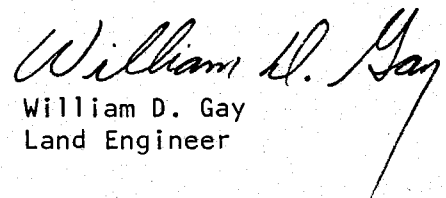
Dear Walt:

Enclosed is a letter from the Arizona State Land Department, dated June 4, 1987, which is self-explanatory. I filled in all information I could on the forms they sent. If you would check the forms, add the date completed and return these three forms to the Tucson Office, we can then forward them to the State Office.

Also, enclosed are the original applications for the improvements. These are for your information only.

Again, all you need to return are the three (3) forms with date completed.

Sincerely,

  
William D. Gay  
Land Engineer

WDG:mek  
Encs.

cc: W.L. Kurtz  
J.D. Sell



BRUCE BABBITT  
GOVERNOR

Arizona  
State Land Department

1624 WEST ADAMS  
PHOENIX, ARIZONA 85007



OFFICE OF  
STATE LAND COMMISSIONER

T.F.S.  
S.W. MINING DEPT.  
JUN 9 1987  
TUCSON

June 4, 1987

Asarco, Inc.  
P.O. Box 5747  
Tucson, AZ 85703

RE: Improvements-Stock Tanks

Dear Lessee \_\_\_\_\_:

On August 12, 1983, you were granted a permit(s) to place improvements on grazing lease 05-1411. A completion report(s) of the improvement(s) was due on 10-31-83. To date, the State Land Department has not received the report(s). For your convenience, I have enclosed a new set of reports. Please complete the form(s) and return to the State Land Department as soon as possible.

If you need assistance, please call me at 255-4625.

Sincerely,

*Linda Olson*

Linda Olson  
Range Leasing Specialist

LJO:ig  
cc  
Enc.



Bruce Babbitt  
Governor

Arizona  
State Land Department

1624 WEST ADAMS  
PHOENIX, ARIZONA 85007



OFFICE OF  
STATE LAND COMMISSIONER

J.R.S.  
AUG 22 1983

S.W. MINING DEPT.

AUG 22 1983

TUCSON

August 18, 1983

Asarco Inc.  
P.O. Box 5747  
Tucson, AZ 85703

Gentlemen:

Re: Lease No. 05-1411

Attached is your file copy of the ALLOWED Application to Place Improvements on lands you lease from the State Land Department:

Section 9, 15 & 16 Township 2S Range 13E

We are also enclosing a set of "Report of Improvements" which must be prepared and returned to our office in TRIPLICATE upon the completion of the proposed improvements. Please also indicate the location of these improvements on the plat on the reverse side of this form. One copy of this Report will be sent to you for your records after being ALLOWED and properly executed.

Thank you very much for your kind cooperation with our Department.

STATE LAND DEPARTMENT

By

*Mary Fleet*

Mary Fleet, Examiner Tech

INSTRUCTIONS: This form must be submitted in duplicate to the State Land Department and shall cover not more than one section or subdivision thereof. (See instructions on reverse side.)

J. R. S.

AUG 22 1983

\$10.00 Filing Fee Required

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams  
Phoenix, Arizona 85007

Lease No. 05-01411-00

APPLICATION TO PLACE IMPROVEMENTS UPON STATE LAND

State Land Commissioner:

In accordance with Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and the terms of the lease heretofore referred to, permission is hereby requested by the undersigned leaseholder to erect or place the following improvements upon Section 9, Township 2 S, Range 13 E.

INDICATE ON THE SECTION PLAT ON THE REVERSE SIDE THE LOCATION OF PROPOSED IMPROVEMENTS APPLIED FOR HEREON.

Proposed Improvements	Location Subdivision of	Estimated Date of Starting Proposed Improvements	Estimated Cost	Estimated Date of Completion of Proposed Improvements
Storage TANK	SE NE 1/4	8-1-83	2,000 -	9-30-83
Pipe Line	NE + SE 1/4	8-1-83	3,000 -	7-30-83
:	:	:	:	:
:	:	:	:	:
:	:	:	:	:

Present lease covering the above land expires 9-9-85

The purpose and need for erecting and placing the heretofore mentioned improvements upon the said lands is as follows:

Development of The Devils Canyon situated under an  
Approved R.M.P.

Dated this 30<sup>th</sup> day of June, A.D. 1983

Lessee: ASARCO Incorporated

By: Walter E. Lockhart

FOR USE OF LAND DEPARTMENT ONLY

Permission to erect or place the improvements contained in your application upon the lands also described therein, and at the location set out in said application, is hereby GRANTED -- DENIED. If denied, the reason for denial is:

The permission granted is upon condition that the erection of said improvements will be carried out with reasonable diligence and will be completed by OCTOBER 31 1983, and that upon completion a report of the improvements and the cost thereof will be listed upon the forms provided for that purpose. Upon receipt thereof by the Land Commissioner, they will be allowed or rejected and a record made in the Department as provided for in the foregoing Article 5, Chapter 2, Title 37, Arizona Revised Statutes.

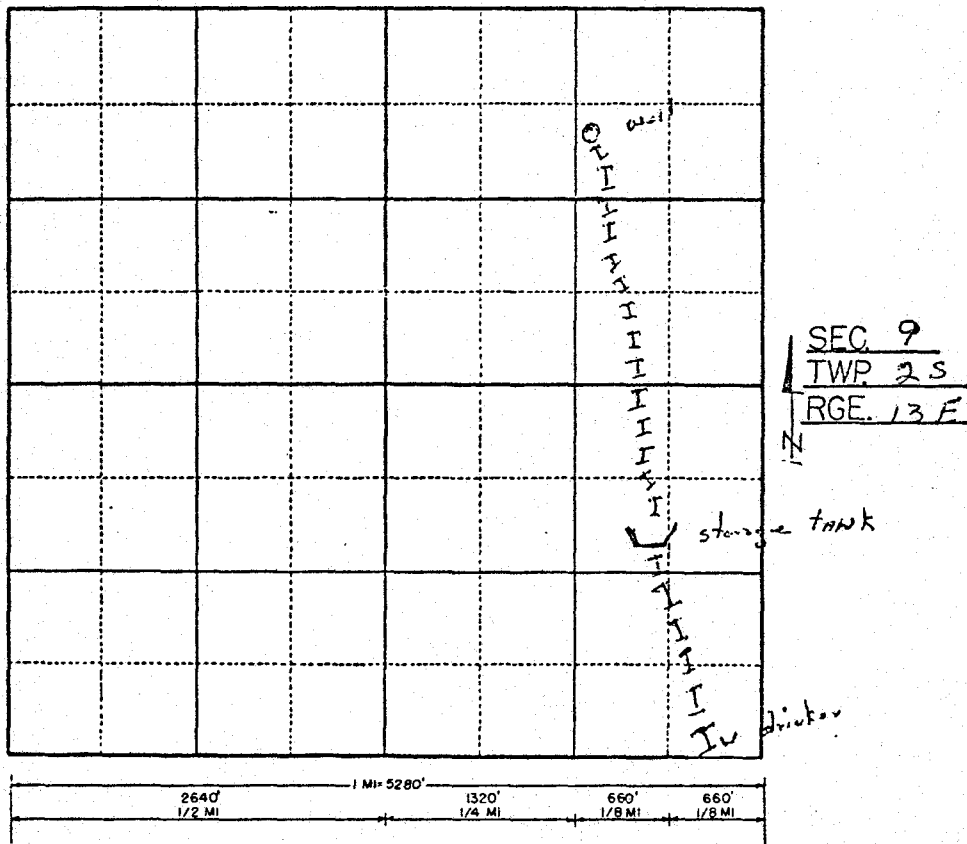
Dated this 18<sup>th</sup> day of August, A.D. 1983

Beverly Uika  
STATE LAND COMMISSIONER

INSTRUCTIONS

When you report your improvements as allowed hereby you will be expected to furnish the following data:

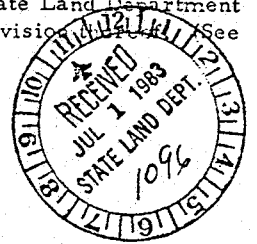
1. A Soil Conservation Service report or the equivalent when clearing and leveling is involved, plus a statement of actual cost to the lessee. The name of any other party participating and amount of their contribution.
2. A detailed report of the yardage of material removed along with payment slips for same.
3. Any time the Federal program is used, the basis of repayment and copy of such document shall be added.
4. When wells are drilled, the depth of the well, depth and diameter of the casing, the production from the well, quality of the water and the cost for each item, including the pump, but not the motor or electrical or gas connections.
5. When permission is requested to drill a water well applicant must file with the Water Division of the Land Department the required forms. If the proposed improvement involves the use of surface water the forms pertaining to this use must be filed with the Water Division of the Land Department.
6. When a fence is placed, a report of the number of wires on the fence, the distance between posts, the type of posts, the type of wire used, along with report of cost of same.
7. When a cement ditch is constructed, the applicant will furnish the length of the ditch, depth and width of the ditch, type of material the ditch is made of, such as mixture of cement, sand, etc., along with report of actual cost.
8. Where buildings are constructed on State land, the applicant will be expected to furnish the material the building is constructed of and the square footage of the building.



INSTRUCTIONS: This form must be submitted in duplicate to the State Land Department and shall cover not more than one section or subdivision. (See instructions on reverse side.)

\$10.00 Filing Fee Required

AUG 22 1983



ARIZONA STATE LAND DEPARTMENT  
1624 West Adams  
Phoenix, Arizona 85007

Lease No. 05-01411-00

APPLICATION TO PLACE IMPROVEMENTS UPON STATE LAND

State Land Commissioner:

In accordance with Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and the terms of the lease heretofore referred to, permission is hereby requested by the undersigned leaseholder to erect or place the following improvements upon Section 15, Township 2 S, Range 13 E.

INDICATE ON THE SECTION PLAT ON THE REVERSE SIDE THE LOCATION OF PROPOSED IMPROVEMENTS APPLIED FOR HEREON.

Proposed Improvements	Location of Subdivision of Section	Estimated Date of Starting Proposed Improvements	Estimated Cost	Estimated Date of Completion of Proposed Improvements
Pipe Line 2nd	NW 2nd	8-1-83	\$4,000.00	9-30-83
Drinkers Run	SW 1/4			
Livestock + wild life				

Present lease covering the above land expires 9-9-85

The purpose and need for erecting and placing the heretofore mentioned improvements upon the said lands is as follows:

Development of Range under an approved RMP

Dated this 30<sup>th</sup> day of June, A.D. 19 83

SLC: [Signature]  
ADM: [Signature]  
C.E.: [Signature]  
L.S.: [Signature]  
S.I.: [Signature]  
M.I.: [Signature]  
R.S. & H.: [Signature]  
V.I.: [Signature]

Lessee: ASARCO Incorporated  
By: Walter E. Lockhart

FOR USE OF LAND DEPARTMENT ONLY

Permission to erect or place the improvements contained in your application upon the lands also described therein, and at the location set out in said application, is hereby GRANTED -- DENIED. If denied, the reason for denial is:

The permission granted is upon condition that the erection of said improvements will be carried out with reasonable diligence and will be completed by October 31 19 83, and that upon completion a report of the improvements and the cost thereof will be listed upon the forms provided for that purpose. Upon receipt thereof by the Land Commissioner, they will be allowed or rejected and a record made in the Department as provided for in the foregoing Article 5, Chapter 2, Title 37, Arizona Revised Statutes.

Dated this 18<sup>th</sup> day of August, A.D. 19 83

Receipt # 4607  
10.10 - 7-1-83

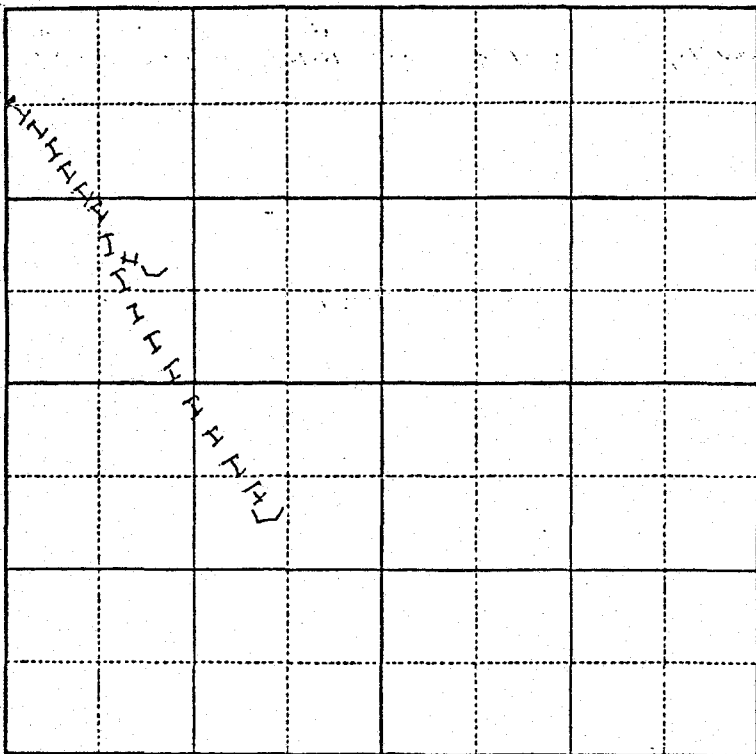
Dorothy Uike  
STATE LAND COMMISSIONER



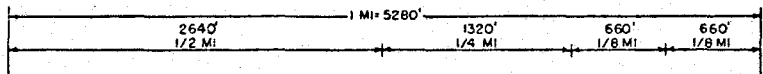
INSTRUCTIONS

When you report your improvements as allowed hereby you will be expected to furnish the following data:

1. A Soil Conservation Service report or the equivalent when clearing and leveling is involved, plus a statement of actual cost to the lessee. The name of any other party participating and amount of their contribution.
2. A detailed report of the yardage of material removed along with payment slips for same.
3. Any time the Federal program is used, the basis of repayment and copy of such document shall be added.
4. When wells are drilled, the depth of the well, depth and diameter of the casing, the production from the well, quality of the water and the cost for each item, including the pump, but not the motor or electrical or gas connections.
5. When permission is requested to drill a water well applicant must file with the Water Division of the Land Department the required forms. If the proposed improvement involves the use of surface water the forms pertaining to this use must be filed with the Water Division of the Land Department.
6. When a fence is placed, a report of the number of wires on the fence, the distance between posts, the type of posts, the type of wire used, along with report of cost of same.
7. When a cement ditch is constructed, the applicant will furnish the length of the ditch, depth and width of the ditch, type of material the ditch is made of, such as mixture of cement, sand, etc., along with report of actual cost.
8. Where buildings are constructed on State land, the applicant will be expected to furnish the material the building is constructed of and the square footage of the building.



SEC. 15  
TWP. 25  
RGE. 13 E  
N



INSTRUCTIONS: This form must be submitted in duplicate to the State Land Department and shall cover not more than one section or subdivision thereof. (See instructions on reverse side.)

\$10.00 Filing Fee Required

J. 11 -

AUG 22 1983

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams  
Phoenix, Arizona 85007

Lease No. 05-01411-02

APPLICATION TO PLACE IMPROVEMENTS UPON STATE LAND

State Land Commissioner:

In accordance with Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and the terms of the lease heretofore referred to, permission is hereby requested by the undersigned leaseholder to erect or place the following improvements upon Section 16, Township 2 S, Range 13 E.

INDICATE ON THE SECTION PLAT ON THE REVERSE SIDE THE LOCATION OF PROPOSED IMPROVEMENTS APPLIED FOR HEREON.

Proposed Improvements	Location Subdivision of	Estimated Date of Starting Proposed	Estimated Cost	Estimated Date of Completion of Proposed
<u>Knightsk water</u>	<u>NE-NE 1/4</u>	<u>8-1-83</u>	<u>See E<sup>2</sup></u>	<u>9-30-83</u>
<u>Pipe lines</u>	:	:	:	:
:	:	:	:	:
:	:	:	:	:

Present lease covering the above land expires 9-9-85

The purpose and need for erecting and placing the heretofore mentioned improvements upon the said lands is as follows:

Development of Range under an approved RMP

Dated this 20<sup>th</sup> day of June, A.D. 1983.

Lessee: ACARCO Incorporated

By: Walter E. Paddock

FOR USE OF LAND DEPARTMENT ONLY

Permission to erect or place the improvements contained in your application upon the lands also described therein, and at the location set out in said application, is hereby GRANTED -- DENIED. If denied, the reason for denial is:

The permission granted is upon condition that the erection of said improvements will be carried out with reasonable diligence and will be completed by October 31 1983, and that upon completion a report of the improvements and the cost thereof will be listed upon the forms provided for that purpose. Upon receipt thereof by the Land Commissioner, they will be allowed or rejected and a record made in the Department as provided for in the foregoing Article 5, Chapter 2, Title 37, Arizona Revised Statutes.

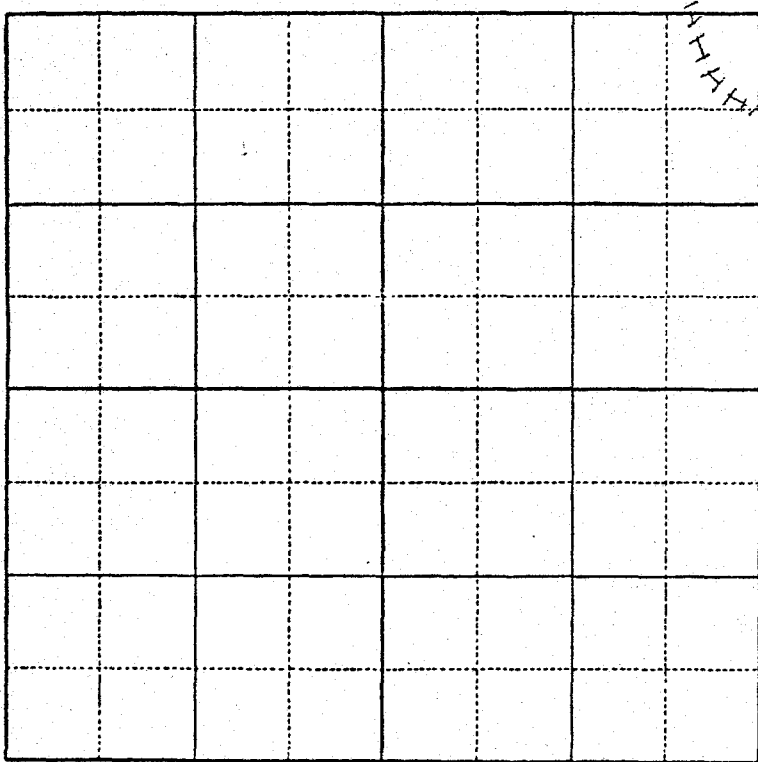
Dated this 18<sup>th</sup> day of August, A.D. 1983.

Dorothy Yike  
STATE LAND COMMISSIONER

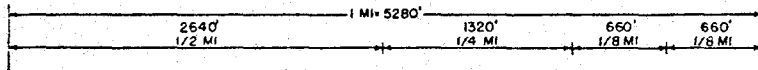
INSTRUCTIONS

When you report your improvements as allowed hereby you will be expected to furnish the following data:

1. A Soil Conservation Service report or the equivalent when clearing and leveling is involved, plus a statement of actual cost to the lessee. The name of any other party participating and amount of their contribution.
2. A detailed report of the yardage of material removed along with payment slips for same.
3. Any time the Federal program is used, the basis of repayment and copy of such document shall be added.
4. When wells are drilled, the depth of the well, depth and diameter of the casing, the production from the well, quality of the water and the cost for each item, including the pump, but not the motor or electrical or gas connections.
5. When permission is requested to drill a water well applicant must file with the Water Division of the Land Department the required forms. If the proposed improvement involves the use of surface water the forms pertaining to this use must be filed with the Water Division of the Land Department.
6. When a fence is placed, a report of the number of wires on the fence, the distance between posts, the type of posts, the type of wire used, along with report of cost of same.
7. When a cement ditch is constructed, the applicant will furnish the length of the ditch, depth and width of the ditch, type of material the ditch is made of, such as mixture of cement, sand, etc., along with report of actual cost.
8. Where buildings are constructed on State land, the applicant will be expected to furnish the material the building is constructed of and the square footage of the building.



SEC. 16  
 TWP. 2 S  
 RGE. 13 E  
 N



INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams - Room 408  
Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner: Lease No. 05-01411-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place a storage tank and pipeline which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 9 Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Storage Tank</u>	<u>NE 1/4 SE 1/4</u>	<u>\$ 2,000</u>	
<u>Pipe Line</u>	<u>E 1/2</u>	<u>\$ 5,000</u>	

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this \_\_\_\_\_, day of \_\_\_\_\_, A.D. 19\_\_\_\_,

\_\_\_\_\_  
Lessee and Owner of Improvements  
By: \_\_\_\_\_

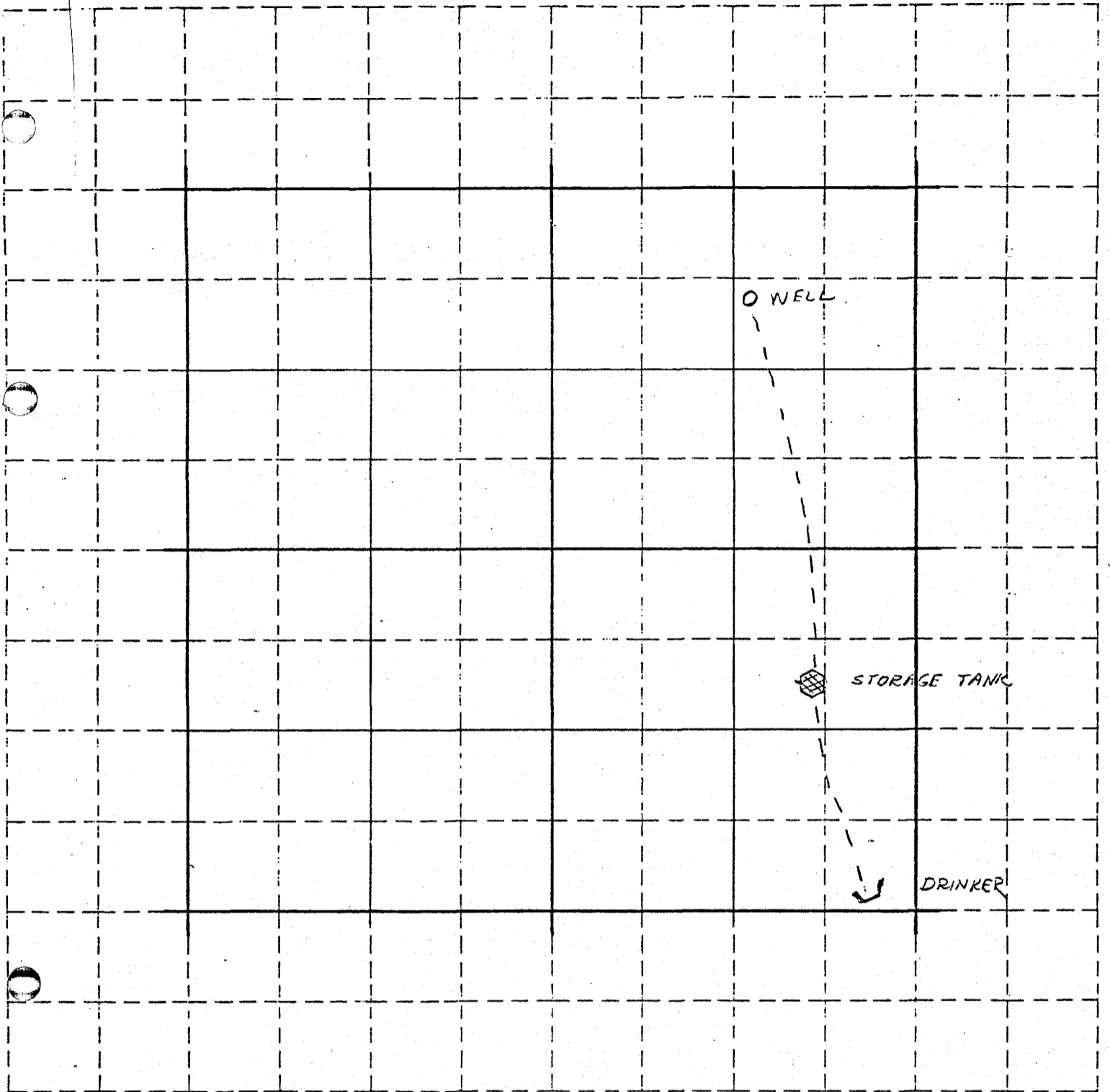
The foregoing improvements listed hereon, and for which permission was granted to erect and place upon State lands, are hereby allowed in accordance with statement hereinabove made, and such improvements are made of record within the Department.

Allowance hereof does not constitute any acceptance by the Land Department of the values above set out. In case of sale or other disposition, a definite appraisal of improvements must be made by the State Land Commissioner in conformity with existing laws.

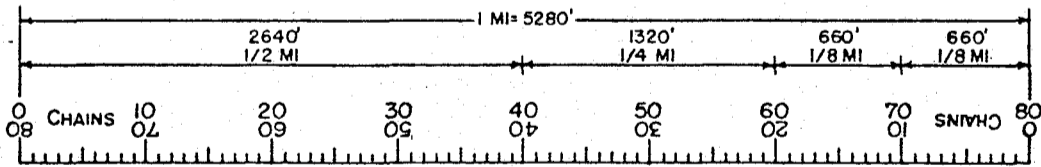
\_\_\_\_\_  
For the State Land Commissioner

SEC. 9 | TWP. 2 S  
 RGE. 13 E  
 N

ARIZONA STATE LAND DEPT.



1-ROD = 16 1/2 FEET  
 1-CHAIN = 66 FEET  
 1-ACRE = 43560 SQ. FT.



1 MILE =  
 5280 FEET  
 80 CHAINS  
 320 RODS  
 1760 YARDS  
 1609.3 METERS

1-44,3-172

INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
 1624 West Adams - Room 408  
 Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner:

Lease No. 05-01411-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place Pipe line and drinkers

which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 15. Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Pipe line and drinkers for livestock and wild life</u>	<u>W 1/2</u>	<u>\$4,000</u>	

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this \_\_\_\_\_, day of \_\_\_\_\_, A.D. 19\_\_\_\_,

\_\_\_\_\_  
 Lessee and Owner of Improvements  
 By: \_\_\_\_\_

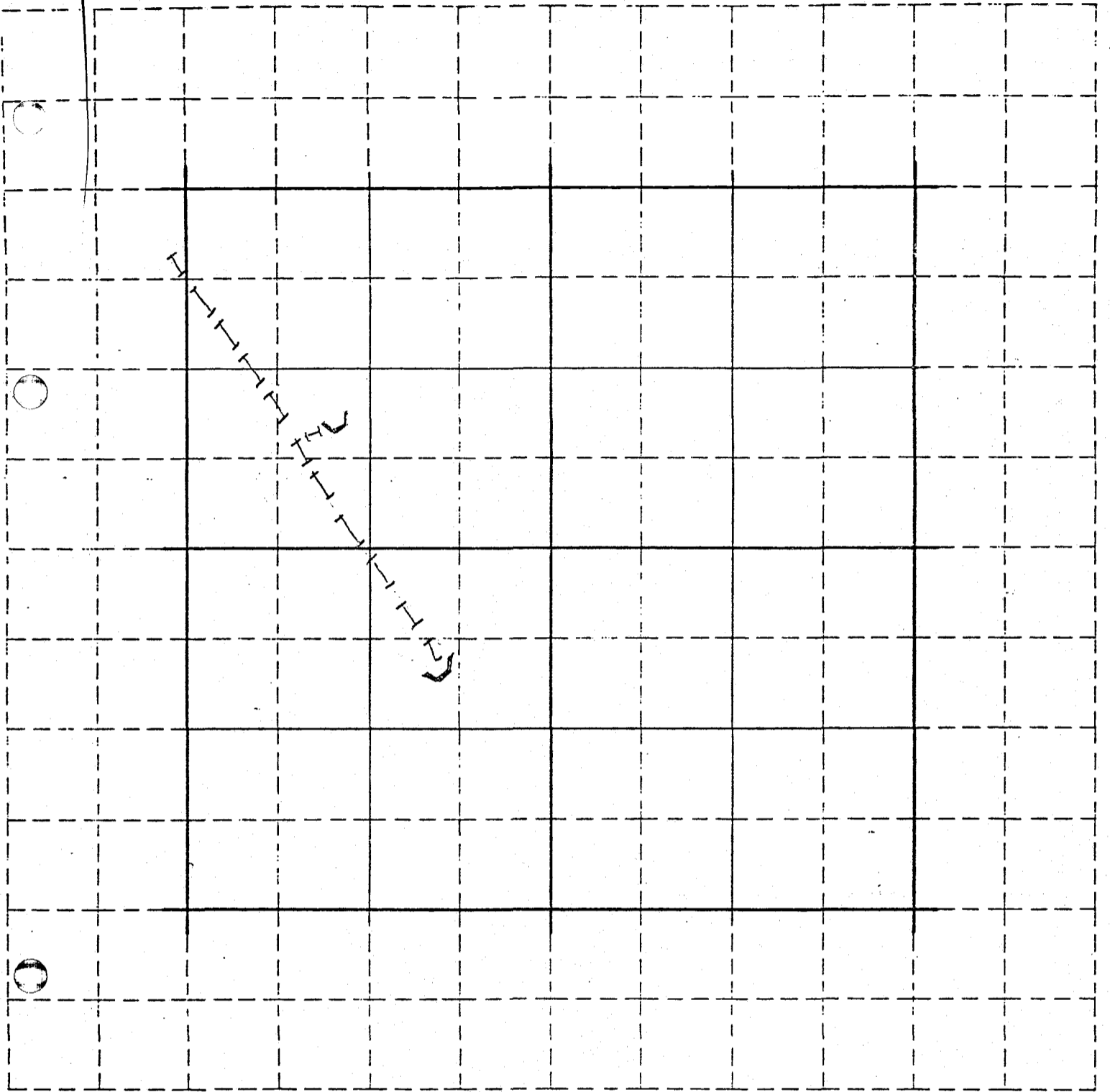
The foregoing improvements listed hereon, and for which permission was granted to erect and place upon State lands, are hereby allowed in accordance with statement hereinabove made, and such improvements are made of record within the Department.

Allowance hereof does not constitute any acceptance by the Land Department of the values above set out. In case of sale or other disposition, a definite appraisal of improvements must be made by the State Land Commissioner in conformity with existing laws.

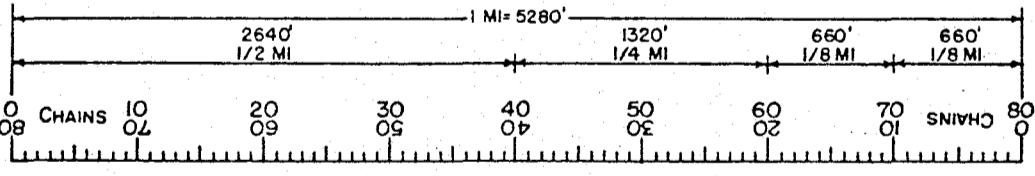
\_\_\_\_\_  
 For the State Land Commissioner

SEC. 15 | TWP. 2 S.  
 RGE. 13 E  
 N

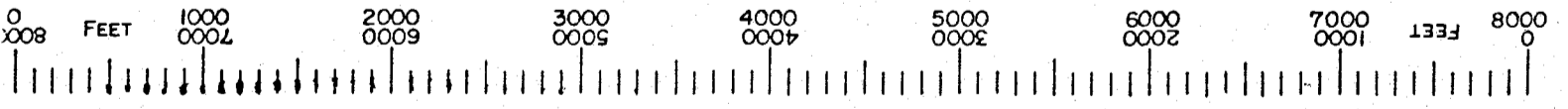
ARIZONA STATE LAND DEPT.



1-ROD = 16 1/2 FEET  
 1-CHAIN = 66 FEET  
 1-ACRE = 43560 SQ. FT.



1 MILE =  
 5280 FEET  
 80 CHAINS  
 320 RODS  
 1760 YARDS  
 1609.3 METERS



1-44, 3-1-72

INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams - Room 408  
Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner:

Lease No. 05-014-11-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place Pipe line for livestock water. which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 16 Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Pipe Line</u>	<u>NE 1/4 NE 1/4</u>	<u>\$500</u>	

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this \_\_\_\_\_, day of \_\_\_\_\_, A.D. 19\_\_\_\_,

\_\_\_\_\_  
Lessee and Owner of Improvements

By: \_\_\_\_\_

The foregoing improvements listed hereon, and for which permission was granted to erect and place upon State lands, are hereby allowed in accordance with statement hereinabove made, and such improvements are made of record within the Department.

Allowance hereof does not constitute any acceptance by the Land Department of the values above set out. In case of sale or other disposition, a definite appraisal of improvements must be made by the State Land Commissioner in conformity with existing laws.

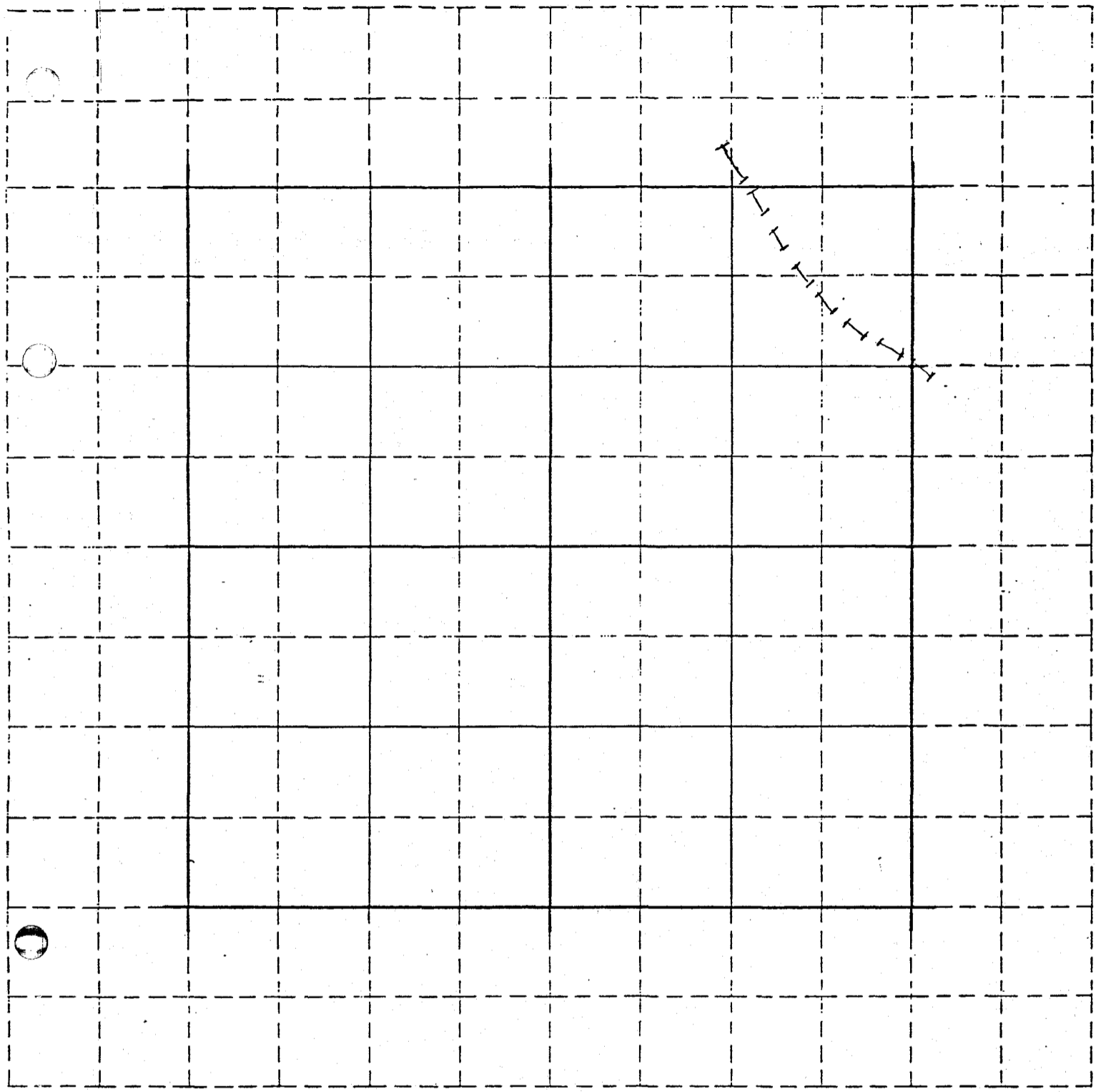
\_\_\_\_\_  
For the State Land Commissioner



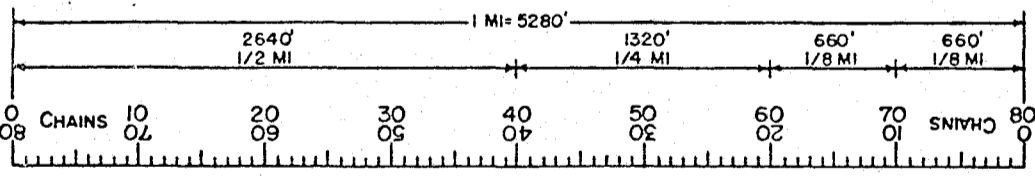
SEC. 16 | TWP. 2 S.  
 RGE. 13 E.

N

ARIZONA STATE LAND DEPT.



1-ROD = 16 1/2 FEET  
 1-CHAIN = 66 FEET  
 1-ACRE = 43560 SQ. FT.



1 MILE =  
 5280 FEET  
 80 CHAINS  
 320 RODS  
 1760 YARDS  
 1609.3 METERS

1-44, 3-1-72



# ASARCO

Exploration Department  
Southwestern United States Division

June 16, 1987

Ms. Linda Olson  
Range Leasing Specialist  
State Land Department  
1624 West Adams  
Phoenix, Arizona 85007

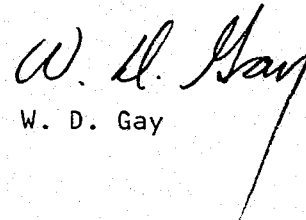
JI Ranch

Dear Ms. Olson:

Please find enclosed the completed forms for improvements on grazing lease 05-1411 which were due on October 31, 1983.

We regret any inconvenience for the late return of these forms.

Very truly yours,

  
W. D. Gay

WDG:mek  
enc.

cc: W.L. Kurtz  
J.D. Sell

INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams - Room 408  
Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner: Lease No. 05-0111-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place a storage tank and pipeline which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 9 Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Storage Tank</u>	<u>NE 1/4 SE 1/4</u>	<u>\$2,000</u>	<u>9-20-83</u>
<u>Pipe Line</u>	<u>E 1/2</u>	<u>\$5,000</u>	<u>9-20-83</u>

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this 15<sup>th</sup> day of June, A.D. 1987

Aracoo Incorporated  
Lessee and Owner of Improvements

By: Walter E. Lehman

The foregoing improvements listed hereon, and for which permission was granted to erect and place upon State lands, are hereby allowed in accordance with statement hereinabove made, and such improvements are made of record within the Department.

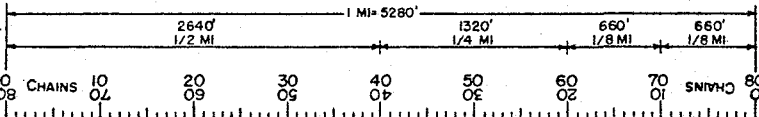
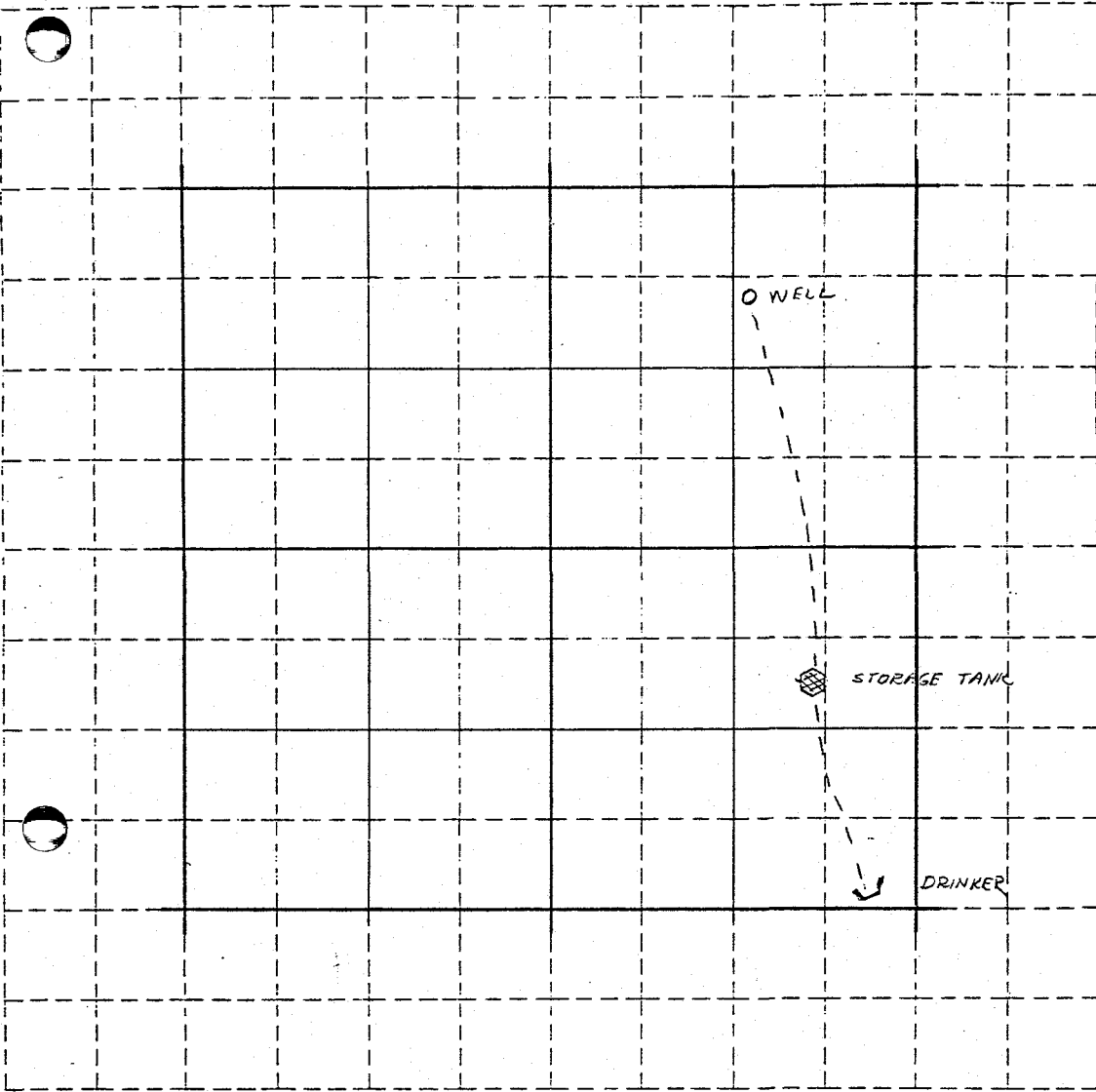
Allowance hereof does not constitute any acceptance by the Land Department of the values above set out. In case of sale or other disposition, a definite appraisal of improvements must be made by the State Land Commissioner in conformity with existing laws.

\_\_\_\_\_  
For the State Land Commissioner

SEC. 9 | TWP. 2S  
 RGE. 13E

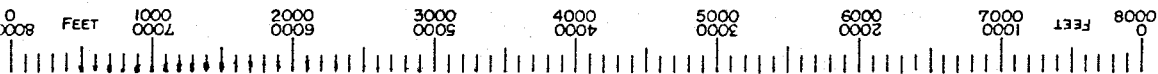
N

ARIZONA STATE LAND DEPT.



1 MILE =  
 5280 FEET  
 80 CHAINS  
 320 RODS  
 1760 YARDS  
 1609.3 METERS

I-44, 3-172



1-ROD = 16 1/2 FEET  
 1-CHAIN = 66 FEET  
 1-ACRE = 43560 SQ. FT.

INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams - Room 408  
Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner:

Lease No. 05-01411-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place Pipe line and drinkers which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 15 Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Pipe line and drinkers for livestock and wild life</u>	<u>W 1/2</u>	<u>\$4,000</u>	<u>9-2-83</u>

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this 15<sup>th</sup>, day of June, A.D. 1983

Roscoe Incorporated  
Lessee and Owner of Improvements

By: Walter E. Lockhart

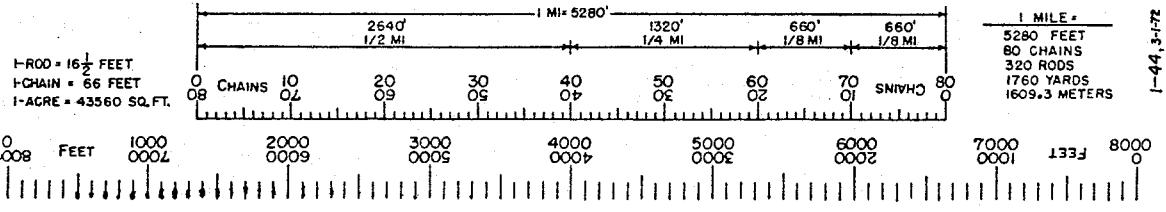
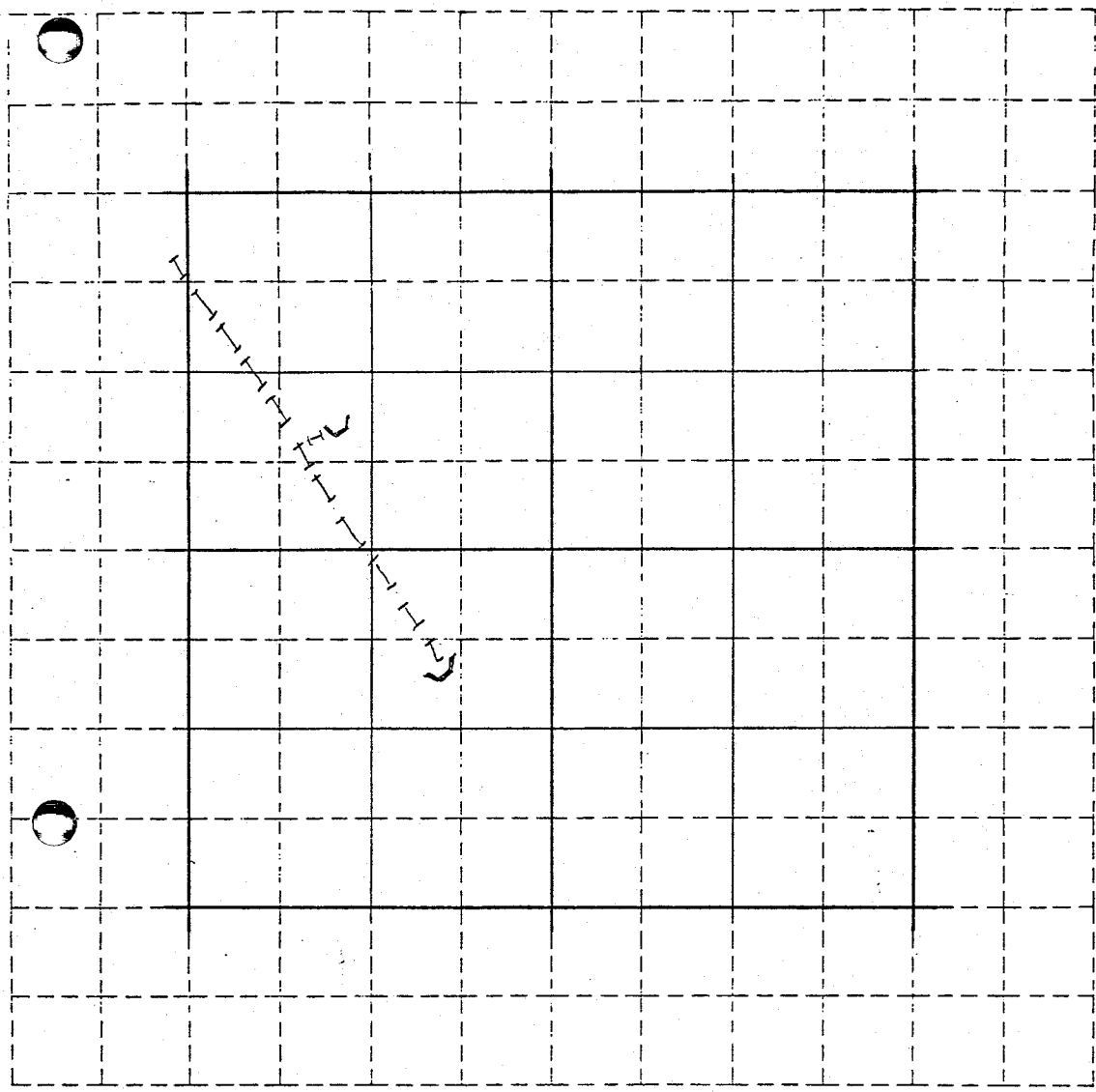
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\_\_\_\_\_  
For the State Land Commissioner

SEC. 15 | TWP. 2 S.  
 RGE. 13 E  
 N

ARIZONA STATE LAND DEPT.



INSTRUCTIONS: This form must be submitted in triplicate to the State Land Department. After being made a matter of record in the Department, one allowed copy will be returned to lessee. A separate report is required for each section of land or subdivision thereof.

ARIZONA STATE LAND DEPARTMENT  
1624 West Adams - Room 408  
Phoenix, Arizona 85007

REPORT OF IMPROVEMENTS PLACED ON STATE LANDS AFTER JUNE 26, 1952

The State Land Commissioner: Lease No. 05-01411-00

In accordance with the provisions of Article 5, Chapter 2, Title 37, Arizona Revised Statutes, and your conditional permission to erect or place Pipe line for livestock water which was granted upon an application to place improvements upon the State lands described herein, a report of completion of said improvements upon Section 16, Township 2 S., Range 13 E., is herewith submitted.

Description of Improvements	Subdivision	Actual Cash Value	Date Completed
<u>Pipe Line</u>	<u>NE 1/4 NE 1/4</u>	<u>\$5.00</u>	<u>9-20-83</u>

I hereby certify under the penalty of perjury that the information contained and statements herein made are to the best of my knowledge and belief true, correct and complete.

Dated this 15<sup>th</sup> day of June, A.D. 1987.

Arara Incorporated  
Lessee and Owner of Improvements

By: Walter E. LaBella

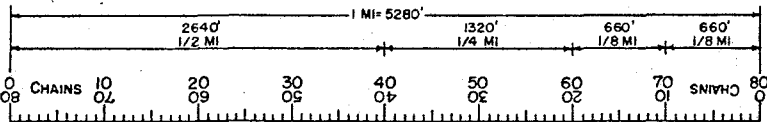
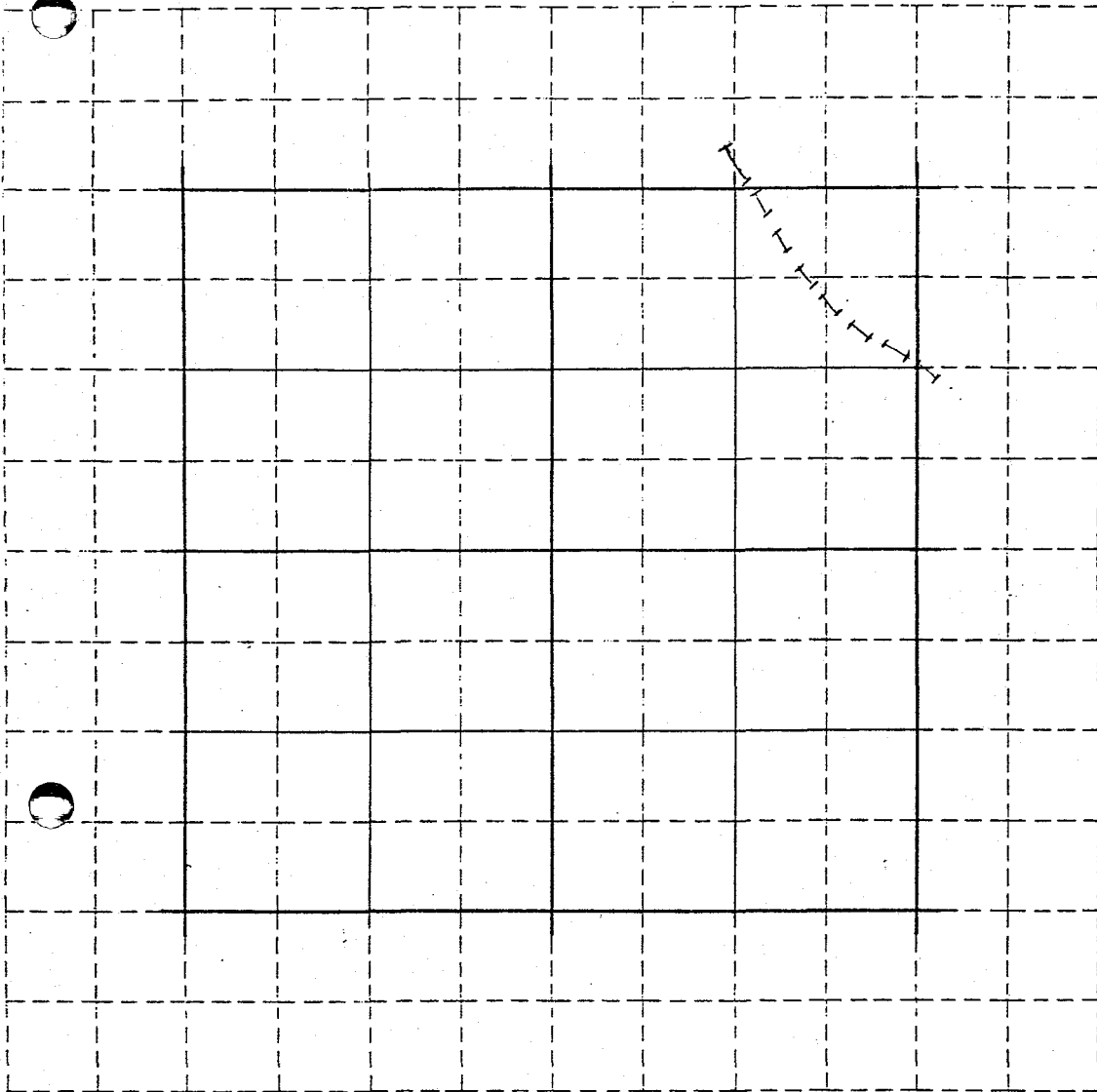
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Allowance hereof does not constitute any acceptance by the Land Department of the values above set out. In case of sale or other disposition, a definite appraisal of improvements must be made by the State Land Commissioner in conformity with existing laws.

\_\_\_\_\_  
For the State Land Commissioner

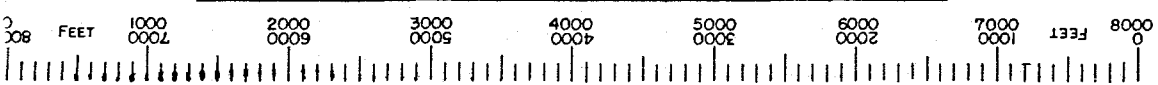
SEC. 16 | TWP. 2 S.  
 RGE. 13 E.  
 N

ARIZONA STATE LAND DEPT.



1 MILE =  
 5280 FEET  
 80 CHAINS  
 320 RODS  
 1760 YARDS  
 1609.3 METERS

1 ROD = 16 1/2 FEET  
 1 CHAIN = 66 FEET  
 1 ACRE = 43560 SQ. FT.



1-44, 3-72



# ASARCO

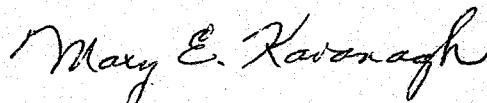
Exploration Department  
Southwestern United States Division

July 1, 1987

Mr. W. A. Bennis  
New York

Jl Ranch  
Superior East Project  
Pinal County, Arizona

Attached are copies of the Arizona Livestock Board Brand Certificates No. 3732 and 3734 which expire May 15, 1993. These certificates are filed in the Superior East Document Book under Doc. 21-1.



Mary E. Kavanagh

mek  
atts.

cc: R.L. Hoyle (w/atts.)  
W.E. Lockhart  
J.D. Sell  
T.E. Scartaccini (w/atts.)

# ASARCO

Exploration Department  
Southwestern United States Division

July 6, 1987

W.A. Bennis  
New York

Jl Ranch  
Pinal County, AZ

Attached is a copy of Arizona State Land Department's "Report of Improvements" for a pipeline for livestock water upon Sec. 16, T2S, R13E.

This has been entered in the Superior East Document Book under Doc. 21-S.

mek  
att.



Mary E. Kavanagh

cc: T.E. Scartaccini (w/att.)  
R.L. Hoyle (w/att.)  
J.D. Sell  
W.D. Gay  
W.E. Lockhart (w/att.)

# ASARCO

Southwestern Exploration Division

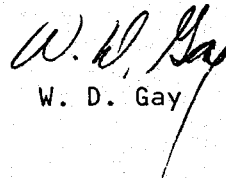
August 28, 1987

R. L. Brown  
New York Office

Ray Unit Grazing Agreement  
for JI Ranch

I signed the sublease agreement and lease agreement referred to  
in the enclosed letter.

WDG:mek  
enc.

  
W. D. Gay

cc: W.L. Kurtz  
J.D. Sell

# ASARCO

ASARCO Incorporated

## RAY UNIT

RICHARD W. BANGHART  
GENERAL MANAGER  
OWEN D. MILLER  
CONTROLLER

AUG 27 1987

SW Exploration

August 25, 1987

Mr. William D. Gay  
Land Engineer  
ASARCO Incorporated  
1150 North 7th Avenue  
Tucson, AZ 85703

Dear Mr. Gay:

We have notified Mr. W. D. Reece of our intent to terminate his grazing lease and sublease on Ray Unit holdings north of the Ray pit, effective October 1, 1987. Accordingly, I have prepared new lease documents for ASARCO Incorporated - Southwestern Mining Department's JI Ranch. The sublease agreement covers 4,466.53 acres of land and includes 4,351.64 acres of state grazing land and 114.89 acres of state commercial leased grounds. The sublease rental will be \$1 plus the yearly grazing rental charged by the state. The lease agreement covers 946.42 acres of Ray Unit property with a rental charge of \$170.00 per year, plus taxes. We cannot sublease our 860.91 acres of Federal Grazing lease; however, we expect the JI Ranch to use these lands described as follows:

### Township 2 South, Range 13 East

Section 26 NE/4 NE/4, W/2 NW/4, NW/4 SW/4  
Section 34 Lots 2, 3 and 4, W/2 NE/4, NW/4, N/2 SW/4, SW/4 SW/4

### Township 3 South, Range 13 East

Section 1 Lots 3, 4, 5, 6, 7, S/2 NW/4, NW/4 SE/4.

Both documents have been signed by Messrs. Banghart and Miller on behalf of the Ray Unit. If this arrangement is satisfactory, please have them executed by the Southwestern Mining Department and return them to me.

*Exploration W.D.M.*

Mr. William D. Gay

-2-

August 25, 1987

Lastly, Mr. Reece advises me that there are approximately 38 head of Ray Unit cattle on the property which we trust the JI Ranch will be taking care of for the Ray Unit account.

Sincerely,



N. A. Gambell  
Technical Services  
Administrator

NAG/bm

Attchs.

cc: R. W. Banghart (w/o attchs.)  
O. D. Miller (w/o attchs.)  
J. W. Toon (w/o attchs.)

# ASARCO

Exploration Department  
Southwestern United States Division

August 28, 1987

Mr. N.A. Gambell  
Technical Services Administrator  
ASARCO Incorporated Ray Unit  
P.O. Box 8  
Hayden, AZ 85235

Grazing Lease & Sublease  
JI Ranch

Dear Mr. Gambell:

Enclosed are the executed grazing lease and sublease on Ray Unit holdings.

Sincerely,



W. D. Gay  
Land Engineer, SWED

WDG:mek  
enc.

cc: W.L. Kurtz  
J.D. Sell

SUBLEASE AGREEMENT

This Sublease is made this First day of October, 1987, by and between ASARCO, Ray Unit, hereinafter referred to as "Ray Unit," and ASARCO Incorporated - Southwestern ~~Mining~~ Department JI Ranch, hereinafter referred to as "JI Ranch." *Exploration W.D.A.*

Ray Unit is the Lessee under State of Arizona Land Department Leases, No. 1044 and No. 365. Ray Unit wishes to sublease the land subject to said lease to the JI Ranch and the JI Ranch wishes to sublease said land from the Ray Unit.

It is, therefore, agreed between the parties as follows:

1. Subject to the terms and conditions of this sublease Ray Unit agrees to sublease to JI Ranch and JI Ranch agrees to sublease from Ray Unit the following described lands which Ray Unit leases from the State of Arizona:

Township 3 South, Range 13 East - 1,331.53 acres

Section 3: Lots 7 to 10, NW/4 SW/4, S/2 SW/4 - 214.96 acres  
Section 4: Lots 1 to 4, S/2 N/2, S/2 - 641.68 acres  
Section 9: Lot 1, E/2 NW/4, NE/4, NE/4 SW/4, NW/4 SE/4 - 354.89 acres  
Section 10: N/2 NW/4, SW/4 NW/4 - 120 acres

Township 2 South, Range 13 East - 3,135 acres

Section 25: All 640 acres  
Section 26: E/2 W2, W/2 NE/4, SE/4 NE/4, SE/4 - 440 acres  
Section 27: N/2 NE/4, SE/4 NE/4, NW/4, W/2 SW/4, SE/4 SW/4, N/2 NE/4 SW/4, SE/4 NE/4 SW/4, SW/4 SE/4 - 470 acres  
Section 33: E/2 - 320 acres  
Section 35: All less the NW/4 NW/4 SW/4 and S/2 SW/4 SW/4 NW/4 - 625 acres  
Section 36: All 640 acres

Gila and Salt River Base and Meridian, Arizona.

2. JI Ranch hereby covenants and agrees to pay as rental for the premises during the first term hereof the sum of One Dollar (\$1.00) per year plus an amount equal to the rental charged by the State of Arizona.

Each year's rent shall be paid on or before the first day of October, commencing October 1, 1987. Rental for succeeding terms is subject to yearly revision by Ray Unit. Ray Unit will provide JI Ranch notice of any rental increases at least thirty (30) days prior to the annual renewal date contained herein. All payments shall be made to Ray Unit by sending same to the Cashier, ASARCO, Ray Unit, P. O. Box 8, Hayden, Arizona 85235, until some other place of payment shall be designated by Ray Unit.

3. Ray Unit shall have the right to delete from this sublease any portion of the lands described above which in Ray Unit's sole judgment becomes necessary or desirable for its operations. The JI Ranch agrees to sign any documents requested by Ray Unit to evidence its consent to any such deletion or the changing of Ray Unit's lease or any portion thereof to a commercial lease.

4. This sublease shall expire on the expiration date of Arizona Land Department Leases, No. 365 and No. 1044.

5. Ray Unit makes no warranty or representation with respect to the property subject to this sublease and shall not be liable to JI Ranch, its employees, agents or invitees for the condition of the property subject to the sublease or any damage to any cattle or any property of JI Ranch or to any of the aforementioned persons which may be sustained on any of the above described property. JI Ranch agrees to and does indemnify and save and hold Ray Unit harmless from any and all suits, claims, demands and liabilities and any and all costs, expenses and fees, including attorneys' fees, which may arise or exist or be alleged to have occurred during the term of this sublease on the land subject to said sublease for any damages, personal injury or death to any person, persons or property.

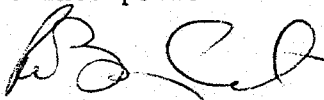
JI Ranch agrees to comply with all laws and regulations of the Arizona State Land Department relating to the property subject to this sublease.

JI Ranch's rights to the lands subject to this sublease shall be limited to grazing only. It shall not have the right to remove soil, gravel, timber or other products of the land and shall promptly reimburse Ray Unit for any damages sustained by it from JI Ranch's occupancy or grazing thereon.




IN WITNESS WHEREOF, the parties have signed this agreement on the date stated above.

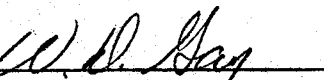
ASARCO Incorporated

By 

General Manager  
Ray Unit

By 

Accounting Manager  
Ray Unit

  
Lessee *Land Engineer*

LEASE

THIS LEASE AGREEMENT made and entered into this first day of October, 1987, by and between ASARCO, Ray Unit, hereinafter referred to as "Lessor," and ASARCO Incorporated - Southwestern ~~Mining~~ Department's JI Ranch, hereinafter referred to as "Lessee." *Exploration W.D.R.*

WITNESSETH:

That for and in consideration of the mutual covenants, promises and agreements herein contained, the parties hereto covenant, promise and agree as follows:

1. Demise of the Premises. Lessor hereby demises and leases to Lessee the following described property situated in Pinal County, Arizona, and sometimes referred to herein as the premises described in Attachment "A." To have and to hold the described premises, together with the tenements, hereditaments, appurtenances, and easements thereunto belonging, at the rental and upon the terms and conditions herein stated.

2. Term. The term of this lease shall begin October 1, 1987, and shall continue from year to year, subject to the parties' rights to terminate this lease pursuant to the provisions of paragraph 12.

3. Rent. Lessee hereby covenants and agrees to pay as rental for the premises during the first term hereof the sum of One Hundred Seventy (\$170.00) Dollars per year. Each year's rent shall be paid on or before the first day of October, commencing October 1, 1987. Rental for succeeding terms is subject to yearly revision by Lessor. Lessor will provide Lessee notice of any rental increases at least thirty (30) days prior to the annual renewal date contained herein. All payments shall be made to Lessor by sending same to the Cashier, ASARCO, Ray Unit, P. O. Box 8, Hayden, Arizona 85235, until some other place of payment shall be designated by Lessor.

4. Use of Premises. The premises will be used for livestock grazing and for no other purpose unless express written consent permitting any other

use is obtained from Lessor. Lessee shall not do or permit anything to be done on or about the premises which might in any way conflict with any governmental law, rule, ordinance, or regulation or constitute a public or private nuisance or waste. Lessee shall, at its sole cost and expense, perform or cause to be performed all affirmative acts which may be required by any governmental law, rule, ordinance, or regulation relating in any way to any activity conducted by it on the premises. Lessee shall at all times keep the premises and all portions thereof in a neat and orderly manner and provide for the regular disposal of garbage from the premises.

5. Taxes and Assessments. In addition to the rental herein agreed to be paid, Lessee hereby agrees to pay all taxes and assessments of every kind and nature which are or may at any time during the term hereof be levied or assessed upon or against the premises or any improvements located on the premises. Such taxes and assessments which shall become payable for the first and last years of the term hereof shall be apportioned pro rata between Lessee and Lessor in accordance with the respective numbers of months during which each party shall be in possession of the premises in such tax years. Lessee also agrees to pay all taxes and assessments of every kind and character levied or assessed upon or against any and all personal property on said premises belonging to the Lessee, its successors, assigns or any of those claiming under the Lessee. All taxes and assessments payable by Lessee as aforesaid shall be paid by it before the same become delinquent. Lessor agrees that Lessee shall have the right, at its own costs and expense, to contest in good faith the amount or collectibility of any such taxes or assessments and to bring or defend any action relative thereto in Lessee's own name, provided that Lessee shall pay and discharge the amount of any taxes or assessments so contested (together with any penalties, fines, interest, costs, and expenses) found payable in the course of any such action.

6. Indemnification. Lessee agrees to indemnify and save Lessor harmless against any and all loss and expense, including attorney's fees and other legal expenses, by reason of liability imposed or claimed to be imposed by law upon Lessor for damage because of bodily injuries, including

death, at any time resulting therefrom, or on account of damage to property, sustained by any person or persons, arising out of or in any manner connected with, or growing out of the utilization of said land by Lessee, whether or not such bodily injuries, death, or damage to property arise or are claimed to have arisen in whole or in part out of the negligence or any other grounds of legal liability, including violation of any duty imposed by a statute or ordinance or regulation, on the part of the Lessor, Lessee, employees or agents, or any of them, or any other person or organization, but excluding any liability caused by sole negligence or willful misconduct of Lessor.

7. Utility Charges. In addition to the rent herein agreed to be paid, Lessee agrees to pay when due and payable any and all charges for any and all utilities used or consumed on or charged to the premises, including, but without limiting the generality of the foregoing, charges for water, gas, electricity, and telephones. Lessee shall also pay for the installation of such utilities effected during the term hereof or any charges of any nature of any utility company relating to the premises.

8. Destruction of Improvements. Should any improvements on the premises be wholly or partially destroyed by fire or other casualty whatsoever, Lessee shall at Lessee's sole cost and expense repair, restore, and reconstruct said improvements with improvements comparable to the improvements wholly or partially destroyed before such destruction occurred.

9. Repairs. Throughout the term hereof Lessee will take good care of the premises and appurtenances, including water lines, and suffer no waste or injury. It will make all repairs, structural and otherwise, both inside and outside, in and about the premises to any building or improvements constructed thereon and to fixtures and appurtenances necessary to preserve the same in good order and condition, which repairs shall be in quality and class equal to the original work. It will repair at or before the end of the term, all injury or damage done by the installation or removal of any furniture or personal property so as to restore the premises and any building and improvements located thereon to their original state and at the end of the term quit and surrender the demised premises and any building and improvements in as good order and condition as they were when so located, reasonable wear and tear excepted.

10. Mechanic's and Other Liens. Lessee will keep the premises and building and improvements thereon and every part thereof and every right, title and interest therein, or in or to any part thereof, at all times during the term of this lease, free and clear of mechanic's liens and other liens for labor, services, supplies, equipment or material and Lessee will at all times fully pay and discharge and save harmless Lessor, its successors and assigns, and every part of the right, title and interest of Lessor in and to every part of said premises against any and all claims which may or could ripen into such liens and against all reasonable attorneys' fees and costs and all expenses, damages or outlays which may or might be incurred by Lessor by reason of any such liens or claims or the assertion or filing thereof. The foregoing shall not apply to mechanic's or other liens incurred by or because of acts of the Lessor.

11. Assignment and Subletting. Lessee shall not have the right at any time to assign this lease or sublet the leased premises or any part thereof without the express written consent of Lessor. Neither assignment or subletting with Lessor's express written consent shall relieve the Lessee from its obligations hereunder.

12. Termination. Lessor or Lessee may at any time it elects, and for any reason it elects, on 30 days' prior written notice, terminate and cancel this lease. Upon the termination of this lease for any reason, any and all improvements to the premises and any and all property left on the premises shall be and remain the property of Lessor. Lessee shall have no further right, title or interest in any such improvements or property whether Lessee shall have built or caused to be built or paid for any such improvements or property or not. Lessee further covenants and agrees that upon termination of this lease for any reason, Lessee will leave the premises and all portions thereof in a clean and orderly condition.

13. Smoke Easement. Lessor, ASARCO Incorporated, a New Jersey corporation, and Magma Copper Company, a Delaware corporation, their respective successor and assigns have, with respect to the property, a perpetual easement in the operation of their mines, mills, smelters and refineries, and the said Lessor, ASARCO Incorporated, and Magma Copper Company, their respective successors and assigns, are hereby absolved and released from any and all claims, damages, or injuries from any character

whatsoever past, present, or future to persons or to said real property or personal property situated thereon resulting from, or arising out of, the operations of said mines, mills, and smelters due to smoke, gases, fumes, dust, and vapors.

14. Easements. Lessor reserves to itself easements for any future installation which it may desire to make of power lines, telephone lines, or telegraph lines, flumes, pipes, or other uses together with the right to repair and maintain same.

15. Default of Lessee. In the event that

- a. Default shall be made by Lessee in the payment of rental hereunder and such default shall continue for a period of ten days;
- b. Default shall be made by Lessee in the performance of any other covenant or condition to be kept or performed by it hereunder and such default shall continue for a period of twenty days after written notice thereof from Lessor;
- c. A receiver or trustee shall be appointed for Lessee or its property, or a petition shall be filed against Lessee for the purpose of adjudicating it bankrupt or for the purpose of effecting a composition or arrangement with its creditors, or Lessee's interest hereunder shall be levied upon under execution or seized by virtue of any writ of any court of law, and such appointment, petition or levy shall not be vacated within twenty days; or
- d. Lessee shall make an assignment for the benefit of creditors or file a petition for the purpose of adjudicating it bankrupt or for the purpose of effecting a composition or arrangement with its creditors,

then in any such event Lessor may, at its option and with or without notice to Lessee or process of law, enter upon and repossess the premises, remove therefrom all persons and property of Lessee and place such property in storage at Lessee's risk and expense. Lessee hereby agrees to indemnify and hold harmless Lessor from and against any and all loss, cost, expense or damage (including reasonable attorneys' fees) which it may suffer or incur in connection with any such re-entry, repossession and/or property removal or storage and hereby waives all claims for loss or damage which may occur (whether to its property or otherwise) in such connection.

No such re-entry shall be deemed to constitute a forcible entry, and should Lessor elect to re-enter as herein provided or take possession pursuant to legal proceedings or any notice given as provided by law, it may either (i) terminate this lease upon written notice given to Lessee or a decree of a court of competent jurisdiction (in the absence of which notice or decree no re-entry or taking possession by Lessor as aforesaid shall be construed as an election on its part to terminate this lease) or (ii) treat the term of this lease as ended without thereby working a forfeiture of the rentals to be paid and the covenants to be performed by Lessee during the full term hereof as hereinabove set forth. If Lessor shall proceed in accordance with the last-mentioned alternative, then Lessee shall, and it does hereby covenant and agree to pay to Lessor on the first day of each calendar month of said full term after such re-entry and repossession by Lessor that amount, if any, by which the rental payable hereunder for such month exceeds the net income actually received by Lessor from the demised premises during the immediately preceding month (the term "net income" as used in this context to be deemed to refer to income received less all indebtedness other than rent due hereunder from Lessee to Lessor and all costs incurred by Lessor in reletting the premises), but, notwithstanding any such procedure by Lessor, it may at any time thereafter elect to terminate this lease for previous breach. Upon terminating this lease at any time as aforesaid, Lessor shall be entitled, in addition to any other remedy it may have, to recover from Lessee all damages it may incur in connection therewith, including the cost of recovering the premises and the worth at the time of such termination of any excess of the amount of rent herein set forth with respect to the remainder of the full term hereof over the then reasonable rental value of the premises for such remainder. Nothing herein contained shall be deemed to limit any rights or remedies to which Lessor would otherwise be entitled under the laws of the State of Arizona as the result of the occurrence of any of the above specified events of default. All rights and remedies herein or by law set forth on the part of Lessor shall be cumulative, and the exercise of any thereof shall not be to the exclusion of any other right or remedy.

16. Notices and Demands. Any notices or demands which shall be required or permitted by law or by any of the provisions of this lease shall

be in writing, and if the same is to be served upon Lessor, may be personally delivered to Lessor or may be deposited in the United States mail, registered or certified, postage prepaid, addressed to Lessor at the place where the last installment of rental was paid or at such other addresses as Lessor may designate in writing.

If such notices or demands are to be served upon Lessee, such notices or demands may be personally delivered to Lessee or may be deposited in the United States mail, registered or certified, postage prepaid, addressed to Lessee at the location of the premises or at such other address as Lessee may designate in writing.

17. Appropriation. In the event the premises or any part thereof is taken for public or quasi-public purposes, Lessee shall have no claim to nor shall Lessee be entitled to any portion of any award for damages or otherwise, such rights to any such award being hereby assigned to Lessor. In the event that only a part of the premises is taken, Lessor shall have the right to terminate this lease as of the date title vests in the condemnor by giving to Lessee written notice of such termination; but should the Lessor not so terminate this lease when a part of the premises is so taken, this lease shall cease as to the part taken, and the rent herein reserved shall be adjusted for the remainder of the demised premises so that the Lessee shall be required to pay for the balance of the term that portion of the rent herein reserved which the value of the part of the premises remaining after condemnation bears to the value of the part of the premises immediately prior to the date of condemnation. The rental shall be apportioned as aforesaid by agreement between the parties or by arbitration or legal proceedings, but pending such determination or adjudication the Lessee shall pay at the time and in the manner above provided, the rental herein reserved, and all other charges herein required to be paid by the Lessee, without deduction, and upon such determination or legal adjudication, the Lessee shall be entitled to credit for any excess rental paid. If, however, by reason of the condemnation there is not sufficient space left in the premises for the Lessee to maintain a sufficient single family resident, then and in such event the lease shall terminate.

18. Payment by Lessee. All costs, expenses and amounts which Lessee assumes or agrees to pay pursuant to the provisions hereof shall, at



Lessor's election, be treated as additional rent, and in the event of nonpayment, Lessor shall have all of the rights and remedies herein provided in the case of nonpayment of rent or breach of condition. If Lessee shall default in performing any obligation involving the expenditure of money, then Lessor shall have the right, but not the obligation, to expend the required sum for the account of Lessee (any such expenditure by Lessors to be deemed to conclusively evidence the necessity therefor) and any and all sums so expended by Lessor, with interest thereon at the rate of ten (10) percent per annum from the date of expenditure, shall be deemed to be additional rent and shall be repaid by Lessee to Lessor on demand, but no such expenditure by Lessor shall be deemed to constitute a waiver of Lessee's default nor shall the same affect any other remedy of Lessor which may arise by reason of such default.

19. Litigation. If Lessor shall commence any legal proceedings against Lessee for the recovery of rent or possession of the premises or because of any default hereunder and shall obtain either judgment thereon or, prior to judgment, the recovery or performance prayed for, then Lessee shall in each and every instance pay to Lessor all expenses thereof, including reasonable attorneys' fees, whether or not such proceedings are prosecuted to judgment.

20. Non-Waiver. The failure of Lessor to insist in any one or more instances upon the performance of any of the covenants and conditions herein set forth on the part of Lessee or to take any action herein permitted shall not be construed as a waiver or relinquishment of the future performance of any such covenant or condition or Lessor's rights in regard thereto, and Lessee's obligations in such regard shall continue in full force and effect. No waiver of any default on the part of Lessee hereunder shall be deemed to arise out of or be evidenced by the acceptance of any rental paid pursuant to the provisions hereof.

21. Holdover. Lessee hereby agrees that at the expiration or earlier termination of the term hereof, peaceable possession of the premises will be delivered to Lessor. If Lessee shall hold the premises after the expiration of the terms hereof with Lessor's consent, express or implied, such holding over shall, in the absence of written agreement with respect thereto, be deemed to have created a tenancy from month to month at the same

rental and on the same terms and conditions prevailing hereunder immediately prior to such expiration or termination, terminable by Lessor at any time or by Lessee upon its giving thirty days' written notice to Lessor, but nothing herein contained shall be deemed to constitute Lessor's consent to any occupancy or possession of the premises by Lessee after the term hereof.

22. Entry on Premises. Lessor, its duly authorized agents and employees shall have the right to enter upon the premises at all reasonable times for the purpose of inspection and for any other proper purpose.


22a. Lessor shall have the right from time to time to establish rules and regulations governing the occupancy of the premises by the Lessee and any other persons. Lessee agrees to abide by such rules and regulations.

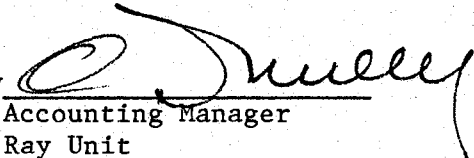
23. Inurement. This lease agreement shall inure to the benefit of and be binding upon the respective heirs, personal representatives, successors and assigns to the parties hereto, which respective heirs, personal representatives, successors and assigns shall be deemed referred to by and included within the terms "Lessor" and "Lessee" as herein used.

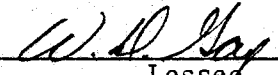
24. Amendments. No amendment or modification of this lease shall be binding or effective unless it shall be in writing and properly executed and acknowledged by Lessor and Lessee.

IN WITNESS WHEREOF, the parties hereto have signed this lease agreement as of the date and year first above written.

ASARCO

By   
General Manager  
Ray Unit

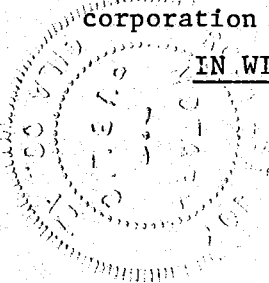
By   
Accounting Manager  
Ray Unit

  
Lessee  
Land Engineer

STATE OF ARIZONA )  
 ) ss  
County of GILA )

On this the 28<sup>th</sup> day of July, 1987, before me, the undersigned Notary Public, personally appeared R. W. Banghart, and O. D. Miller, who acknowledged themselves to be the general manager and accounting manager of the Ray Unit, ASARCO Incorporated, a New Jersey corporation, and they, in such capacities, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



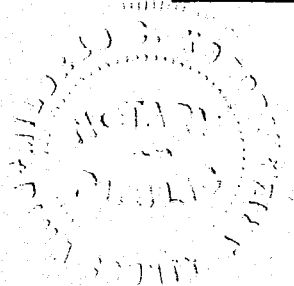
*Rosa Lee Joy*  
Notary Public

My commission expires 09/16/88.

STATE OF ARIZONA )  
 ) ss  
County of )

On this the 28 day of Aug., 87, before me, the undersigned Notary Public, personally appeared W. D. Gay, who acknowledged that he executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



*Mildred C. Koeppe*  
Notary Public

My commission expires My Commission Expires Nov. 28, 1988

ATTACHMENT "A"

J. I. Ranch

Parcel No. 1: Walter Scott, Chicago, Consolidated, Hindo, Golden and Tunnel Sight Mining Claims in Sections 1 and 12, Range 13 East, Township Three (3) South, and Sections 6 and 7, Range 14 East, Township 3 South of the Gila and Salt River Base and Meridian, being shown on Mineral Survey #2273, on file in the Bureau of Land Management, as granted by Patent recorded June 12, 1908, in Book 24 of Deeds, page 483, and containing 109.29 acres, more or less.

Parcel No. 2: Lots One (1) and Two (2); the South Half of the Northeast Quarter (S $\frac{1}{2}$ NE $\frac{1}{4}$ ) and the Southwest Quarter (SW $\frac{1}{4}$ ) of Section One (1); and  
Lots One (1), Two (2), Six (6) and Seven (7) of Section Eleven (11); and  
Lots Three (3) and Four (4); the East Half of the Northwest Quarter (E $\frac{1}{2}$ NW $\frac{1}{4}$ ) of Section Twelve (12).  
All in Township Three (3) South, Range Thirteen (13) East of the Gila and Salt River Base and Meridian, and containing 635.40 acres, more or less, together with the improvements, if any, thereon.

Township 2 South, Range 26 East - 311.02 acres  
Section 26 SW/4 SW/4 - 40 acres  
Section 27 SW/4 NE/4, N/2 SE/4, SE/4 SE/4 - 160 acres  
Section 34 E/2 NE/4, Lots 6 and 7 - 111.02 acres

# ASARCO

## RAY UNIT

RICHARD W. BANGHART  
GENERAL MANAGER  
OWEN D. MILLER  
CONTROLLER

October 2, 1987

Mr. William D. Gay  
Land Engineer  
ASARCO Incorporated  
1150 North 7th Avenue  
Tucson, AZ 85703

Dear Bill,

Mr. Reece stopped by today to say that he has removed all of his cattle north of Ray with the exception of a cow and calf that he suspects may have wandered onto the JI Ranch. He would appreciate being called if Mr. Lockhart locates them.

Also, Mr. Reece gave me the enclosed self-inspection certificate book for the Ray cattle.

Sincerely,



N. A. Gambell  
Technical Services  
Administrator

NAG/bm

Encl.

cc: R. W. Banghart

cc: JD Sell

ASARCO Incorporated

OCT 6 1987

SW Exploration

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

December 18, 1989

Mr. Walter E. Lockhart  
JI Ranch  
Route 1, Box 745  
Miami, AZ 85539

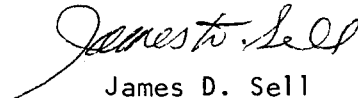
JI Ranch  
Moving JI Cattle

Dear Walt:

In reference to your letter of December 1, 1989, and after talking with you, F.T. Graybeal, T.E. Scartaccini, G.H. Meyers, and C.L. Snow, the consensus concerning the 100 head of excess cattle which must be removed from the JI Ranch area, is as follows:

1. Move the 100 head of cattle to the Mining Department's Rosemont Ranch range.
2. Keep track of all the cattle (including other animals) as before, with the JI and Rosemont areas kept separate.
3. The Mining Department has a range foreman at Rosemont, but neither his charges nor other charges for non-bought items, such as grass and water and up-keep of the ranch area, will be charged to the JI account.
4. Supplies bought for the range cattle at Rosemont will be charged to the JI account, as will transportation costs.
5. Sale receipts of cattle sold from the Rosemont range will be credited to the JI account.
6. You will continue the normal reporting procedures for the animals at JI and Rosemont, as before, with Mr. Bill Gay.

Sincerely,

  
James D. Sell

JDS:mek

cc: F.T. Graybeal  
T.E. Scartaccini  
W.L. Kurtz  
W.D. Gay  
G.H. Meyers  
C.L. Snow

# ASARCO

T-4.19

Southwestern Mining Department

December 18, 1989

Mr. C. L. Snow  
Tucson Office

J I Ranch  
Livestock Inventory

In December accounts, please make the following entry to reflect additional adjustments to livestock inventory:

A/C 1590 Balance 12/31/87	\$170,536
Dec. 12, 1988 adjustment	10,042
Dec. 14, 1989 adjustment	36,652
Livestock Purchase, May, 1988	2,400
Livestock Purchase Feb. 1989	485
Cr. A/C 1590 - Dr. A/C 9300-1	<u>(2,885)</u>
A/C 1590 adjusted balance	<u>\$217,230</u>

ORIGINAL SIGNED BY  
G. H. MYERS

G. H. Myers  
Accounting Manager

GHM/kh

cc: WLKurtz  
JDSell  
WDGay

ASARCO Incorporated

DEC 18 1989

SW Exploration



# ASARCO

Exploration Department  
Southwestern United States Division

December 29, 1987

Mr. Neil Gambell  
Technical Services Administrator  
ASARCO Incorporated  
Ray Unit  
P.O. Box 8  
Hayden, Arizona 85235

## Cattle

Dear Mr. Gambell:

Mr. Lockhart has completed his round-up of cattle in all areas where the original Kennecott cattle may have ranged.

For your records, Kennecott branded cattle found were 19 mother cows and 5 calves.

Very truly yours,



William D. Gay  
Land Engineer, SWED

WDG:mek

cc: W.L. Kurtz  
J.D. Sell  
W.E. Lockhart

Original & complete forms with instructions  
& envelopes given to W.D. Gay 11/11/88  
\*attached only first page of  
forms. Mek

From: R. L. Brown

To: J. Sell

Please get Bill Gay to  
fill this out and mail in

ASARCO Incorporated

JAN 11 1988

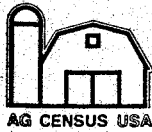
SW Exploration

DUE BY FEBRUARY 1, 1988

FORM 87-A0311 (6-14-86)

U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS

OMB No. 0607-0534: Approval Expires September 30, 1989



UNITED STATES CENSUS OF AGRICULTURE

NOTICE - Response to this inquiry is required by law (title 13, U.S. Code). By the same law YOUR REPORT TO THE CENSUS BUREAU IS CONFIDENTIAL. It may be seen only by sworn Census employees and may be used only for statistical purposes. Your report CANNOT be used for purposes of taxation, investigation, or regulation. The law also provides that copies retained in your files are immune from legal process.

In correspondence pertaining to this report, please refer to your Census File Number (CFN)

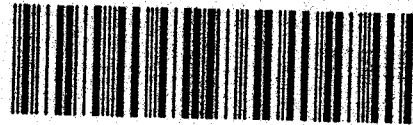
Please complete this form and RETURN TO

BUREAU OF THE CENSUS 1201 East Tenth Street Jeffersonville, IN 47133

Note - If your records are not available, reasonable estimates may be used. If you cannot file by February 1, a time extension request may be sent to the above address. Include your 12-character Census File Number (CFN) as shown in your address label in all correspondence to us.

Table for recording multiple forms: If you received more than one report form, enter extra Census File Number(s) here and return extra copies with your completed report.

Table for recording census use only: CENSUS USE ONLY with columns 035-042



87-A0311

CFN A 86004-057740 EI 13-4924440 B
& 0 0 00 12 12 0 0 0 0 2 311
81230232698 13 0 OY PIMA 900

ASARCO INCORPORATED
J I RANCH
P O BOX 5747
TUCSON AZ 85703-0000

Please correct errors in name, address, and ZIP Code. ENTER street and number if not shown.

SECTION 1 ACREAGE IN 1987 Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization for which you are reporting. Include ALL LAND, REGARDLESS OF LOCATION OR USE - cropland, pastureland, rangeland, woodland, idle land, house lots, etc.

If the acres you operated in 1987 changed during the year, refer to the INFORMATION SHEET, section 1.

- 1. All land owned
2. All land rented or leased FROM OTHERS, including land worked by you on shares, used rent free, in exchange for services, payment of taxes, etc. Include leased Federal, State, and railroad land. (DO NOT include land used on a per-head basis under a grazing permit.) Also complete item 5 below.
3. All land rented or leased TO OTHERS, including land worked on shares by others and land subleased. Also complete item 6 below.
4. Acres in "THIS PLACE" - ADD acres owned (item 1) and acres rented (item 2), then SUBTRACT acres rented TO OTHERS (item 3), and enter the result in this space.

For this census report these are the acres in "THIS PLACE." If the entry is zero please refer to the INFORMATION SHEET, section 1.

Table for item 5: If you rented land FROM OTHERS (item 2), enter the following information for each landlord. Columns: Name of landlord, Mailing address (Include ZIP Code), Number of acres.

List additional landlords on a separate sheet of paper.

Table for item 6: If you rented land TO OTHERS (item 3), enter the following information for each renter. Columns: Name of renter, Mailing address (Include ZIP Code), Number of acres.

List additional renters on a separate sheet of paper.

6. Of the land you rented or leased to others, how many acres did you own? 053 Acres

- 7. Did you have any grazing permits on a per-head basis?
3 Forest Service
4 Taylor Grazing Sec. 3 (BLM)
5 Indian Land
6 Other - Specify

Table for item 8: LOCATION OF AGRICULTURAL ACTIVITY FOR "THIS PLACE". Columns: County name, State, Number of acres. Rows for Principal county and Other counties.

INSTRUCTIONS - Please report your crops in the appropriate section. Use section 7 to report ONLY those CROPS NOT listed in sections 2 through 6 and section 8. DO NOT INCLUDE crops grown on land rented to others.

SECTION 2 Were any of the following CROPS harvested from "THIS PLACE" in 1987?

Table for section 2: CROPS harvested from "THIS PLACE" in 1987. Columns: Crop type, Acres harvested, Quantity harvested, Acres irrigated. Rows 1-11: Cotton, Rice, Barley for grain, Oats for grain, Wheat for grain, Corn (field) for grain or seed, Corn (field) for silage or green chop, Beans, dry lima, Beans, dry edible, Safflower, Sugar beets for sugar, Potatoes, Irish.

SECTION 3 Was any DRY HAY, GRASS SILAGE, HAYLAGE, or GREEN CHOP cut or harvested from "THIS PLACE" in 1987? Include sorghum-sudan crosses and hay cut from pastures.

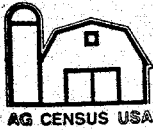
63 1 YES - Complete this section 2 NO - Go to section 4. If cuttings were made for both dry hay and grass silage, haylage, or green chop from the same fields, report the acreage in the appropriate items under DRY HAY and also under GRASS SILAGE, HAYLAGE, and GREEN CHOP.

Table for section 3: DRY HAY, GRASS SILAGE, HAYLAGE, AND GREEN CHOP. Columns: Acres harvested, Quantity harvested, Acres irrigated. Rows a-d: Alfalfa and alfalfa mixtures, Small grain hay, Other tame dry hay, Wild hay. Row 2: GRASS SILAGE, HAYLAGE, AND GREEN CHOP. Row 3: HAY SOLD.

DUE BY FEBRUARY 1, 1988

FORM 87-A0311 (9-14-86)

U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS



UNITED STATES CENSUS OF AGRICULTURE

Please complete this form and RETURN TO

BUREAU OF THE CENSUS 1201 East Tenth Street Jeffersonville, IN 47133

Note - If your records are not available, reasonable estimates may be used. If you cannot file by February 1, a time extension request may be sent to the above address. Include your 12-character Census File Number (CFN) as shown in your address label in all correspondence to us.

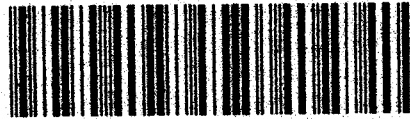
If you received more than one report form, enter extra Census File Number(s) here and return extra copies with your completed report.

Table with columns for CENSUS USE ONLY and rows for 035-042

NOTICE - Response to this inquiry is required by law (title 13, U.S. Code). By the same law YOUR REPORT TO THE CENSUS BUREAU IS CONFIDENTIAL. It may be seen only by sworn Census employees and may be used only for statistical purposes.

In correspondence pertaining to this report, please refer to your Census File Number (CFN)

87-A0311



CFN A 86003-040390 EI 13-4924408 5 6 0 0 00 6 3 4 0 0 1 2 3 11 81230232690 13 131 0 Y P I N A 0 0 5

ASARCO INCORPORATED SANTA CRUZ JOINT VENTURE P O BOX 3747 TUCSON AZ 85703-0000

Please correct errors in name, address, and ZIP Code. ENTER street and number if not shown.

SECTION 1 ACREAGE IN 1987 Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization for which you are reporting. Include ALL LAND, REGARDLESS OF LOCATION OR USE - cropland, pastureland, rangeland, woodland, idle land, house lots, etc.

If the acres you operated in 1987 changed during the year, refer to the INFORMATION SHEET, section 1.

Table for Section 1 with columns for None, Number of acres, and rows for 043-046

For this census report these are the acres in "THIS PLACE." If the entry is zero please refer to the INFORMATION SHEET, section 1.

Table for Section 1.5 with columns for Name of landlord, Mailing address, and Number of acres

Table for Section 1.6 with columns for Name of renter, Mailing address, and Number of acres

- 7. Did you have any grazing permits on a per-head basis? 054 1 Yes - Mark (X) all boxes which apply... 2 No - Go to item 8

Table for Section 1.8 with columns for County name, State, and Number of acres

INSTRUCTIONS - Please report your crops in the appropriate section. Use section 7 to report ONLY those CROPS NOT listed in sections 2 through 6 and section 8. DO NOT INCLUDE crops grown on land rented to others.

SECTION 2 Were any of the following CROPS harvested from "THIS PLACE" in 1987?

Table for Section 2 with columns for Acres harvested, Quantity harvested, and Acres irrigated, and rows for 091-099

SECTION 3 Was any DRY HAY, GRASS SILAGE, HAYLAGE, or GREEN CHOP cut or harvested from "THIS PLACE" in 1987?

1 YES - Complete this section 2 NO - Go to section 4 If cuttings were made for both dry hay and grass silage, haylage, or green chop from the same fields, report the acreage in the appropriate items under DRY HAY and also under GRASS SILAGE, HAYLAGE, and GREEN CHOP.

Table for Section 3 with columns for Acres harvested, Quantity harvested, and Acres irrigated, and rows for 103-117

PENALTY FOR FAILURE TO REPORT

March 1, 1988

R.L. Brown  
New York Office

JI Ranch

As I have mentioned to you several times, the state grazing leases that the JI Ranch has acquired from the Ray Mines Division allow 80 cows. At present only 20 cows (remainder of the Kennecott herd) are on the land.

We recommend the JI purchase 50 pregnant cows and 6 bulls to stock this area.

Estimated cost:

50 pregnant cows	\$27,000
6 bulls	<u>3,000</u>
	<u>\$30,000</u>

Please let us know immediately if we may proceed with the purchase as now is the best time to get the pregnant cows on the land.

The 1988 and 1989 calf crop should return this amount and we will still have the area stocked with mother cows. To keep the 80 cow lease in good standing we simply need to keep a few cows on the land.

WLK:mek

*W. L. Kurtz*  
W. L. Kurtz

cc: J.D. Sell  
W.D. Gay

# ASARCO

Exploration Department  
Southwestern United States Division

May 24, 1988

Mr. Burton M. Apker  
APKER, APKER & KURTZ, P.C.  
2111 East Highland Avenue, Suite 230  
Phoenix, Arizona 85015

## JI Ranch Stockponds

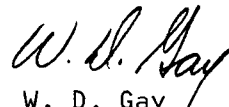
Dear Mr. Apker:

In reference to your letter of May 23, 1988, I concur that Asarco should protest the following stockponds which have location errors:

Rancho Rio Tank	NESW 5-2S-13E
Henderson Tank	SENE 11-2S-13E
Grapevine Tank	NWNE 28-2S-13E
Well Tank	NENE 4-2S-13E
Oak Tank	NWNE 17-2S-13E

Please write the necessary letter as you suggested.

Very truly yours,

  
W. D. Gay  
Land Engineer

WDG:mek

cc: W.L. Kurtz  
J.D. Sell  
W.E. Lockhart

LAW OFFICES OF  
APKER, APKER & KURTZ, P.C.

A PROFESSIONAL CORPORATION

PARK ONE

2111 EAST HIGHLAND AVENUE, SUITE 230

PHOENIX, ARIZONA 85016

AREA CODE 602 TELEPHONE 381-0085

BURTON M. APKER\*  
DAVID B. APKER\*\*  
GERRIE APKER KURTZ

TELECOPIER  
(602) 956-3457

\*ALSO ADMITTED IN WISCONSIN  
\*\*ALSO ADMITTED IN COLORADO

May 23, 1988

ASARCO Incorporated

MAY 24 1988

Mr. W. D. Gay, Land Engineer  
ASARCO Incorporated  
Post Office Box 5747  
Tucson, AZ 85703-0747

SW Exploration

Dear Mr. Gay:

I have reviewed the Notices of Claim of Water Right for a Stockpond issued April 15, 1988 by the Department of Water Resources regarding the State Land Department's Stockpond Claims filed June 27, 1979, and I have discussed the Notices with DWR personnel.

ASARCO and many other State land lessees made protective filings for stockponds on State (and BLM) lands under the Stockpond Registration Act. I assume that such filings were made by the Company on these Pinal County lands.

It was, of course, appropriate for SLD under the Stockpond Registration Act to file stockpond claims for ponds on State lands. It was in fact the Department's duty to do so, because the ponds belong to the State and not to the State land lessees.

The long delay--nine years-- in the notification by DWR of the SLD filings is occasioned by the manner of the State Land Department's filing in 1979. To meet the filing deadline, SLD made one blanket filing for "all stockponds on state lands," and it has taken until now for individual claims to be substituted for the blanket filing.

I believe that ASARCO should protest only the claims upon which you found location errors, to-wit:

Rancho Rio Tank	NESW 5 - 2S - 13E
Henderson Tank	SESW 11 - 2S - 13E
Grapevine Tank	NWNE 28 - 2S - 13E
Well Tank	NENW 4 - 2S - 13E

and, if you agree,

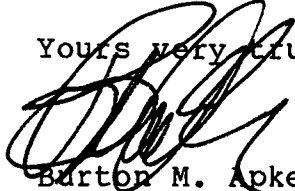
Oak Tank	NWNE 17 - 2S - 13E
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Mr. W. D. Gay, Land Engineer  
ASARCO Incorporated  
May 23, 1988  
Page Two

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I could write one letter to DWR with multiple copies, to make the protest (to avoid the claims' clouding of other lands). I will await your instructions.

Yours very truly,



Burton M. Apker

BMA:lar

cc: W.L. Kurtz  
J.D. Sell  
W.E. Lockhart



Tucson, Feb. 1, 1989

JI Ranch

Memorandum for Mr. T. C. Osborne

As you will recall, we unitized the JI and the Ray Unit ranches a year or so ago. The Ray ranch consists of a state lease and BLM grazing permits. It now carries about 24 cows and bulls and 18 calves. The original JI Ranch ground is permitted for 400 cattle and there are 400 cattle on it. Annual sales from the original JI are 200 calves and 25 cows at \$300 each.

There are no sales at present from the Ray Unit range.

It is now proposed that 5 bulls and 45 cows be purchased for the Ray Unit acreage at a cost of \$29,500. If this purchase were to be made we would increase sales from the Ray acreage from 0 to 5 cows and 60 calves for about \$19,000. The investment which would be incremental to our present capital would be \$29,500, and the annual income, starting a year from now would be \$19,000.

Sales from the total range acreage would then be 30 cows and 260 calves for annual sales of about \$90,000.

We recommend purchase of 5 bulls and 45 cows for the JI Ranch at a cost of \$29,500 and seek authority to do so.

  
R. L. Brown

cc: T. E. Scartaccini  
W. L. Kurtz  
J. D. Sell

# ASARCO

Southwestern Exploration Division

JDS

February 3, 1989

W.L. Kurtz  
Tucson Office

Monte Lockhart  
Salary Status  
JI Ranch  
Pinal County, AZ

I attach Mr. W.E. Lockhart's letter in which he outlines the strong reasons to support placing Monte on a salary basis, i.e., Monte may soon be managing the JI-Ray units on his own. I support this view.

I understand that the staff numbers within the Exploration Department are still fully filled and it is unknown when such numbers may be allowed to increase for staff. When a position is open I recommend Monte for consideration with the managerial duties he now has under his area of operations.

JDS:mek

  
James D. Sell

cc: W.E. Lockhart

February 1, 1989

ASARCO Incorporated

James D. Sell  
Exploration Department  
ASARCO incorporated  
P.O. Box 5747  
Tucson, AZ. 85703

FEB 3 1989

SW Exploration

Dear Jim;

I am submitting a request for ASARCO's consideration of placing Monte in the previous salaried position on the JI ranch.

When Monte was hired he was put on hourly wages and since that time the ranch has received an increase in animal units from 355 to 420 head of cattle. We have also taken over the permit and management of the Ray unit. Working these two units requires considerable independent judgement on needed improvements, cattle distribution and hours needed to complete the job.

Within the next few months we also expect to take over management and operation of the Rosemont (Helvetia) ranch near Sonoita and I will have overall responsibility for the operation of the JI, Rosemont and Ray units. Monte will be working on the JI with limited supervision and will be responsible for making daily work schedules, cattle accountability and purchasing for the operation of the ranch.

I feel it will be to ASARCO's benefit to have him as a salaried employee by the time we obtain operation of the Rosemont.

Please call if you have any questions.

*Walt*  
Walter E. Lockhart

# ASARCO

Southwestern Exploration Division

November 17, 1989

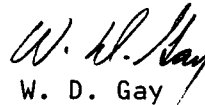
R.L. Brown  
New York Office

JI Ranch  
Water Well  
Request for Capital Appropriation

On October 10, 1989, Mr. Lockhart, JI Ranch Manager, told me the water well for domestic use of the ranch was drying up. He had made efforts to conserve water to see if the well would recharge. The well continued to give an insufficient amount of water, so he asked about drilling a new well. Since the well is critical for two (2) families, a drilling contractor was called to drill, set a pump and pressure tank.

This well was completed on an emergency basis, but a request for capital appropriation is necessary.

WDG:mek

  
W. D. Gay

cc: W.L. Kurtz  
J.D. Sell  
C.L. Snow

# ASARCO

## REQUEST FOR CAPITAL APPROPRIATION FORM 302

N.Y. App. or Supp. No. \_\_\_\_\_  
 Plant App. No. T-15-9  
 Plant or Unit Name Tucson Office  
 Unit No. 7845  
 Date 11/17/89

Current Request  Supplemental Request   
 Scope Change

### I. DESCRIPTION OF PROPOSAL AND REASONS FOR MAKING REQUEST:

Drill 545 feet of 5½" diameter hole, install necessary casing, 1½ H.P. (10 gpm) pump, Well-X-Trol WX-350 pressure tank with necessary electrical and plumbing equipment. Reason for this well is to supply domestic water for JI Ranch when original water well supply diminished to a critical amount.

### II. ADVANTAGES TO BE DERIVED FROM ADOPTION OF THE PROPOSAL:

A continuous and adequate supply of domestic water.

### III. ESTIMATED EXPENDITURES:

#### Appropriations

	Current Request	Previous	Total
Capital Expenditures	\$ 13,000	\$	\$ 13,000
Working Capital			
Capitalized Interest			
Other Expenditures			
Total	*\$ 13,000	\$	\$ 13,000

### \*TOTAL AMOUNT REQUESTED WITH THIS APPROPRIATION

### IV. EVALUATION OF PROPOSAL

#### Nature of Current Request:

Internal Rate of Return:  
 Excluding Tax Credits \_\_\_\_\_ %  
 Including Tax Credits \_\_\_\_\_ %  
 Estimated Useful Life 20 yrs.

Start Date 11/89  
 Completion Date 11/89  
 Previously Forecasted? No  
 Available Investment Tax Credit No  
 Available Energy Tax Credit \$ No

Maintenance	\$ 13,000
Legislative	
New Project	
Automobiles	
Total	*\$ 13,000

### V. APPROVAL AND REVIEW SIGNATURES:

Recommended by W. H. Gay  
 Manager

Reviewed by \_\_\_\_\_  
 Treasurer

Reviewed by C. L. Snow  
 Acctg. Mgr. or Chief Acct.

Reviewed by \_\_\_\_\_  
 Controller

Approved by \_\_\_\_\_  
 Vice President

Charge to Accts. \_\_\_\_\_

Approved by Advisory Committee:

Approved by Board of Directors:

Date: \_\_\_\_\_

Secretary: \_\_\_\_\_

Date: \_\_\_\_\_

A	UNIT NO. 7 8 4 5	APPROP. NO.	PROJECT DESCRIPTION W A T E R   W E L L   A N D   P U M P	A
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APPROVAL DATE	EST. COMPLETION DATE 1 1 8 9	ACCTG. MONTH & YEAR	TOTAL APPROPRIATION 1 3 0 0 0	CREDIT	NATURE CODE 0 1
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NAME OF ACCOUNT	ACCT. NOS	ACCOUNT AMOUNT	CREDIT	LIFE YEAR & MONTH	I	T	C	E	T
<b>I. CAPITAL EXPENDITURES</b>									
Land Other Than Mineral	3220								
Mineral Land No. 1	3231								
Mineral Land No. 2	3232								
Mineral Land No. 3	3233								
Building & Structures	3240								
Machinery & Equipment	3245	1 3 0 0 0		2 0 0 0					
Automobiles	3280								
Other									
<b>II. WORKING CAPITAL</b>									
Cash									
Receivables									
Inventories Metals									
Inventories Supplies									
<b>III. CAPITALIZED INTEREST</b>									
	3250								
<b>IV. OTHER EXPENDITURES</b>									

<b>STATUS CODE</b> 1 = ADD 2 = COMPLETE 3 = INACTIVE 4 = INTRAJURIS TRANSFER 5 = UNIT TRANSFER	<b>CREDIT CODE</b> C = CREDIT	<b>NATURE CODE</b> 01 = MAINTENANCE 02 = LEGISLATIVE 03 = NEW PROJECTS 09 = AUTOMOBILES 90 = ENGINEERING PLANS AND PROJECTS 91 = WORKING CAPITAL: RECEIVABLES 92 = WORKING CAPITAL: INVENTORIES - SUPPLIES 93 = WORKING CAPITAL: INVENTORIES - METAL 99 = OTHER	<b>ITC/ETC CODES</b> Y = YES N = NO	<b>ACTION CODE</b> A = ADD
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# ASARCO

Southwestern Exploration Division

JDS

May 5, 1990

Walter E. Lockhart  
Manager, JI Ranch

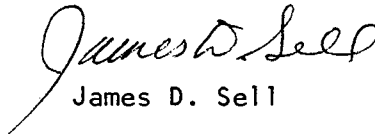
JI Ranch  
Superior East Project Area  
Pinal & Gila Cos., AZ

It has been brought to my attention that your fall roundup tabulation has not been reaching the Tucson Office until March or April.

Accounting needs the tabulation by mid-December so they can close the account by the year end.

I'm sure your computer can be programed to satisfy this request.

JDS:mek

  
James D. Sell

cc: W.L. Kurtz  
G.H. Myers  
C.L. Snow  
W.D. Gay  
D. Campbell

# ASARCO

Exploration Department  
Southwestern United States Division

March 9, 1992

Mr. Burton M. Apker  
Apker, Apker, Haggard & Kurtz, P.C.  
211 East Highland Avenue, Suite 230  
Phoenix, AZ 85016

J1 Ranch  
Water Rights

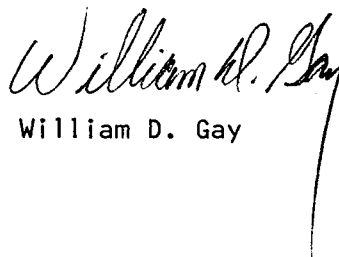
Dear Mr. Apker:

Enclosed are:

1. Water Sources Map
2. Several documents; which should be everything pertaining to water rights.

Please call if you need any more information.

Sincerely,



William D. Gay

WDG:mek  
Encs.

cc: W.L. Kurtz  
J.D. Sell



JDS

# ASARCO

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

May 21, 1992

Mr. Walter E. Lockhart  
Manager, JI Ranch  
Route 1, Box 745  
Miami, AZ 85539-9606

Asarco Resource  
Management Program

Dear Walt:

I talked with Stu on the above subject, since none of this had reached this office, and today received a copy of Stu's reply to the subject.

Stu is very positive on the program as long as it is properly run and documented. You may want to talk with Stu on the subject and outline a plan to incorporate this program into the JI Ranch activities.

Sincerely,



James D. Sell

JDS:mek  
Att.

cc: W.L. Kurtz  
W.D. Gay  
S.A. Bengson (w/o att.)

Memo To: J.R. Fricke, Senior Environmental Scientist  
ASARCO Technical Services Center - Salt Lake City

From: S.A. Bengson, Agronomist  
ASARCO Mission Complex - Sahuarita, AZ

ASARCO RESOURCE MANAGEMENT PROGRAM  
GENERAL COMMENTS  
4/20/92

The general "Resource Management Program" as outlined by Dr. Brian Sindelar & John Hansen appears to be a step in the right direction for ASARCO Inc.. It is exciting to see the company moving towards the integrated resource management that I've been advocating for so long. I congratulate you on accomplishing this initial start. As the program proves itself I would anticipate more and more of the company's properties becoming involved. Eventually all of the company's ancillary properties will be managed for their peak resource productivity.

The Sindelar program appears to have incorporated a lot of the "Holistic Resource Management Model" in its design. This, I believe, is the ecologically sound way to manage natural resources. This method of management does however, require total commitment on the part of management and all who are involved (field personnel, lessees, etc.). Without this commitment and dedication to the goals, the plan is doomed to failure.

The key to this program, as I see it, goes beyond just a maximization of natural resource utilization. It also provides the company with a method to limit its potential liability exposure, improve its public image, and enhance the quality of the lands & resources owned by the company. The plan specifies methodologies to enhance soils & restore productivity through the use of soil amendments & treatments, as well as grazing. These technologies have been proven, and when added to developing techniques such as "constructed wetlands" can greatly reduce the environmental impacts of mineral development.

The ideas of the grazing systems presented by Dr. Sindelar are merely extensions of the 3-basic grazing systems: continuous, rest rotation & short duration. Each has its own peculiar advantages and disadvantages and will require site specific selectivity. With the short duration system it must be remembered that this system depends on a very large number of livestock concentrated on a limited area for a very short period of time. While I'm not familiar with the system of "scoring" that Dr. Sindelar used to evaluate the various grazing system, I would tend to favor the short duration system as the best method to achieve the results desired (i.e. enhancing the productivity of impacted soils & sites).

In developing the site resource inventory, along with existing water sources you should also look at potential or future water sources that could be utilized or developed (i.e. solar pumps in exploration/monitoring wells or water harvest catchments). The vegetation inventory should also indicate site potential (i.e. what species composition the site may be capable of producing based on historic data or adjacent site productivity). Also vegetative inventorying should also include reseeding potential or brush management to enhance productivity. Also, along with existing fencing you should contemplate how future fencing, or modification of existing, could improve the management program. This also applies to other range improvements. In sampling the site care must be taken not to "bias" the sampling. Gathering of soil and vegetative samples has to be random. The "washed/unwashed" samples must be carefully selected and properly handled. There should be a standard procedure developed that will assure that samples are all taken in exactly the same manner.

In developing this program Asarco can utilize its own livestock. This will ensure that quality stock is used, and the company can maintain complete control over the livestock. This will also reduce some of the costs of this program. Monitoring of the stock's performance, changes in vegetation, soils, etc. is extremely critical. The monitoring must be continual, and there must be sufficient baseline study to substantiate any findings. Along with the suggested information to be recorded in this sampling & monitoring I would suggest adding the date of sampling and the name of the individual who is responsible for the field sampling.

I would like to assist you in any way that I can in this endeavor. I firmly believe that ASARCO Inc. has a tremendous wealth of natural resources beyond its mineral resource holdings. Most of these resources are grossly underestimated and under utilized. A comprehensive integrated natural resource management plan has long been needed to enhance the company's natural resource revenues and public image, as well as helping to reduce potential liabilities. Please let me know if there is anything I can do to be of assistance.

ASARCO RESOURCE MANAGEMENT PLAN  
E. HELENA GRAZING PROGRAM  
COMMENTS 4/20/92

Without knowing any of the details of this program, the soils, well data, etc.; it is difficult to make any informed judgements. It does appear that the projected management plan is on the right track. I would have added one more "goal" to those set forth - "to restore the productivity of the lands impacted by heavy metal accumulation in the soil". This can be quite easily achieved within the existing management plan.

Improvement of the soils & productivity of the land can be accomplished with the proposed "short duration-high intensity grazing option". The only changes I would suggest would be to rearrange the pasture utilizing existing fences, develop adequate water in the pastures, use salt & supplemental feeding to increase animal dispersal & impact, and fence off the "riparian" areas. I would increase the "irrigated alfalfa" to provide some of the supplemental feed. This can be accomplished with some tillage & soil amendments (lime, fertilizer, etc.). I would like to see the results of your October, 1991 test plots. From the data I've collected on the "Weston Plots" I would say that you will need lime & tillage with seeding of the "Greenleaf" pubescent wheatgrass, "Secor" bluebunch & "Sodar" streambank wheatgrasses. Using the animal impact for surface tillage, adding lime & fertilizer, and seeding should bring these fields back to full productivity in a few short years. It may require some supplemental feeding in pastures and moving the water around to get the degree of impact needed. I've attached a rough sketch of how I would envision the pastures to be laid out. This may require some adjustment & fine tuning as dictated by specific field conditions that I don't know about at this time.

It is critical that management involves the lessee with this plan. As indicated by your report, if he doesn't understand what it is you're trying to accomplish, his best intentions can completely dismantle your best efforts (as in the case of moving the herd off without notice - I presume that is why you have no bodily fluid data after grazing?). It is also essential to have management and the field technicians 100% COMMITTED to this program. It doesn't take much money invested in the program, but does require commitment on everyone's part for the program to succeed. Without the commitment there will be no real interest to see the program succeed and it will in all likelihood fail.

The idea of irrigated pastures is fine, if an adequate irrigation system is feasible. Well data is critical. What quantity of water do the wells supply? What is the quality of the water? What is the water pressure at the well head? With this information you can design the proper irrigation system. Irrigation

will mean that the goals of improving the productivity of the land are achieved in a much faster time period and that the ultimate productivity of the land will be greatly increased.

The idea of separating the pastures into "cells" is good in that it will help to achieve the level of animal impact as desired. I would change your proposed design somewhat though (as mentioned above). Moving the water (where animal impact will be at its greatest) and the supplemental salt/feed locations will help to maximize the effects. Areas disturbed can be seeded with the selected species for faster plant response. Feeding of "native prairie hay" will also expedite plant response (the hay would contain some seed of desirable plant species). Also fencing off the "riparian" will be a good idea for now. Trying to rebuild the productivity of the "riparian" will be very good public relations. "Riparian" is a "hot issue" with conservationists these days. Once the "riparian" is restored these areas should be periodically and properly grazed to be used as a showcase example of good range management.



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

JDS

Reply to: 2810 Mining Claims  
Margaret, et al  
Date: January 28, 1983

Mr. James R. Stringham  
Property Manager  
ASARCO, Inc.  
P. O. Box 5747  
Tucson, Arizona 85703

Dear Mr. Stringham:

We have reviewed your 1/25/83, proposal for an additional drill site on the Margaret #247 LMC.

The proposed operation will not create a significant surface disturbance. Your plan is approved subject to the same stipulations of the original operating plan.

We appreciate your cooperation.

Sincerely,

LARRY P. WIDNER  
District Ranger

ASARCO Incorporated

FEB 3 1983

BW Exploration

# ASARCO

Exploration Department  
Southwestern United States Division

January 25, 1983

Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District  
Re: Operating Plan

Dear Mr. Widner:

As a supplement to an Operating Plan approved March 28, 1980, we request approval of an additional drill site adjacent to an existing road located in Sec. 23, T. 1 S., R. 13 E. See the attached map.

The site location has been flagged by our field technician.

Mr. James Sell has arranged to meet Mr. Rod Meyer <sup>Byers</sup> in Globe on Thursday, January 27, to inspect the site.

Sincerely yours,

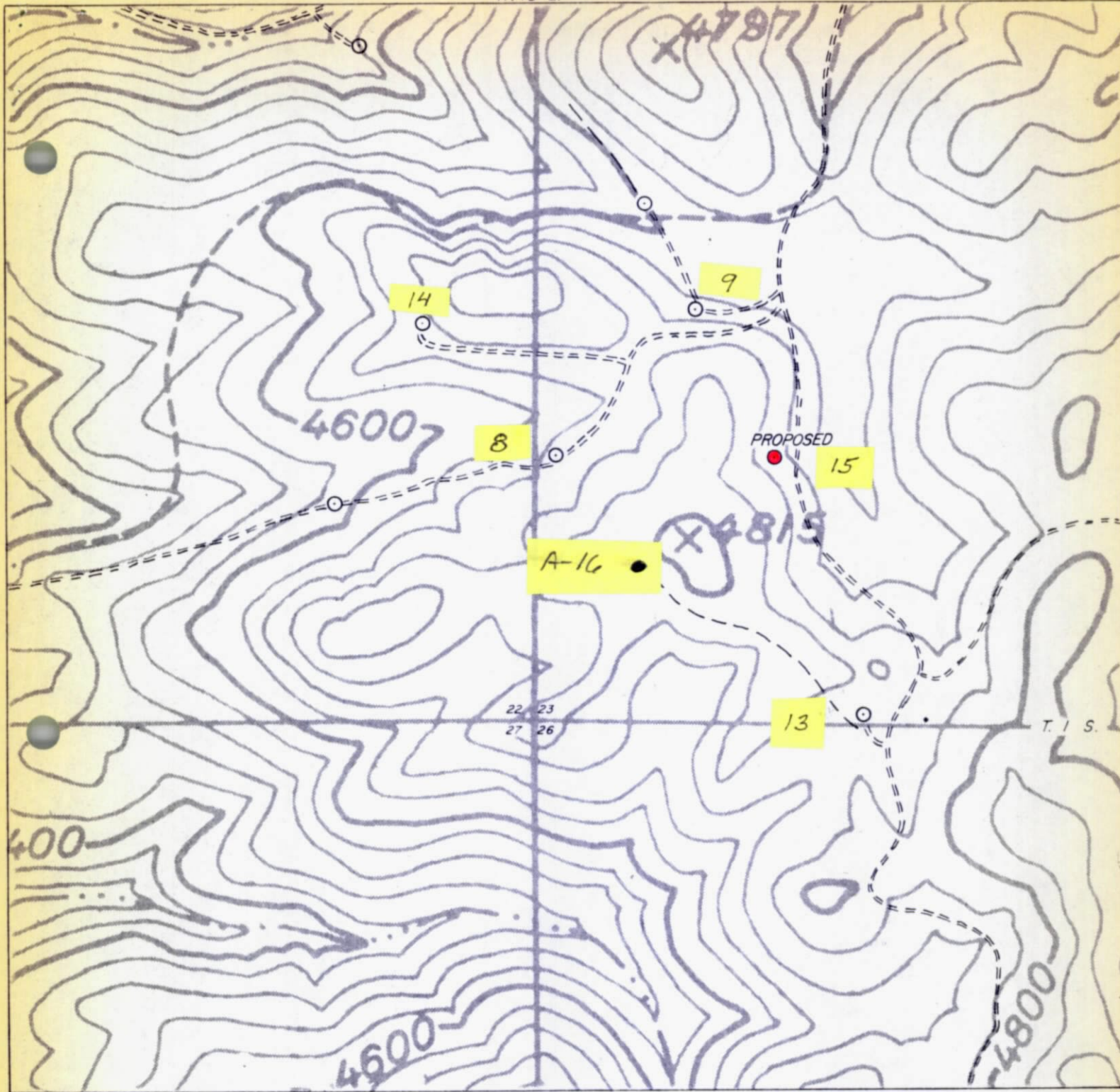
  
James R. Stringham  
Property Manager

JRS:mek  
Att.




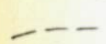

cc: J. D. Sell





BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

-  Existing Roads
-  Approved Rights-of-way
-  Proposed Drill Site



PLAN OF ASARCO DRILL HOLES

U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA

SCALE : 1" = 500'

J.D.Sell

Jan, 1983



OPERATING PLAN  
 AMENDMENT NO. 14  
 Tonto National Forest

Page 1 of 6  
 2810

Date Rec'd \_\_\_\_\_

Globe	Ranger District
Pinal	County
Pioneer	Mining District

This Operating Plan is submitted pursuant to 36 CFR 252 by the below-listed operator, for review and approval by the authorized officer of the Tonto National Forest.

A. OPERATOR

Name of Operator ASARCO Incorporated 602-792-3010  
 Telephone No.

Address of Operator P. O. Box 5747  
Tucson, AZ 85703

Name of Field Representative \_\_\_\_\_  
 (if other than Operator)

Address and phone of Field Representative \_\_\_\_\_

B. CLAIM IDENTIFICATION

The name(s) of the claim(s) on which the operation will be conducted are:

Name & Type of Claim (x) Lode ( ) Tunnel Site ( ) Placer ( ) Millsite	Location (Township, Range Section)	Location Date	Recorded	
			Book or Docket	Page
Margaret No. 247	T1S, R13E Sec. 23	1/31/69	D 559 (AMC# 45931)	896
Margaret No. 249	Sec. 23	2/15/69	D 561 (AMC# 45933)	578

C. CLAIM OWNER

The owner(s) of the above claim(s) are as follows:

<u>ASARCO Incorporated</u>	<u>P. O. Box 5747, Tucson, AZ 85703</u>	<u>(602)792-3010</u>
<u>Continental Materials</u>	_____	_____
_____	_____	_____
(Name)	(Address)	(Phone)

The above owner has authorized this operation through (check one):  lease,  contract,  direct employment,  Other (explain)

D. MAPS

Attached as Exhibit A to this Operating Plan is a map of all claims listed under item B. (a 2" = 1 mile quad map or a U.S.G.S. topographic map). An optional attachment is a sketch map showing the claim grouping, and details of the operation.

E. ACCESS

The proposed route of access is: by a short off-ramp to site from  
 \_\_\_\_\_  
 (describe access from point of  
existing road in area.  
 \_\_\_\_\_  
 entry into National Forest, using road numbers when available)

which consists of existing roads shown as solid lines and proposed roads shown as dashed lines in Exhibit A. (Note: Construction, reconstruction, or restoration of a road is a means of access to mining claims will be authorized separately by a special use permit.)

F. VEHICLES AND EQUIPMENT

The following vehicles and equipment listed by type and size, will be used in connection with this operation:

Type & Size of Vehicle	License or Serial No.	Location
D-8 Cat w/dozer & ripper H-60E front-end loader 600 cfm air compressor L-900, 12 yd. dump truck 580-BRC backhoe	A-43332	Paul Bryant Construction 843 Spray St. Superior, AZ 85273
(See previous Amendment No. 13 for additional details)		

G. TYPE OF OPERATION

Describe the type and magnitude of the operation to be performed. Detailed information is required for any earth moving and site clearance operations. A separate surface disturbance map will be submitted as Exhibit B if such operations are extensive. Tie all operations to claim maps.

Ripping and moving loose material, with minor drilling and blasting, to create a drill pad site along side of present roadway. Work to be performed as under previous amendments and supplements.

H. ENVIRONMENTAL PROTECTION MEASURES

Describe actions taken to minimize adverse environmental impacts. State plans for reclamation of disturbed areas and for erosion control, including provisions for filling excavations, grading of soil banks, blocking of access roads, reseeding, etc.

All specifications and conditions of the Amendment are the same as those shown in the original permit, environmental analyses report, and letter of understanding.

I. PERIOD OF OPERATION

This operation will begin on or near date of approval (a date not prior to date of approval. This operation will be completed on or within 180 days. (a date not to exceed 12 months from approval date). If operations are proposed to exceed one year, an addendum to this plan should be filed. A substantially changed operation will be covered by a new Operating Plan.


J. ANTIQUITIES

The operator agrees to notify the authorizing officer of any discovery of cultural or natural history resources within the area covered by the plan. This authorization to proceed does not constitute permission so as to relieve the operator from criminal prosecution under the Antiquities Act (P.L. 59-209).

K. ENCLOSURES (list as appropriate)

1. Exhibit A - map
2. (Note: Maps showing claims & BLM plats have been previously submitted.)

Submitted by:



Signature  
J. R. Stringham  
January 25, 1983  
Date

APPROVAL

1. Approval of this Operating Plan:
  - (a) Does not constitute recognition or certification of ownership by any person named as owner herein.
  - (b) Does not constitute now or in the future recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.
2. When another party asserts a title interest in the area covered by this plan, it will be the sole responsibility of the concerned parties to resolve such conflict before proceeding with claim development.
3. A bond ( ) is, ( ) is not required. This bond in the amount of \_\_\_\_\_ in the form of cash or surety is required to assure reclamation of the disturbed area.
4. Other stipulations (explain or attach).

Proposal Evaluated by:

\_\_\_\_\_  
Signature of Forest Service  
Evaluator

\_\_\_\_\_  
Date

Approved by:

\_\_\_\_\_  
Signature of Authorized  
Officer

\_\_\_\_\_  
Date

ACCEPTANCE OF STIPULATIONS

The stipulations and/or modifications to this plan attached hereto have been reviewed, and will be incorporated into and become a part of this Operating Plan.

\_\_\_\_\_  
Signature of Operator

\_\_\_\_\_  
Date

OPERATING PLAN

Tonto National Forest

Date Rec'd \_\_\_\_\_

\_\_\_\_\_ Ranger District  
\_\_\_\_\_ County  
\_\_\_\_\_ Mining District

This Operating Plan is submitted pursuant to 36 CFR 252 by the below-listed operator, for review and approval by the authorized officer of the Tonto National Forest.

A. OPERATOR

Name of Operator \_\_\_\_\_ Telephone No. \_\_\_\_\_

Address of Operator \_\_\_\_\_

Name of Field Representative \_\_\_\_\_  
(if other than Operator)

Address and phone of Field Representative \_\_\_\_\_

B. CLAIM IDENTIFICATION

The name(s) of the claim(s) on which the operation will be conducted are:

Name & Type of Claim ( ) Lode ( ) Tunnel Site ( ) Placer ( ) Millsite	Location (Township, Range Section)	Location Date	Recorded	
			Book or Docket	Page

C. CLAIM OWNER

The owner(s) of the above claim(s) are as follows:

(Name)	(Address)	(Phone)

The above owner has authorized this operation through (check one):  lease,  contract,  direct employment,  Other (explain)

D. MAPS

Attached as Exhibit A to this Operating Plan is a map of all claims listed under item B. (a 2" = 1 mile quad map or a U.S.G.S. topographic map). An optional attachment is a sketch map showing the claim grouping, and details of the operation.

E. ACCESS

The proposed route of access is: \_\_\_\_\_  
 (describe access from point of \_\_\_\_\_  
 entry into National Forest, using road numbers when available)

which consists of existing roads shown as solid lines and proposed roads shown as dashed lines in Exhibit A. (Note: Construction, reconstruction, or restoration of a road is a means of access to mining claims will be authorized separately by a special use permit.)

F. VEHICLES AND EQUIPMENT

The following vehicles and equipment listed by type and size, will be used in connection with this operation:

Type & Size of Vehicle	License or Serial No.	Location

G. TYPE OF OPERATION

Describe the type and magnitude of the operation to be performed. Detailed information is required for any earth moving and site clearance operations. A separate surface disturbance map will be submitted as Exhibit B if such operations are extensive. Tie all operations to claim maps.



H. ENVIRONMENTAL PROTECTION MEASURES

Describe actions taken to minimize adverse environmental impacts. State plans for reclamation of disturbed areas and for erosion control, including provisions for filling excavations, grading of soil banks, blocking of access roads, reseeding, etc.

I. PERIOD OF OPERATION

This operation will begin on \_\_\_\_\_ (a date not prior to date of approval. This operation will be completed on \_\_\_\_\_ (a date not to exceed 12 months from approval date). If operations are proposed to exceed one year, an addendum to this plan should be filed. A substantially changed operation will be covered by a new Operating Plan.

J. ANTIQUITIES

The operator agrees to notify the authorizing officer of any discovery of cultural or natural history resources within the area covered by the plan. This authorization to proceed does not constitute permission so as to relieve the operator from criminal prosecution under the Antiquities Act (P.L. 59-209).

K. ENCLOSURES (list as appropriate)

1. Exhibit A - map
- 2.

Submitted by:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

APPROVAL

1. Approval of this Operating Plan:
  - (a) Does not constitute recognition or certification of ownership by any person named as owner herein.
  - (b) Does not constitute now or in the future recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.
2. When another party asserts a title interest in the area covered by this plan, it will be the sole responsibility of the concerned parties to resolve such conflict before proceeding with claim development.
3. A bond ( ) is, ( ) is not required. This bond in the amount of \_\_\_\_\_ in the form of cash or surety is required to assure reclamation of the disturbed area.
4. Other stipulations (explain or attach).

Proposal Evaluated by: \_\_\_\_\_  
 Signature of Forest Service Evaluator \_\_\_\_\_ Date \_\_\_\_\_

Approved by: \_\_\_\_\_  
 Signature of Authorized Officer \_\_\_\_\_ Date \_\_\_\_\_

ACCEPTANCE OF STIPULATIONS

The stipulations and/or modifications to this plan attached hereto have been reviewed, and will be incorporated into and become a part of this Operating Plan.

\_\_\_\_\_  
 Signature of Operator \_\_\_\_\_ Date \_\_\_\_\_

OPERATING PLAN

Page 1 of 2810

Tonto National Forest

Date Rec'd \_\_\_\_\_

\_\_\_\_\_ Ranger District  
 \_\_\_\_\_ County  
 \_\_\_\_\_ Mining District

This Operating Plan is submitted pursuant to 36 CFR 252 by the below-listed operator, for review and approval by the authorized officer of the Tonto National Forest.

A. OPERATOR

Name of Operator \_\_\_\_\_ Telephone No. \_\_\_\_\_

Address of Operator \_\_\_\_\_

Name of Field Representative \_\_\_\_\_  
(if other than Operator)

Address and phone of Field Representative \_\_\_\_\_

B. CLAIM IDENTIFICATION

The name(s) of the claim(s) on which the operation will be conducted are:

Name & Type of Claim ( ) Lode ( ) Tunnel Site ( ) Placer ( ) Millsite	Location (Township, Range Section)	Location Date	Recorded	
			Book or Docket	Page

C. CLAIM OWNER

The owner(s) of the above claim(s) are as follows:

_____	_____	_____
_____	_____	_____
_____	_____	_____
(Name)	(Address)	(Phone)

The above owner has authorized this operation through (check one): ( ) lease, ( ) contract, ( ) direct employment, ( ) Other (explain)

D. MAPS

Attached as Exhibit A to this Operating Plan is a map of all claims listed under item B. (a 2" = 1 mile quad map or a U.S.G.S. topographic map). An optional attachment is a sketch map showing the claim grouping, and details of the operation.

E. ACCESS

The proposed route of access is: \_\_\_\_\_  
(describe access from point of entry into National Forest, using road numbers when available)

which consists of existing roads shown as solid lines and proposed roads shown as dashed lines in Exhibit A. (Note: Construction, reconstruction, or restoration of a road is a means of access to mining claims will be authorized separately by a special use permit.)

F. VEHICLES AND EQUIPMENT

The following vehicles and equipment listed by type and size, will be used in connection with this operation:

Type & Size of Vehicle	License or Serial No.	Location

G. TYPE OF OPERATION

Describe the type and magnitude of the operation to be performed. Detailed information is required for any earth moving and site clearance operations. A separate surface disturbance map will be submitted as Exhibit B if such operations are extensive. Tie all operations to claim maps.

H. ENVIRONMENTAL PROTECTION MEASURES

Describe actions taken to minimize adverse environmental impacts. State plans for reclamation of disturbed areas and for erosion control, including provisions for filling excavations, grading of soil banks, blocking of access roads, reseeding, etc.

I. PERIOD OF OPERATION

This operation will begin on \_\_\_\_\_ (a date not prior to date of approval. This operation will be completed on \_\_\_\_\_ (a date not to exceed 12 months from approval date). If operations are proposed to exceed one year, an addendum to this plan should be filed. A substantially changed operation will be covered by a new Operating Plan.

J. ANTIQUITIES

The operator agrees to notify the authorizing officer of any discovery of cultural or natural history resources within the area covered by the plan. This authorization to proceed does not constitute permission so as to relieve the operator from criminal prosecution under the Antiquities Act (P.L. 59-209).

K. ENCLOSURES (list as appropriate)

1. Exhibit A - map
- 2.

Submitted by:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

APPROVAL

1. Approval of this Operating Plan:
  - (a) Does not constitute recognition or certification of ownership by any person named as owner herein.
  - (b) Does not constitute now or in the future recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.
2. When another party asserts a title interest in the area covered by this plan, it will be the sole responsibility of the concerned parties to resolve such conflict before proceeding with claim development.
3. A bond ( ) is, ( ) is not required. This bond in the amount of \_\_\_\_\_ in the form of cash or surety is required to assure reclamation of the disturbed area.
4. Other stipulations (explain or attach).

Proposal Evaluated by:

\_\_\_\_\_  
Signature of Forest Service  
Evaluator

\_\_\_\_\_  
Date

Approved by:

\_\_\_\_\_  
Signature of Authorized  
Officer

\_\_\_\_\_  
Date

ACCEPTANCE OF STIPULATIONS

The stipulations and/or modifications to this plan attached hereto have been reviewed, and will be incorporated into and become a part of this Operating Plan.

\_\_\_\_\_  
Signature of Operator

\_\_\_\_\_  
Date

*JDS + copy for file*



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

Reply to: 2810 Mining Claims  
Margaret, et al  
Date: February 15, 1984

*J. R. S.*

FEB 17 1984

American Smelting & Refining Co.  
ATTN: Mr. James R. Stringham  
P. O. Box 5747  
Tucson, AZ 85703

Dear Mr. Stringham:

We have reviewed your February 9, 1984, proposal to redrill the 1983 drill hole on the Superior East project.

The proposed operation will not create a significant surface disturbance. Your plan is approved subject to the same stipulations as the original operating plan.

Sincerely,

LARRY P. WIDNER  
District Ranger

ASARCO Incorporated

FEB 17 1984

SW Exploration





# ASARCO

Exploration Department  
Southwestern United States Division

February 9, 1984

Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

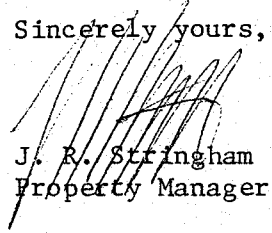
Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

We request approval to reenter the drill hole in Sec. 23, T1S, R13E which was approved, drilled and cased in early 1983. The estimated time of reentry is March 1984. A copy of my letter of January 25, 1983 requesting approval for 1983 drill site and your letter of approval, dated January 28, 1983, are attached, along with a map of the drill site.

If you need any further information, please don't hesitate to call me.

Sincerely yours,



J. R. Stringham  
Property Manager

JRS:mek  
Att.

cc: J. D. Sell

*Superior East*



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

**FEB - 7 1983**  
**J. R. S.**

Reply to: 2810 Mining Claims  
Margaret, et al  
Date: January 28, 1983

Mr. James R. Stringham  
Property Manager  
ASARCO, Inc.  
P. O. Box 5747  
Tucson, Arizona 85703

Dear Mr. Stringham:

We have reviewed your 1/25/83, proposal for an additional drill site on the Margaret #247 LMC.

The proposed operation will not create a significant surface disturbance. Your plan is approved subject to the same stipulations of the original operating plan.

We appreciate your cooperation.

Sincerely,

LARRY P. WIDNER  
District Ranger

cc: J. D. Sell (2/3/83)

ASARCO Incorporated

FEB 3 1983

SW Exploration



# ASARCO

Exploration Department  
Southwestern United States Division

January 25, 1983

Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District  
Re: Operating Plan

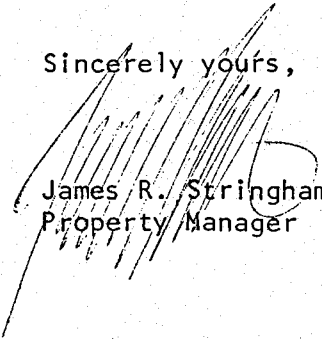
Dear Mr. Widner:

As a supplement to an Operating Plan approved March 28, 1980, we request approval of an additional drill site adjacent to an existing road located in Sec. 23, T. 1 S., R. 13 E. See the attached map.

The site location has been flagged by our field technician.

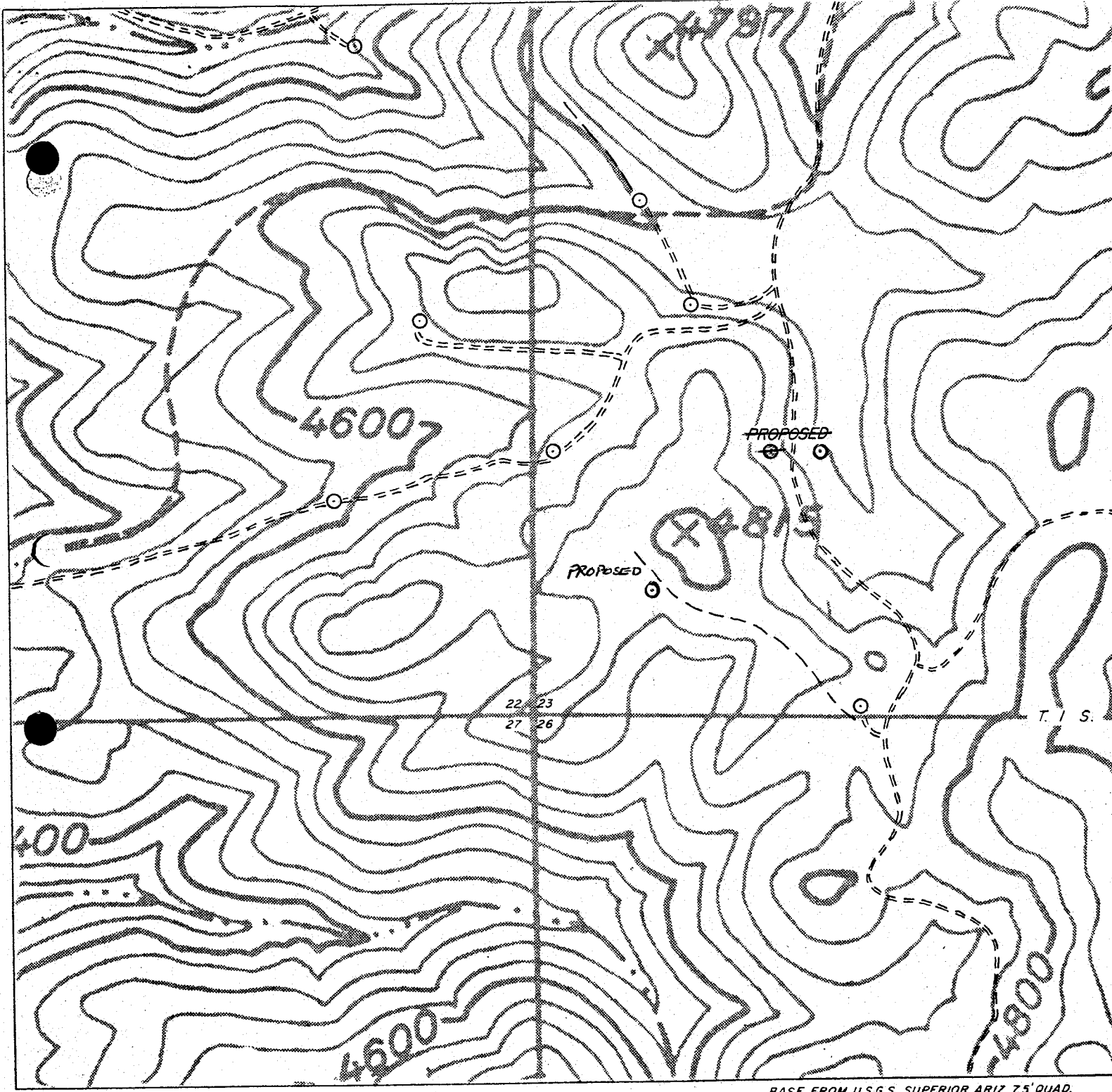
Mr. James Sell has arranged to meet Mr. Rod Meyer in Globe on Thursday, January 27, to inspect the site.

Sincerely yours,

  
James R. Stringham  
Property Manager

JRS:mek  
Att.

cc: J. D. Sell



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

- Existing Roads
- Approved Rights-of-way
- Proposed Drill Site



PLAN OF ASARCO DRILL HOLES  
U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA

SCALE : 1" = 500' Feb  
Jan, 1983

J.D. Sell

# ASARCO

Exploration Department  
Southwestern United States Division

February 10, 1984

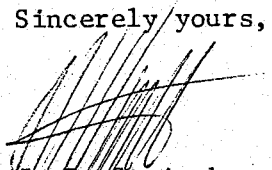
Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

Attached is a copy of the map that should have been attached to my letter of February 9 requesting approval to reenter the drill hole in Sec. 23, T1S, R13E. Last year's map of the proposed site was inadvertently attached.

Sincerely yours,

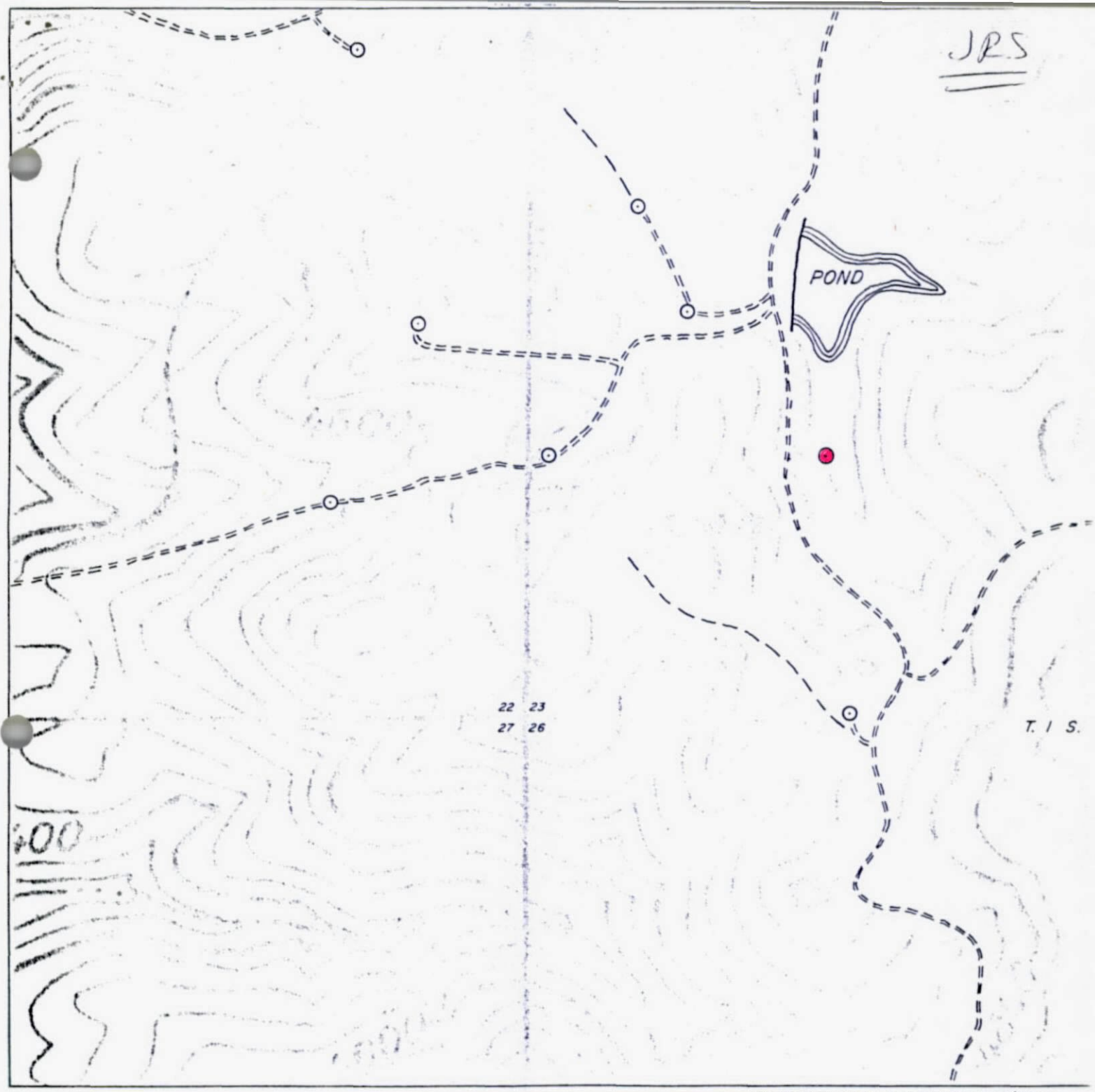


J. R. Stringham  
Property Manager

JRS:mek  
Att.

cc: J. D. Sell

JRS



BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

-  Existing Roads
-  Approved Rights-of-way
-  Proposed Drill Site



PLAN OF ASARCO DRILL HOLES

U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA

SCALE : 1" = 500'

J.D.Sell

Jan, 1983

MMK-SAC

JDS



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

*Return to*

Reply to: 2810 Mining Claims  
Margaret, et al  
Date: February 29, 1984

*J. R. S.*

MAR - 5 1984

American Smelting & Refining Co.  
ATTN: Mr. James R. Stringham  
P. O. Box 5747  
Tucson, AZ 85703

Dear Mr. Stringham:

Thank you for sending the revised map showing the drilling location you intend to use. Your operations are approved.

Sincerely,

*Larry Widner*

LARRY P. WIDNER  
District Ranger

Xc: JDS

RECEIVED

MAR - 5 1984

EXPLORATION DEPARTMENT



# ASARCO

Southwestern Exploration Division

JDS

February 11, 1985

To: J. R. Stringham

From: J. D. Sell

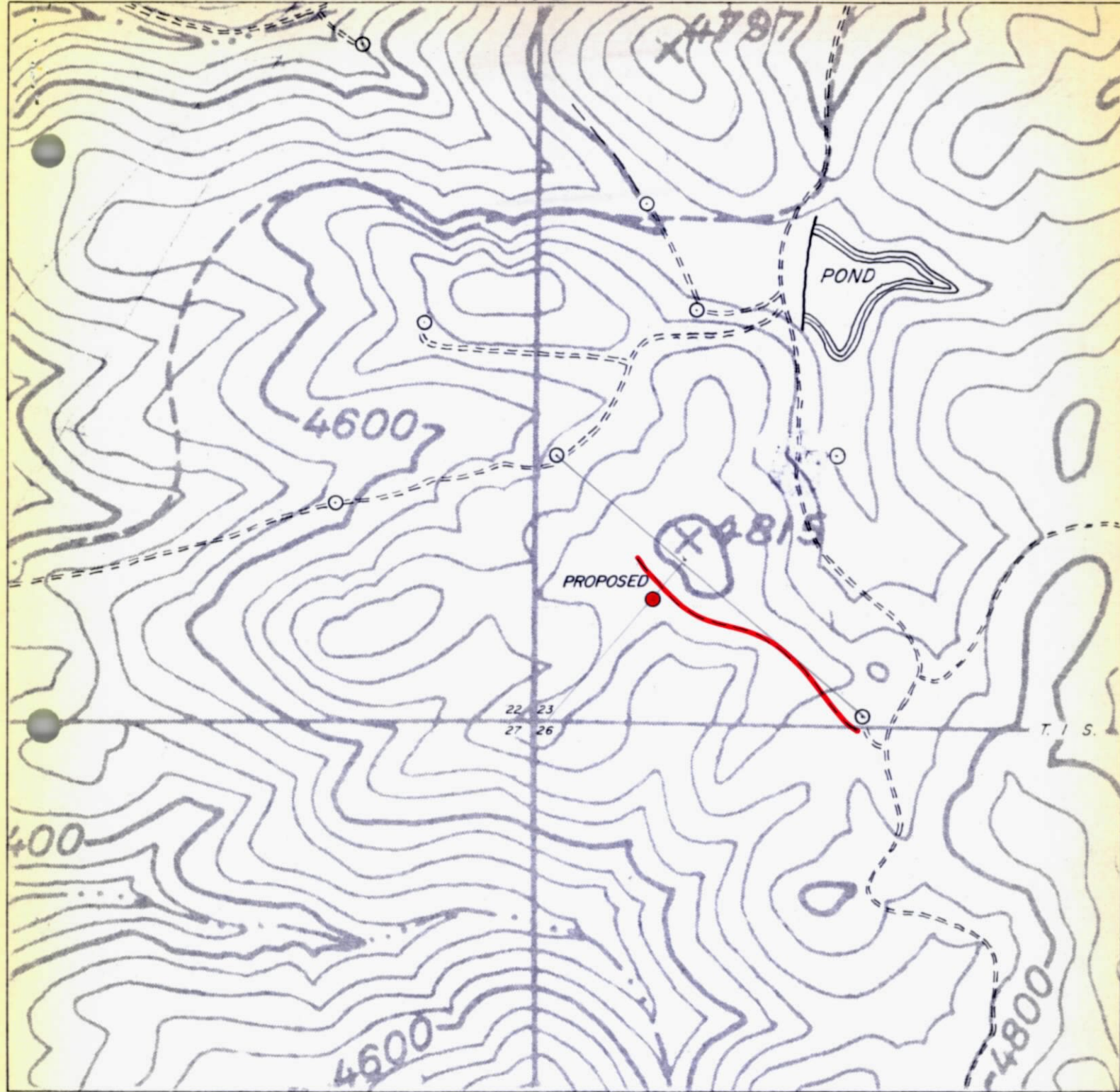
Superior East Project  
Pinal County, AZ

Please send a letter to the Globe Ranger District to confirm that Asarco requests approval to start construction of the road and a drill site in the SW<sup>1/4</sup>, <sup>Sec 13</sup>T1S, R13E, as previously approved under our Operating Plan of March 28, 1980. Map 5566 attached.

5446

*James D. Sell*





BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

-  Existing Roads
-  Approved Rights-of-way
-  Proposed Drill Site



TO ACCOMPANY	<i>MEMO</i>
TO	<i>JRS</i>
DATED	<i>2-11-85</i>
BY	<i>JDS</i>

PLAN OF ASARCO DRILL HOLES  
 U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA  
 SCALE : 1" = 500'

J.D. Sell

Jan, 1983

# ASARCO

Exploration Department  
Southwestern United States Division

February 12, 1985

Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

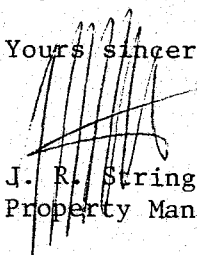
We request approval to build about 1000 feet of access road to a drill site and to start an exploration diamond drill hole on the site reached. The road construction was approved in Amendment 10, dated March 28, 1980, to our Basic Operating Plan.

We attach a copy of a current map showing the proposed road and drill hole in red. Both are located in the SW $\frac{1}{4}$ , Sec. 23, T1S, R13E, G&SRBM. We also attach a copy of the 1980 Amendment.

We expect to use the same construction contractor as we have in the past if he is available. We will fit the road to the topography to cause as little disturbance as possible.

Mr. Sell or I could accompany you if you want to review the plans with us on the site. Please let me know if you need any further information.

Yours sincerely,

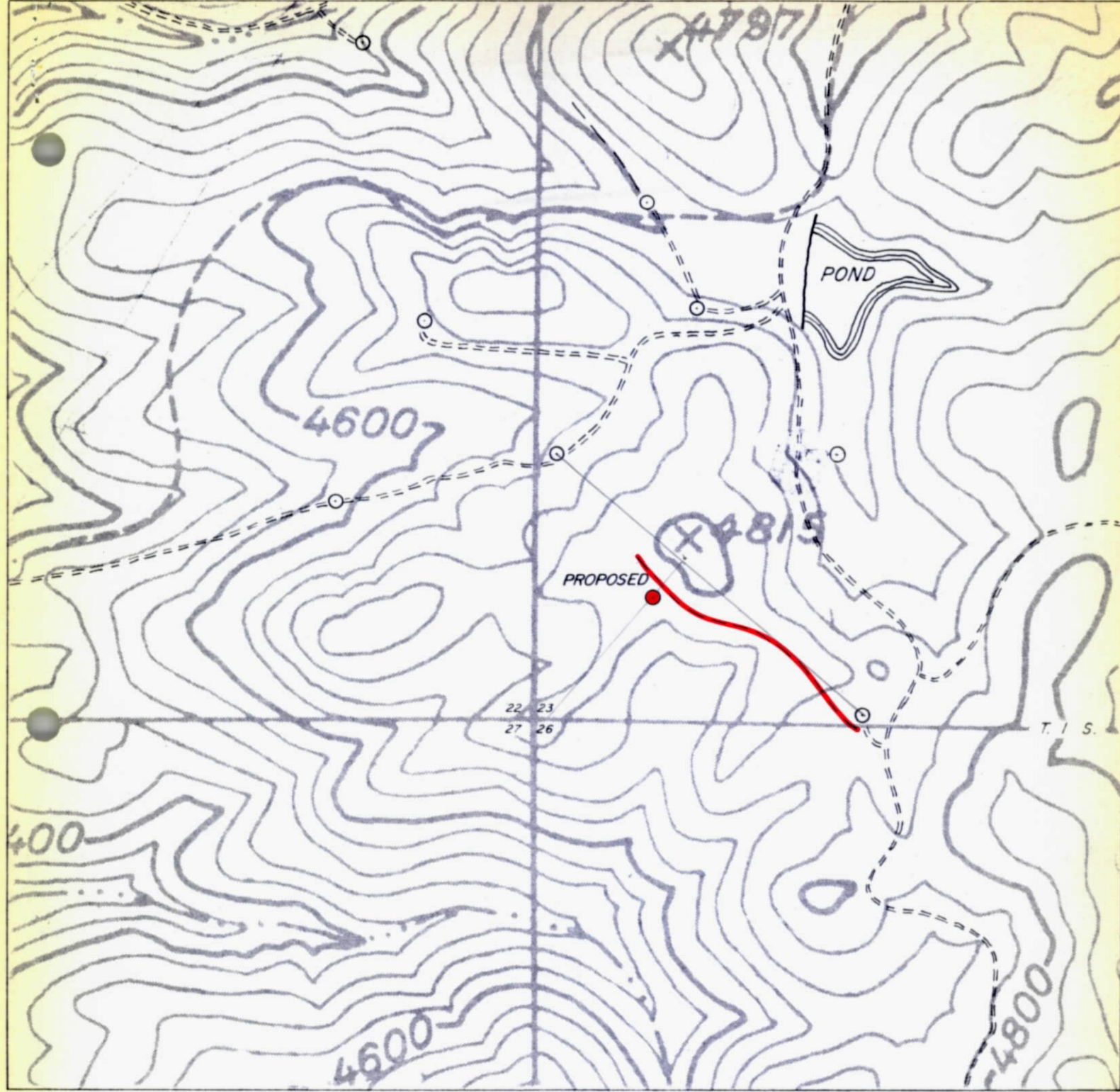


J. R. Stringham  
Property Manager

JRS:mek  
att.

cc: J. D. Sell





BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

-  Existing Roads
-  Approved Rights-of-way
-  Proposed Drill Site



TO ACCOMPANY	<i>MEMO</i>
TO	<i>JRS</i>
DATED	<i>2-11-85</i>
BY	<i>JDS</i>

PLAN OF ASARCO DRILL HOLES  
 U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA

SCALE : 1" = 500'

J.D. Sell

Jan, 1983

# ASARCO

Exploration Department  
Southwestern United States Division

February 12, 1985

Mr. Larry Widner  
Globe District Ranger  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

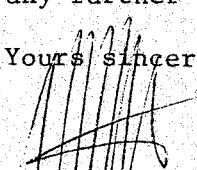
We request approval to build about 1000 feet of access road to a drill site and to start an exploration diamond drill hole on the site reached. The road construction was approved in Amendment 10, dated March 28, 1980, to our Basic Operating Plan.

We attach a copy of a current map showing the proposed road and drill hole in red. Both are located in the SW $\frac{1}{4}$ , Sec. 23, T1S, R13E, G&SRBM. We also attach a copy of the 1980 Amendment.

We expect to use the same construction contractor as we have in the past if he is available. We will fit the road to the topography to cause as little disturbance as possible.

Mr. Sell or I could accompany you if you want to review the plans with us on the site. Please let me know if you need any further information.

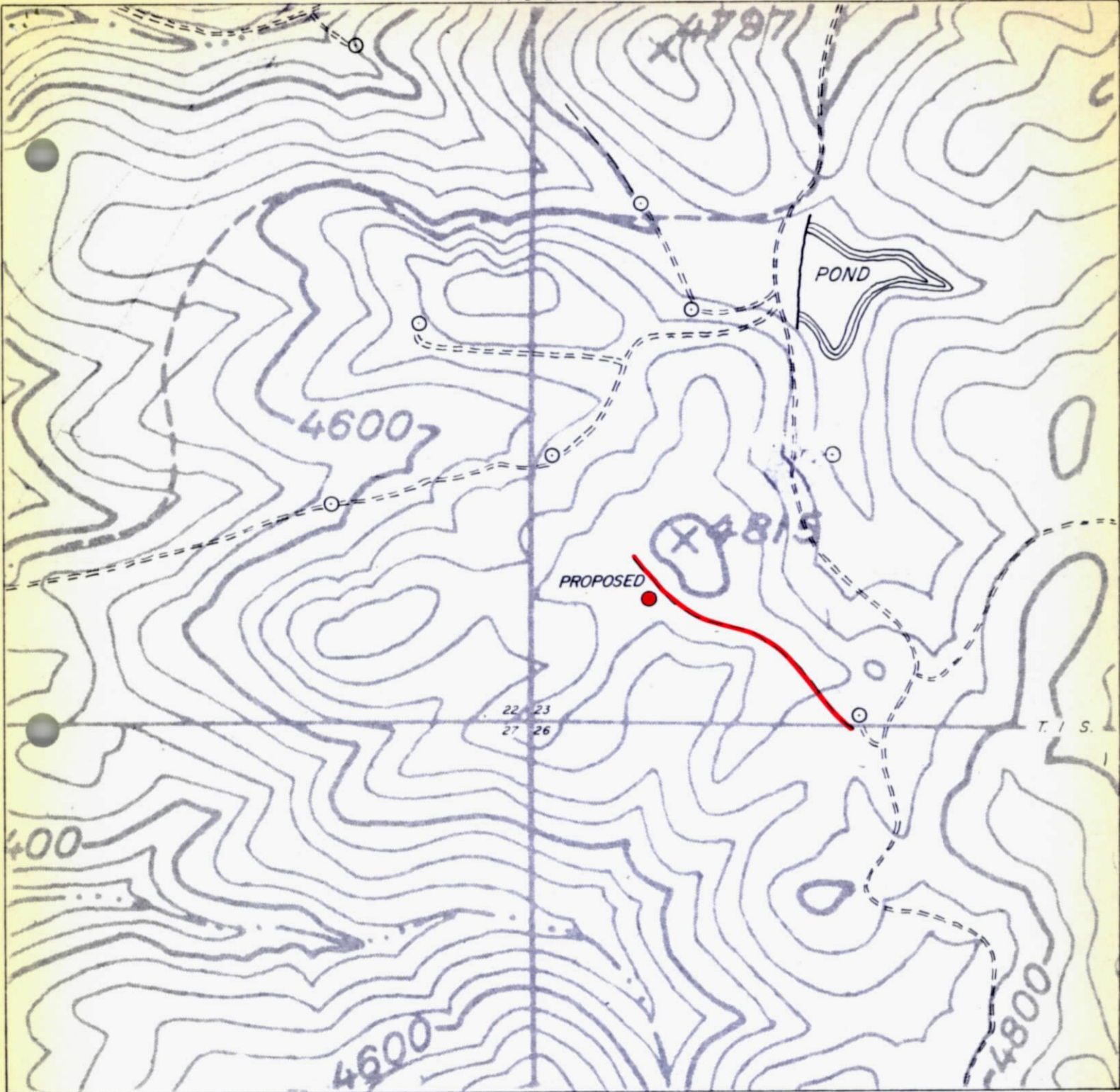
Yours sincerely,

  
J. R. Stringham  
Property Manager

JRS:mek  
att.

cc: J. D. Sell





BASE FROM U.S.G.S. SUPERIOR ARIZ. 7.5' QUAD.

EXPLANATION

-  Existing Roads
-  Approved Rights-of-way
-  Proposed Drill Site



TO ACCOMPANY	<i>memo</i>
TO	<i>JRS</i>
DATED	<i>2-11-85</i>
BY	<i>JAS</i>

PLAN OF ASARCO DRILL HOLES  
 U.S. FOREST SERVICE

PINAL COUNTY, ARIZONA  
 SCALE : 1" = 500'

J.D. Sell

Jan, 1983



*JDS*      *WLK* →      *SE FILE*

# United States Department of the Interior

IN REPLY REFER TO:  
3000 (028)

## BUREAU OF LAND MANAGEMENT

Phoenix District Office  
2015 West Deer Valley Road  
Phoenix, Arizona 85027

*JDS*

September 6, 1985

Mr. James D. Sell  
Asarco Incorporated  
P. O. Box 5747  
Tucson, Arizona 85703

Dear Mr. Sell:

Thought you might like to see the memorandum regarding Oak Flat Picnic and Campground. Thank you for the information.

Sincerely,

Paul J. Buff  
Assistant District Manager  
Mineral Resources

Enclosure

ASARCO Incorporated

SEP 9 1985

SW Exploration

August 29, 1985

Memorandum

To: State Director (920)  
From: Assistant District Manager, Mineral Resources  
Subject: ACMP No. 24-10 - Oak Flat Picnic and Campground, Forest Service  
Withdrawal, PLO 1229, ARO5427

I have reviewed the information which the nominator, Asarco Inc., has provided. I feel this new information warrants this area being identified as an ACMP. The legal description is as follows:

T. 1 S., R. 13 E., G&SRM  
Sec. 28, S $\frac{1}{2}$ S $\frac{1}{2}$   
Sec. 29, SE $\frac{1}{4}$ SE $\frac{1}{4}$   
Sec. 32, E $\frac{1}{2}$ NE $\frac{1}{4}$   
Sec. 33, N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$

A copy of this letter should be put into this specific withdrawal file. The withdrawal file ARO5427 was transmitted to the Director BLM on July 26, 1971.

As a further note, mineralization occurs at a depth that would not require surface occupancy other than for staking the mining claims and a few possible exploration drill holes.

cc: Forest Supervisor  
Tonto National Forest, w/encl.

PJB:baf:08/29/85  
WP 288M

# ASARCO

Southwestern Exploration Division

June 11, 1986

Walt Lockhart  
JI Ranch

JI RANCH  
Lease No. 05-1411

Would you please fill in the attached forms as requested by Linda Olson of the Arizona State Land Department in her letter of June 6, 1986. Also send a copy of the completed reports to me for our records.

I've enclosed a copy of the Allowed Application to Place Improvements, dated August 18, 1983, for your reference.

*W. D. Gay*  
W. D. Gay

WDG:mek  
Atts.

cc: J. D. Sell





BRUCE BABBITT  
GOVERNOR

Arizona  
State Land Department

1624 WEST ADAMS  
PHOENIX, ARIZONA 85007



OFFICE OF  
STATE LAND COMMISSIONER

June 6, 1986

Asarco, Inc.  
P.O. Box 5747  
Tucson, AZ 85703

RE: Improvements-Stock Tanks

Dear Lessee \_\_\_\_\_ :

On August 12, 1983, you were granted a permit(s) to place improvements on grazing lease 05-1411. A completion report(s) of the improvement(s) was due on 10-31-83. To date, the State Land Department has not received the report(s). For your convenience, I have enclosed a new set of reports. Please complete the form(s) and return to the State Land Department as soon as possible.

If you need assistance, please call me at 255-4625.

Sincerely,

*Linda Olson*

Linda Olson  
Range Leasing Specialist

LJO:ig  
cc  
Enc.

ASARCO Incorporated

JUN 10 1986

SW Exploration

ASARCO

~~HS~~ WDG  
met,  
please  
copy for  
me  
JCS

Northwestern Exploration Division  
John C. Balla  
Manager

January 8, 1987

Mr. R.L. Brown  
Vice President  
Exploration Department  
ASARCO Incorporated  
180 Maiden Lane  
New York, NY 10038

U.S. Forest Service

Dear Mr. Brown:

For your general interest, enclosed is an organizational chart for the minerals branch of the U.S. Forest Service in Washington D.C., along with their respective phone numbers.

Also enclosed is a copy of Max Peterson's (Chief of the U.S. Forest Service) Minerals Program Policy, dated November 26, 1986.

Very truly yours,

*John C. Balla*  
John C. Balla

JCB/dt  
Enclosures

cc: W.L. Kurtz with enclosures  
T.E. Erskine " "  
J.L. Haggard " "

RECEIVED

JAN 12 1987

EXPLORATION DEPARTMENT

RECEIVED

JAN 12 1987

EXPLORATION DEPARTMENT

**DIRECTOR - MINERALS AND GEOLOGY MANAGEMENT**  
Buster LaMoure (235-3970)

Formulates National policies, and develops plans, standards, and procedures for a program designed to manage mineral and geological activities on NFS lands.

**Asst. Dir. Mineral Oper.**  
David Fredley (235-8010)

Develops National policies, standards, and instructions for leasable, locatable, and salable minerals.

**Secretary**  
Judy Glinaky (235-9661)

**Asst. Dir. Planning & Support**  
Walt Schlumpf (235-3675)

Develops National policies, objectives, and standards for planning and financing minerals and geology.

**Solid Leasable Minerals**  
Stanley Kurcaba (235-9715)

Develops National policy, standards, and instructions for solid mineral leasing and administration.

**Solid Leasable Oper.**  
Sam Hotchkiss (235-9886)

Conceives plans, and conducts work in the technical area of solid leasable minerals operations.

**Program Analyst**  
Tao Ming (235-1751)

Provides staff assistance in program evaluation and systems development.

**Program Coordinator**  
Jack Bills (235-1750)

Provides National direction for minerals reclamation. Manage systems design and development for minerals and geology.

**Fluid Leasable Minerals**  
Craig Losche (235-9873)

Develops National policy, standards, and instructions for fluid mineral leasing and administration.

**Fluid Leasable Oper.**  
Bruce Ramsey (235-8011)

Conceives plans, and conducts work in the technical area of fluid leasable minerals operations.

**Program Analyst**  
Keith Namock (235-9885)

Provides staff assistance in developing goals, objectives and strategies for personnel placement & minerals training.

**Program Spec. (PD&B & RPA)**  
Kathryn Maloney (235-1109)

Provides National direction for program development and budget, and resource planning.

**Locatable/Salable Minerals**  
Norm Day (235-9784)

Develops National policy, standards, and instructions for locatable/salable minerals activities and administration.

**Locatable/Salable Oper.**  
Steve Marshall (235-3142)

Conceives plans, and conducts work in the technical areas of locatable and salable minerals.

**Program Analyst**  
RuthAnn Erkelens (235-8658)

Provides staff assistance in program development, budget, and training.

**Geology Program Spec.**  
Thomas King (235-9754)

Provides National direction in development and implementation of geologic resources and services.

**Economist**  
Vacant (235-7777)

Provides National leadership in economic analysis.

**Minerals Planning**  
David Barone (235-9834)

Provides National direction for integrating minerals and geology information into LMP.



United States  
Department of  
Agriculture

Forest  
Service

WO

Reply to: 2800

Date: NOV 26 1986

Subject: Minerals Program Policy

To: Regional Foresters

The enclosed Forest Service Minerals Program Policy is summarized from the recently approved FSM 2800 Zero Code.

Because of the importance of mineral resources on the National Forests and Grasslands, and the activities associated with their development, it is imperative that all of our people understand and follow this policy. To assure that this happens, I am asking that you and your unit heads review the policy through staff, family, training, or other appropriate meetings.

In the review and implementation of this policy I am further asking that the following be emphasized.

a. A key objective of the minerals program is to encourage and facilitate the orderly exploration, development, and production of mineral resources.

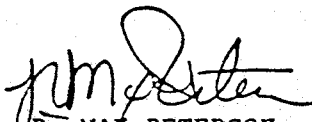
b. Minerals has joined range, recreation, timber, water, wildlife, and wilderness as one of the multiple-uses we manage.

c. Managers must develop a good understanding of the minerals industry, its practices, and the mineral laws and regulations.

d. Managers must develop a strong working relationship with the minerals industry.

e. Visibility and interaction with the minerals industry must be increased by attendance and participation of line officers and appropriate staff at industry and professional association activities and meetings.

f. Assure that directories, organization charts, and receptionists direct the mineral industry to personnel who have minerals administration responsibilities.

  
R. MAX PETERSON  
Chief



FOREST SERVICE  
MINERALS PROGRAM POLICY

The availability of mineral and energy resources within the National Forests and Grasslands significantly affects the development, economic growth, and defense of the Nation. The mission of the Forest Service in relation to minerals management is to encourage, facilitate, and administer the orderly exploration, development, and production of mineral and energy resources on National Forest System lands to help meet the present and future needs of the Nation.

The Forest Service administers its mineral program to:

1. Encourage and facilitate the orderly exploration, development, and production of mineral and energy resources within the National Forest System in order to maintain a viable, healthy minerals industry and to promote self-sufficiency in those mineral and energy resources necessary for economic growth and the national defense.
2. Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other National Forest resources.
3. Ensure that lands disturbed by mineral and energy activities are reclaimed for other productive uses.

The Forest Service policy is to:

1. Process mineral applications, operating plans, leases, licenses, permits and other use authorizations efficiently and timely.
2. Ensure the integration of mineral resource programs and activities with the planning and management of renewable resources through the land and resource management planning process (FSM 1922), recognizing that mineral development can occur concurrently or sequentially with other resource uses.
3. Plan and provide for access to and occupancy of National Forest System lands for mineral resource activities, consistent with the overall management objectives and the rights granted through statutes, leases, licenses, and permits. Eliminate or prevent occupancy that is not reasonably incident to and required for mineral operations.
4. Prior to applying for the administrative withdrawal of National Forest System lands from mineral entry, ensure the consideration of (a) the national interest in strategic and critical minerals (b) the value of the mineral resource foregone (c) the value of the resource or improvement being protected (FSM 2760).
5. Ensure that valid existing rights have been established before allowing mineral or energy activities in congressionally-designated or other withdrawn areas.
6. Coordinate and cooperate with other Federal and State agencies having authority and expertise in mineral-related activities.
7. Maintain an effective professional, technical, and managerial work force that is knowledgeable in mineral exploration and development.
8. Ensure the uniform application of exploration, development, and reclamation standards.
9. For all mineral exploration and development proposals that would create environmental disturbance require a reclamation plan to return the land to other productive uses consistent with land and mineral management goals.



**MINERALS  
EXPLORATION  
COALITION**

*Minerals Advocate  
In Public Policy*

*Mailing Address:  
Box 195  
767 South Xenon Court  
Lakewood, Colorado 80228  
(303) 989-5804*

JDS

Reply to:

Lakewood, Colorado

L.C. Lee

*Washington Representative  
L. Courtland Lee  
3814 West Street  
Landover, Maryland 20785  
(301) 322-5762*

MEMORANDUM

TO: ALL MEC MEMBERS  
FROM: JOHN D. WELLS  
SUBJECT: U.S. FOREST SERVICE MINERALS PROGRAM POLICY

DATE: JANUARY 28, 1987

---

Please find attached a copy of a memorandum from the U.S. Forest Service regarding their Minerals Program Policy. This information may be helpful to you in dealing with the Forest Service in the future.

JDW:hjm

Attachment



United States  
Department of  
Agriculture

Forest  
Service

WO

Reply to: 2800

Date: NOV 26 1986

Subject: Minerals Program Policy

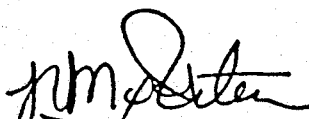
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- d. Managers must develop a strong working relationship with the minerals industry.
- e. Visibility and interaction with the minerals industry must be increased by attendance and participation of line officers and appropriate staff at industry and professional association activities and meetings.
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R. MAX PETERSON  
Chief



**FOREST SERVICE  
MINERALS PROGRAM POLICY**

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9. For all mineral exploration and development proposals that would create environmental disturbance require a reclamation plan to return the land to other productive uses consistent with land and mineral management goals.



# ASARCO

Exploration Department  
Southwestern United States Division

June 11, 1987

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501


Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

This letter is to inform you of Asarco's intent to drill a hole at the site shown on the attached map. Asarco requested approval to build the drill site and to start the drill hole in J.R. Stringham's letter to you of February 12, 1985. Approval was granted by the Forest Service in your letter to J.R. Stringham, dated February 27, 1985.

Since approval to drill was requested and granted, Asarco assumes it is permissible to drill at its convenience. If you feel otherwise or if you have any questions, please call James D. Sell, Manager, or Bill Gay, Land Engineer, at the telephone number and address shown at the bottom of this page. I'll be unavailable since I'll be in Nevada for the summer.

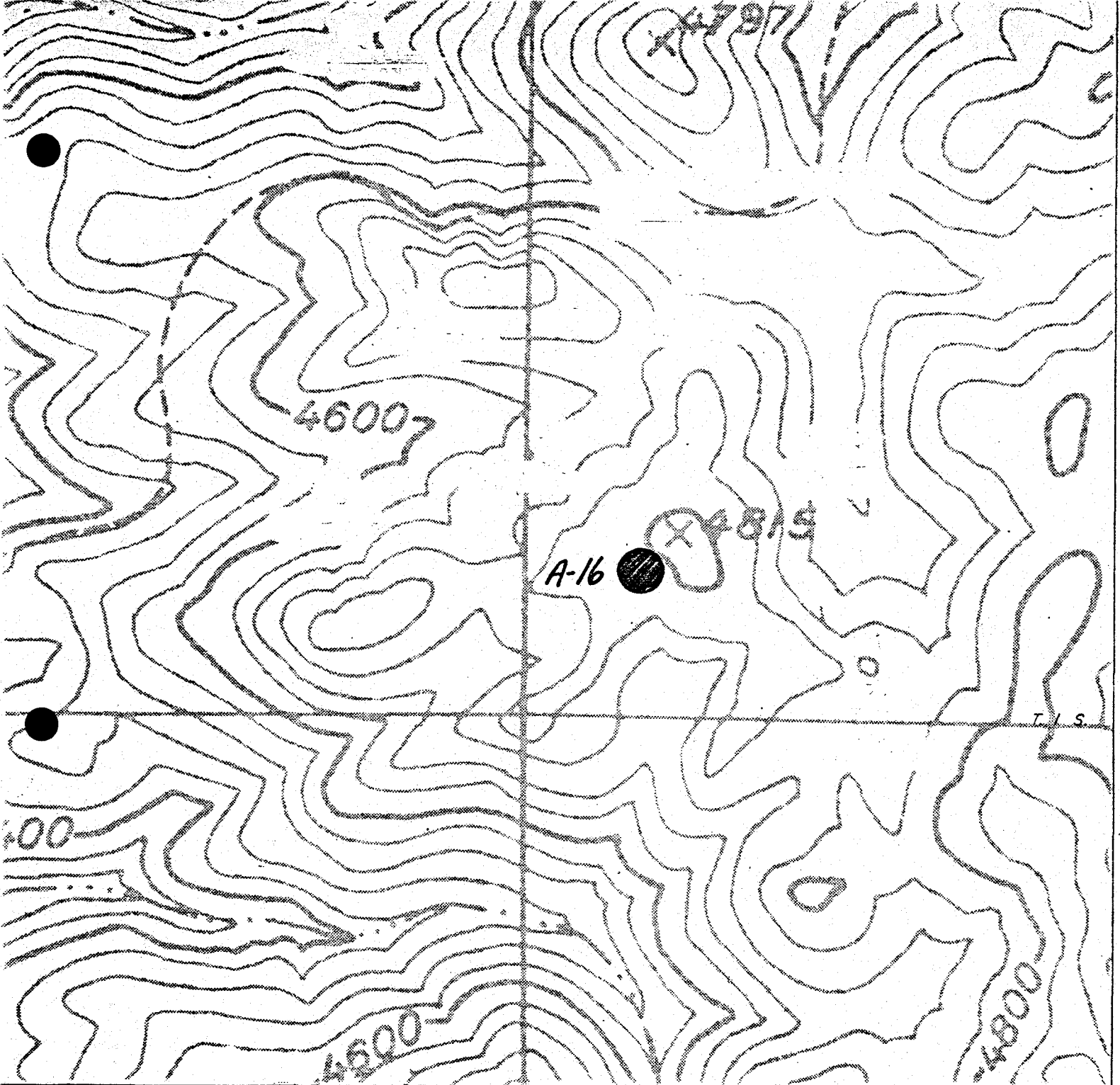
Sincerely yours,



Henry G. Kreis  
Geologist

HGK:mek  
Att.

cc: W.L. Kurtz  
J.D. Sell  
W.D. Gay



BASE FROM USGS SUPERIOR ARIZ 7.5' QUAD.



Proposed Drill Site

**SUPERIOR EAST PROJECT**

PINAL COUNTY, ARIZONA

SCALE: 1"=500'

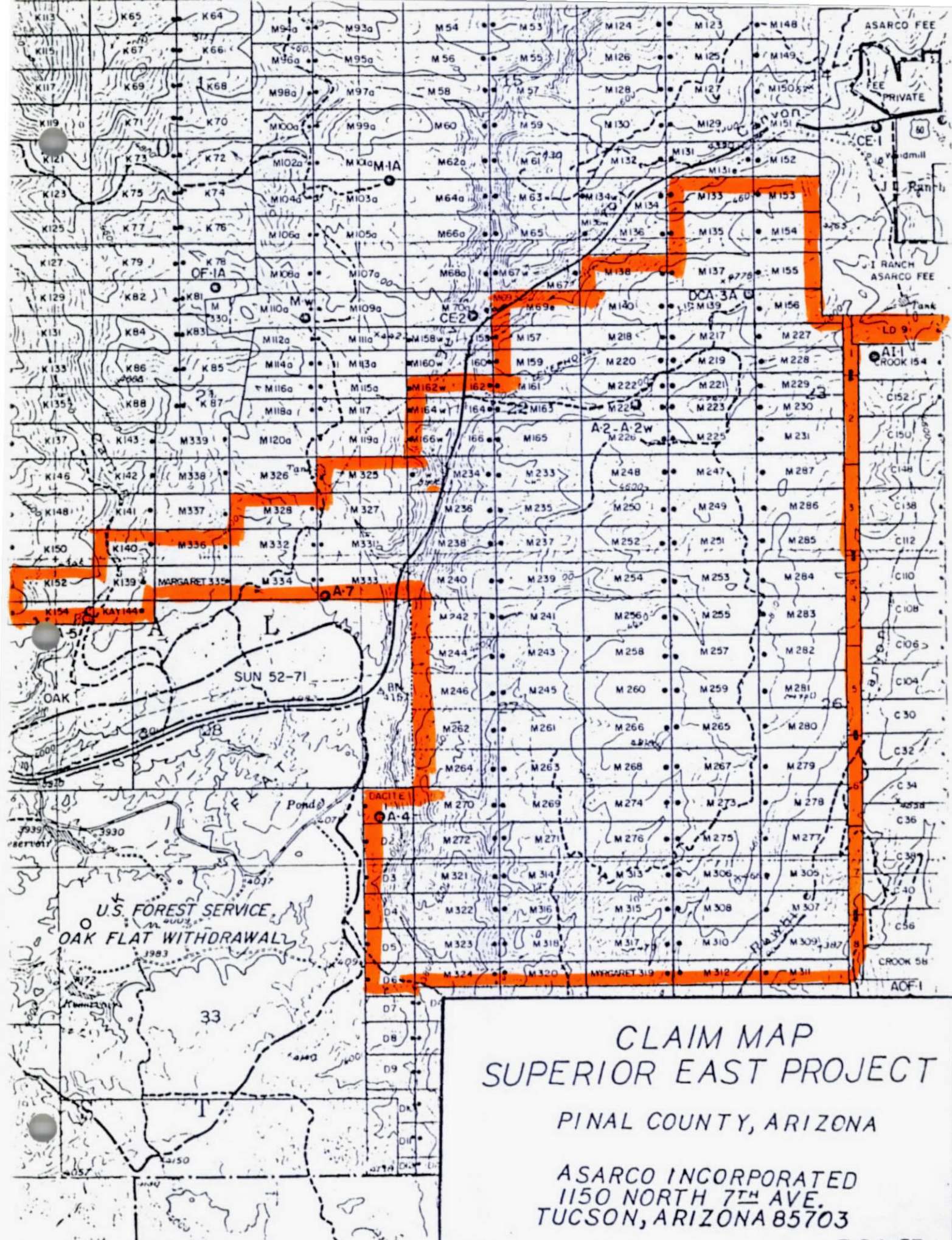
J.D. Sell

June 1977

H6K-6-11-87

MVR-1041





# CLAIM MAP SUPERIOR EAST PROJECT

PINAL COUNTY, ARIZONA

ASARCO INCORPORATED  
1150 NORTH 7TH AVE.  
TUCSON, ARIZONA 85703

7-24-87



# ASARCO

Exploration Department  
Southwestern United States Division

October 9, 1987


Mr. Stewart Herkenoff  
Recreation and Land Staff Manager  
Tonto National Forest  
U.S. Department of Agriculture  
Route 1 - Box 33  
Globe, Arizona 85501

Dear Mr. Herkenoff:

As per our telephone conversation of today, enclosed is a replacement bond No. 152128 for bond No. 80806137.

If you have any questions, please feel free to call.

Very truly yours,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
enc.

cc: P. Taylor - N.Y.  
J.D. Sell  
W.L. Kurtz

INSURANCE DEPARTMENT

October 5, 1987

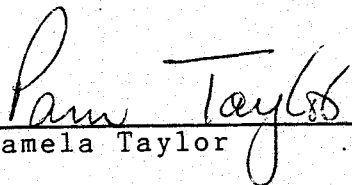
Bill Gay  
Southwestern Exploration

Re: Surety Bonds

We are currently replacing all bonds issued by Federal Insurance Company with bonds issued by Seaboard Surety Company.

As a part of this process, please request that the governmental agency substitute the enclosed Performance Bond  
# 152128 issued by Seaboard for the Federal Insurance Company bond # 80806137 which the agency is currently holding. Please return Federal's bond directly to me.

Your assistance in this matter is greatly appreciated.

  
Pamela Taylor

PT:gf  
att.

ASARCO Incorporated

OCT 8 1987

SW Exploration

**PERFORMANCE BOND**  
 (See Instructions on reverse)

DATE BOND EXECUTED (Must be same or later than date of contract)  
 Bond #152128  
 October 1, 1987

PRINCIPAL (Legal name and business address)  
**ASARCO INCORPORATED, OF**  
 1150 N. 7th Ave. 180 Maiden Lane  
 Tucson, Az. 85705 & New York, N.Y. 10038

TYPE OF ORGANIZATION ("X" one)  
 INDIVIDUAL  PARTNERSHIP  
 JOINT VENTURE  CORPORATION  
 STATE OF INCORPORATION  
 New Jersey

SURETY(IES) (Name(s) and business address(es))  
**SEABOARD SURETY COMPANY**  
 88 Pine Street  
 New York, N.Y. 10005

PENAL SUM OF BOND  

MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)
	2	000	00

 CONTRACT DATE: February 20, 1980  
 CONTRACT NO.: Restoration and Damage Bond - Unpatented Mining Claims, Tonto National Forest, Pinal Gila Counties, Arizona

KNOW ALL MEN BY THESE PRESENTS. That we, the Principal and Surety (ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above; NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. ASARCO INCORPORATED <i>S.P. McCandless</i> (Seal)	2.	Corporate Seal
Name(s) & Title(s) (Typed)	1. S.P. McCANDLESS VICE PRESIDENT & TREASURER	2.	
INDIVIDUAL SURETY(IES)			
Signature(s)	1. (Seal)	2. (Seal)	
Name(s) (Typed)	1.	2.	
CORPORATE SURETY(IES)			
SURETY A	Name & Address	SEABOARD SURETY COMPANY 88 Pine Street, N.Y. 10005	STATE OF INC. LIABILITY LIMIT N.Y.
	Signature(s)	1. <i>Paul Salmon</i>	2.
	Name(s) & Title(s) (Typed)	1. Paul Salmon, Attorney-In-Fact	2.

CORPORATE SURETY(IES) (Continued)

SURETY B	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	
SURETY C	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	
SURETY D	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	
SURETY E	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	
SURETY F	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	
SURETY G	Name & Address	STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.	
	Name(s) & Title(s) (Typed)	1.	2.	

BOND PREMIUM	▶	RATE PER THOUSAND	TOTAL
		\$	\$

INSTRUCTIONS

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses

(city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

# SEABOARD SURETY COMPANY

ADMINISTRATIVE OFFICES: BEDMINSTER, NEW JERSEY

FINANCIAL STATEMENT—DECEMBER 31, 1986

ASSETS		LIABILITIES	
*Stocks and Bonds.....	\$129,359,120.	Reserve for Unearned Premiums.....	\$ 44,735,934.
Cash in Office & Banks.....	2,557,944.	Claim Reserves.....	24,224,886.
Accrued Interest & Dividends.....	2,540,598.	Other Reserves.....	5,561,937.
Outstanding Premiums.....	(4,628,218.)	Capital Stock.....	2,500,000.
Accounts Receivable.....	2,433,276.	Surplus.....	55,239,963.
	\$132,262,720		\$132,262,720
Total Admitted Assets.....		Total Liabilities.....	

\* Bonds and stocks are valued on basis approved by National Association of Insurance Commissioners.  
 Securities carried at \$7,012,276 in the above statement are deposited for the purpose required by law.

STATE OF NEW JERSEY }  
 COUNTY OF SOMERSET } ss.:

I, G. F. THOMPSON, President of SEABOARD SURETY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the Financial Statement of said Company, as of December 31, 1986.

IN WITNESS WHEREOF, I have signed this statement at New York, New York, this ...1st..... day of  
 October....., 19.....87....



Revised Form 157

*[Handwritten Signature]*  
 President

STATE OF NEW YORK }  
 COUNTY OF New York } ss.:

On the 1st day of October in the year 1987... before me personally came

Paul Salmon....., to me known, who, being by me duly sworn, did

depose and say that he resides in New York..... N. Y.; that he is the Attorney-in-Fact of the SEABOARD SURETY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 327 of the Insurance Law of the State of New York, issued to Seaboard Surety Company his certificate of qualification, evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ROBERT S. REID  
 NOTARY PUBLIC, STATE OF NEW YORK  
 No. 24-8828000  
 Qualified in Kings County  
 Commission Expires April 30, 1988

*[Handwritten Signature]*  
 Notary Public



# SEABOARD SURETY COMPANY

SS 2721

No. 10032

ADMINISTRATIVE OFFICES, BEDMINSTER, NEW JERSEY

## POWER OF ATTORNEY

**KNOW ALL MEN BY THESE PRESENTS:** that SEABOARD SURETY COMPANY, a corporation of the State of New York, has made, constituted and appointed and by these presents does make, constitute and appoint H.R. Boyle or Robert Urban or James P. Reilly or Catherine P. Rosano or Paul Salmon

of New York, New York

its true and lawful Attorney-in-Fact, to make, execute and deliver on its behalf insurance policies, surety bonds, undertakings and other instruments of similar nature as follows: **Without Limitations**

Such insurance policies, surety bonds, undertakings and instruments for said purposes, when duly executed by the aforesaid Attorney-in-Fact, shall be binding upon the said Company as fully and to the same extent as if signed by the duly authorized officers of the Company and sealed with its corporate seal, and all the acts of said Attorney-in-Fact, pursuant to the authority hereby given, are hereby ratified and confirmed.

This appointment is made pursuant to the following By-Laws which were duly adopted by the Board of Directors of the said Company on December 9th, 1927, with Amendments to and including January 15, 1982 and are still in full force and effect.

### ARTICLE VII, SECTION 1

"Policies, bonds, recognizances, stipulations, consents of surety, underwriting undertakings and instruments relating thereto, insurance policies, bonds, recognizances, stipulations, consents of surety and underwriting undertakings of the Company, and releases, agreements and other writings relating in any way thereto or to any claim or loss thereunder, shall be signed in the name and on behalf of the Company:

(a) by the Chairman of the Board, the President, a Vice-President or a Resident Vice-President and by the Secretary, an Assistant Secretary, a Resident Secretary or a Resident Assistant Secretary; or (b) by an Attorney-in-Fact for the Company appointed and authorized by the Chairman of the Board, the President or a Vice-President to make such signature; or (c) by such other officers or representatives as the Board may from time to time determine.

The seal of the Company shall, if appropriate be affixed thereto by any such officer, Attorney-in-Fact or representative.

**IN WITNESS WHEREOF**, SEABOARD SURETY COMPANY has caused these presents to be signed by one of its Vice-Presidents, and its corporate seal to be hereunto affixed and duly attested by one of its Assistant Secretaries, this 11th day of September, 1987.



Attest:

(Seal) Nia A. Respoli  
Assistant Secretary

SEABOARD SURETY COMPANY,

By Michael B. Keegan  
Vice President

STATE OF NEW JERSEY  
COUNTY OF SOMERSET

On this 11th day of September, 1987, before me personally appeared Michael B. Keegan

with whom I am personally acquainted, who, being by me duly sworn, said that he resides in the State of New Jersey, that he is a Vice-President of SEABOARD SURETY COMPANY, the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of the said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto as Vice-President of said Company by like authority.

(Seal) FELICE M. CATALANO  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Exp. June 4, 1991

[Signature]  
Notary Public

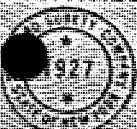
## CERTIFICATE

I, the undersigned Assistant Secretary of SEABOARD SURETY COMPANY do hereby certify that the original Power of Attorney of which the foregoing is a true and correct copy, is in full force and effect on the date of this Certificate and I do further certify that the Vice-President who executed the said Power of Attorney was one of the Officers authorized by the Board of Directors to appoint an attorney-in-fact as provided in Article VII, Section 1, of the By-Laws of SEABOARD SURETY COMPANY.

This Certificate may be signed and sealed by facsimile under and by authority of the following resolution of the Executive Committee of the Board of Directors of SEABOARD SURETY COMPANY at a meeting duly called and held on the 26th day of March 1970.

**RESOLVED:** (2) That the use of a printed facsimile of the corporate seal of the Company and of the signature of an Assistant Secretary on any certification of the correctness of a copy of an instrument executed by the President or a Vice-President pursuant to Article VII, Section 1, of the By-Laws appointing and authorizing an attorney-in-fact to sign in the name and on behalf of the Company surety bonds, underwriting undertakings or other instruments described in said Article VII, Section 1, with like effect as if such seal and such signature had been manually affixed and made, hereby is authorized and approved.

**IN WITNESS WHEREOF**, I have hereunto set my hand and affixed the corporate seal of the Company to these presents this 1st day of October, 1987.



[Signature]  
Assistant Secretary  
Form 857 (Rev. 7-81)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

..... May 13 ..... 19 92 .....

..... Originating Office ... SWED, Tucson .....

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0010, Superior East, AZ

Present total Estimated Cost .	\$ 4,129,200
Amount previously authorized (date . 5-15-90 ..... ) EA-0010-25	\$ 4,007,500
Balance for which Authorization is now requested	\$ 121,700

ADDITIONAL WORK CONTEMPLATED:

Extension of drill road and pad site for drill.

EXPLANATION OF INCREASED COST:

Clearing of overrun from 1990-1991 drilling, closing of Miami core storage building, moving core and materials to Tucson, and preparation of site for continued delineation of large porphyry copper system buried under post-mineral cover.

Reviewed by ..... *C. L. Snow* .....  
ACC'T. MGR. OR CHIEF ACCN'T.

Recommended by ..... *James D. Seep* .....  
SUPERVISOR

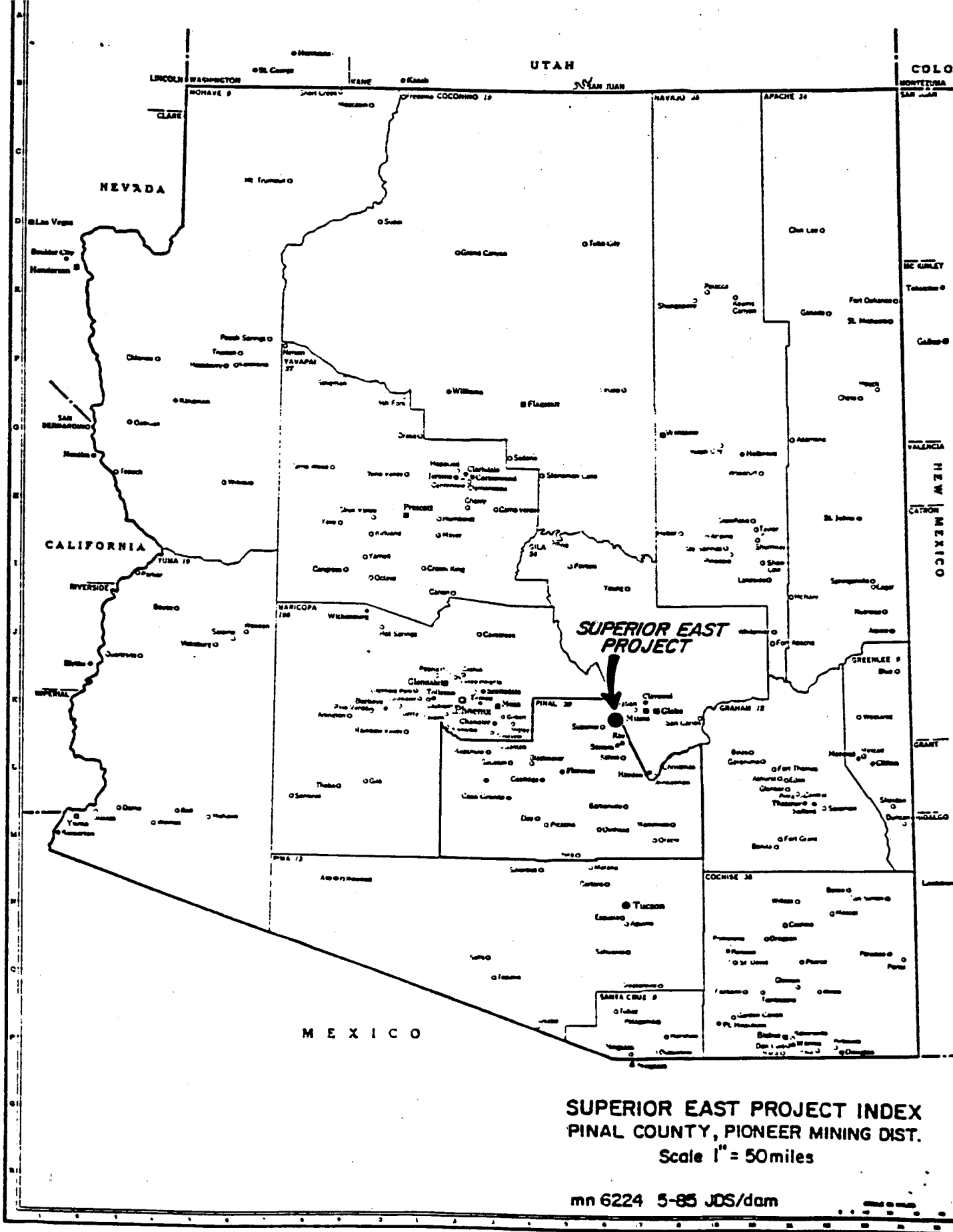
Approved by .....  
CONTROLLER

Account Chargeable to .....  
TO BE FILLED IN BY CONTROLLER

Approved by .....  
VICE PRESIDENT

Approved by Advisory Committee  
..... 19.....

Approved by Board of Directors  
..... 19.....



**SUPERIOR EAST PROJECT INDEX**  
**PINAL COUNTY, PIONEER MINING DIST.**  
 Scale 1" = 50 miles

mn 6224 5-85 JDS/dam

# ASARCO

Southwestern Exploration Division

October 9, 1987

Pamela Taylor  
NYO Insurance Dept.

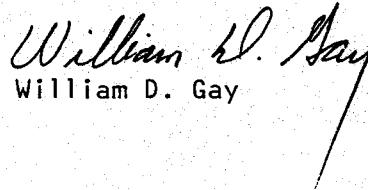
## Bonds

We received the bond information you sent September 28, 1987 on October 5, 1987. After reviewing the information and making telephone inquiries to several offices of the Bureau of Land Management and of the Forest Service, I believe the following to be what the bonding situation of the Southwestern Exploration Dept. should be:

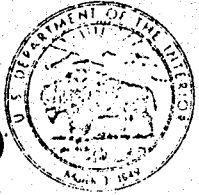
1. No. 80869904 (Federal) which was to be replaced with No. 142706 (Federal) is no longer needed.
2. No. 80869905 (Federal) which was replaced with No. 81116127 (Federal) has not been released by the Forest Service in Nevada. This bond should belong to Great Basin Exploration Department in Reno, Nevada.
3. No. 80806137 (Federal) will be replaced by No. 152128 (Seaboard). I will forward originals to the Forest Service in Globe, Arizona.
4. No. 80441794 (Federal) replaced by 152129 (Seaboard) is no longer needed. Enclosed is original bond 152129.
5. No. 143428 (Seaboard) will be released by the Bureau of Land Management as noted in the attached letter.

If you have any questions, please call.

WDG:mek  
encs.

  
William D. Gay

cc: J. D. Sell  
W. L. Kurtz



United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Ridgecrest Resource Area  
112 East Dolphin Avenue  
Ridgecrest, California 93555

IN REPLY REFER TO:  
3802(3)  
CMMC-167809  
WBA-CDCA-170  
(CA-065.43)

AUG 21 1987

ASARCO Incorporated

AUG 24 1987

SW Exploration

James D. Sell  
ASARCO Incorporated  
P.O. Box 5747  
Tucson, Arizona 85703

Dear Mr. Sell:

We conducted the joint field compliance examination with your representative William D. Gay on August 5, 1987, of the Brown's Ranch Fault project area located in T. 29 S., R. 42 E., Sections 17 and 20. We feel that ASARCO has fully completed the reclamation specified within the Environmental Assessment. We recommend that the \$1000.00 bond No. 143428 held by Seaboard Surety Company be released.

We would especially like to thank your field representative William D. Gay for working closely with our Geologist and Wilderness Specialist while working within a sensitive Wilderness Study Area. It was through his efforts that disturbance was kept to a minimum and the wilderness area was kept in a nonimpaired condition. I hope this will prove to others that exploration can occur within wilderness study areas without impairing wilderness values.

Thank you for your cooperation in this effort. If you have any questions please contact our Geologist, Peter Milne and our Wilderness Specialist, Paul T. Happel.

Sincerely,

Patricia E. McLean  
Area Manager

cc: William D. Gay

INSURANCE DEPARTMENT

October 5, 1987

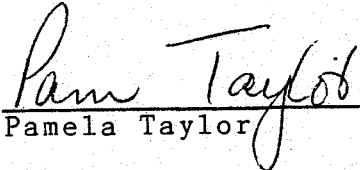
Bill Gay  
Southwestern Exploration

Re: Surety Bonds

We are currently replacing all bonds issued by Federal Insurance Company with bonds issued by Seaboard Surety Company.

As a part of this process, please request that the governmental agency substitute the enclosed Bond to accompany Prospecting Permit # 152129 issued by Seaboard for the Federal Insurance Company bond # 80441794 which the agency is currently holding. Please return Federal's bond directly to me.

Your assistance in this matter is greatly appreciated.

  
Pamela Taylor

PT:gf  
att.

ASARCO Incorporated

OCT 8 1987

SW Exploration



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS

Bond No. 152129

BOND TO ACCOMPANY PROSPECTING PERMIT

KNOW ALL MEN BY THESE PRESENTS, That ASARCO INCORPORATED  
of Tucson, Arizona, as principal, and SEABOARD SURETY COMPANY  
of 88 Pine Street, New York, N. Y. 10005, as surety, are held and firmly bound  
unto the United States of America in the sum of TWO THOUSAND AND 00/100  
Dollars (\$ 2,000.00), lawful money of the United States of America, for  
the payment of which well and truly to be made, we bind ourselves, and each  
of us, our and each of our heirs, executors, and assigns, jointly and sever-  
ally, firmly by these presents.

Sealed with our seals and dated this 1st day of October, 19 87.

The condition of this obligation is such that, whereas the said prin-  
cipal, as permittee, entered into a certain indenture of mineral pros-  
pecting permit approved \_\_\_\_\_, 19\_\_\_\_, with the Papago Indian Tribe  
permitter, as obligee, for a permit on a tract of land described as follows:

Approximately 2,700,000 acres more or less within the boundaries of  
the Gila Bend and Sells (Papago) Reservation, State of Arizona  
excepting those areas that have been officially withdrawn from  
prospecting, patented mining claims, validated claims and areas  
presently under approved lease.

for mineral exploration purposes for the period of \_\_\_\_\_ from the  
date of approval thereof.

WHEREAS the principal and surety agree that the neglect or for-  
bearance of the permitter-obligee in enforcing against the permittee the  
performance of any covenant, condition or agreement of the permit shall not  
in any way release the principal and surety, or either of them, from  
any liability under this bond; and

WHEREAS the principal and surety agree that in the event of any  
default under such permit, the permitter-obligee may prosecute any claim,  
suit, action, or other proceeding against either the principal or  
surety without the necessity of joining the other.

Now, if the said principal herein shall faithfully carry out and  
observe all the obligations assumed in said indenture of permit, and shall  
observe all the laws of the United States, and regulations made, or which  
shall be made, thereunder, for the government of trade and intercourse with  
Indian tribes, and all the rules and regulations that have been or may here-  
after lawfully prescribed by the Secretary of the Interior relative to min-  
ing leases on the said Reservation, so far as applicable, then this obliga-  
tion shall be null and void, otherwise, to remain in full force and effect.

PROVIDED, That in event supervision over all the permitted tract to which this bond applies is relinquished by the Secretary of the Interior and permittee shall have made all payments then due under the permit and shall have fully performed all obligations on his part to be performed up to the time of relinquishment of supervision, this bond shall be of no further force and effect.

The rate of premium charged on this bond is \$ 1.00 ; the total premium paid is \$ 1.00 .

Signed and sealed in the presence of -

WITNESSES: (Two for each signature)

\_\_\_\_\_)  
P. O. Servadine Snyder)

\_\_\_\_\_)  
P. O. C. D. Goyal)

\_\_\_\_\_)  
P. O. \_\_\_\_\_)

\_\_\_\_\_)  
P. O. Jacqueline M. Faiella)

\_\_\_\_\_)  
P. O. Cerette L. Ruura)

\_\_\_\_\_)  
P. O. \_\_\_\_\_)

\_\_\_\_\_)  
P. O. \_\_\_\_\_)

\_\_\_\_\_)  
P. O. \_\_\_\_\_)

\_\_\_\_\_)  
P. O. \_\_\_\_\_)

as to ASARCO INCORPORATED

By: Steven P. McCandless  
STEVEN P. McCANDLESS  
VICE PRESIDENT & TREASURER

as to SEABOARD SURETY COMPANY

By: Paul Salmon  
Paul Salmon, Attorney-In-Fact

as to \_\_\_\_\_

APPROVED:

DEPARTMENT OF THE INTERIOR  
Bureau of Indian Affairs

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
Superintendent



On the 1st day of October in the year 1987, before me personally came Paul Salmon to me known, who, being by me duly sworn, did

depose and say that he resides in New York, N. Y.; that he is the Attorney-in-Fact of the SEABOARD SURETY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 327 of the Insurance Law of the State of New York, issued to Seaboard Surety Company his certificate of qualification, evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ROBERT S. REID  
 NOTARY PUBLIC, STATE OF NEW YORK  
 No. 24-8326900  
 Qualified in Kings County  
 Commission Expires April 30, 1988

*[Signature]*  
 Notary Public

Form 860

## SEABOARD SURETY COMPANY

ADMINISTRATIVE OFFICES: BEDMINSTER, NEW JERSEY

FINANCIAL STATEMENT—DECEMBER 31, 1986

**ASSETS**

**LIABILITIES**

*Stocks and Bonds.....	\$129,359,120.	Reserve for Unearned Premiums.....	\$ 44,735,934.
Cash in Office & Banks.....	2,557,944.	Claim Reserves.....	24,224,886.
Accrued Interest & Dividends.....	2,540,598.	Other Reserves.....	5,561,937.
Outstanding Premiums.....	(4,628,218.)	Capital Stock.....	2,500,000.
Accounts Receivable.....	2,433,276.	Surplus.....	55,239,963.
Total Admitted Assets.....	\$132,262,720	Total Liabilities.....	\$132,262,720

\* Bonds and stocks are valued on basis approved by National Association of Insurance Commissioners.  
 Securities carried at \$7,012,276 in the above statement are deposited for the purpose required by law.

STATE OF NEW JERSEY }  
 COUNTY OF SOMERSET } ss.:

I, G. F. THOMPSON, President of SEABOARD SURETY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the Financial Statement of said Company, as of December 31, 1986.

IN WITNESS WHEREOF, I have signed this statement at New York, New York, this ...1st..... day of

October, 1987



*[Signature]*  
 President

# SEABOARD SURETY COMPANY

ADMINISTRATIVE OFFICES, BEDMINSTER, NEW JERSEY

## POWER OF ATTORNEY

**KNOW ALL MEN BY THESE PRESENTS:** That SEABOARD SURETY COMPANY, a corporation of the State of New York, has hereby constituted and appointed and by these presents does make, constitute and appoint H. R. Boyle or Robert Urban or James P. Reilly or Catherine E. Rosano or Paul Salmon

of New York, New York

its true and lawful Attorney-in-Fact to make, execute and deliver on its behalf insurance policies, surety bonds, undertakings and other instruments of similar nature as follows: Without Limitations

Such insurance policies, surety bonds, undertakings and instruments for said purposes, when duly executed by the aforesaid Attorney-in-Fact, shall be binding upon the said Company as fully and to the same extent as if signed by the duly authorized officers of the Company and sealed with its corporate seal, and all the acts of said Attorney-in-Fact, pursuant to the authority hereby given, are hereby ratified and confirmed.

This appointment is made pursuant to the following By-Laws which were duly adopted by the Board of Directors of the said Company on December 8th, 1927, with Amendments to and including January 15, 1982 and are still in full force and effect:

### ARTICLE VII, SECTION 1

"Policies, bonds, recognizances, stipulations, consents of surety, underwriting undertakings and instruments relating thereto, insurance policies, bonds, recognizances, stipulations, consents of surety and underwriting undertakings of the Company, and releases, agreements and other writings relating in any way thereto or to any claim or loss thereunder, shall be signed in the name and on behalf of the Company (a) by the Chairman of the Board, the President, a Vice-President or a Resident Vice-President and by the Secretary, an Assistant Secretary, a Resident Secretary or a Resident Assistant Secretary, or (b) by an Attorney-in-Fact for the Company appointed and authorized by the Chairman of the Board, the President or a Vice-President to make such signature, or (c) by such other officers or representatives as the Board may from time to time determine. The seal of the Company shall if appropriate be affixed thereto by any such officer, Attorney-in-Fact or representative."

**IN WITNESS WHEREOF,** SEABOARD SURETY COMPANY has caused these presents to be signed by one of its Vice-Presidents, and its corporate seal to be hereunto affixed and duly attested by one of its Assistant Secretaries, this 11th day of September, 19 87



Attest

(Seal) *Lia A. Rosali*  
Assistant Secretary

SEABOARD SURETY COMPANY

By *Michael B. Keegan*  
Vice President

STATE OF NEW JERSEY  
COUNTY OF SOMERSET

On this 11th day of September, 19 87, before me personally appeared Michael B. Keegan

19 87, before me personally appeared a Vice President of SEABOARD SURETY COMPANY, with whom I am personally acquainted, who, being by me duly sworn, said that he resides in the State of New Jersey, that he is a Vice-President of SEABOARD SURETY COMPANY, the corporation described in and which executed the foregoing instrument, that he knows the corporate seal of the said Company, that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said Company, and that he signed his name thereto as Vice-President of said Company by like authority.

(Seal) FELICE M. CATALANO  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Exp. June 4, 1991

*[Signature]*  
Notary Public

### CERTIFICATE

I, the undersigned Assistant Secretary of SEABOARD SURETY COMPANY do hereby certify that the original Power of Attorney of which the foregoing is a true, free and correct copy, is in full force and effect on the date of this Certificate and I do further certify that the Vice-President who executed the said Power of Attorney was one of the Officers authorized by the Board of Directors to appoint an attorney-in-fact as provided in Article VII, Section 1, of the By-Laws of SEABOARD SURETY COMPANY.

This Certificate may be signed and sealed by facsimile under and by authority of the following resolution of the Executive Committee of the Board of Directors of SEABOARD SURETY COMPANY at a meeting duly called and held on the 25th day of March 1970:

RESOLVED: (2) That the use of a printed facsimile of the corporate seal of the Company and of the signature of an Assistant Secretary on any certification of the correctness of a copy of an instrument executed by the President or a Vice-President pursuant to Article VII, Section 1, of the By-Laws appointing and authorizing an attorney-in-fact to sign in the name and on behalf of the Company surety bonds, underwriting undertakings or other instruments described in said Article VII, Section 1, with like effect as if such seal and such signature had been manually affixed and made, hereby is authorized and approved.

**IN WITNESS WHEREOF,** I have hereunto set my hand and affixed the corporate seal of the Company to these presents this 1st day of October, 19 87



*[Signature]*  
Assistant Secretary

# ASARCO

Exploration Department  
Southwestern United States Division

October 29, 1987

Ms. Pamela Taylor  
Insurance Dept.  
New York

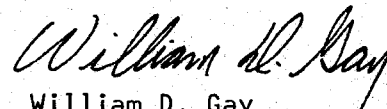
Surety Bond  
#152128

Dear Ms. Taylor:

Enclosed is the original performance bond issued by Seaboard Surety Company. This bond was returned by the Forest Service due to a spelling error as noted on the attached letter sent to me.

Please correct and return to me. I will then forward it to the Forest Service.

Sincerely,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
Att/enc.

cc: W.L. Kurtz  
J.D. Sell



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

Reply to: 2810

Date: October 27, 1987

ASARCO, Inc.  
ATTN: Mr. William D. Gay  
Land Engineer, SWED  
P.O. Box 5747  
Tucson, AZ 85703-0747

Dear Mr. Gay:

This letter refers to your letter of October 9, 1987, and your telephone conversation with Stu Herkenhoff on October 26, 1987.

Enclosed is the performance bond you sent us, as under Contract No. the counties specified should be Pinal and Gila Counties, Arizona. Please cause the performance bond to be corrected and, upon receipt, we will return the "Federal" bond to you.

Thank you.

LARRY P. WIDNER  
District Ranger

Enclosure

ASARCO Incorporated

OCT 29 1987

SW Exploration



INSURANCE DEPARTMENT

October 5, 1987

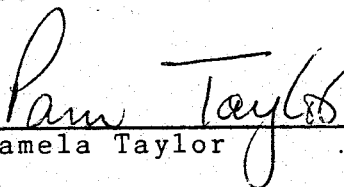
Bill Gay  
Southwestern Exploration

Re: Surety Bonds

We are currently replacing all bonds issued by Federal Insurance Company with bonds issued by Seaboard Surety Company.

As a part of this process, please request that the governmental agency substitute the enclosed Performance Bond  
# 152128 issued by Seaboard for the Federal Insurance Company bond # 80806137 which the agency is currently holding. Please return Federal's bond directly to me.

Your assistance in this matter is greatly appreciated.

  
Pamela Taylor

PT:gf  
att.

ASARCO Incorporated

OCT 8 1987

SW Exploration

**PERFORMANCE BOND**  
 (See Instructions on reverse)

DATE BOND EXECUTED (Must be same or later than date of contract)  
 Bond #152128

October 1, 1987

PRINCIPAL (Legal name and business address) ASARCO INCORPORATED, OF 1150 N. 7th Ave. 180 Maiden Lane Tucson, Az. 85705 & New York, N.Y. 10038		TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input checked="" type="checkbox"/> CORPORATION	
SURETY(IES) (Name(s) and business address(es)) SEABOARD SURETY COMPANY 88 Pine Street New York, N.Y. 10005		STATE OF INCORPORATION New Jersey	
		PENAL SUM OF BOND	
		MILLION(S)	THOUSAND(S)
			2 000
		HUNDRED(S)	00
		CENT(S)	
		CONTRACT DATE	CONTRACT NO.
		February 20, 1980	Restoration and Damage Bond - Unpatented Mining Claims, Tonto National Forest, Pinal Gila Counties, Arizona

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety (ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally; *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above; NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. ASARCO INCORPORATED <i>S.P. McCandless</i> (Seal)	2.	Corporate Seal
Name(s) & Title(s) (Typed)	1. S.P. McCANDLESS VICE PRESIDENT & TREASURER	2.	
INDIVIDUAL SURETY(IES)			
Signature(s)	1. (Seal)	2. (Seal)	
Name(s) (Typed)	1.	2.	
CORPORATE SURETY(IES)			
SURETY A	Name & Address	SEABOARD SURETY COMPANY 88 Pine Street, N.Y. 10005	STATE OF INC. LIABILITY LIMIT N.Y.
	Signature(s)	1. <i>Paul Salmon</i>	2.
	Name(s) & Title(s) (Typed)	1. Paul Salmon, Attorney-In-Fact	2.
			Corporate Seal



CORPORATE SURETY(IES) (Continued)

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		

BOND PREMIUM	▶	RATE PER THOUSAND \$	TOTAL \$
--------------	---	-------------------------	-------------

**INSTRUCTIONS**

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses

(city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

# SEABOARD SURETY COMPANY

ADMINISTRATIVE OFFICES: BEDMINSTER, NEW JERSEY

FINANCIAL STATEMENT—DECEMBER 31, 1986

ASSETS		LIABILITIES	
*Stocks and Bonds.....	\$129,359,120.	Reserve for Unearned Premiums.....	\$ 44,735,934.
Cash in Office & Banks.....	2,557,944.	Claim Reserves.....	24,224,886.
Accrued Interest & Dividends.....	2,540,598.	Other Reserves.....	5,561,937.
Outstanding Premiums.....	(4,628,218.)	Capital Stock.....	2,500,000.
Accounts Receivable.....	<u>2,433,276.</u>	Surplus.....	<u>55,239,963.</u>
 Total Admitted Assets.....	 \$132,262,720	 Total Liabilities.....	 \$132,262,720

\* Bonds and stocks are valued on basis approved by National Association of Insurance Commissioners.  
 Securities carried at \$7,012,276 in the above statement are deposited for the purpose required by law.

STATE OF NEW JERSEY }  
 COUNTY OF SOMERSET } ss.:

I, G. F. THOMPSON, President of SEABOARD SURETY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the Financial Statement of said Company, as of December 31, 1986.

IN WITNESS WHEREOF, I have signed this statement at New York, New York, this ... 1st. .... day of

..... October ....., 19.... 87....



Revised Form 157

*[Handwritten Signature]*  
 President

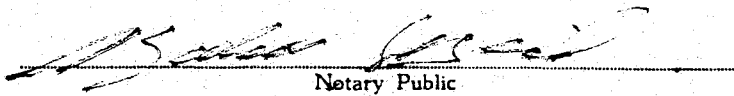


STATE OF NEW YORK }  
COUNTY OF New York } ss.:

On the 1st day of October in the year 1987... before me personally came Paul Salmon, to me known, who, being by me duly sworn, did

depose and say that he resides in New York N. Y.; that he is the Attorney-in-Fact of the SEABOARD SURETY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 327 of the Insurance Law of the State of New York, issued to Seaboard Surety Company his certificate of qualification, evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ROBERT S. REID  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 24-8823000  
Qualified in Kings County  
Commission Expires April 30, 1988

  
Notary Public

# SEABOARD SURETY COMPANY

ADMINISTRATIVE OFFICES, BEDMINSTER, NEW JERSEY

## POWER OF ATTORNEY

**KNOW ALL MEN BY THESE PRESENTS:** That SEABOARD SURETY COMPANY, a corporation of the State of New York, has made, constituted and appointed and by these presents does make, constitute and appoint H.R. Boyle or Robert Urban or James P. Reilly or Catherine F. Rosano or Paul Salmon

of New York, New York

its true and lawful Attorney-in-Fact, to make, execute and deliver on its behalf insurance policies, surety bonds, undertakings and other instruments of similar nature as follows: **Without Limitations**

Such insurance policies, surety bonds, undertakings and instruments for said purposes, when duly executed by the aforesaid Attorney-in-Fact shall be binding upon the said Company as fully and to the same extent as if signed by the duly authorized officers of the Company and sealed with its corporate seal, and all the acts of said Attorney-in-Fact, pursuant to the authority hereby given, are hereby ratified and confirmed.

This appointment is made pursuant to the following By-Laws which were duly adopted by the Board of Directors of the said Company on December 8th, 1977, with Amendments to and including January 15, 1982 and are still in full force and effect:

### ARTICLE VII, SECTION 1

"Policies, bonds, recognizances, stipulations, consents of surety, underwriting undertakings and instruments relating thereto, insurance policies, bonds, recognizances, stipulations, consents of surety and underwriting undertakings of the Company, and releases, agreements and other writings relating in any way thereto or to any claim or loss thereunder, shall be signed in the name and on behalf of the Company (a) by the Chairman of the Board, the President, a Vice-President or a Resident Vice-President and by the Secretary, an Assistant Secretary, a President Secretary or a Resident Assistant Secretary, or (b) by an Attorney-in-Fact for the Company appointed and authorized by the Chairman of the Board, the President or a Vice-President to make such signature, or (c) by such other officers or representatives as the Board may from time to time determine. The cost of the Company shall if appropriate be affixed thereto by any such officer, Attorney-in-Fact or representative."

**IN WITNESS WHEREOF**, SEABOARD SURETY COMPANY has caused these presents to be signed by one of its Vice-Presidents, and its corporate seal to be hereunto affixed and duly attested by one of its Assistant Secretaries, this 11th day of September, 1987.



Attest  
(Seal) *Dia A. Respoli*  
Assistant Secretary

SEABOARD SURETY COMPANY  
By *Michael B. Keegan*  
Vice-President

STATE OF NEW JERSEY  
COUNTY OF SOMERSET

On this 11th day of September, 1987, before me personally appeared *Michael B. Keegan*, a Vice-President of SEABOARD SURETY COMPANY, with whom I am personally acquainted, who, being by me duly sworn, said that he resides in the State of New Jersey, that he is a Vice-President of SEABOARD SURETY COMPANY, the corporation described in and which executed the foregoing instrument, that he knows the corporate seal of the said Company, that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said Company, and that he signed his name thereto as Vice-President of said Company by like authority.

(Seal) *FELICE M. CATALANO*  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Exp. June 4, 1991

*Felice M. Catalano*  
Notary Public

## CERTIFICATE

I, the undersigned Assistant Secretary of SEABOARD SURETY COMPANY do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is in full force and effect on the date of this Certificate and I do further certify that the Vice-President who executed the said Power of Attorney was one of the Officers authorized by the Board of Directors to appoint an attorney-in-fact as provided in Article VII, Section 1, of the By-Laws of SEABOARD SURETY COMPANY.

This Certificate may be signed and sealed by facsimile under and by authority of the following resolution of the Executive Committee of the Board of Directors of SEABOARD SURETY COMPANY at a meeting duly called and held on the 25th day of March 1970:

**RESOLVED:** (2) That the use of a printed facsimile of the corporate seal of the Company and of the signature of an Assistant Secretary on any certification of the correctness of a copy of an instrument executed by the President or a Vice-President pursuant to Article VII, Section 1, of the By-Laws appointing and authorizing an attorney-in-fact to sign in the name and on behalf of the Company surety bonds, underwriting undertakings or other instruments described in said Article VII, Section 1, with like effect as if such seal and such signature had been manually affixed and made hereby is authorized and approved.

**IN WITNESS WHEREOF**, I have hereunto set my hand and affixed the corporate seal of the Company to these presents this 1st day of October, 1987.



*Robert Urban*  
Assistant Secretary

# ASARCO

Exploration Department  
Southwestern United States Division

November 6, 1987

Mr. Larry P. Widner  
District Ranger  
Tonto National Forest  
U.S. Dept. of Agriculture  
Rt. 1, Box 33  
Globe, AZ 85501

RE: 2810

Dear Mr. Widner:

Enclosed is a corrected Seaboard Bond No. 152128.

The original bond as you discovered used the spelling Pina instead of Pinal.

I hope this will satisfy your requirements. If you have any questions, please call.

Very truly yours,

*William D. Gay*  
William D. Gay  
Land Engineer, SWED

WDG:mek  
Enc.

cc: P. Taylor - NY  
J.D. Sell  
W.L. Kurtz



INSURANCE DEPARTMENT

October 5, 1987

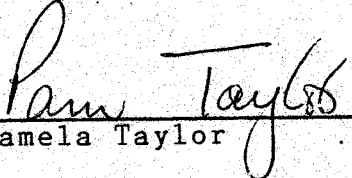
Bill Gay  
Southwestern Exploration

Re: Surety Bonds

We are currently replacing all bonds issued by Federal Insurance Company with bonds issued by Seaboard Surety Company.

As a part of this process, please request that the governmental agency substitute the enclosed Performance Bond # 152128 issued by Seaboard for the Federal Insurance Company bond # 80806137 which the agency is currently holding. Please return Federal's bond directly to me.

Your assistance in this matter is greatly appreciated.

  
Pamela Taylor

PT:gf  
att.

ASARCO Incorporated

NOV 6 1987

SW Exploration

ASARCO Incorporated

OCT 8 1987

SW Exploration

**PERFORMANCE BOND**  
 (See Instructions on reverse)

DATE BOND EXECUTED (Must be same or later than date of contract)  
 Bond #152128  
 October 1, 1987

PRINCIPAL (Legal name and business address) ASARCO INCORPORATED, OF 1150 N. 7th Ave. Tucson, Az. 85705 & 180 Maiden Lane New York, N.Y. 10038		TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input checked="" type="checkbox"/> CORPORATION	
SURETY(IES) (Name(s) and business address(es)) SEABOARD SURETY COMPANY 88 Pine Street New York, N.Y. 10005		STATE OF INCORPORATION New Jersey	
		PENAL SUM OF BOND	
		MILLION(S)	THOUSAND(S)
			2 000 00
		CONTRACT DATE	CONTRACT NO.
		February 20, 1980	Restoration and Damage Bond - Unpatented Mining Claims, Tonto National Forest, Pinal & Gila Counties, Arizona

KNOW ALL MEN BY THESE PRESENTS. That we, the Principal and Surety (ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above:

NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. ASARCO INCORPORATED <i>[Signature]</i> (Seal)	2.	Corporate Seal
Name(s) & Title(s) (Typed)	1. S.P. McCANDLESS VICE PRESIDENT & TREASURER	2.	
INDIVIDUAL SURETY(IES)			
Signature(s)	1. (Seal)	2. (Seal)	
Name(s) (Typed)	1.	2.	
CORPORATE SURETY(IES)			
SURETY A	Name & Address	SEABOARD SURETY COMPANY 88 Pine Street, N.Y. 10005	STATE OF INC. N.Y.
	Signature(s)	1. <i>[Signature]</i>	2.
	Name(s) & Title(s) (Typed)	1. Paul Salmon, Attorney-In-Fact	2.
			Corporate Seal

**CORPORATE SURETY(IES) (Continued)**

<b>SURETY B</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
<b>SURETY C</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
<b>SURETY D</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
<b>SURETY E</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
<b>SURETY F</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
<b>SURETY G</b>	Name & Address		STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		

BOND PREMIUM	▶	RATE PER THOUSAND \$	TOTAL \$
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**INSTRUCTIONS**

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses

(city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

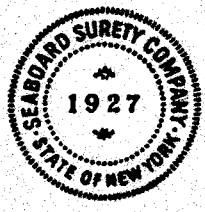
Outstanding Premiums.....	(4,628,218.)	Capital Stock.....	2,500,000.
Accounts Receivable.....	2,433,276.	Surplus.....	55,239,963.
Total Admitted Assets.....	\$132,262,720	Total Liabilities.....	\$132,262,720

\* Bonds and stocks are valued on basis approved by National Association of Insurance Commissioners.  
 Securities carried at \$7,012,276 in the above statement are deposited for the purpose required by law.

STATE OF NEW JERSEY }  
 COUNTY OF SOMERSET } ss.:

I, G. F. THOMPSON, President of SEABOARD SURETY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the Financial Statement of said Company, as of December 31, 1986.

IN WITNESS WHEREOF, I have signed this statement at New York, New York, this ... 1st ..... day of  
 ..... October ..... , 19... 87....



Revised Form 157

*[Handwritten Signature]*  
 President

STATE OF NEW YORK }  
 COUNTY OF New York } ss.:

On the ... 1st ..... day of ... October ..... in the year 1987... before me personally came  
Paul Salmon ..... to me known, who, being by me duly sworn, did

depose and say that he resides in ... New York ..... N. Y.; that he is the Attorney-in-Fact of the SEABOARD SURETY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 327 of the Insurance Law of the State of New York, issued to Seaboard Surety Company his certificate of qualification, evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ROBERT S. REID  
 NOTARY PUBLIC, STATE OF NEW YORK  
 No. 24-8528800  
 Qualified in Kings County  
 Commission Expires April 30, 1988

*[Handwritten Signature]*  
 Notary Public



# SEABOARD SURETY COMPANY

SS 2721

No. 10032

ADMINISTRATIVE OFFICES, BEDMINSTER, NEW JERSEY

## POWER OF ATTORNEY

**KNOW ALL MEN BY THESE PRESENTS:** That SEABOARD SURETY COMPANY, a corporation of the State of New York, has made, constituted and appointed and by these presents does make, constitute and appoint **H.R. Boyle or Robert Urban or James P. Reilly or Catherine P. Rosano or Paul Salmon**

of New York, New York

its true and lawful Attorney-in-Fact, to make, execute and deliver on its behalf insurance policies, surety bonds, undertakings and other instruments of similar nature as follows: Without Limitations

Such insurance policies, surety bonds, undertakings and instruments for said purposes, when duly executed by the aforesaid Attorney-in-Fact, shall be binding upon the said Company as fully and to the same extent as if signed by the duly authorized officers of the Company and sealed with its corporate seal, and all the acts of said Attorney-in-Fact, pursuant to the authority hereby given, are hereby ratified and confirmed.

This appointment is made pursuant to the following By-Laws which were duly adopted by the Board of Directors of the said Company on December 8th, 1927, with Amendments to and including January 15, 1982 and are still in full force and effect:

### ARTICLE VII, SECTION 1

Policies, bonds, recognizances, stipulations, consents of surety, underwriting undertakings and instruments relating thereto, insurance policies, bonds, recognizances, stipulations, consents of surety and underwriting undertakings of the Company, and releases, agreements and other writings relating in any way thereto or to any claim or loss thereunder, shall be signed in the name and on behalf of the Company

(a) by the Chairman of the Board, the President, a Vice-President or a Resident Vice-President and by the Secretary, an Assistant Secretary, a Resident Secretary or a Resident Assistant Secretary, or (b) by an Attorney-in-Fact for the Company appointed and authorized by the Chairman of the Board, the President or a Vice-President to make such signature, or (c) by such other officers or representatives as the Board may from time to time determine. The seal of the Company shall, if appropriate be affixed thereto by any such officer, Attorney-in-Fact or representative.

**IN WITNESS WHEREOF** SEABOARD SURETY COMPANY has caused these presents to be signed by one of its Vice-Presidents, and its corporate seal to be hereunto affixed and duly attested by one of its Assistant Secretaries, this 11th day of September, 1987



Attest:

(Seal) *Joia A. Respoli*  
Assistant Secretary

SEABOARD SURETY COMPANY

By *Michael B. Keegan*  
Vice President

STATE OF NEW JERSEY SS  
COUNTY OF SOMERSET

On this 11th day of September, 1987

Michael B. Keegan

with whom I am personally acquainted, who, being by me duly sworn, said that he resides in the State of New Jersey, that he is a Vice-President of SEABOARD SURETY COMPANY, the corporation described in and which executed the foregoing instrument, that he knows the corporate seal of the said Company, that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said Company, and that he signed his name thereto as Vice-President of said Company by like authority.

(Seal) **FELICE M. CATALANO**  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Exp. June 4, 1991

*Felice M. Catalano*

Notary Public

### CERTIFICATE

I, the undersigned Assistant Secretary of SEABOARD SURETY COMPANY do hereby certify that the original Power of Attorney of which this foregoing is a full true and correct copy, is in full force and effect on the date of this Certificate and I do further certify that the Vice-President who executed the said Power of Attorney was one of the Officers authorized by the Board of Directors to appoint an attorney-in-fact as provided in Article VII, Section 1, of the By-Laws of SEABOARD SURETY COMPANY.

This Certificate may be signed and sealed by facsimile under and by authority of the following resolution of the Executive Committee of the Board of Directors of SEABOARD SURETY COMPANY, as meeting duly called and held on the 29th day of March 1970:

RESOLVED: (1) That the use of a printed facsimile of the corporate seal of the Company and of the signature of an Assistant Secretary on any certification of the correctness of a copy of an instrument executed by the President or a Vice-President pursuant to Article VII, Section 1, of the By-Laws and instruments described in said Article VII, Section 1, with like effect as if such seal and such signature had been manually affixed and made, hereby is authorized and approved.

**IN WITNESS WHEREOF**, I have hereunto set my hand and affixed the corporate seal of the Company to these presents this 1st day of October, 1987



*Michael B. Keegan*  
Assistant Secretary



# ASARCO

Southwestern Exploration Division

December 9, 1987

Ms. Pamela Taylor  
Insurance Dept.  
New York Office

Re: Federal Bond  
#80869904

As requested in your letter of December 1, 1987, attached is a copy of what we received from the Forest Service.

WDG:mek  
Att.

*W. D. Gay*  
W. D. Gay

cc: W.L. Kurtz  
J.D. Sell



United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger District

Rt. 1, Box 33  
Globe, AZ 85501

Reply to: 2810

Date: November 24, 1987

ASARCO  
ATTN: Mr. William D. Gay  
Land Engineer, SWED  
P.O. Box 5747  
Tucson, AZ 85703-0747

Dear Mr. Gay:

Enclosed is the original performance bond issued by the Federal Insurance Company with a contract date of February 20, 1980. This bond is replaced by the bond as described in your November 6, 1987 letter to me. Thank you.

Sincerely,

LARRY P. WIDNER  
District Ranger

Enclosure

ASARCO Incorporated

NOV 25 1987

SW Exploration



**PERFORMANCE BOND**  
(See Instructions on reverse)

BOND EXECUTED (Must be same or  
than date of contract)

**February 20, 1980**

PRINCIPAL (Legal name and business address)  <b>ASARCO INCORPORATED</b> 1150 N. 7th Ave. Tucson, Az. 85705		TYPE OF ORGANIZATION ("X" one)  <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input checked="" type="checkbox"/> CORPORATION									
		STATE OF INCORPORATION <b>New Jersey</b>									
SURETY(IES) (Name(s) and business address(es))  <b>FEDERAL INSURANCE COMPANY</b> 51 John F. Kennedy Parkway Short Hills, N.J. 07078		PENAL SUM OF BOND <table border="1"> <tr> <th>MILLION(S)</th> <th>THOUSAND(S)</th> <th>HUNDRED(S)</th> <th>CENT(S)</th> </tr> <tr> <td>*****</td> <td>2</td> <td>000</td> <td>00</td> </tr> </table>		MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)	*****	2	000	00
MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)								
*****	2	000	00								
		CONTRACT DATE <b>February 20 1980</b>	CONTRACT NO. <b>Restoration and Damage Bond - Unpatented Mining Claims, Tonto National Forest, Pima Gila Counties, Arizona</b>								

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above;

NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. ASARCO Incorporated by Robert B. Crist (Seal)	2.	Corporate Seal
Name(s) & Title(s) (Typed)	1. Robert B. Crist Property Manager	2.	
INDIVIDUAL SURETY(IES)			
Signature(s)	1.	2.	(Seal)
Name(s) (Typed)	1.	2.	
CORPORATE SURETY(IES)			
SURETY A	Name & Address	FEDERAL INSURANCE COMPANY	STATE OF INC. N.J.    LIABILITY LIMIT \$1,000,000.
	Signature(s)	1. [Signature]	2.
	Name(s) & Title(s) (Typed)	1. Lee Mullins Attorney-in-Fact	2.

CORPORATE SURETY(IES) (Continued)

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.		

BOND PREMIUM	▶	RATE PER THOUSAND \$	TOTAL \$
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**INSTRUCTIONS**

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city and State) shall be inserted in the spaces

(Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger  
District

Rt. 1, Box 33  
Globe, AZ 85501

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Reply To: 2230

Date: May 5, 1988

American Smelting and Refining  
ATTN: Mr. Walt Lockhart  
Rt. 1, Box 745  
Miami, AZ 85539

Dear Walt:

I have scheduled June 13, 1988, 8:00 a.m. so we may record your spring removals.

If you cannot make it on that date, please call the office, 425-7189, and we will try to reschedule you for another time.

Please bring your records of purchases, removals, death losses, and shipping tickets with you.

Sincerely,

*Lawrence P. Widner*

LARRY P. WIDNER  
District Ranger

✓ Copy to:  
American Smelting and Refining  
P.O. Box 5747  
Tucson, AZ 85703

cc: W.D. Gay  
5/9/88

ASARCO Incorporated

MAY 9 1988

SW Exploration

# ASARCO

Exploration Department  
Southwestern United States Division

May 10, 1988

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501

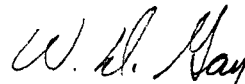
Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

This letter is to inform you of Asarco's intent to deepen a drill hole at the site shown on the attached map.

Since this hole was started last year, Asarco assumes it is permissible to re-enter and deepen the hole this summer. If for any reason you do not approve or have any questions, please call me. The telephone number and address are shown at the bottom of this page.

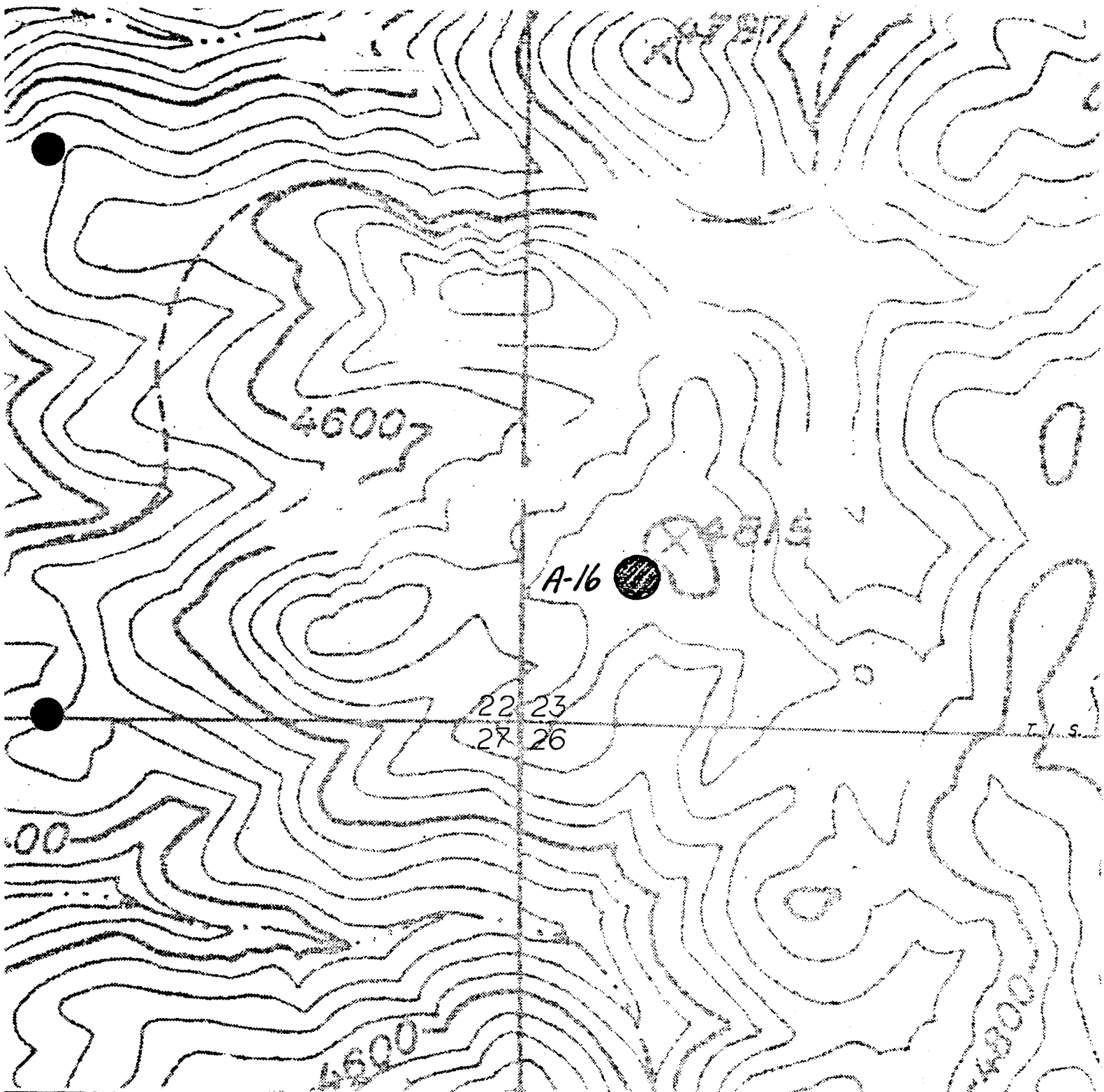
Sincerely yours,



W. D. Gay  
Land Engineer

WDG:mek  
att.

cc: W.L. Kurtz  
J.D. Sell



A-16

22 23  
27 26

T.1 S.

T.1 S. R.13E.

BASE FROM USGS SUPERIOR ARIZ 7.5 QUAD.



Drill Site

SUPERIOR EAST PROJECT  
PINAL COUNTY, ARIZONA  
SCALE: 1" = 500'

# ASARCO

Exploration Department  
Southwestern United States Division

April 5, 1989

Ms. Cookie Mellillo  
New York - Insurance Dept.

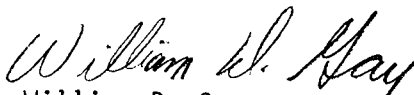
## Insurance Bonds

Enclosed are three (3) copies of Federal Insurance Bond No. 8086-99-04 and one (1) copy of Bond No. 8086-99-05, all copies signed and notarized. Also attached to the copies are Xerox copies indicating an increase in bond amounts from \$5,000 to \$10,000.

I talked to the Forest Service people in Globe, Arizona, today and they show a current Seaboard Bond No. 152128.

If you have any questions, please call.

WDG:mek  
Encs.

  
William D. Gay  
Land Engineer, SWED

cc: J.D. Sell  
W.L. Kurtz



**SAMUEL METZGER, INCORPORATED**

**INSURANCE BROKERS**

120 BROADWAY, NEW YORK, N. Y. 10271

RECTOR 2-9589

C. D. N.

MAY 17 1982

RECEIVED

INVOICE

To:

ASARCO Incorporated  
A/C NORTH AMERICAN MINING DEPT.

ASARCO INC.  
ACCTS. PAYABLE

No 12428 N. Y.

DATE APRIL 20, 1982

POLICY NO		COMPANY	COVERAGE	AMOUNT	PREMIUM
80843848		FEDERAL	NATIONWIDE MINERAL LEASE BOND-IN FAVOR OF U.S.A.	\$10,000.00	\$30.00
EFFECTIVE DATE	EXPIRATION DATE	TERM	<i>of Samuel Metzman</i> EFF: 4/8/82 INCREASE BOND AMOUNT FROM \$5,000. TO \$10,000.00		
5/9/80	5/9/85	5 YRS.			

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON, D.C.

FED.INS.CO.BOND NO 8086-99-04

PROSPECTING PERMIT BOND

KNOW ALL MEN BY THESE PRESENT, That ASARCO INCORPORATED of New Jersey, as principal, and Federal Insurance Company of New Jersey, as surety, are held and firmly bound unto the United States in the sum of Five Thousand dollars (\$5,000.00), lawful money of the United States, for the payment of which well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the said principal has been granted a prospecting permit for non-ferrous metal deposits in the states of Arizona, California, New Mexico or Nevada, and

Whereas the said principal has by such instrument entered into certain covenants and agreements set forth therein, under which operations are to be conducted; and

Whereas, the surety waives any right to notice of and agrees that this bond shall remain in full force and effect, notwithstanding:

1. Any assignment or assignments of an undivided interest in the entire prospecting permit or lease, in which event the assignee or assignees shall be considered to be coprincipal or coprincipals on this bond as fully and to the same extent as though his or their duly authenticated signatures appeared hereon.

2. Any assignment of some of the lands described in the permit or lease, the bond to remain in full force and effect only as to the lands retained in the permit or lease.

3. Any extension of the permit or lease term, or any modification thereof, or readjustment or change of the rental, minimum royalty and royalty provisions, or otherwise.

NOW, THEREFORE, if the said principal, his heirs, executors, administrators, or successors, shall fully comply with all the terms and conditions of said permit or lease or of any extensions thereof, use all reasonable precautions to prevent damage to the deposits, lease the premises in a safe condition upon the termination of said permit or lease, and compensate the surface owner of tenant, if any, for damages to the land, then this obligation shall be null and void; otherwise to remain in full force and effect.

Signed with our hands and sealed with our seals this 5th day of September, 1980.

In presence of

Name of witnesses:

Address:

Miriam B. Morris 120 Broadway, N.Y.C.  
Elyse Kramer 100 Wm St, NYC

ASARCO Incorporated

by: [Signature]  
(Principal, sign full name)

by: [Signature]  
FEDERAL INSURANCE COMPANY  
(Surety)

Richard G. Hight  
Assistant Secretary

NOTARIAL ACKNOWLEDGMENT

CITY, COUNTY & STATE OF NEW YORK, ss

On this 5th day of Sept 1980, before me personally came Richard G. Hight  
Assistant Secretary

to me known, who, being by me duly sworn, did depose and say that he is an Attorney-in-Fact of the **FEDERAL INSURANCE COMPANY**, the Corporation described in and which executed the annexed instrument; that he knows the corporate seal; that it was so affixed by order and authority of the Board of Directors of said corporation, and that he signed his name thereto by like order and authority.

Sworn to and Acknowledged before me on the date above written

**HELEN S. BROWN**  
 NOTARY PUBLIC, State of New York  
 No. 31-4882129  
 Qualified in New York County  
 Commission Expires March 30, 1982

*Helen S. Brown*  
 (Notary's Signature, Description and Seal)

CERTIFICATION

CITY AND COUNTY OF NEW YORK: ss

I, the undersigned, Assistant Secretary of the **FEDERAL INSURANCE COMPANY**, do hereby certify that the following is a true excerpt from the By-Laws of the said Company as adopted by its Board of Directors on March 11, 1953 and amended May 27, 1971 and that this By-Law is in full force and effect.

"ARTICLE XVIII.

Section 2. All bonds, undertakings, contracts and other instruments other than as above for and on behalf of the Company which it is authorized by law or its charter to execute, may and shall be executed in the name and on behalf of the Company either by the Chairman or the Vice-Chairman or the President or a Vice-President, jointly with the Secretary or an Assistant Secretary, under their respective designations, except that any one or more officers or attorneys-in-fact designated in any resolution of the Board of Directors or the Executive Committee, or in any power of attorney executed as provided for in Section 3 below, may execute any such bond, undertaking or other obligation as provided in such resolution or power of attorney.

Section 3. All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the Vice-Chairman or the President or a Vice-President or an Assistant Vice-President, jointly with the Secretary or an Assistant Secretary, under their respective designations."

And I further certify that I have compared the foregoing copy of the POWER OF ATTORNEY with the original thereof and the same is a correct and true copy of the whole of said original Power of Attorney and that said Power of Attorney has not been revoked.

And I further certify that said **FEDERAL INSURANCE COMPANY** is duly licensed to transact fidelity and surety business in each of the States of the United States of America, District of Columbia, Puerto Rico, and each of the Provinces of Canada with the exception of Prince Edward Island; and is also duly licensed to become sole surety on bonds, undertakings, etc., permitted or required by law.

Given under my hand and seal of said Company at New York, N.Y., this 5th day of September 1980

*R. Simmons*  
 Assistant Secretary

Financial Statement of Federal Insurance Company as of December 31, 1979  
 IN THOUSANDS OF DOLLARS  
 STATUTORY BASIS

ASSETS		LIABILITIES AND SURPLUS TO POLICYHOLDERS	
United States Treasury Bonds .....	\$ 100	Unearned Premiums .....	\$ 281,388
United States Government Secured		Outstanding Losses and Claims .....	551,678
New Housing Bonds .....	108,141	Ceded Reinsurance Balances Payable .....	6,355
State and Municipal Bonds .....	449,133	Funds Held under Reinsurance Treaties .....	6,829
Other Bonds .....	113,752	Non-Admitted Reinsurance .....	12,940
Preferred Stocks .....	100,811	Other Liabilities .....	125,341
Common Stocks .....	108,170		
Collateral Loans .....	1,800		
<b>TOTAL INVESTMENTS</b> .....	<b>881,707</b>	<b>TOTAL LIABILITIES</b> .....	<b>984,509</b>
Investment in Affiliates:		Common Stock .....	13,987
Great Northern Insurance Co. ....	14,456	Paid-in Surplus .....	40,602
Pacific Indemnity Company .....	66,748	Earned Surplus .....	185,603
Chubb Life Insurance Co. ....	31,914	Unrealized Appreciation of Investments ...	20,955
Bellmead Development Corp. ....	39,109		
Other .....	3,020	<b>SURPLUS TO POLICYHOLDERS</b> .....	<b>261,147</b>
Cash .....	20,080	<b>TOTAL</b> .....	<b>\$ 1,245,656</b>
Net Premiums Receivable .....	139,619		
Reinsurance Recoverable on Paid			
Losses .....	8,156		
Other Assets .....	40,847		
<b>TOTAL ADMITTED ASSETS</b> .....	<b>\$ 1,245,656</b>		

Investments are valued in accordance with requirements of the National Association of Insurance Commissioners.  
 Investments valued at \$71,967,507 are deposited with government authorities as required by law.



# POWER OF ATTORNEY

**Know all Men by These Presents**, That the FEDERAL INSURANCE COMPANY, 100 William Street, New York, New York, a New Jersey Corporation, has constituted and appointed, and does hereby constitute and appoint Richard G. Hight, Assistant Secretary and Floyd A. Schroppe, David B. Norris, Jr., Muriel Farrell, Paul Salmon, George W. Rabbe, James E. Altman, Olga Andino, Ed Van Name, Yasmin Marinaro, Edward R. Saunders, Jr., and Bruce Lee Wilson of New York, New York each its true and lawful Attorney-in-Fact to execute under such designation in its name and to affix its corporate seal to and deliver for and on its behalf as surety thereon or otherwise, bonds or obligations given or executed in the course of its business, and any instruments amending or altering the same, and consents to the modification or alteration of any instruments referred to in said bonds or obligations.

**In Witness Whereof**, the said FEDERAL INSURANCE COMPANY has, pursuant to its By-Laws, caused these presents to be signed by its Assistant Vice-President and Assistant Secretary and its corporate seal to be hereto affixed this 1st day of May 1980.

FEDERAL INSURANCE COMPANY  
By



George McClellan  
Assistant Vice-President

Richard D. O'Connor  
Assistant Secretary

STATE OF NEW JERSEY  
County of Essex

ss:

On this 1st day of May 1980, before me personally came Richard D. O'Connor to me known and by me known to be Assistant Secretary of the FEDERAL INSURANCE COMPANY, the corporation described in and which executed the foregoing Power of Attorney, and the said Richard D. O'Connor being by me duly sworn, did depose and say that he is Assistant Secretary of the FEDERAL INSURANCE COMPANY and knows the corporate seal thereof; that the seal affixed to the foregoing Power of Attorney is such corporate seal and was thereto affixed by authority of the By-Laws of said Company, and that he signed said Power of Attorney as Assistant Secretary of said Company by like authority; and that he is acquainted with George McClellan and knows him to be the Assistant Vice-President of said Company, and that the signature of said George McClellan subscribed to said Power of Attorney is in the genuine handwriting of said George McClellan and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Acknowledged and Sworn to before me  
on the date above written.

Notary Public



PATRICIA RYAN  
Notary Public of New Jersey  
My Commission Expires December 11, 1983

# SAMUEL METZGER, INCORPORATED

INSURANCE BROKERS

120 BROADWAY, NEW YORK, N.Y. 10271 • RECTOR 2-9589

RECEIVED

INVOICE

To:

ASARCO Incorporated  
A/C NORTH AMERICAN MINING DEPT.

*Wilson*

ASARCO INC.  
ACCTS. PAYABLE

NO 12427

N. Y.  
C. D. N.

MIN 17 4000

DATE APRIL 20, 1982

POLICY NO	COMPANY	COVERAGE	AMOUNT	PREMIUM
0843849	FEDERAL	NATIONWIDE MINERAL LEASE BOND - IN FAVOR OF U.S.A.	\$10,000.00	\$30.00
		<i>Ok Smelting</i>		
EFFECTIVE DATE	EXPIRATION DATE	TERM		
4/9/80	5/9/85	5 YRS.		
		EFF: 4/8/82 INCREASE BOND AMOUNT FROM \$5,000. TO \$10,000.00		

UNITED STATES  
DEPARTMENT OF AGRICULTURE  
NATIONAL FOREST LANDS  
WASHINGTON, D.C.

FED.INS.CO.BOND NO 8086-99-05

PROSPECTING PERMIT BOND

KNOW ALL MEN BY THESE PRESENT, That ASARCO INCORPORATED of New Jersey, as principal, and Federal Insurance Company of New Jersey, as surety, are held and firmly bound unto the United States in the sum of Five Thousand dollars (\$5,000.00), lawful money of the United States, for the payment of which well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the said principal has been granted a prospecting permit for non-ferrous metal deposits in the states of Arizona, California, New Mexico or Nevada, and

Whereas the said principal has by such instrument entered into certain covenants and agreements set forth therein, under which operations are to be conducted; and

Whereas, the surety waives any right to notice of and agrees that this bond shall remain in full force and effect, notwithstanding:

1. Any assignment or assignments of an undivided interest in the entire prospecting permit or lease, in which event the assignee or assignees shall be considered to be coprincipal or coprincipals on this bond as fully and to the same extent as though his or their duly authenticated signatures appeared hereon.

2. Any assignment of some of the lands described in the permit or lease, the bond to remain in full force and effect only as to the lands retained in the permit or lease.

3. Any extension of the permit or lease term, or any modification thereof, or readjustment or change of the rental, minimum royalty and royalty provisions or otherwise.

NOW, THEREFORE, if the said principal, his heirs, executors, administrators or successors, shall fully comply with all the terms and conditions of said permit or lease or of any extensions thereof, use all reasonable precautions to prevent damage to the deposits, lease the premises in a safe condition upon the termination of said permit or lease, and compensate the surface owner of tenant if any, for damages to the land, then this obligation shall be null and void; otherwise to remain in full force and effect.

Signed with our hands and sealed with our seals this 5th day of September 1980.

In presence of

Name of witnesses:

Address:

Miriam B. Morris 120 Broadway, N.Y.C.  
Elyse Kramer 100 Wm St. NYE

ASARCO Incorporated

by: [Signature]  
(Principal, sign full name)  
T. C. Osborne

by: [Signature]  
FEDERAL INSURANCE COMPANY  
(Surety)

Richard G. Hight  
Assistant Secretary



NOTARIAL ACKNOWLEDGMENT

CITY, COUNTY & STATE OF NEW YORK, ss

On this 5th day of Sept. 1980, before me personally came Richard G. Hight  
Assistant Secretary

to me known, who, being by me duly sworn, did depose and say that he is an Attorney-in-Fact of the FEDERAL INSURANCE COMPANY, the Corporation described in and which executed the annexed instrument; that he knows the corporate seal; that it was so affixed by order and authority of the Board of Directors of said corporation, and that he signed his name thereto by like order and authority.

Sworn to and Acknowledged  
 before me on the date above written

**HELEN S. BROWN**  
 NOTARY PUBLIC, State of New York  
 No. 31-4682129  
 Qualified in New York County  
 Commission Expires March 30, 1982

*Helen S. Brown*  
 (Notary's Signature, Description and Seal)

CERTIFICATION

CITY AND COUNTY OF NEW YORK: ss

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And I further certify that said FEDERAL INSURANCE COMPANY is duly licensed to transact fidelity and surety business in each of the States of the United States of America, District of Columbia, Puerto Rico, and each of the Provinces of Canada with the exception of Prince Edward Island; and is also duly licensed to become sole surety on bonds, undertakings, etc., permitted or required by law.

Given under my hand and seal of said Company at New York, N.Y., this 5th day of September, 1980

*L. Summerville*  
 Assistant Secretary

Financial Statement of Federal Insurance Company as of December 31, 1979  
 IN THOUSANDS OF DOLLARS  
 STATUTORY BASIS

ASSETS		LIABILITIES AND SURPLUS TO POLICYHOLDERS	
United States Treasury Bonds .....	\$ 100	Unearned Premiums .....	\$ 281,366
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Common Stocks .....	108,170		
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<b>TOTAL INVESTMENTS .....</b>	<b>881,707</b>	<b>TOTAL LIABILITIES .....</b>	<b>984,509</b>
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Pacific Indemnity Company .....	66,748	Earned Surplus .....	185,603
Chubb Life Insurance Co. ....	31,914	Unrealized Appreciation of Investments ...	20,955
Bellmead Development Corp. ....	39,109		
Other .....	3,020	<b>SURPLUS TO POLICYHOLDERS .....</b>	<b>281,147</b>
Cash .....	20,080	<b>TOTAL .....</b>	<b>\$ 1,245,656</b>
Net Premiums Receivable .....	139,619		
Reinsurance Recoverable on Paid			
Losses .....	8,156		
Other Assets .....	40,847		
<b>TOTAL ADMITTED ASSETS .....</b>	<b>\$ 1,245,656</b>		

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In Witness Whereof, the said FEDERAL INSURANCE COMPANY has, pursuant to its By-Laws, caused these presents to be signed by its Assistant Vice-President and Assistant Secretary and its corporate seal to be hereto affixed this 1st day of May 1980.

FEDERAL INSURANCE COMPANY  
By



George McClellan  
Assistant Vice-President

Richard D. O'Connor  
Assistant Secretary

STATE OF NEW JERSEY  
County of Essex

ss:

On this 1st day of May 1980, before me personally came Richard D. O'Connor to me known and by me known to be Assistant Secretary of the FEDERAL INSURANCE COMPANY, the corporation described in and which executed the foregoing Power of Attorney, and the said Richard D. O'Connor being by me duly sworn, did depose and say that he is Assistant Secretary of the FEDERAL INSURANCE COMPANY and knows the corporate seal thereof; that the seal affixed to the foregoing Power of Attorney is such corporate seal and was thereto affixed by authority of the By-Laws of said Company, and that he signed said Power of Attorney as Assistant Secretary of said Company by like authority; and that he is acquainted with George McClellan and knows him to be the Assistant Vice-President of said Company, and that the signature of said George McClellan subscribed to said Power of Attorney is in the genuine handwriting of said George McClellan and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Acknowledged and Sworn to before me  
on the date above written.



Notary Public

PATRICIA RYAN  
Notary Public of New Jersey  
My Commission Expires December 11, 1983



United States  
Department of  
Agriculture

Forest  
Service

Sierra Vista RD  
Coronado NF

5990 S. Hwy. 92  
Hereford, AZ. 856  
602/378-0311

T.E.S.

JUL 2 1991

cc: Tony Dalla Vista - 7/2/91  
Bill Gay mck

Reply to: 2360, 2810

Date: June 28, 1991

ASARCO, Inc.  
P.O. Box 5747  
Tucson, AZ. 85703-0747


Dear Miner/Operator,

On February 19, 1991, a letter was mailed to you by this office informing you of a new policy regarding cultural resources surveys and biological evaluations. The policy stated that the cost of these surveys and evaluations would be the responsibility of the operator. This statement was in error. The statement should have read that the listed consultants could be contracted and paid for by the operator if he/she wished to "speed up" the environmental document process required prior to approval of any operating plan. We apologize for any inconvenience this may have caused. Currently, it takes up to 90 days to schedule surveys and evaluations by Forest Service personnel, prepare the documents, advertise the decision in the newspaper, and approve the plans.

Due to the length of this process we again ask that all notices of intent/operating plans be submitted at least 10 weeks prior to any planned work. We feel this is the minimum amount of time needed to complete the above process. Additional time may be required depending on the complexity of your proposal.

If you have any questions regarding these policies please contact Duane Bennett, Dennis Brandolino, or myself at 378-0311.

Sincerely,

  
JERRY A. DEITER  
District Ranger

ASARCO Inc.

JUL 3 1991

SW Exploratio

# ASARCO

JDS

Exploration Department  
Southwestern United States Division  
James D. Sell  
Manager

July 10, 1989

Mr. Larry Widner  
District Ranger  
Tonto National Forest  
U.S. Dept. of Agriculture  
Rt. 1, Box 33  
Globe, AZ 85501

Re 2810 Mining Claims  
Reoccupy Site A-16  
Superior East Project  
Pinal County, Arizona

Dear Mr. Widner:

Asarco will reoccupy drill site A-16, SW  $\frac{1}{4}$ , Sec. 23, T1S, R13E, on the JI Ranch area, about the middle of August 1989.

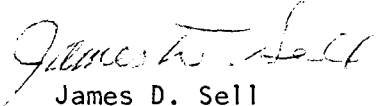
The driller will again be Joy Drilling (now named CBC Drilling) and will resume coring from where they left off last year.

The drilling will be continued into September.

Mr. Walt Lockhart has informed me that the road from Devil's Canyon has been cleared to the drill site.

Sincerely,

JDS:mek

  
James D. Sell

cc: W.D. Gay  
W.E. Lockhart

October 6, 1989

Mr. J.D. Sell

Tonto National Forest  
Road Implementation Plan

Attached to this memo is the original letter sent to us by the Forest Service and a Xerox map showing the Superior East claim block in relation to the road plan.

The majority of the claims are within an area that shows a road that would be closed to the public, but Mr. Larry Widner and Mr. Wayne Brasher, Forest Rangers, pointed out the following:

1. The proposed closing is being protested by several 4-wheel drive groups (Tucson and Phoenix) and for this reason the road is likely to remain public.
2. If it were closed to the public, Asarco would have access to do assessment work as long as we have active claims.
3. The holder of the grazing permit would have access also. Asarco (J1 Ranch) now holds the grazing lease.

WDG:mek

*William D. Gay*  
William D. Gay

*WDG:*  
*Of the closures we are to take place - would the FS block off the road at the Devil's Canyon gate, and then ASARCO would have to request each time we wanted in?*

*Check FS if they would OK a road starting on private J1 Ranch ground & connecting with the "dotted" road stub south of the J1 Ranch. The gate here would be locked & on private ground & not open to public.*  
*JDS*

JDS

October 6, 1989

copy to  
FILES  
WLG  
WDG

Mr. J.D. Sell

Tonto National Forest  
Road Implementation Plan

Attached to this memo is the original letter sent to us by the Forest Service and a Xerox map showing the Superior East claim block in relation to the road plan.

The majority of the claims are within an area that shows a road that would be closed to the public, but Mr. Larry Widner and Mr. Wayne Brasher, Forest Rangers, pointed out the following:

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3. The holder of the grazing permit would have access also. Asarco (JI Ranch) now holds the grazing lease.

WDG:mek

*William D. Gay*  
William D. Gay

*WDG:*  
*If the closings were to take place - would the FS block off the road at the Devil's Canyon gate, and then ASARCO would have to re-open it every time we wanted in?*

*Check FS if they would OK a road starting on private SI Ranch ground & connecting with the "closed" road south of the SI Ranch. The gate here would be locked on private ground & not open to public.*  
*W.D.G.*

United States  
Department of  
Agriculture

Forest  
Service

Tonto  
National  
Forest

2324 E. McDowell Road  
P.O. Box 5348  
Phoenix, AZ 85010  
602 225-5200

WLN-505-406  
Reply To: 1920

Date: September 11, 1989

SEP 15 1989

Dear Forest Partner,

SW Exploration

The Tonto National Forest Plan calls for the development of a road implementation plan to serve the transportation needs on the Forest and assure appropriate and adequate access to Forest resources.

Forest managers have been evaluating the current transportation network and developing a new travel way access plan that balances the needs and safety of Forest users while protecting resource values, such as wildlife habitat, soil stability and water quality. The plan under consideration proposes that some existing roads and travel routes that do not lead to any destination or serve a specific access need would be closed.

To help assure we don't overlook any function that is not readily apparent, before closing any traditional travel routes, we want the people who use the Forest to have an opportunity to comment on the proposal.

The following open houses have been scheduled for you to visit with Forest personnel about the proposal. Please stop by anytime during the day listed at whichever location is most convenient to you:

Monday, Sept 18  
8:00 a.m.-9:00 p.m.

Tonto National Forest Supervisor's Office  
2324 E. McDowell Road, Phoenix

Thursday, Sept 21  
8:00 a.m.-9:00 p.m.

Mesa Ranger District Office  
26 North MacDonald Street, Mesa

Tuesday, Sept 26  
8:00 a.m.-9:00 p.m.

Pleasant Valley Ranger District  
Young Public Library Conference Room  
Young, Arizona

Thursday, Sept 28  
8:00 a.m.-9:00 p.m.

Payson Ranger District Office  
1009 East Highway 260, Payson

Monday, Oct 2  
8:00 a.m.-8:00 p.m.

Tonto Basin Ranger District Office  
Highway 88, Roosevelt

Thursday, Oct 5  
8:00 a.m.-9:00 p.m.

Globe Ranger District Office  
Sixshooter Canyon on Jess Hayes Road, Globe

Wednesday, Oct 11  
8:00 a.m.-9:00 p.m.

Cave Creek Ranger District Office  
Carefree Trade Center  
Southwest corner of Tom Darlington  
and Cave Creek Roads, Carefree

792-3934

There will be no formal presentations at any of the open houses. They are an opportunity for discussion with Forest Rangers so they can collect information about personal preferences and concerns. Maps (quads) for the entire Forest will be available for inspection at each open house along with comment forms like the sample attached to identify roads which need further study.

If you are unable to attend any of the open houses, but wish to examine the proposal, please call Forest Engineer Rod Mendenhall at 225-5200 to schedule an appointment. The maps will be available at the Supervisor's Office by October 16, after the final open houses. If desired, an additional open house can be scheduled in Phoenix after October 16.

Sincerely,



JAMES L. KIMBALL  
Forest Supervisor

Enclosure

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

PLACE \_\_\_\_\_

DATE \_\_\_\_\_

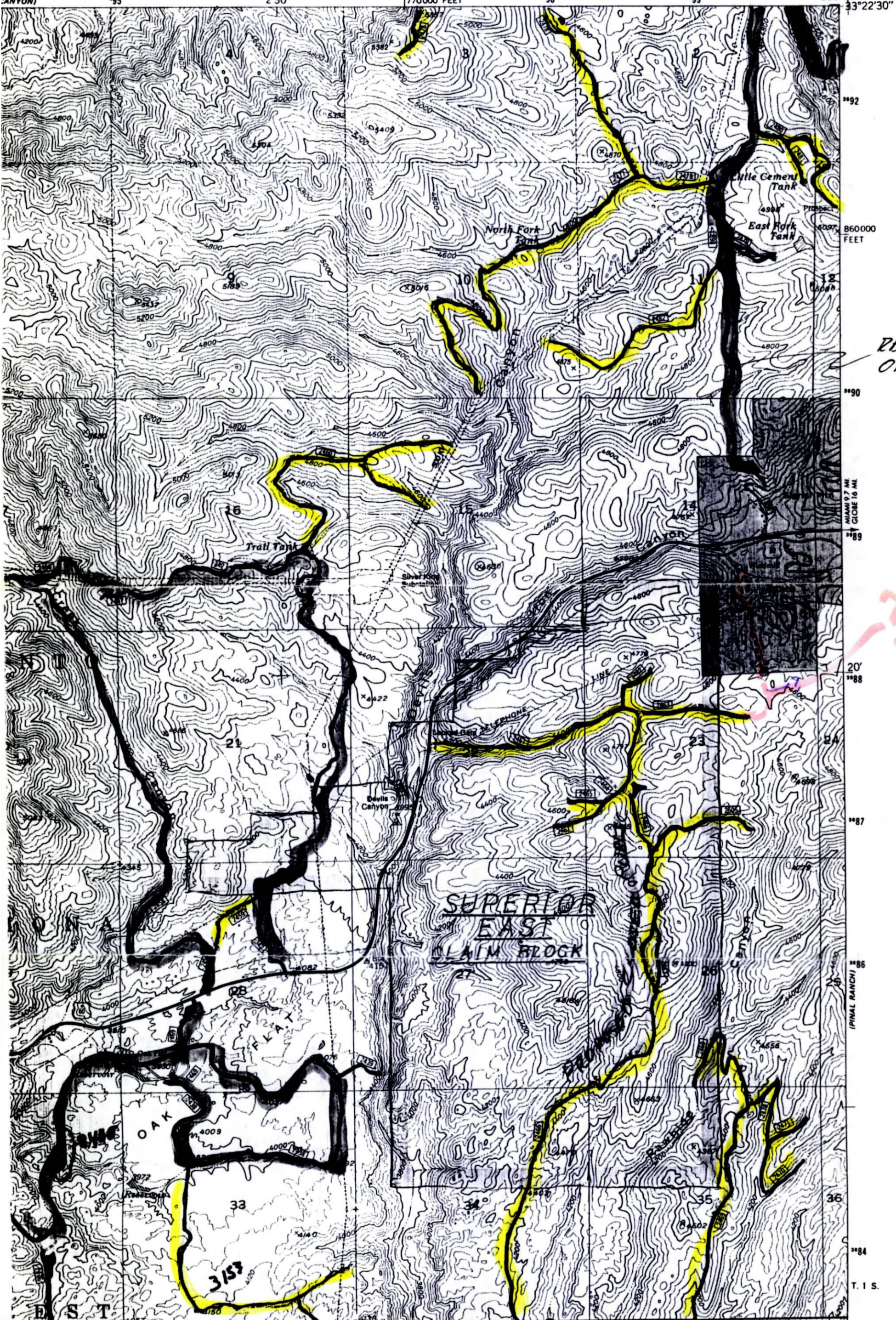
**RESOURCE ACCESS/TRAVEL MANAGEMENT  
ISSUES, CONCERNS, AND OPPORTUNITIES**

ROAD NUMBER	SEGMENT	QUAD	LOCATION
COMMENTS			



INSPIRATION

111°00' 33"22'30" 111°00' 33"22'30" 111°00' 33"22'30" 111°00' 33"22'30"



REMAIN  
OPEN

MIAMI 97 MI  
CLOSE 16 MI

(PINAL RANCH)



~~Mr~~ Robin Strathy, USFS

Geologist  
City Zone Office  
225-5264

2324 E McDowell Rd  
Flagstaff  
85006

Forest Service doing review on Oak Flat  
Withdrawal. He would like to review  
our drill data - sections, etc. suggesting why  
the withdrawal should be reopened to  
exploration.

I explained that much of our interest  
was based on the projection of Magma's zones  
and that the mineralization would be deep  
& mining would not affect the surface use.

To JDS

Date 9/18/89 Time 11:49  AM  PM

**WHILE YOU WERE OUT**

M Robin Strathy  
of Forest Serv of Phx

Phone ( 1 ) 225-5266  
Area Code Number Extension

TELEPHONED	<input checked="" type="checkbox"/>	PLEASE CALL	<input checked="" type="checkbox"/>
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN	<input type="checkbox"/>
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT	<input type="checkbox"/>

RETURNED YOUR CALL

Message Re Oak Flat

Still wants hard data

Will be in Tucson Friday 22 Sept

Mary  
Operator

AIME, 1948

One Hundredth of the United  
States, 1933-1967

The Graton-Sales Volume  
Vol II, p. 1282-1310

Geol of the Magma Mine Area,  
area map p. 1290  
Section p. 1294

plan. p. 1297

Also pay dirt SW Edition

Sept 1989, p. 3A & 3B

Magma looking at reopening  
Superior mine - Has a good  
orebody.

December 1, 1989

J. D. Sells  
ASARCO Incorporated  
Exploration Department  
P.O. Box 5747  
Tucson, AZ. 85703

Dear Jim:

In reference to our telephone conversation this morning, no livestock has been removed from the JI Ranch since spring sales.

We have been moving the cattle from the southeast and southwest pastures to the north pasture, and have been putting some cattle on Hutton Peak for removal later. We have turned some of the bigger steer calves to the north pasture which ordinarily would have been sold this fall.

I am to meet with the Forest Service at 8 a.m. December 14 to turn in removals for 1989. To be within our allotted permit numbers we will have to remove 100 head by December 31, and they require the number removed by sex and class of animals.

Please keep me informed of the decision made concerning the cattle before the December 14th deadline.

Sincerely,



Walt Lockhart

cc: W.L. Kurtz  
W.D. Gay  
12/4/89

ASARCO Incorporated

DEC 4 1989

SW Exploration

FILE

JDS

12/5/89

As you requested, I  
called Walt Lockhart  
& asked if the cattle  
are scheduled to be  
sold. He said - No  
its up to you, Bill  
& Tom to decide  
what to do with them

Mary

J I Ranch

# ASARCO

Exploration Department  
Southwestern United States Division

May 30, 1990

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501

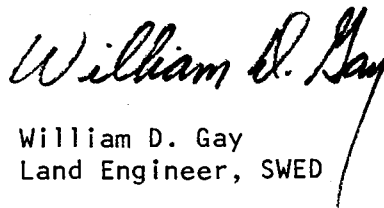
Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

This letter is to inform you of Asarco's plan to reenter and continue coring the drill hole that was occupied last August and September. The drill hole (A-16) site is shown on the attached map. Would like to occupy the site about June 1990.

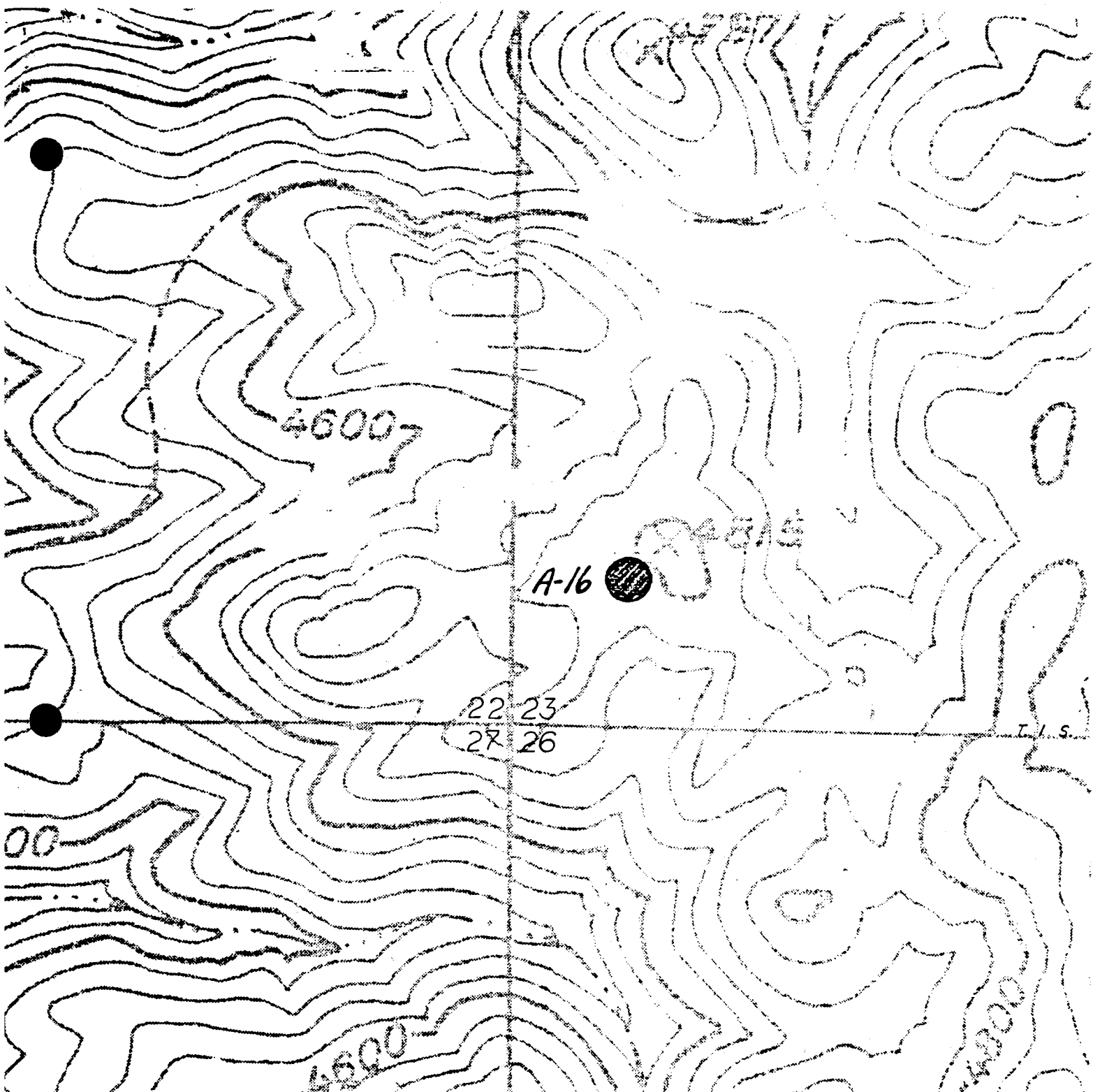
If for any reason you do not approve of the reentry or have any questions, please call me. The telephone number and address are shown at the bottom of this page.

Sincerely yours,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
Att.

cc: W.L. Kurtz  
J.D. Sell



T. 1 S. R. 13 E.

BASE FROM U.S.G.S. SUPERIOR ARIZ. 2.5' QUAD.



Drill Site

SUPERIOR EAST PROJECT  
PINAL COUNTY, ARIZONA  
SCALE: 1" = 500'

7-11-90

From: W. D. Gay

To: J. D. Sell

Mr. Larry Widner (Forest Service) gave verbal permission for us to recenter A-16 - Superior East.

He could not find my letter of 5-30-90 and indicated with all the fires & lack of help the Globe District is in chaos

Bill

# ASARCO

Exploration Department  
Southwestern United States Division

July 11, 1990

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501


Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

Enclosed is a copy of the letter we discussed by telephone this morning.

I appreciate your efforts in handling this matter.

Sincerely yours,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
enc.

cc: W.L. Kurtz  
J.D. Sell

# ASARCO

Exploration Department  
Southwestern United States Division

May 30, 1990

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501

Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

This letter is to inform you of Asarco's plan to reenter and continue coring the drill hole that was occupied last August and September. The drill hole (A-16) site is shown on the attached map. Would like to occupy the site about June 1990.

If for any reason you do not approve of the reentry or have any questions, please call me. The telephone number and address are shown at the bottom of this page.

Sincerely yours,

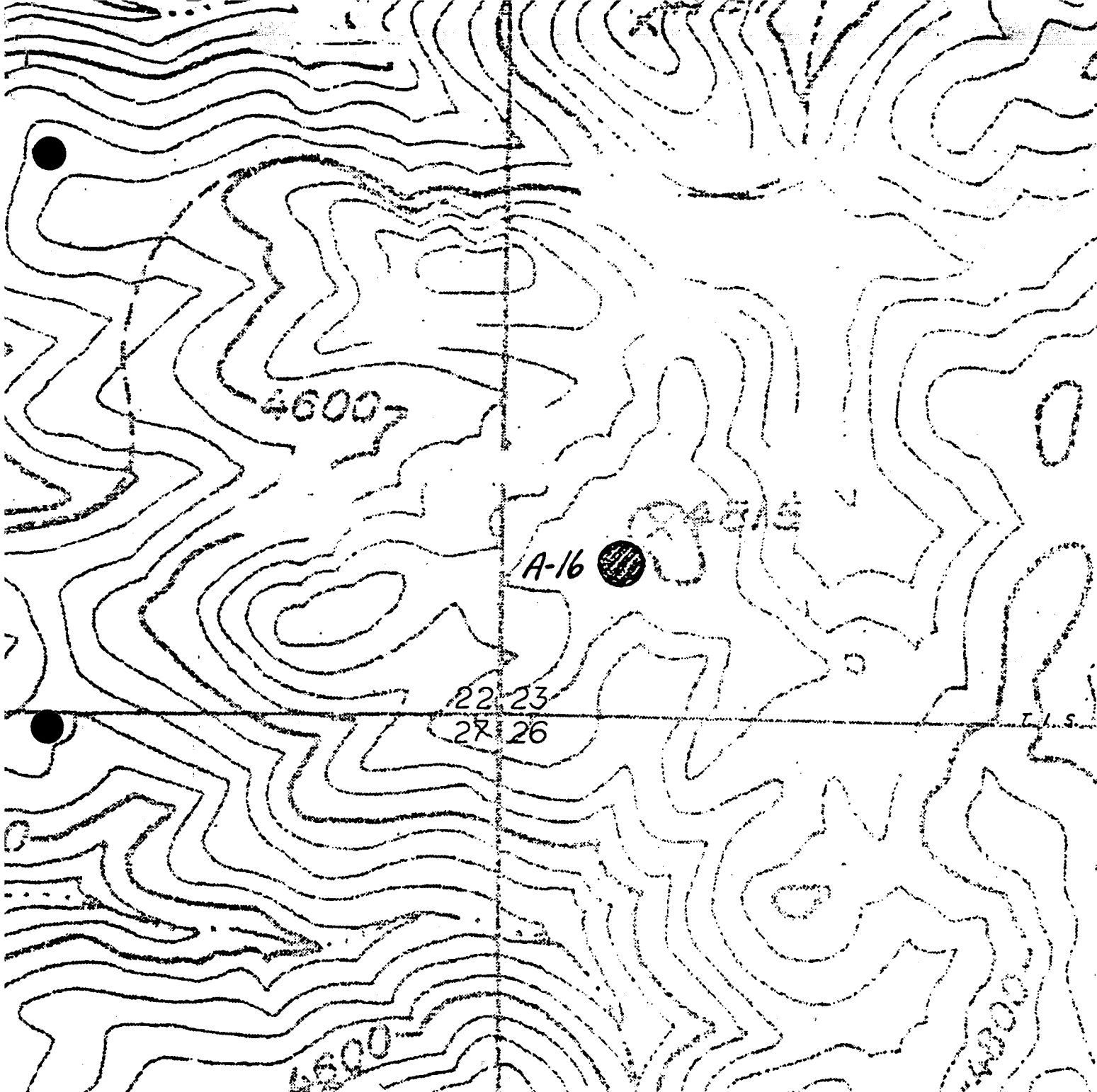


William D. Gay  
Land Engineer, SWED

WDG:mek  
Att.

cc: W.L. Kurtz  
J.D. Sell





T.1 S. R.13E.

BASE FROM U.S.G.S. SUPERIOR ARIZ. 2.5 QUAD.



Drill Site

SUPERIOR EAST PROJECT

PINAL COUNTY, ARIZONA

SCALE: 1" = 500'

United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger  
District

Rt. 1, Box 33  
Globe, AZ 85501-9707  
602 425-7189

JDS

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Reply To: 2810

Date: July 23, 1990

ASARCO Incorporated  
ATTN: Mr. William D. Gay, <sup>NEW TITLE</sup> (Lard) Engineer, SWED  
P.O. Box 5747  
Tucson, AZ 85703-0747

Dear Mr. Gay:

ASARCO's plan of additional work at the drill hole (A-16) site is approved provided there is no additional surface disturbance over that which has previously occurred.

If you have any questions, please contact Stu Herkenhoff or Alexis Collins at the above number.

Sincerely,



LARRY F. WIDNER  
District Ranger

# ASARCO

Southwestern Exploration Division

JDS

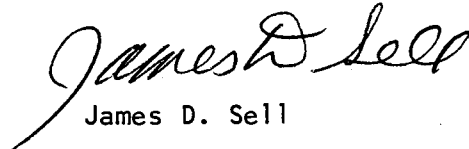
May 13, 1992

W.D. Gay

New Road Request  
Superior East Project  
Pinal County, Arizona

Please prepare a map and letter to the Forest Service, Globe, showing old access to site (A-16) (unnamed on your map), then request extension of road for 700' SW along ridge with new pad for drill site.

JDS:mek

  
James D. Sell

cc: W.L. Kurtz

# ASARCO

Exploration Department  
Southwestern United States Division

May 20, 1992

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501

1992 Assessment Work  
Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

Asarco would like to submit for your approval the following:

1. Establish a drill site about 50 feet east of road as shown on the attached map. This site would require very little disturbance to surface or vegetation.
2. Improve the existing road in the area noted on the attached map. Also enclosed is a slope diagram showing existing and proposed grades. This improvement will require drilling and blasting.

If you care to review the projects on site, or have any questions, please call or write to me or J.D. Sell, Manager, SWED.

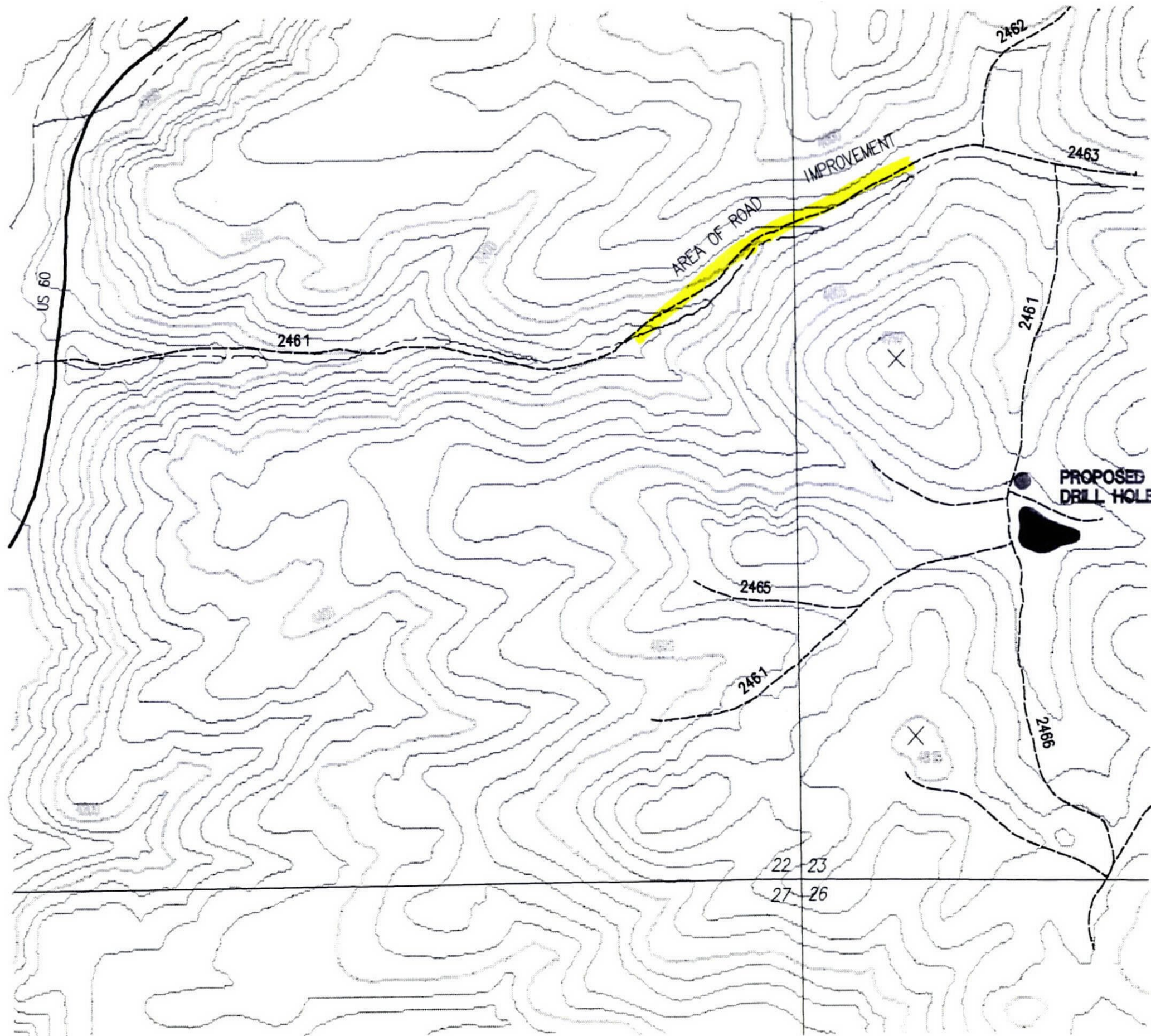
Sincerely yours,



William D. Gay  
Land Engineer, SWED

WDG:mek  
Atts.

cc: W.L. Kurtz  
J.D. Sell



T. 1 S., R. 13 E.

**ASARCO** SOUTHWESTERN EXPLORATION

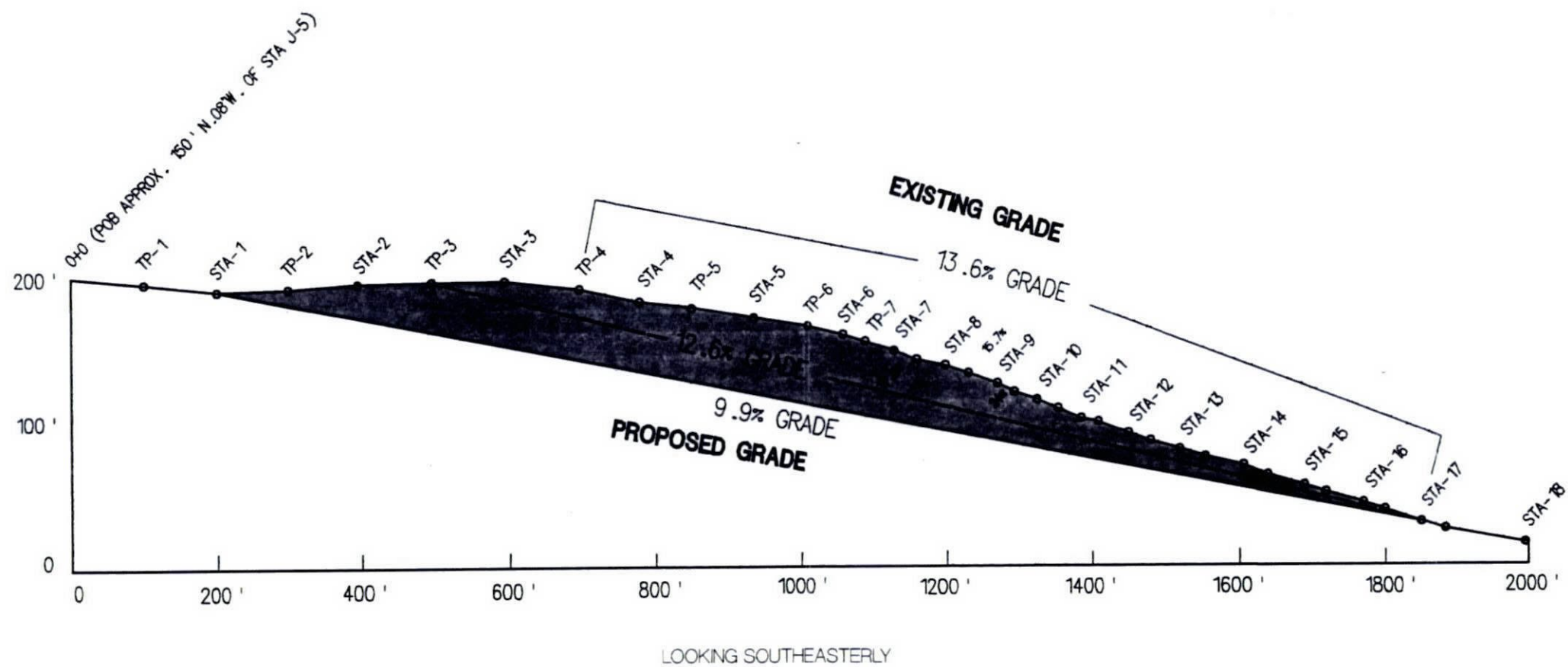
**SUPERIOR EAST PROJECT  
1992 DRILLING & ROADWORK**

PINAL CO., ARIZONA  
1"500'

mn SE920503 JDS-WDG/DAM 05/15/92  
PLOT: SP8-10  
SP9-10/.7

TOPOGRAPHY FROM USGS SUPERIOR 7.5 MIN QUAD.





**ASARCO** SOUTHWESTERN  
EXPLORATION

**SUPERIOR EAST PROJECT  
PROPOSED GRADE IMPROVEMENT  
USFS 2461  
PINAL CO., ARIZONA**

JDS/WDG/DAM

05/92

United States  
Department of  
Agriculture

Forest  
Service

Globe  
Ranger  
District

Rt. 1, Box 33  
Globe, AZ 85501-9707  
602 425-7189

JDS

*Superior East*

Reply To: 2810

Date: June 3, 1992

American Smelting & Refining Co.  
ATTN: Mr. William D. Gay, Land Engineer  
Exploration Department  
P.O. Box 5747  
1150 N. 7th Ave.  
Tucson, AZ 85703-0747

ASARCO Incorporated

JUN 8 1992

SW EXPLORE

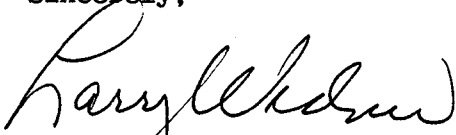
Dear Mr. Gay:

We have received your letter of May 20, 1992, and, after initial review, would like to meet with you or the appropriate person to review the proposal on the ground. We propose to meet at the junction of subject road and US 60 at 10:00 a.m., June 18, 1992, unless you contact us for an alternative date.

We are enclosing a copy of a plan of operations for your use in submitting for this and future projects. Completion of this form will help you to address all issues/protection measures in planning for the proposed project. For example, for the proposed project: How or where will the material resulting from the road grade leveling be disposed?

Should you have any further questions, please contact Stu Herkenhoff at the number above.

Sincerely,



LARRY P. WIDNER  
District Ranger

Enclosure

cc: J.D. Sell (6/8/92) ✓

USDA, Forest Service

FS-2800-5 (1/90)  
OMB NO. 0596-0022  
EXPIRES: 07/31/92

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**PLAN OF OPERATIONS  
FOR MINING ACTIVITIES  
ON NATIONAL FOREST LANDS**

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Submitted by \_\_\_\_\_  
Signature Title Date

Plan Received by \_\_\_\_\_  
Signature Title Date

**I. GENERAL INFORMATION**

A. Name of Mine/Project \_\_\_\_\_

B. Type of Operation \_\_\_\_\_  
(lode, placer, mill, exploration, development, production, other)

C. Is this a (new/continuing) operation? (CIRCLE ONE)  
If continuing a previous operation, this plan (replaces/modifies) a previous plan of operation.  
(CIRCLE ONE)

D. Proposed start-up date of operation \_\_\_\_\_

E. Proposed duration of operations \_\_\_\_\_

F. Proposed seasonal reclamation close-out date \_\_\_\_\_



II. PRINCIPALS

A. Name, address and phone number of operator \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Name, address, and phone number of authorized field representative (if other than the operator).  
Attach authorization to act on behalf of operator.  
\_\_\_\_\_  
\_\_\_\_\_

C. List the owners of the claims (if other than the operator)  
\_\_\_\_\_  
\_\_\_\_\_

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

D. List name and address of any other lessees, assigns, agents, etc. and briefly describe their  
involvement with the operation, if applicable:  
\_\_\_\_\_  
\_\_\_\_\_

III. PROPERTY OR AREA

Name of claim and the legal land description where the operation will be conducted.

MC #	Name	Section	Township	Range

**IV. DESCRIPTION OF THE OPERATION**

A. Access. Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries and describe and show on the map all access needs, on and off the claim. Specify what Forest Service existing roads will be used, where maintenance or reconstruction is proposed and where any new construction is necessary. For new construction, include construction specifications such as widths, grades, etc. Show location and size of culverts. Describe maintenance plans. Describe the type and sizes of vehicles and equipment that will be traveling the access routes.

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B. Attach map, sketch or drawing showing location and layout of the area of operation. Include names and locations of any streams, creeks, and springs. Describe and explain on the map the type of operation, method or techniques you propose (examples: drilling, open pit mining, dredging, milling, etc.; include locations, capacity, size, amount, etc.). Show on the map and describe below the size and kind of all surface disturbance, such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

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(If more space is needed to fill out a block of information, use additional sheets and attach to form.)



Describe the Equipment and Vehicles you propose to use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.

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E. Structures. Describe and include justification for the structures or facilities planned for the operation. Include such things as storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipe lines, water diversions, trailers, sanitation facilities, etc. Include justification and calculations for sizing of tanks, pipelines and water diversions. The fuel storage facilities should include containment structures that will hold the volume of the largest storage tank in case of a tank failure or leak. Show the locations on the sketch map.

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V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. Air Quality. Describe measures to be taken to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.

Five horizontal lines for writing.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

B. Water Quality. State how applicable state and federal water quality standards will be met. Describe what measures or management practices will be used to minimize water quality impacts and meet applicable standards.

- 1. If water is to be used in the operation (processing ore, washing ore, solution make-up, etc.) state how the water will be stored, treated and disposed of. If ponds of any type are proposed, such as for storage or settling, state how they will be designed and built. Provide storage capacities and water balance calculations. State how ponds will be maintained on an annual basis.
- 2. Describe methods to control runoff and erosion to prevent entry into surface water for all disturbed areas, including waste and tailings dumps.
- 3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.
- 4. Describe what measures will be used to minimize potential water quality impacts during winter closure, if applicable.
- 5. If land application is proposed for wastewater disposal, the location and operation of the land application system should be described.

Four horizontal lines for writing.

**Solid Wastes.** State how any tailing, dumpage, or other waste produced by operations will be disposed of or treated so as to minimize adverse impacts. Include a statement that all unburnable garbage and refuse will be hauled off-Forest to a sanitary landfill.

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**D. Scenic Values.** State how scenic values will be protected. Examples are screening, slash disposal, timely reclamation, etc.

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(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

**E. Fish and Wildlife.** All practicable measures to maintain and protect fisheries and wildlife habitat affected by the operations must be taken, and should be defined. Most of those measures involve avoidance of critical habitat such as along streams and bogs when planning roads, dumps, etc. Opportunities during reclamation to prevent erosion or plant browse or forage species should be described.

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**F. Cultural Resources.** Describe procedures for protection of historic and archeological values. The Forest Service is responsible for insuring that the area to be covered by the operating plan is inventoried prior to plan approval to determine the presence of significant cultural resources and will specify protective and/or mitigation measures to be taken by the operator. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, the operator shall not proceed until he is notified by the District

Ranger that he has complied with provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800.

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G. List all hazardous substances (by name and quantity required) which you intend to use or generate during the proposed operation. Operations USING or GENERATING HAZARDOUS SUBSTANCES must attach copies of other Federal and State agency permits, including all stipulations and conditions pertaining to the permit.

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H. With regard to hazardous substances, discuss handling, storage, security (fencing), identification (signing), or other special operations requirements necessary to conduct the proposed operation.

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(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

Close-out Reclamation. This section should describe the removal of structures and facilities, and the reclamation of the access road. It should specify that roads no longer needed: (1) be closed, (2) bridges and culverts be removed, (3) cross drains, dips, or water bars be constructed, and (4) the road surface be shaped to as near a natural contour as practicable and be stabilized. Show the expected date for completion of all reclamation.

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**VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS**

A. Recommended Changes/Modifications for Plan of Operations: \_\_\_\_\_

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B. Bond - As a further guarantee of faithful performance with the reclamation requirements agreed upon in the plan of operations, the operator delivers herewith and agrees to maintain a surety bond, cash, bond, irrevocable letters of credit in the sum of \_\_\_\_\_ (\$ \_\_\_\_\_).





ACKNOWLEDGMENTS

- A. It is understood that should the nature of the operation change a modified or supplemental plan of operations may be required.
- B. It is understood that approval of this plan of operations does not constitute: (1) Certification of ownership to any person named herein; and (2) Recognition of the validity of any mining claim named herein.
- C. It is understood that a bond equivalent to the actual cost of performing the agreed upon mitigation and reclamation measures may be required before this plan can be approved.
- D. It is understood that approval of this plan does not relieve me of my responsibility to comply with any other applicable State or Federal laws, rules or regulations.
- E. It is understood that any information provided with this plan that is marked confidential will be treated by the agency in accordance with that agency's laws, rules and regulations.

I/We have reviewed and agree to comply with all conditions in this plan of operations, including the recommended changes and reclamation requirements. I/We understand that the bond will not be released until the Forest Officer in charge gives written approval of the reclamation work.

Operator (or Authorized Official)

(Date)

OPERATING PLAN APPROVAL:

(Name)

(Title)

(Authorized Officer)

(Date)

*BE approved* \_\_\_\_\_

*ARCH SURVEY Approved* \_\_\_\_\_

Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0596-0022), Washington, D.C. 20503.

# ASARCO

Exploration Department  
Southwestern United States Division

June 23, 1992

Mr. Larry Widner  
Globe District Ranger  
U.S. Forest Service  
Route 1 - Box 33  
Globe, AZ 85501


Plan of Operations  
Superior East Project  
Tonto National Forest  
Globe Ranger District  
Pioneer Mining District

Dear Mr. Widner:

Submitted for your consideration is a completed Plan of Operations for a drill pad in Section 23, T1S, R13E.

I met with Mr. Herkenhoff and we reviewed the proposed site on June 18, 1992.

Very truly yours,

  
William D. Gay  
Land Engineer, SWED

WDG:mek  
Encs.

cc: W.L. Kurtz  
J.D. Sell

PLAN OF OPERATIONS  
FOR MINING ACTIVITIES  
ON NATIONAL FOREST LANDS

Submitted by	<u>William H. Gay</u>	Land Engineer	6/23/92
	Signature	Title	Date
Plan Received by	_____	_____	_____
	Signature	Title	Date

I. GENERAL INFORMATION

A. Name of Mine/Project SUPERIOR EAST PROJECT

B. Type of Operation Exploration (Drill Site)  
(lode, placer, mill, exploration, development, production, other)

C. Is this a (new/continuing) operation? (CIRCLE ONE)  
If continuing a previous operation, this plan (replaces/modifies) a previous plan of operation.  
(CIRCLE ONE)

D. Proposed start-up date of operation  
August 3, 1992

E. Proposed duration of operations  
Four years, site would only be occupied for annual assessment work.

F. Proposed seasonal reclamation close-out date  
Will abandon site temporarily after each annual assessment work is complete.

II. PRINCIPALS

A. Name, address and phone number of operator ASARCO Incorporated, Southwestern  
Exploration Dept., P.O. Box 5747, Tucson, AZ 85703 602/792-3010

B. Name, address, and phone number of authorized field representative (if other than the operator).  
Attach authorization to act on behalf of operator.

NONE.

C. List the owners of the claims (if other than the operator)

Continental Copper, Inc.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

D. List name and address of any other lessees, assigns, agents, etc. and briefly describe their  
involvement with the operation, if applicable:

NONE.

III. PROPERTY OR AREA

Name of claim and the legal land description where the operation will be conducted.

MC #	Name	Section	Township	Range
45909	Margaret #225 (Amd.)	23	1 South	13 East

## IV. DESCRIPTION OF THE OPERATION

- A. Access. Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries and describe and show on the map all access needs, on and off the claim. Specify what Forest Service existing roads will be used, where maintenance or reconstruction is proposed and where any new construction is necessary. For new construction, include construction specifications such as widths, grades, etc. Show location and size of culverts. Describe maintenance plans. Describe the type and sizes of vehicles and equipment that will be traveling the access routes.

Attached is a map 1"=500' showing details of roads and proposed drill pad (approx. 30' x 50') location. Drill is a conventional rubber tired rotary/core drill (approx. 9 feet wide and 35 feet long).

- B. Attach map, sketch or drawing showing location and layout of the area of operation. Include names and locations of any streams, creeks, and springs. Describe and explain on the map the type of operation, method or techniques you propose (examples: drilling, open pit mining, dredging, milling, etc.; include locations, capacity, size, amount, etc.). Show on the map and describe below the size and kind of all surface disturbance, such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

See IV.A. (above).

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

C. **Project Description.** Describe all aspects of the operation: how clearing will be accomplished, topsoil stockpiled, waste rock placed, tailing disposed of, etc. Calculate production rates and total volumes of waste rock and ore. Include justification and calculations for settling pond capacities and sizing of runoff diversion channels.

**1. For first 12 months:**

Drill site will be leveled using a track type dozer. Site will be built with reclamation in mind. Forest Service road 2461 would be cleaned and repaired where necessary between US 60 and the proposed drill pad.

**2. For total life of project:**

After site is leveled, it should not required any modifications or maintenance for the life of the drill pad.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

D. Describe the Equipment and Vehicles you propose to use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.

Drill would be a conventional rubber tired rotary/core drill rig. Other equipment would be a water truck and utility vehicles such as a pickup for drill personnel.

E. Structures. Describe and include justification for the structures or facilities planned for the operation. Include such things as storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipe lines, water diversions, trailers, sanitation facilities, etc. Include justification and calculations for sizing of tanks, pipelines and water diversions. The fuel storage facilities should include containment structures that will hold the volume of the largest storage tank in case of a tank failure or leak. Show the locations on the sketch map.

NONE.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. Air Quality. Describe measures to be taken to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.

Water truck available for dust abatement.

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(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

B. Water Quality. State how applicable state and federal water quality standards will be met. Describe what measures or management practices will be used to minimize water quality impacts and meet applicable standards.

1. If water is to be used in the operation (processing ore, washing ore, solution make-up, etc.) state how the water will be stored, treated and disposed of. If ponds of any type are proposed, such as for storage or settling, state how they will be designed and built. Provide storage capacities and water balance calculations. State how ponds will be maintained on an annual basis.

2. Describe methods to control runoff and erosion to prevent entry into surface water for all disturbed areas, including waste and tailings dumps.

3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.

4. Describe what measures will be used to minimize potential water quality impacts during winter closure, if applicable.

5. If land application is proposed for wastewater disposal, the location and operation of the land application system should be described.

The drill hole will be drilled and abandoned in compliance with existing

Arizona Revised Statutes as administered by the Arizona Dept. of Water

Resources.

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C. Solid Wastes. State how any tailing, dumpage, or other waste produced by operations will be disposed of or treated so as to minimize adverse impacts. Include a statement that all unburnable garbage and refuse will be hauled off-Forest to a sanitary landfill.

The site around the hole will be cleaned up and surplus cuttings leveled.

All unburnable garbage and refuse will be hauled off--Forest to sanitary landfill.

D. Scenic Values. State how scenic values will be protected. Examples are screening, slash disposal, timely reclamation, etc.

Scenic values will not be impacted in the area of the drill site. Reclamation of the site will restore surface features.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

E. Fish and Wildlife. All practicable measures to maintain and protect fisheries and wildlife habitat affected by the operations must be taken, and should be defined. Most of those measures involve avoidance of critical habitat such as along streams and bogs when planning roads, dumps, etc. Opportunities during reclamation to prevent erosion or plant browse or forage species should be described.

No wildlife or fish will be affected by the drill site location or during drilling operations.

F. Cultural Resources. Describe procedures for protection of historic and archeological values. The Forest Service is responsible for insuring that the area to be covered by the operating plan is inventoried prior to plan approval to determine the presence of significant cultural resources and will specify protective and/or mitigation measures to be taken by the operator. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, the operator shall not proceed until he is notified by the District

Ranger that he has complied with provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800.

At this time, no cultural resources have been observed.

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G. List all hazardous substances (by name and quantity required) which you intend to use or generate during the proposed operation. Operations USING or GENERATING HAZARDOUS SUBSTANCES must attach copies of other Federal and State agency permits, including all stipulations and conditions pertaining to the permit.

NONE.

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H. With regard to hazardous substances, discuss handling, storage, security (fencing), identification (signing), or other special operations requirements necessary to conduct the proposed operation.

NONE.

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(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

Close-out Reclamation. This section should describe the removal of structures and facilities, and the reclamation of the access road. It should specify that roads no longer needed: (1) be closed, (2) bridges and culverts be removed, (3) cross drains, dips, or water bars be constructed, and (4) the road surface be shaped to as near a natural contour as practicable and be stabilized. Show the expected date for completion of all reclamation.

Expected date of reclamation would be mid October 1996.

The drill pad will be shaped to as near a natural contour as practicable and stabilized.

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Recommended Changes/Modifications for Plan of Operations:

Multiple horizontal lines for writing under section A.

B. Bond - As a further guarantee of faithful performance with the reclamation requirements agreed upon in the plan of operations, the operator delivers herewith and agrees to maintain a surety bond, cash, bond, irrevocable letters of credit in the sum of \_\_\_\_\_ (\$ \_\_\_\_\_).

## ACKNOWLEDGMENTS

- A. It is understood that should the nature of the operation change a modified or supplemental plan of operations may be required.
- B. It is understood that approval of this plan of operations does not constitute: (1) Certification of ownership to any person named herein; and (2) Recognition of the validity of any mining claim named herein.
- C. It is understood that a bond equivalent to the actual cost of performing the agreed upon mitigation and reclamation measures may be required before this plan can be approved.
- D. It is understood that approval of this plan does not relieve me of my responsibility to comply with any other applicable State or Federal laws, rules or regulations.
- E. It is understood that any information provided with this plan that is marked confidential will be treated by the agency in accordance with that agency's laws, rules and regulations.

I/We have reviewed and agree to comply with all conditions in this plan of operations, including the recommended changes and reclamation requirements. I/We understand that the bond will not be released until the Forest Officer in charge gives written approval of the reclamation work.

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Operator (or Authorized Official)

(Date)

## OPERATING PLAN APPROVAL:

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(Name)

(Title)

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(Authorized Officer)

(Date)

*BE approved* \_\_\_\_\_

*ARCH SURVEY Approved* \_\_\_\_\_

Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0596-0022), Washington, D.C. 20503.