CONFIDENTIAL
Release Date 10/23/83

SANCHEZ-O'BRIEN O&G 1-4 FEDERAL 838
SE NW 4-4N-12E GILA CO.

COUNTY GILA AREA 20 mi. W of Tonto Basin (Roosevelt Dam area) LEASE NO. Fed. A-9039

WELL NAME SANCHEZ-O'BRIEN OIL & GAS CORP. 1-4 FEDERAL

LOCATION SE NW SEC 4 TWP 4N RANGE 12E FOOTAGE 1650 FNL, 2122 FWL

ELEV 2190' GR _____ KB SPUD DATE 3-17-83 STATUS [illegible] 4/22/83 TOTAL DEPTH 3494'

COMP. DATE 4/22/83

CONTRACTOR James Drilling Co.

CASING SIZE	DEPTH	CEMENT	LINER SIZE & DEPTH

DRILLED BY ROTARY _____

DRILLED BY CABLE TOOL _____

PRODUCTIVE RESERVOIR _____

INITIAL PRODUCTION _____

FORMATION TOPS	DEPTHS	SOURCE L.L.	SOURCE E.L.	REMARKS
Siltstone &	-0-			
Mudstone	1690			
Arkose	1900			
Quartzite	2050			
Diabase SIll	2305			
Pioneer Sahle	2305			
DIABASE SILL	3280			4/17/83
	3494'			

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS
COMPENSATED DENSITY		to 3496'
DUAL INDUCTION	GUARD LOG	To 3496'
COMPUTER ANALYZED LOG	1000'	TO 1920'

SAMPLE LOG 1849
SAMPLE DESCRP.
SAMPLE NO. 1849
CORE ANALYSIS 2 SETS
DSTs 600' to TD

REMARKS Mud Log - 4/6/83 (Partial to 1600)
" " 4/12/83 (to 2200)
" 4/18/83 to 2600.

APP. TO PLUG X
PLUGGING REP. X
COMP. REPORT 1-30-84

WATER WELL ACCEPTED BY 4/25/83 to 3200' 4/26/83 to 3491

BOND CO. UNITED STATES FIDELITY & GUARANTY CO. BOND NO. 72-0130-12283-81-5

DATE 10-27-81

BOND AMT. $ 25,000 CANCELLED _____ ORGANIZATION REPORT x

FILING RECEIPT 2365 LOC. PLAT x WELL BOOK x PLAT BOOK x

API NO. 02-007-20003 DATE ISSUED 2-8-83 DEDICATION E/2 NW/4

PERMIT NUMBER 838

(over)

RECEIVED
JAN 30 1984
O & G CONS. COMM.

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well ☐ Work-Over ☐ Deepen ☐ Plug Back ☐ Same Reservoir ☐ Different Reservoir ☐ Oil ☐ Gas ☐ Dry ☒

DESCRIPTION OF WELL AND LEASE

Operator: Sanchez-O'Brien Oil & Gas Corporation	Address: P. O. Box 2986, Laredo, TX 78041
Federal, State or Indian Lease Number or name of lessor if free lease: Federal A-9039	Well Number: 1-4
	Field & Reservoir: Wildcat
Location: 1650' FNL/ 2122'FWL (6)	County: Gila
Sec. TWP-Range or Block & Survey: 4- 4N-12E GSRM	

Date spudded	Date total depth reached	Date completed, ready to produce	Elevation (DF, RKB, RT or Gr.)	Elevation of casing hd. flange
3-17-83	4-22-83		RKB 2195 feet	2186 feet

Total depth	P.B.T.D.	Single, dual or triple completion?	If this is a dual or triple completion, furnish separate report for each completion.
3491			

Producing interval (s) for this completion	Rotary tools used (interval)	Cable tools used (interval)
None	0-3491	

Was this well directionally drilled?	Was directional survey made?	Was copy of directional survey filed?	Date filed
NO	NO		

Type of electrical or other logs run (check logs filed with the commission)	Date filed
Welex DIG CDN	4-24-83

CASING RECORD

Casing (report all strings set in well — conductor, surface, intermediate, producing, etc.)

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
8 5/8	12 1/4	8 5/8	24	496	400	none

TUBING RECORD

Size	Depth set	Packer set at
in.	ft.	ft.

LINER RECORD

Size	Top	Bottom	Sacks cement	Screen (ft)
in.	ft.	ft.		

PERFORATION RECORD

Number per ft.	Size & type	Depth Interval

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

Am't. & kind of material used	Depth Interval

INITIAL PRODUCTION

Date of first production	Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)

Date of test	Hrs. tested	Choke size	Oil prod. during test	Gas prod. during test	Water prod. during test	Oil gravity
			bbls.	MCF	bbls.	*API (Corr)

Tubing pressure	Casing pressure	Cal'ted rate of Production per 24 hrs.	Oil	Gas	Water	Gas—oil ratio
			bbls.	MCF	bbls.	

Disposition of gas (state whether vented, used for fuel or sold):

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the AGENT of the Sanchez-O'Brien Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

5-12-83
Date

Charles D. Tucker
Signature

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Well Completion or Recompletion Report and Well Log
File One Copy
Form No. 4

DETAIL OF FORMATIONS PENETRATED

FORMATION	TOP	BOTTOM	DESCRIPTION*
Alluvial Fill	0	1690	Siltstone, Sandstone & mudstone
Lower Dripping Spring	1690	1888	Arkose
Quartzite	1888	2040	Quartzite (Felspathic)
Diabase Sill	2040	3245	Olivene, Quartz, Mica, & Weathered Feldspar
Conglomerate	3245	3372	Diabase Conglomerate with trace granite
Conglomerate	3372	3491	Granite conglomerate with abundant Olivene
Water zone	788	854	Blackish water (7900 PPM Total Chlorides) Flowed estimated 60 BBls/day @ 846
Water zone	1497	1502	Fresh water (217 PPM Total chlorides) Stronger flow than zone above. No estimate on rate. Flowed 1" stream.
Water zone	1900	1962	Fresh water (700 PPM Total chlorides) Artesian flow 63 P. S. I. Surface pressure. Flowed 2 1/2" stream.
			Water samples analyzed by Western Technologies, Inc. Phoenix, Arizona

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well.

This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Oil & Gas Conservation Commission not later than thirty days after project completion.

Form No. 4

RECEIVED
MAY 11 1983
O & G CONS. COMM

PLUGGING RECORD

Operator: Sanchez-O'Brien Oil & Gas Corporation	Address: P. O. Box 2986, Laredo, TX 78041	
Federal, State, or Indian Lease Number, or lessor's name if fee lease.	Well No.: 1-4	Field & Reservoir: Wildcat
Location of Well: 1650' FNL & 2122'FWL	Sec-Twp-Rge or Block & Survey: 4-4N-12E GSRM	County: Gila
Application to drill this well was filed in name of: Sanchez-O'Brien Oil & Gas	Has this well ever produced oil or gas: no	Character of well at completion (initial production): Oil (bbls/day): Gas (MCF/day): Dry?: yes
Date plugged: 4-23-83	Total depth: 3494	Amount well producing when plugged: Oil (bbls/day): Gas (MCF/day): Water (bbls/day):

Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used Indicate zones squeeze cemented, giving amount cement
Apache	Fresh water		50 sacks 1730-1900
Quaternary	Fresh water		50 sacks 1365-1500
Quaternary	Brackish Water		125 sacks 633-850

CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes
8 5/8	499'	0	499'		

Was well filled with mud-laden fluid, according to regulations? yes

Indicate deepest formation containing fresh water. 1900

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:
Mitch Holder	Hat Ranch Box 823, Globe AZ 67730	Northeast 1 1/2 miles

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Agent of the Sanchez-O'Brien Oil & Gas Corp (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

5/9/83
Date

Charles D. Tucker
Signature

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Plugging Record
File One Copy

Form No. 10

RECEIVED
MAY 11 1983
O & G CONS. COMM.

APPLICATION TO PLUG AND ABANDON

FIELD Wildcat

OPERATOR Sanchez-O'Brien Oil & Gas Corp ADDRESS P. O. Box 2986, Laredo, TX 78041

Federal, State or Indian Lease Number or Lessor's Name if Fee Lease A-9039 WELL NO. 1-4

LOCATION 1650' FNL & 2122'FWL Section 4 4North 12 East

TYPE OF WELL Dry (Oil, Gas or Dry Hole) TOTAL DEPTH 3494

ALLOWABLE (If Assigned) N/A

LAST PRODUCTION TEST OIL N/a (Bbls.) WATER _____ (Bbls.)

GAS _____ (MCF) DATE OF TEST _____

PRODUCING HORIZON N/A PRODUCING FROM _____ TO _____

1. COMPLETE CASING RECORD.

Ran 12 joints 8 5/8 J-55 ST & C Casing, guide shoe and float cemented with 400 sacks class "A" + 4% gel + ¼#/sack flo seal + 3% CaCl mixed @ 14.1 pounds per gallon. Pumped plug down with 1200 PSI. Plug down 11 PM 3-23-83. Got 210 sacks return (Cement circulated to surface). Casing set at 499'.

2. FULL DETAILS OF PROPOSED PLAN OF WORK.

Set 3-100' plugs opposite water zones at 1730 - 1900, 1365 - 1500 and 633 - 850. A 100' plug 50' in and 50' below base of surface casing @ 499 by displacement. Put 15 sacks in top of surface pipe, weld on steel plate 4' below surface and pipe marker with well data to extend 4' above surface.

DATE COMMENCING OPERATIONS 4/23/83

NAME OF PERSON DOING WORK Jim Pierson ADDRESS P. O. Box 1298, Grants, New Mexico

Charles D. Tucker
Signature

Agent - - Sanchez-O'Brien Oil & Gas Corporation
Title

2212 N. W. 50th, Suite 245, OKC, OK 73112
Address

May 9, 1983
Date

#838

Date Approved 4-23-83
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
By: [signature]

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Plug and Abandon
File Two Copies
Form No. 9

4/82

2-8-83

SANCHEZ-O'BRIEN OIL & GAS CORP. 1-4 FEDERAL 838

SE NW 4-4N-12E GILA CO. 1650 FNL, 2122 FWL

Elev. 2190 GL

Spud date 3-17-83

Proposed depth 3500

3-22-83 Ginette K. reported SOB shut down (rain)

3-23-83 J.K. 3:45P SOB cementing now. Test BOP to air.

3-28-83 J.K. 891'± Hit water (60 bbls/d est) @ 846'

4-11-83 J.K. @ 2582 in diabase sill.

4-22-83 @ 3459' 3 wtr zones 850', 1500' & 1900'

4-23-83 P&A @

API No. 02-007-20003

WESTERN TECHNOLOGIES, INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 268-1381

LABORATORY REPORT

Client Karabees Agencies
5513 North 79th Place
Scottsdale, Arizona 85253

Job No. ____
Lab/Invoice No. 22130445
Date of Report 5/09/83

Project Sanchez-O'Brien Oil and Gas Corporation
Location Federal 1-4 Gila County, Arizona
Material/Specimen Water Sampled By -- Date --
Source 4-4N-12E SO BOG Submitted By KA/J.Karabees Date 4/25/83
Test Procedure Standard Methods,15thED Authorized By KA/J.Karabees Date 4/25/83

RESULTS

Three samples were submitted for analyis following standard laboratory procedures. Boron was determined using an ICP emission spectrophotometer. The results were as follows:

Parameter	846 ft.	1521 ft.	1900 ft.
E.C., umhos/cm	27922	1494	2700
Boron, ppm	2.8	11	4.5
Chloride, ppm	8377	217	482

*It should be noted that all samples contained sediment and analyses were performed on dissolved fraction only.

Copies to Addressee (2)

Reviewed By: Lisa C. Lund, Chemist

RECEIVED
APR 19 1983
O & G CONS. COMM.

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Sanchez-O'Brien Oil & Gas Corporation

2. OIL WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Wildcat

3. Well Name: Federal 1-4

Location: SENW

Sec. 4 Twp. 4N Rge. 12E County Gila Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease:

5. Field or Pool Name: Wildcat

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER)			☐	(OTHER) Weekly			☒

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

4/10/83 Drilling at 2,460 feet.
4/11/83 Drilling at 2,582 feet.
4/12/83 Drilling at 2,643 feet.
4/13/83 Drilling at 2,756 feet.
4/14/83 Drilling at 2,806 feet.
4/15/83 Drilling at 2,900 feet.
4/16/83 Drilling at 2,984 feet.
4/17/83 Drilling at 3,104 feet as of 12:00 Noon.

Note: Drilled through 1,034 feet of diabase sill as of 4/17/83.

8. I hereby certify that the foregoing is true and correct.

Signed: for Charles O. Tucker Title: Agent Date: April 17, 1983

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

838

RECEIVED
APR 11 1983
O & G CONS. COMM.

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Sanchez-O'Brien Oil & Gas Corporation

2. Oil WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Wildcat

3. Well Name: Federal 1-4

Location: SENW

Sec. 4 Twp. 4N Rge. 12E County Gila Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease: A-9039

5. Field or Pool Name: Wildcat

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER)			☐	(OTHER) Weekly			X

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

4/5/83 Drilled to 2035 feet. Stuck pipe at 1980. Waiting on back-off truck and fishing tools.

4/6/83 Spent 4 hours working pipe without fishing tools - pipe came free. Reamed from 1960 to 2035 feet. Drilled to 2121 feet.

4/7/83 Drilling at 2203 feet.

4/8/83 Drilling at 2275 feet.

4/9/83 On 7th bit. Reamed 2075 to 2275. Drilling at 2372 feet at 1:25PM.

Lithology

Siltstone & Mudstone (lt. Brown)	0-1690
Arkose Lower Dripping Spring	1690-1900
Quartzite (Felspathic)	1900-2050
Diabase Sill (Olivene, Quartz, Mica & Weathered Feldspar)	2050-2305
Pioneer Sahle (Red Brn. Shale)	2305-

Chlorides

Water	7900 PPM	840-860
Water	300 PPM	1500-1520
Water	700 PPM	1880-1890
(Artesian)	65# SIP	

8. I hereby certify that the foregoing is true and correct.

Signed [signature] Title Agent Date April 9, 1983

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

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RECEIVED
APR 11 1983
O & G CONS. COMM.

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Sanchez-O'Brien Oil & Gas Corporation

2. Oil WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Wildcat

3. Well Name: Federal 1-4

Location: SENW

Sec. 4 Twp. 4N Rge. 12E County Gila Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease: A-9039

5. Field or Pool Name: Wildcat

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

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FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER)			☐	(OTHER) Weekly			X

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

3/29/83 Drilling at 960 feet.

3/30/83 Drilled to 1500 feet, water decreasing. At 1500-1524, encountered flow of fresh water. Washed and reamed from 975 to 1099. Displaced hole with mud.

3/31/83 Drilling at 1705 feet. Reamed tight hole from 1150 to 1524.

4/ 1/83 Drilled to 1888.

4/ 2/83 Drilled to 1906 feet. Encountered strong flow of fresh water at 1905 feet. Pulled out of hole. Water had 63 PSI shut in pressure. Estimated 3600 barrels per day water flow. Enlarged reserve pit.

4/ 3/83 Displaced water in hole with 9.4# mud. Washed from 1700 to 1906. Drilled to 1936 feet.

4/ 4/83 Drilling at 2006 feet as of 7:00 AM.

Deviation Surveys:

530	1°
1028	2 3/4°
1095	2¼°
1524	1½°
1690	1°
1900	½°

8. I hereby certify that the foregoing is true and correct.

Signed Charles D. Tuber Title Agent Date April 4, 1983

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

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MAR 29 1983
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SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Sanchez-O'Brien Oil & Gas Corporation

2. Oil Well ☐ Gas Well ☐ Other ☒ (Specify) Wildcat

3. Well Name: Federal 1-4

Location: SENW

Sec. 4 Twp. 4N Rge. 12E County Gila Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease: A-9039

5. Field or Pool Name: Wildcat

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER)			☐	(OTHER) Weekly			☒

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

3/17/83 Spud 5:35PM.

3/22/83 Shutdown due to muddy roads. Unable to get surface pipe to location.

3/23/83 Ran 12 joint of 8 5/8ths, 24#, J-55 ST&C casing with guide shoe and baffle float to 495.11 ft. Halliburton cemented with 400 sacks, Class A plus 4% gel, plus ¼ lbs. per sack flow seal, plus 3% calcium chloride. Mixed at 14.1 ppg. Plugged down at 11:00PM.

3/26/83 Nippled up BOP, tested pipe rams, blind rams, valves and 8 5/8ths casing to 2,350 PSI.

3/27/83 Drilling to 891 ft. with stiff foam. Had water estimated at 846 ft., estimated flow rate of 60 barrels per day.

3/28/83 Installed booster compressor to drill ahead.

8. I hereby certify that the foregoing is true and correct.

Signed for Charles O. Tucker Title Agent Date March 28, 1983

Permit No. 00838

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

RECEIVED
FEB 7 1983
O & G CONS. COMM.

MULTI-POINT SURFACE USE AND OPERATIONAL PLAN

SANCHEZ-O'BRIEN OIL & GAS CORPORATION

FEDERAL 1-4
SECTION 4-4N-12E
GILA COUNTY, ARIZONA

MULTI-POINT SURFACE USE AND OPERATIONAL PLAN

1. EXISTING ROADS

See attached Arizona Road Map, Exhibit "A" and Topographic Maps, Exhibit A-1 and Exhibit A-2.

The existing gravel road is color coded in green. The access road (jeep trail) is indicated in red.

2. PLANNED ACCESS ROAD

See attached Topographic Maps, Exhibit A-1 and A-2. The existing jeep road will be used. Drainage work and repair will be as follows:

A. Existing gate to be left open and a cattleguard will be installed 50 to 75 feet off the main road (A Cross Road) and tied into the existing fence.

B. Two 16" x 30' culverts will be installed at points 1 & 2 shown on Topographic map A-2. This will eliminate two hair-pin turns and provide adequate drainage. These two locations will be centerline flagged. Existing fill material in the drainages will .e used. This will be a restoration to the original route before it was washed out and the hair-pin routes established.

C. Contingency Spills.

A crescent shaped berm will be constructed on the low side of the location with sufficient capacity to contain double the hole volume at total depth.

3. LOCATION OF EXISTING WELLS

832

See Surveyor Plat No. 1.Well located in the SW¼SW½SW¼ of section 33-5N-12E, ½ mile northwest of the proposed Federal 1-4. The well was drilled in 1915 by the Tonto Headlight Oil Company. (Reference old newspaper articles dated October 12, 1915). This well is still open. It was determined that it has an unknown amount of fresh water at 120 feet.

Tonto Oil Company drilled a well in April 1914 through April 1916, southeast in the N½NE of section 9-4N-12E. Newspaper articles indicate the well was drilled to a depth of 1650 feet. Oil and gas shows were reported at approximate depths of 400', 1150', 1310', 1500' and 1600'. No information is available as to the plugging of this well. The casing is bridged above ground level.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

A. At the present time, there are no existing production facilities, tank batteries, oil/gas gathering lines, injection or disposal lines. See Production Facilities Layout, Exhibit O-2.

B. In the event that production of this well is established, then the existing area of the location will be utilized for the establishment of the necessary production facilities.

This area will be built, if possible, with native materials and if these materials are not available, then the necessary arrangements will be made to obtain them from private sources.

The total area that is needed for the production of this well will be fenced and a cattleguard will be utilized for access to these facilities.

C. The rehabilitation of the disturbed area that is not required for the production of this well, will meet the requirements of items #7 and #10 and these requirements and standards will be adhered to.

5. LOCATION AND TYPE OF WATER SUPPLY

A Special Use Permit will be sought from the Tonto National Forest to use water from an abandoned well ½ mile northwest of the location. Additional water requirements will be met by trucking from private sources.

6. SOURCE OF CONSTRUCTION MATERIALS

The topsoil shall be stockpiled to one side of the proposed reserve pit until rehabilitation of the site.

All construction materials for this location site shall be borrow materials accumulated during construction of the location site.

No additional road gravels or pit lining material from other sources are anticipated at this time, but if they are required, the appropriate action will be taken to acquire them from private sources.

No additional access will be required other than that stated in item #1.

7. METHODS FOR HANDLING WASTE DISPOSAL

See Location Layout, Exhibit O-3. A Reserve Pit and Burn Pit will be constructed.

The reserve pit will be approximately 8' deep and at least one half of this depth shall be below the surface of the existing ground.

One half of the reserve pit will be used as a fresh water storage area during the drilling of this well and the other one half will be used to store non-flammable materials such as cuttings, salts, drilling fluids, chemicals, produced fluids, etc. This waste material will be buried when the operation is complete.

TEN POINT DRILLING PROGRAM

Sanchez-O'Brien Oil & Gas Corporation
Roosevelt Lake, Arizona Prospects

1. Geologic Surface Formation

The surface formation is Quaternary.

2. &
3. Geologic markers and productive intervals:

Formation	Estimated Top	Possible Production
Quaternary	Surface	
Pre Cambrian Apache		
Dripping Spring Quartzite	50'	
Middle Member	400'	Fresh W
Sierra Ancha Shear	*	
Barnes Conglomerate	920'	H
Pioneer Shale	1000'	H
Pre Cambrian Weathered Granite	1650'	H
Pre Cambrian Granite	1700'	

* Formations below Sierra Ancha Shear undetermined. Could vary from Pennsylvanion to Pre Cambrian.

W= Water H= Hydrocarbon (Oil or Gas) C= Coal S= Steam

4. Casing Program

Hole Size	Casing Size	Grade	Weight	Thrd & Conn	Depth
12¼	New 8 5/8	J-55	24#	8RND ST&C	500'
7 7/8	New 4½/5½	J-55	10.5/15.5#	8 RND ST&C	3500'

5. Control Equipment Specifications

As noted below the following equipment will be utilized for detection and control during the drilling operation.

Blowout Preventers

Size: 8" Pressure Rating: 3000 psi

Annular Preventer:	No
Rotating Head:	Yes
Top Pipe Rams:	No
Blind Rams:	Yes
Bottom Pipe Rams:	Yes

Kill Line Size: 2" x 3000 psi Valves: 2" x 3000 psi

Check Valves: 2" x 3000 psi

Manifold

Size: 2" Valves: 2" Pressure Rating: 3000 psi

Positive Choke:	No
Hydraulic Choke:	No
Power Operated Valve:	No
Adjustable Choke:	Yes

See Exhibit O-1 attached for additional details. BOP equipment will be installed and tested after setting 8 5/8" surface casing. Test pressure 2000 psi prior to drilling out 8 5/8" casing shoe.

6. Drilling Fluids

Interval	Type Fluid	Weight	Viscosity	Fluid Loss	Remarks
Plan A:					
0 - 3500	Biodegradable Foam	0.5	Stiff	Low	Mud up to log and/or run production casi
Plan B: (In the event prevailing conditions dictate the use of mud for drilling).					
500-3500	Low Solids	8.8-9.1	36-40	8-10	LCM as needed.

If deemed necessary by the agencies concerned, to prevent contamination to surrounding areas, the reserve pits will be lined with a gel or a plastic liner.

The pits will have wire and overhead flagging installed at such time as deemed necessary to protect the water fowl, wildlife, domestic animals.

On the onset of drilling, this reserve pit will be fenced on three sides and at the time the drilling activities are completed, it will be fenced on the fourth side and allowed to dry completely prior to the time that backfilling and reclamation activities are attempted.

When the reserve pit dries and the reclamation activities commence, the pits will be covered with a minimum of four feet of soil and all requirements in item #10 will be followed.

The burn pit will be constructed and fenced on all four sides with a small mesh wire to prevent any flammable materials from escaping and creating a fire hazard.

All flammable materials will be burned (or hauled to a disposal site) and then buried upon completion of this well.

A portable chemical toilet will be supplied for human waste.

8. ANCILLARY FACILITIES

There are no ancillary facilities planned for at the present time and none forseen in the near future.

9. WELL SITE LAYOUT

See attached Location Layout, Exhibit O-3.

The B.L.M./Tonto National Forest/Arizona Oil & Gas Commission shall be notified before any construction begins on the proposed location site.

As mentioned in item #7, the pits will be unlined unless it is determined by the representatives of the agencies involved that the materials are too porous and would cause contamination to the surrounding area. Then the pits will be lined with a gel and any other type material necessary to make it safe and tight.

When drilling activities commence, all work shall proceed in a neat and orderly sequence.

10. PLANS FOR RESTORATION OF SURFACE

The topsoil on the location site shall be stripped and stockpiled. (See Location Layout, Exhibit O-3 and item #9). When all drilling and production activities have been completed, the location site will be reshaped to the original contour and stockpiled topsoil spread over the disturbed area.

6. Drilling Fluids (continued)

Possible Sub Normal Pressured Zones: None

Possible Abnormal Pressured Zones: None

7. Auxiliary Equipment

Upper Kelly Cock:	Yes
Lower Kelly Cock:	No
Floor Valve Drill Pipe:	Yes
Floor Valve Drill Collars:	Yes
Float in Drill Pipe:	No
Inside BOP:	No

Additional Detection Equipment and Service

Mud Logging Unit:	Yes
Pit Volume Totalizer:	No
Flowline Sensor:	No
Sour Gas Detector:	Yes
Pump Stroke Counter:	No
Degasser:	No
Mud Gas Separator:	No

8. Evaluation

A. Testing

No drillstem tests will be run.

B. Logging

Depth	Electric Wireline Logs	Interval
3500	DLL	BSC-TD
3500	FDC-CNL	BSC-TD
3500	Micro Seismogram (Frac Finder)	BSC-TD

C. Coring

None

Any drainages rerouted during the construction activities shall be restored to their original line of flow as near as possible. Fences around pits are to be removed upon completion of drilling activities and all waste being contained in the trash pit shall be buried with a minimum of 4' of cover.

As mentioned in item #7, the reserve pit will be completely fenced and flagging installed, if there is oil in the pits. Depending on the volume, the oil will be removed or allowed to weather and evaporate prior to closing the pit. Restoration activities shall begin within 90 days after completion of the well. Once completion activities have begun, they shall be completed within 30 days.

When restoration activities have been completed, the location site shall be rehabilitated as recommended by the B.L.M./Forest Service. The Lessee further convenants and agrees that all said cleanup and restoration activities shall be done and performed in a diligent and most workmanlike manner and in strict conformity with the above mentioned items #7 and #10.

11. OTHER INFORMATION

See Topographic Map, Exhibit A-1. The surface is a high desert located on the Sierra Ancha, covered in places by a veneer of quaternary lake sand and gravel. The surface has been broken by north-west southeast trending normal faults. The geomorphic surface is an erosional one which has been cut into Pre-Cambrian sedimentary rock.

The surface and minerals is owned by the United States of America. There are no dwellings in the area to be involved with the drilling activity. There are no known archaeological, historical or cultural sites in the immediate area. (See Archaeological Report, Exhibit O-4). All drainage in the area is gentle south-southwest into Roosevelt Lake.

12. LESSEES OR OPERATORS REPRESENTIVE

Charles O. Tucker, Sanchez-O'Brien Oil & Gas Corporation, 2212 N.W. 50th Street, Suite 245, Oklahoma City, OK 73112, (405) 848-1851.

13. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Sanchez-O'Brien Oil & Gas Corporation and its contractors and subcontractors in conformity with this plan and terms and conditions with this plan and the terms and conditions under which it is approved.

Charles O. Tucker

Charles O. Tucker

February 4, 1983
Date

EXHIBITS

9. Drilling Hazards

None

10. Starting Date: March 15, 1983
Duration: 15 days.

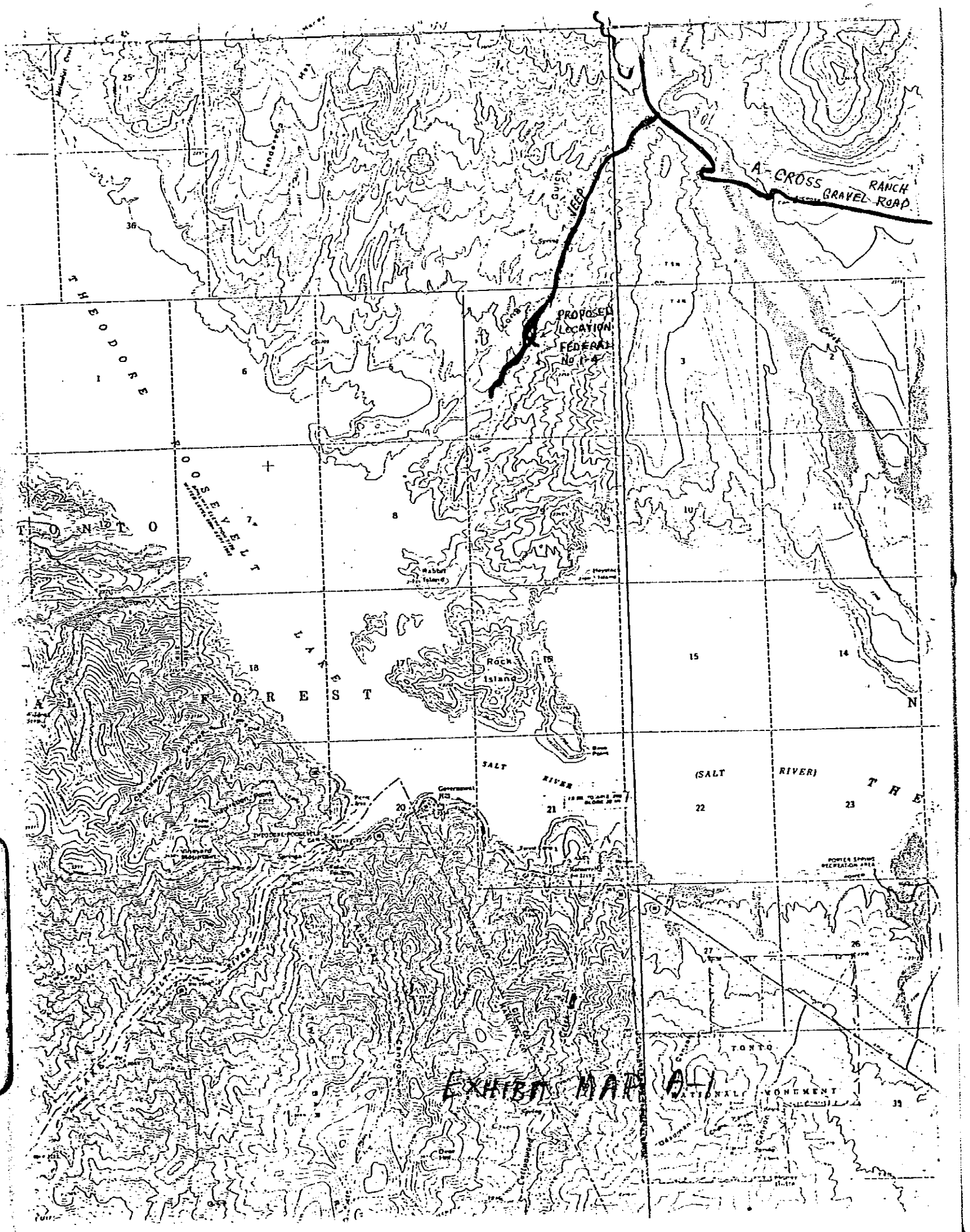
Drilling program prepared by: Sanchez-O'Brien Oil & Gas Corporation

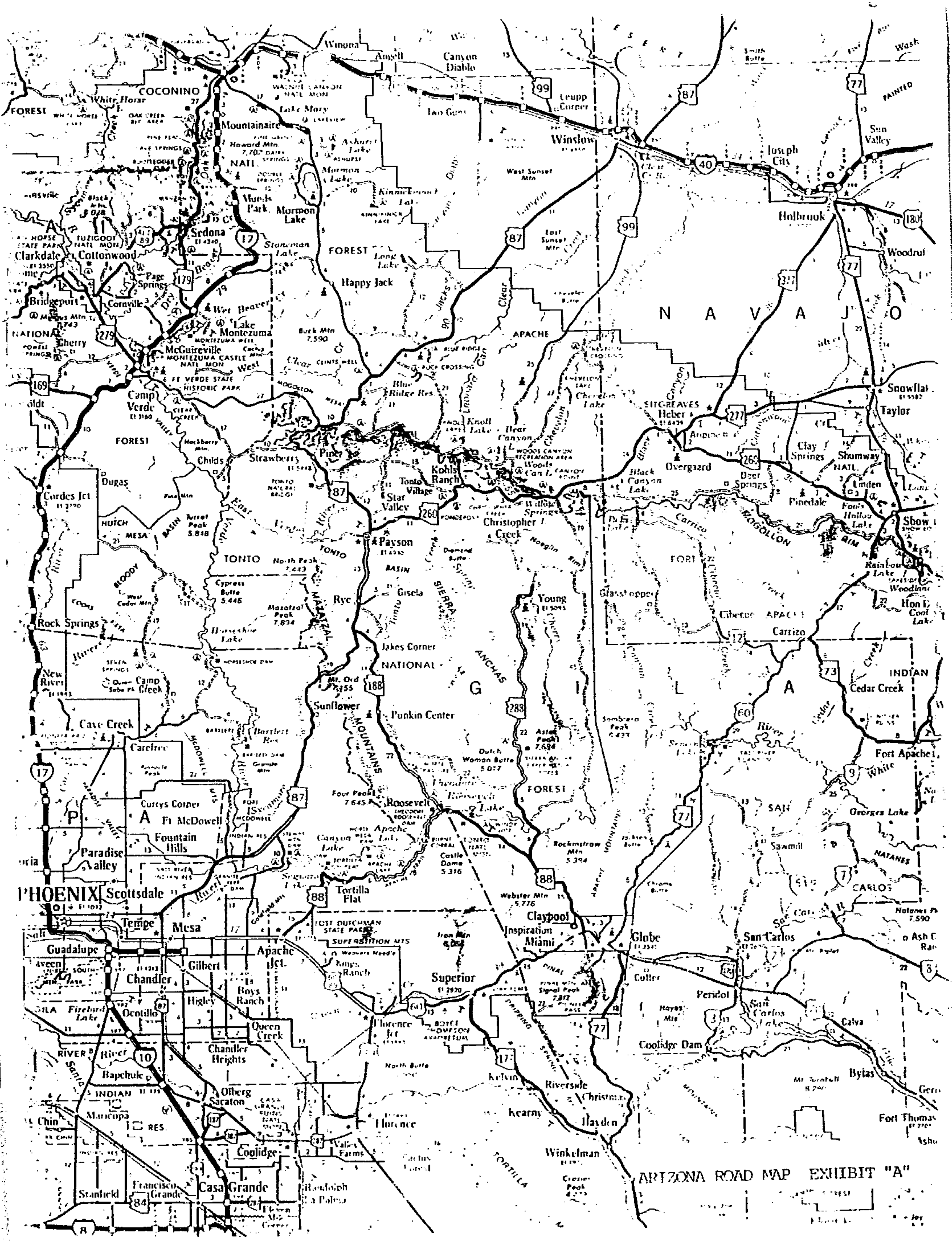
Charles O. Tucker

February 4, 1983

Date

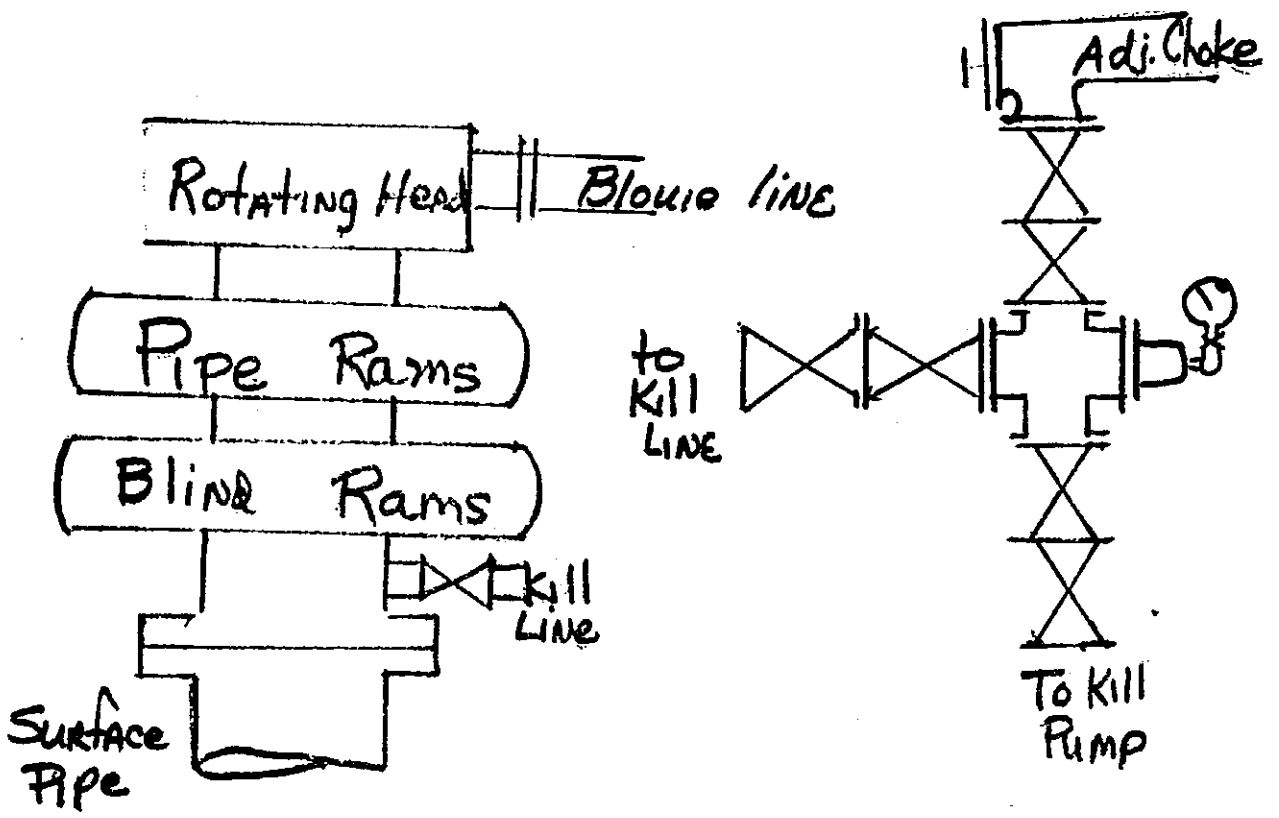
[redacted]


A CROSS RANCH
GRAVEL ROAD
JEEP
PROPOSED LOCATION FEDERAL No 1-4
THEODORE
ROOSEVELT
T 10 N
T 9 N
FOREST
Rock Island
SALT RIVER
(SALT RIVER)
TONTO
NATIONAL MONUMENT
EXHIBIT MAP A-1



ARIZONA ROAD MAP EXHIBIT "A"

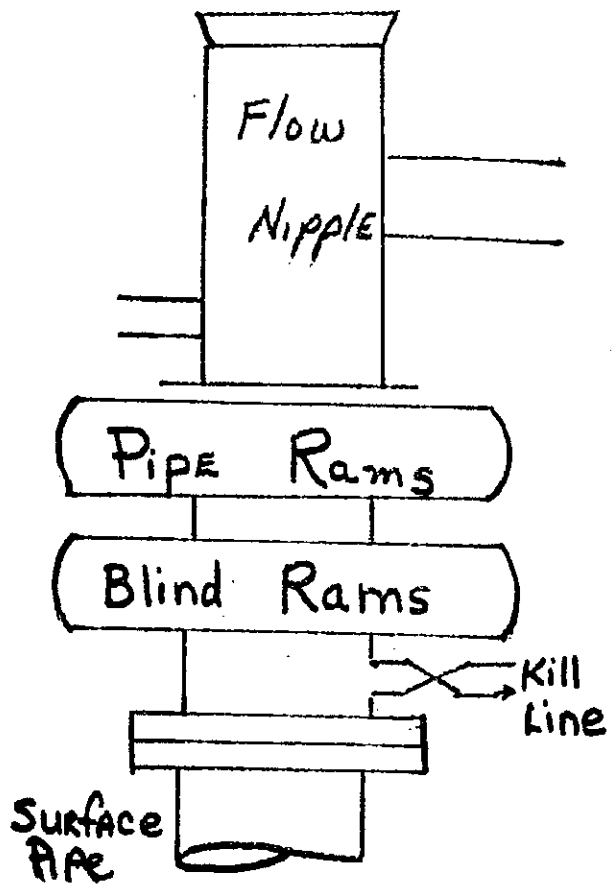
3000 PSI WORKING PRESSURE BOP'S AND ALL FITTINGS
(TEST PRESSURE 2000 PSI) USING FOAM
EXHIBIT O-1, Page 1



TEST PROCEDURE:

1. Flush BOP and all lines to be tested with water.
2. Test the following to pressure of 2000 PSI:
   a. Inside blowout preventer
   b. Lower kelly cock and surface pipe before drilling plug
   c. Stand pipe valve
   d. Lines to mud pump
   e. Kill line to BOP
3. Close and test pipe rams to 2000 PSI.
4. Close and test blind rams to 2000 PSI. Pull drill pipe.
5. Test all choke manifold valves to 2000 PSI.
6. Test kill line valves to 2000 PSI.

3000 PSI WORKING PRESSURE BOP'S AND ALL FITTINGS
(TEST PRESSURE 2000 PSI) USING MUD
EXHIBIT O-1, Page 2



Manifold
as Per
Exhibit O-1 (PAGE 1)

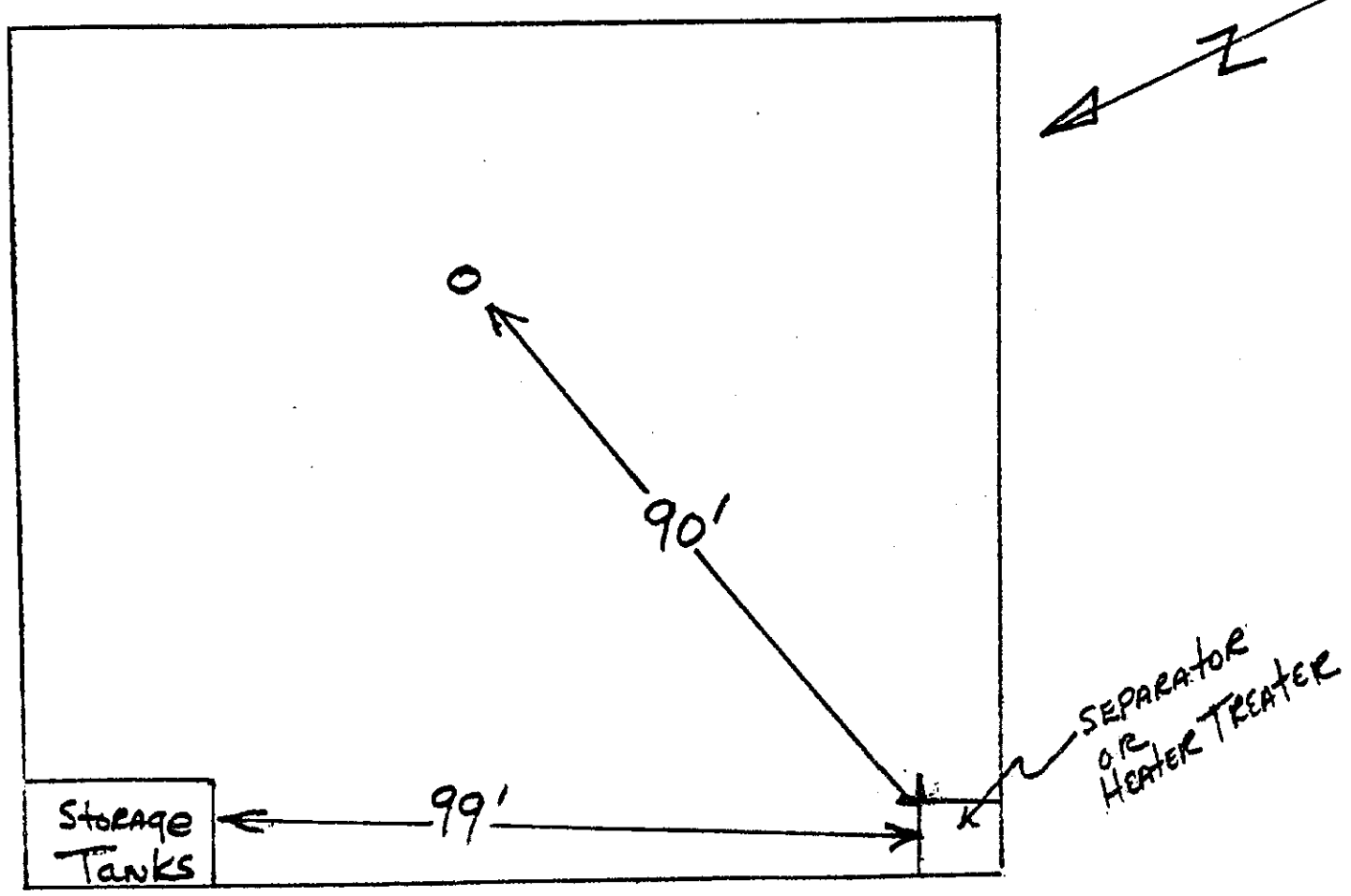
TEST PROCEDURE AS SHOWN ON PAGE 1.

EXHIBIT O-2

SANCHEZ-O'BRIEN OIL & GAS CORPORATION

Federal 1-4
4-4N-12E

Production Facilities Layout



Location Layout
Exhibit 0-3

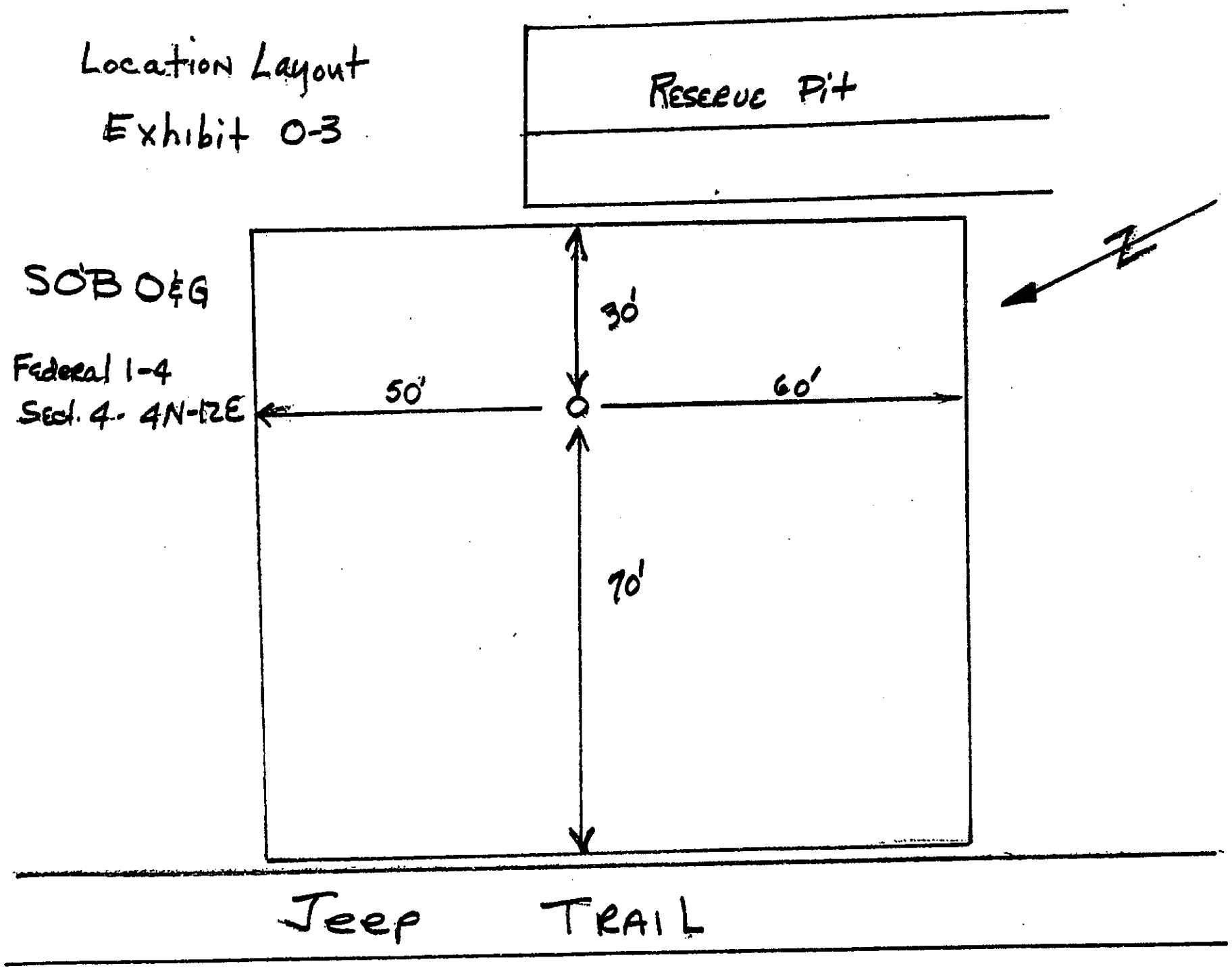


EXHIBIT O-4

AN ARCHAEOLOGICAL SURVEY OF PROPOSED DRILLING SITES NEAR ROOSEVELT LAKE, GILA COUNTY, ARIZONA

(TONTO BASIN DISTRICT, TONTO NATIONAL FOREST)

Introduction

On February 1, 1983, Lyle M. Stone of Archaeological Research Services, Inc. performed archaeological surveys of two proposed oil and gas drilling sites located on U.S. Forest Service, Tonto National Forest lands near Roosevelt Lake, Gila County, Arizona. The two drill site locations are:

(1) Sanchez-O'Brien Federal 1-4, located in the NE¼, SE¼, NW¼ of Section 4, T4N, R12E, G & SRB & M, at an approximate elevation of 2190 ft above mean sea level. This irregularly-shaped parcel of approximately one acre is oriented in a northwest by southeast direction and is between 250 and 400 ft per side (Figure 1).

(2) Sanchez-O'Brien Federal 1-5, located in the NW¼, NE¼, SW¼ of Section 5, T4N, R13E, G & SRB & M, at an approximate elevation of 2632 ft above mean sea level. This irregularly-shaped parcel of approximately one acre is oriented in a northeast by southwest direction and is between 200 and 300 ft per side (Figure 1).

Both locations are on existing jeep trails which extend to the south of A-Cross Road.

These surveys were requested by John J. Karabees (Karabees Agencies), Agent for Sanchez-O'Brien Oil and Gas Corporation, in order to determine if cultural resources (prehistoric or historic archaeological sites, historically or architecturally significant structures or buildings) were located on either of the subject properties which would be affected by proposed land-use actions. These surveys on Tonto National Forest lands were performed under the authority of a Special Use Permit (Blanket Consulting Permit (Archeology) Non-Disturbing) for Region 3 forest lands issued to Archaeological Research Services, Inc. in November, 1981. The Acting District Ranger for the Tonto Basin District was advised of proposed survey activities by letter of January 28, 1983.

Study Procedures

Each of the four corners of the two survey parcels had been previously staked and flagged by Sanchez-O'Brien surveyors. Survey procedures consisted of walking across each parcel in 20 to 25 ft north-south and east-west increments in order to observe surface evidence of cultural resources. In addition, a 100 ft wide area outside of the staked boundaries of each drill site was archaeologically surveyed in order to determine if cultural resources were present which could be inadvertantly affected by proposed land-use actions.

In performing these surveys, archaeological site records on file at the Arizona State Museum, the Arizona State University Department of Anthropology, Archaeological Research Services, Inc., State Historic Preservation Office, and U.S. Forest Service (Tonto National Forest) were consulted to determine if cultural resources had been previously defined within or immediately adjacent to the survey area.

Study Results

Cultural resources were not identified at either survey location. The site file review indicated that one archaeological site had been previously identified in the vicinity of Federal 1-5. This site, (USFS AR-03-1L-06-403), a small prehistoric agricultural fieldhouse, is located on the west side of the area access road, approximately 420 ft northwest of the proposed drill site. This site was not observed during the course of field investigations. No sites had been previously recorded in the vicinity of Federal 1-4.

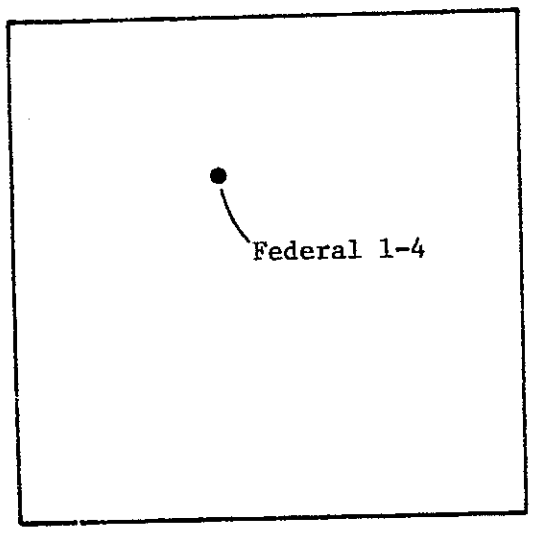
Recommendations

Based on the results of these surveys, the areas to be affected by proposed land-use actions can be recommended for archaeological clearance, provided that activities at Federal 1-5 are confined to the staked drill site on the east side of the area access road.

Submitted: February 7, 1983

Lyle M. Stone
ARCHAEOLOGICAL RESEARCH SERVICES

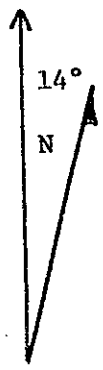
FIGURE 1

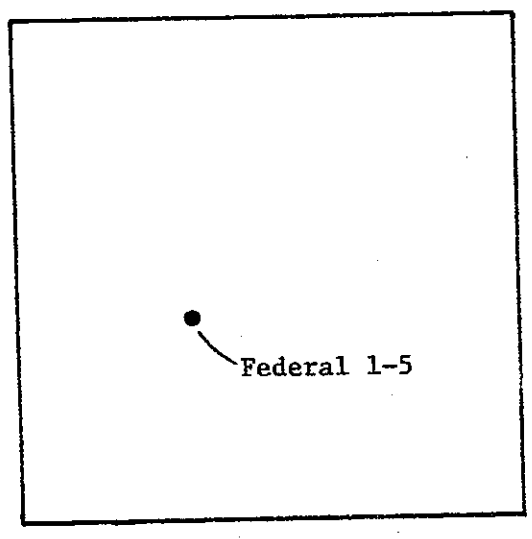


LOCATION of Sanchez-O'Brien Federal 1-4 in Section 4, T4N, R12E

Map Source: U.S.G.S., Theodore Roosevelt Dam, Ariz. (7.5)

1 in - 2000 ft

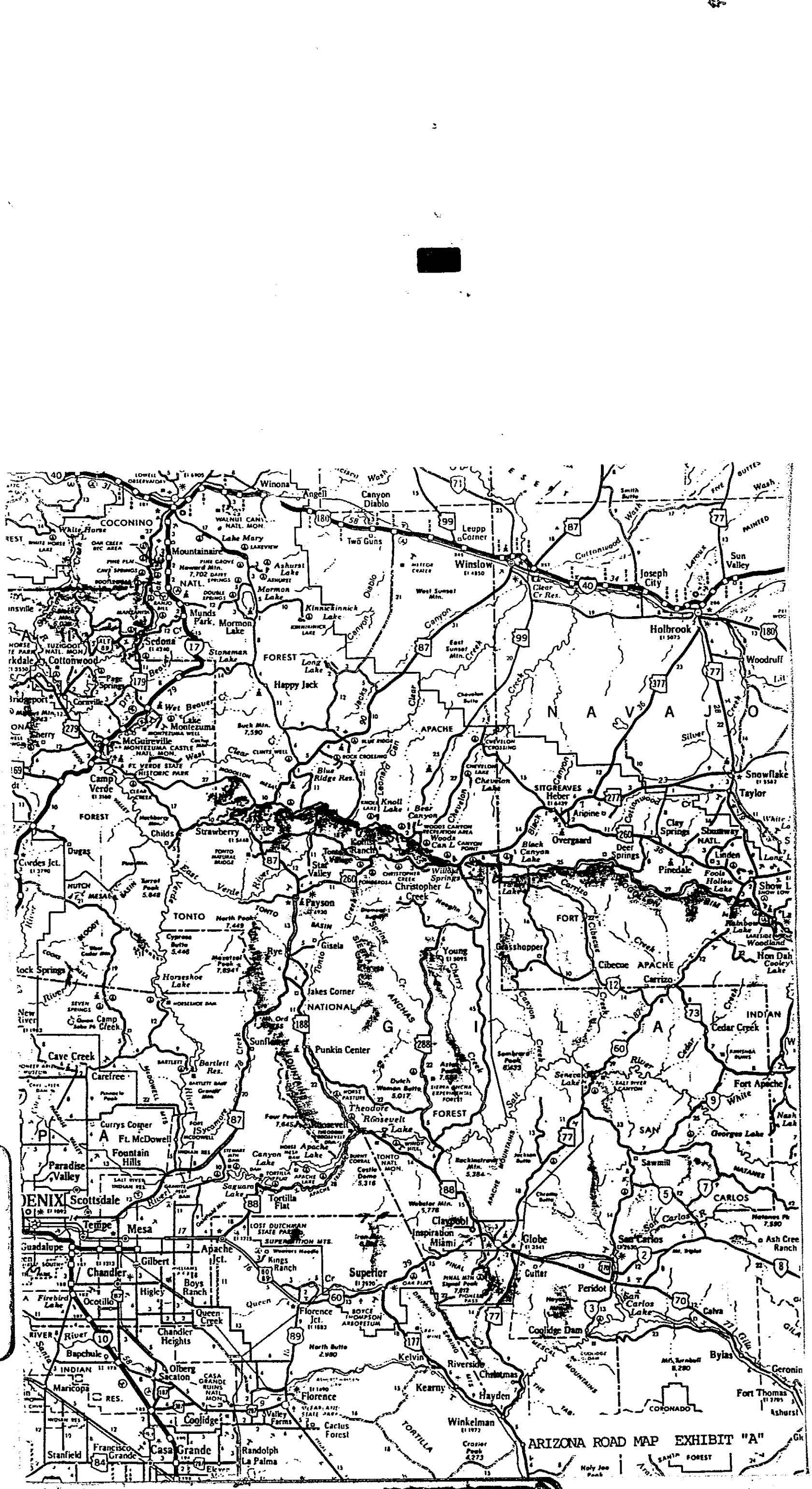




LOCATION of Sanchez-O'Brien Federal 1-5 in Section 5, T4N, R13E

Map Source: U.S.G.S., Windy Hill, Ariz. (7.5)

1 in - 2000 ft


ARIZONA ROAD MAP EXHIBIT "A"
COCONINO
NATL.
FOREST
APACHE
NAVAJO
TONTO
NATIONAL
FOREST
FORT
APACHE
INDIAN
RES.
Winona
Angell
Canyon Diablo
Two Guns
Leupp Corner
Winslow
Joseph City
Holbrook
Sun Valley
Woodruff
Snowflake
Taylor
Show Low
Lake Mary
Mountainaire
Ashurst Lake
Mormon Lake
Kinnickinnick Lake
Munds Park
Sedona
Stoneman Lake
Happy Jack
Long Lake
Cottonwood
Page Springs
Cornville
Wet Beaver
Lake Montezuma
McGuireville
Camp Verde
Blue Ridge Res.
Chevelon Lake
Knoll Lake
Bear Canyon Lake
Black Canyon Lake
Heber
Overgaard
Aripine
Clay Springs
Shumway
Deer Springs
Linden
Pinedale
Clear Cr Res.
Cottonwood Cr
Silver Creek
Leonard Canyon
Chevelon Canyon
Jacks Canyon
Clear Creek
Dry Beaver
Beaver Creek
Oak Creek
Sycamore Creek
Cherry Creek
Willow Springs
Christopher Creek
Tonto Village
Strawberry
Pine
Payson
Star Valley
Tonto Natural Bridge
Woods Canyon Recreation Area
Woods Can L
Canyon Point
Rock Crossing
Blue Ridge Crossing
Chevelon Crossing
Chevelon Lake
Clints Well
Fort Verde State Historic Park
Montezuma Castle Natl. Mon.
Montezuma Well
Tuzigoot Natl. Mon.
Walnut Canyon Natl. Mon.
Lowell Observatory
Oak Creek Rec Area
Fine Grove
Howard Mtn. 7,702
Dairy Springs
Double Springs
Banjo Bill
Marshall Mtn.
Buck Mtn. 7,590
West Sunset Mtn.
East Sunset Mtn.
Meteor Crater
Cinder Lake
Sitgreaves
Silver Creek
Show Low Lake
Fools Hollow Lake
Rainbow Lake
Woodland Lake
Hon Dah
Cooley Lake
Cibecue
Carrizo
Grasshopper
Cedar Creek
Fort Apache
Seneca Lake
Salt River Canyon
Sombrero Peak 6,439
Georges Lake
Sawmill
Carlos
San Carlos
Ash Creek Ranch
Natanes Pk 7,590
Natanes Mts.
Black Mesa
Mesa Basin
Turret Peak 5,848
North Peak 7,449
Cypress Butte 5,446
Mazatzal Peak 7,894
Horseshoe Lake
Seven Springs
Camp Creek
Cave Creek
Carefree
Bartlett Res.
Currys Corner
Ft. McDowell
Fountain Hills
Paradise Valley
Scottsdale
Tempe
Mesa
Guadalupe
Gilbert
Chandler
Higley
Ocotillo
Firebird Lake
Apache Jct.
Kings Ranch
Boys Ranch
Queen Creek
Chandler Heights
Florence Jct.
Florence
Coolidge
Casa Grande
Stanfield
Francisco Grande
Maricopa
Bapchule
Olberg
Sacaton
Casa Grande Ruins Natl. Mon.
Valley Farms
Cactus Forest
Randolph
La Palma
Eleven
Sunflower
Punkin Center
Roosevelt
Theodore Roosevelt Lake
Windy Hill
Four Peaks 7,645
Canyon Lake
Apache Lake
Saguaro Lake
Tortilla Flat
Lost Dutchman State Park
Superstition Mts.
Weavers Needle
Dutch Woman Butte 5,017
Horse Pasture
Burnt Corral
Castle Dome 5,316
Tonto Natl. Mon.
Superior
Oak Flat
Boyce Thompson Arboretum
Queen Creek
Kelvin
Riverside
Christmas
Kearny
Hayden
Winkelman
Crozier Peak 4,273
Tortilla
Dripping Spring Mts.
Webster Mtn. 5,778
Claypool
Inspiration
Miami
Globe
Cutter
Peridot
San Carlos Lake
Coolidge Dam
Calva
Bylas
Geronimo
Fort Thomas
Ashurst
Mescal Mts.
Riverside Mts.
Christmas Mts.
Pinal Mts.
Signal Peak 7,812
Pioneer Pass
Superstition Mts.
Salt River
Gila River
Santa Cruz River
Verde River
Agua Fria River
New River
Cave Creek
Queen Creek
Sycamore Creek
Cherry Creek
Tonto Creek
Spring Creek
Sierra Ancha Experimental Forest
Ancha Mts.
Mazatzal Mts.
Superstition Mts.
Pinal Mts.
Tortilla Mts.
Four Peaks
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Sombrero Peak
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Carrizo Creek
Cibecue Creek
Canyon Creek
Salt River Canyon
Natanes Mts.
Carlos River
Gila River
Gila Mts.
Tonto Basin
Mesa Basin
Hutch Mesa
Meadow Valley
Horse Mesa
Coon Bluff
Roosevelt Lake
Apache Lake
Canyon Lake
Saguaro Lake
Lake Pleasant
Bartlett Res.
Clear Cr Res.
Lake Montezuma
Dry Beaver
Wet Beaver
Oak Creek
Sycamore Creek
Cherry Creek
Willow Springs
Christopher Creek
Tonto Village
Strawberry
Pine
Payson
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Fountain Hills
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Tempe
Mesa
Guadalupe
Gilbert
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Higley
Ocotillo
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Apache Jct.
Kings Ranch
Boys Ranch
Queen Creek
Chandler Heights
Florence Jct.
Florence
Coolidge
Casa Grande
Stanfield
Francisco Grande
Maricopa
Bapchule
Olberg
Sacaton
Casa Grande Ruins Natl. Mon.
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Cactus Forest
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Horse Pasture
Burnt Corral
Castle Dome 5,316
Tonto Natl. Mon.
Superior
Oak Flat
Boyce Thompson Arboretum
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Riverside
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Kearny
Hayden
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Inspiration
Miami
Globe
Cutter
Peridot
San Carlos Lake
Coolidge Dam
Calva
Bylas
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Fort Thomas
Ashurst
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Riverside Mts.
Christmas Mts.
Pinal Mts.
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Pioneer Pass
Superstition Mts.
Salt River
Gila River
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Verde River
Agua Fria River
New River
Cave Creek
Queen Creek
Sycamore Creek
Cherry Creek
Tonto Creek
Spring Creek
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Ancha Mts.
Mazatzal Mts.
Superstition Mts.
Pinal Mts.
Tortilla Mts.
Four Peaks
Mesquite Mts.
Sombrero Peak
Seneca Lake
Cedar Creek
Carrizo Creek
Cibecue Creek
Canyon Creek
Salt River Canyon
Natanes Mts.
Carlos River
Gila River
Gila Mts.
Tonto Basin
Mesa Basin
Hutch Mesa
Meadow Valley
Horse Mesa
Coon Bluff
Roosevelt Lake
Apache Lake
Canyon Lake
Saguaro Lake
Lake Pleasant
Bartlett Res.
Clear Cr Res.
Lake Montezuma
Dry Beaver
Wet Beaver

RECEIVED
FEB 7 1983
O & G CONS. COMM.

APPLICATION FOR PERMIT TO DRILL OR RE-ENTER

APPLICATION TO DRILL ☒ RE-ENTER OLD WELL ☐

NAME OF COMPANY OR OPERATOR
Sanchez-O'Brien Oil & Gas Corporation

Address	City	State
P. O. Box 2986	Laredo,	Texas 78041

Drilling Contractor
James Drilling Co., Inc.
Address P. O. Box 370, Flora Vista, New Mexico 82415

DESCRIPTION OF WELL AND LEASE

Federal, State or Indian Lease Number, or if fee lease, name of lessor	Well number	Elevation (ground)
Federal lease A-9039	1-4	GL 2,190'

Nearest distance from proposed location to property or lease line:	Distance from proposed location to nearest drilling, completed or applied–for well on the same lease:
1,272 feet	None feet
Number of acres in lease: 2,440.32	Number of wells on lease, including this well, completed in or drilling to this reservoir: None

If lease, purchased with one or more wells drilled, from whom purchased: Name N/A Address

Well location (give footage from section lines)	Section–township–range or block and survey	Dedication (Comply with Rule 105)
990' FSL, 802' FWL or 1650 FNL & 2122 FWL Use Survey Plat Loc.	4-4N-12E	E½NW¼

Field and reservoir (if wildcat, so state)	County
Wildcat	Gila

Distance in miles, and direction from nearest town or post office
20 miles west to Tonto Basin, AZ post office.

Proposed depth:	Rotary or cable tools	Approx. date work will start
3,500'	Rotary	March 15, 1983
Bond Status Blanket Amount $25,000	Organization Report On file Or attached X	Filing Fee of $25.00 Attached X

Remarks:

See attached:
1. Ten Point Drilling Program
2. Multipoint Surface Use and Operation Plan

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Agent of the Sanchez-O'Brien Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature Charles O. Tucker

Date February 4, 1983

Permit Number: 838
Approval Date: 2-8-83
Approved By:

Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Drill or Re-enter
File Two Copies

Form No. 3

(Complete Reverse Side)

1. Operator shall outline the dedicated acreage for *both* oil and gas wells on the plat.

2. A registered professional engineer or land surveyor registered in the State of Arizona or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.

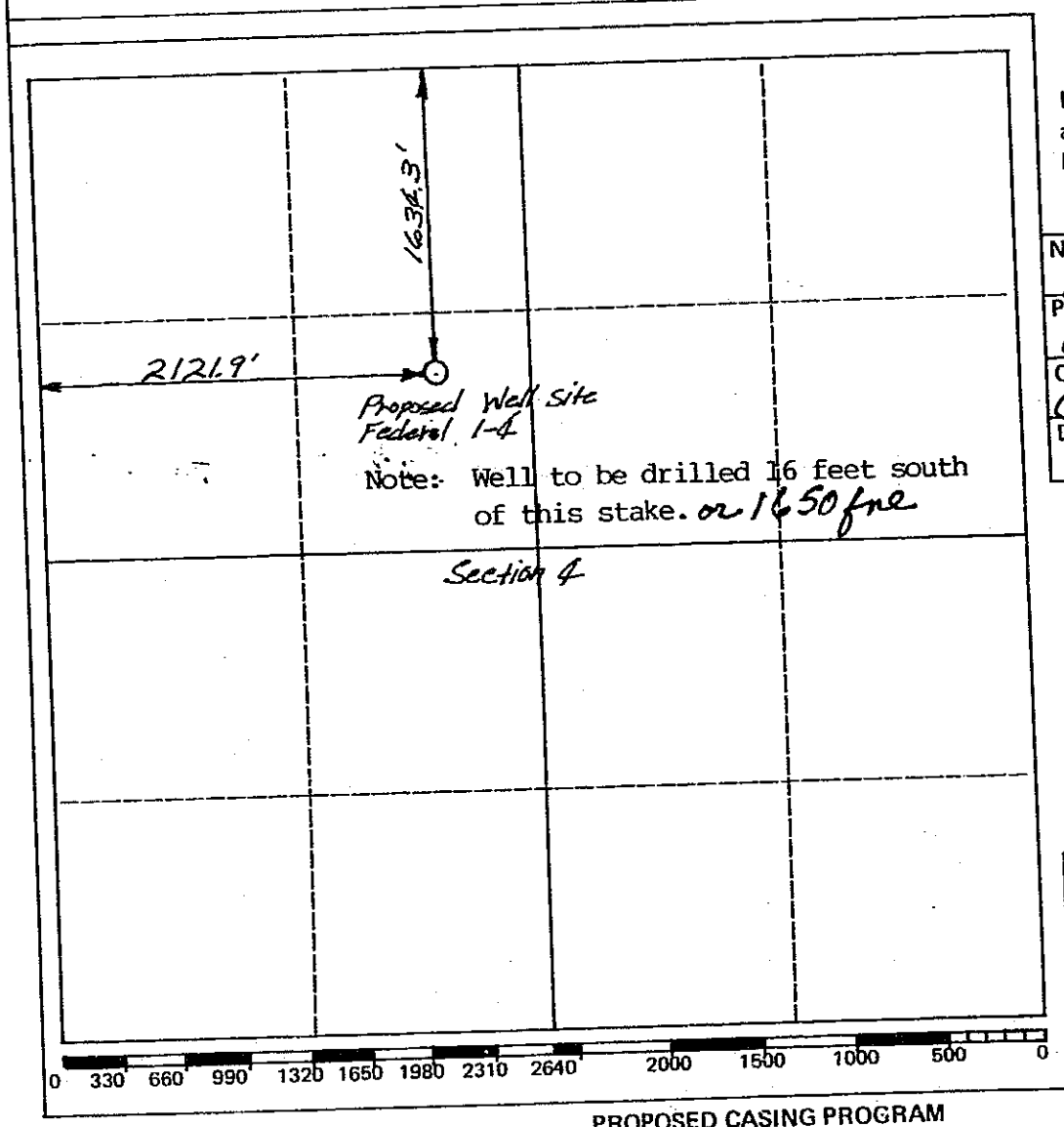
3. ALL DISTANCES SHOWN ON THE PLAT MUST BE FROM THE OUTER BOUNDARIES OF THE SECTION.

4. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES X NO _____.

5. If the answer to question four is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES _____ NO _____. If answer is "yes," Type of Consolidation _____

6. If the answer to question four is "no," list all the owners and their respective interests below:

Owner	Land Description
N/A	Section 4, T.4N., R.12E., G.&S.R.M.



CERTIFICATION

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Name: Raymon L. Garrett
Position: Owner
Company: Garrett & Smith Land Surveyors
Date: Jan 28, 1983

I hereby certify that the well location shown on the plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: Jan
Registered Professional Engineer and/or Land Surveyor
Certificate No.

REGISTERED LAND SURVEYOR 14180 RAYMON LEWIS GARRETT ARIZONA

PROPOSED CASING PROGRAM

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement	Type
8 5/8	24#	J-55	0	500	To surface	350	API Class A
4½/5½	10.5#/15.5#	J-55	0	3500	200' above production	Calculated volume + 100%	API Class A

PERMIT TO DRILL

This constitutes the permission and authority from the

OIL AND GAS CONSERVATION COMMISSION,
STATE OF ARIZONA,

To: SANCHEZ-O'BRIEN OIL & GAS CORPORATION
(OPERATOR)

to drill a well to be known as

1-4 FEDERAL
(WELL NAME)

located 1650' FNL & 2122' FWL

Section 4 Township 4 NORTH Range 12 EAST, GILA County, Arizona.

The E/2 NW/4 of said
Section, Township and Range is dedicated to this well.

Said well is to be drilled substantially as outlined in the attached Application and must be drilled in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona.

Issued this 8th day of February, 19 83.

OIL AND GAS CONSERVATION COMMISSION

By [signature]
Enforcement EXECUTIVE DIRECTOR

PERMIT 00928

RECEIPT NO. 2365

A.P.I. NO. 02-007-20003

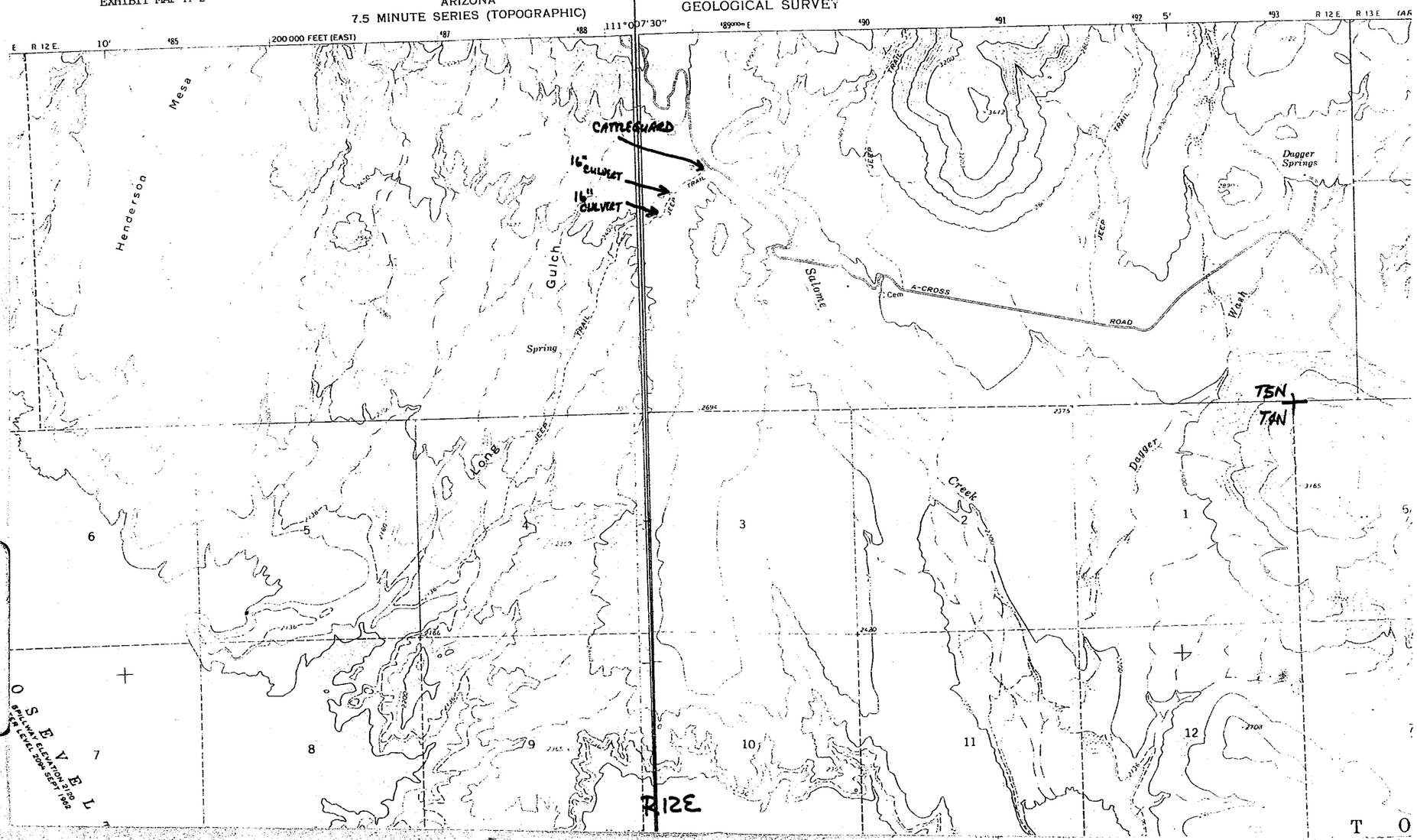
State of Arizona
Oil & Gas Conservation Commission
Permit to Drill
FORM NO. 27

TEN FOOT SAMPLES ARE REQUIRED FROM SURFACE

EXHIBIT MAP A-2

THEODORE ROOSEVELT DAM QUADRANGLE
ARIZONA
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



SANCHEZ-O'BRIEN O&G 1-4 FEDERAL
SE NW 4-4N-12E GILA CO.
838

WESTERN TECHNOLOGIES, INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 268-1381

LABORATORY REPORT

AWS
RY

RECEIVED
MAY 13 1983
O & G CONS. COMM.

Client Karabees Agencies
5513 North 79th Place
Scottsdale, Arizona 85253

Job No. _____
Lab/Invoice No. 22130445
Date of Report 5/09/83

Project Sanchez-O'Brien Oil and Gas Corporation
Location Federal 1-4 Gila County, Arizona
Material/Specimen Water Sampled By -- Date --
Source 4-4N-12E SO BOG Submitted By KA/J.Karabees Date 4/25/83
Test Procedure Standard Methods,15thED Authorized By KA/J.Karabees Date 4/25/83

RESULTS

Three samples were submitted for analyis following standard laboratory procedures. Boron was determined using an ICP emission spectrophotometer. The results were as follows:

Parameter	846 ft.	1521 ft.	1900 ft.
E.C., umhos/cm	27922	1494	2700
Boron, ppm	2.8	11	4.5
Chloride, ppm	8377	217	482

*It should be noted that all samples contained sediment and analyses were performed on dissolved fraction only.

#838

Copies to Addressee (2)

Reviewed By: Lisa Lund
Lisa C. Lund, Chemist

Phone: (505) 287-3984

INVOICE

AKO

PIERSON CEMENTING, INC.

RECEIVED 6251

MAY 5 1983

O & G CONS. COMM.

P. O. BOX 1298

GRANTS, NEW MEXICO 87020

DATE 4/23/83

YOUR ORDER NO.

SOLD TO Sanchez - O'Brien Oil & Gas Corporation

P.O. Box 2986

Laredo, Texas 78041

SHIPPED TO Federal 1-4

OUR ORDER NO.	SALESMAN	TERMS	F.O.B.	DATE SHIPPED	SHIPPED VIA
	Pierson	Net: 30-Days		4/23/83	

QUANTITY ORDERED	QUANTITY SHIPPED	STOCK NUMBER/DESCRIPTION	UNIT PRICE	UNIT	AMOUNT
		PR-1 : Mileage Chg. X 345 Mi. Pump Truck	2 00		690 00
		PR-20: Base Chg. Pump			600 00
		PR-29: Handling Chg. on Cement 200 C.F.	75		150 00
		Port Entry Fees			76 75
					1,516 75
		3.5% New Mexico Sales Tax			53 09
		Total			1,569 84
		Thank You			

838

P.O. BOX 1298
GRANTS, NEW MEXICO 87020

PHONE
287-3984

RECEIVED 1993

PIERSON CEMENTING, INC.

SERVICE TICKET

№ 2629

AKA py

Date	Customer Order No.	Section	Township	Range	County	State
4.23.93		4	4N	12E	Gila	Arizona

Well Number & Farm	Location	Contractor	Owner
Federal 4-1-4		James A	Sanchez-O'Brien

Charge To: Sanchez - O'Brien Oil & Gas Corp.

PIERSON CEMENTING, INC. IS HEREBY REQUESTED TO FURNISH CEMENTING EQUIPMENT

To ______ (OWNER, OPERATOR OR HIS AGENT) P.O. Box 2986 Laredo Texas 78041

and service men to deliver and operate same, as an independent contractor

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

PIERSON CEMENTING, INC. shall not be liable for damage to property of well owner and – or customer unless caused by its willful negligence, this provision applying but not limited to subsurface damage and surface damage arising from subsurface damage, well owner and – or customer shall be responsible for and secure against any liability for reservoir loss or damage or property damage arising from a well blowout, unless such loss or damage is caused by the willful negligence of PIERSON CEMENTING, INC. If equipment or instruments of PIERSON CEMENTING, INC. are lost or damaged at the well, well owner and – or customer shall either recover the same or pay for such equipment or instruments unless, however, such loss or damage is caused by the negligence of PIERSON CEMENTING, INC. In the event it is necessary to employ an attorney for the collection of amounts due on this contract customer agrees to pay a reasonable attorney's fee and all other costs of collection.

I have read and understand the terms of this agreement and represent that I am authorized to sign the same as agent of customer.

Date: 4, 23, 93 Time: 2:30 P.M. Signed: [signature] WELL OWNER, OPERATOR or CONTRACTOR

TYPE OF JOB AND SIZE	HOLE DATA
P.T.A.	T.D. 3490' 7 7/8"

PLUG BACK OR SQUEEZE

DEPTH FROM:	TO APPROX:	SIZE CASING	SIZE HOLE
1900'	1730' = 75SK	9"	
1730-	1365' = 125SK	8 3/4"	
980	635' = 50SK	6 5/8"	
625	377' = 50SK	7 7/8"	

CEMENT DATA

200 SK

MAKE OF FLOATING EQUIP.:

CEMENT LEFT IN CASING ______ FT.

DEPTH OF JOB	ON LOCATION	JOB BEGAN	JOB COMPLETED	CREW ON JOB
1900	4.23.93 2:30 Pm	4.23.93 3:00 P.m	4.23.93 6:15 P.m.	Pierson

PRICE REF:	EXPLANATION:	
PR. 1	Mileage For 345 mi x 2.00	690.00
PR 20	Base Charge	600.00
P.R.	Handling on Cement 200 SK x .75	150.00
	Port Entry Fees	76.75

JOB COMMENTS:

838

SUB-TOTAL	1516.75
TAX 3 1/2 %	53.09
TOTAL	1569.84

Signed: [signature] OWNER, OPERATOR OR HIS AGENT

CARPENTER
DEVELOPMENT
Incorporated

GEOLOGIC EVALUATION OF THE

ROOSEVELT LAKE PROSPECT

Gila County, Arizona

1531 W. El Caminito Drive, Phoenix, Arizona 85021 Phone 943-2951
274-6175

CARPENTER
DEVELOPMENT
Incorporated

GEOLOGIC EVALUATION OF THE

ROOSEVELT LAKE PROSPECT

Gila County, Arizona

1531 W. El Caminito Drive, Phoenix, Arizona 85021 Phone 246-2631
274-6175

ROOSEVELT LAKE PROSPECT

INTRODUCTION

The services of Gene C. Carpenter, consulting geologist, were retained by Mr. Ed Kerber to conduct a preliminary geologic evaluation of property located north of Roosevelt Lake, in Townships 4 and 5 North, Ranges 12 and 13 East. The purpose of this study was to inspect the geologic details available and correlate any known geologic data with a Ra-Mag study undertaken by Carpenter Development, Incorporated. The results of the Ra-Mag study are presented in a separate report.

This report was also to derive some conclusions as to the oil and gas potential in the area under question and project some pssible drilling targets.

HISTORICAL BACKGROUND:

Many years ago it was determined that the Tonto Basin was of sufficient interest to warrant testing for oil and gas. It should be pointed out at this point that the Tonto Basin does not refer to an oil and gas basin but rather a surface drainage basin and from which it acquires its name.

In 1913 interest was stimulated greatly by the report of devolitilized oil (dead oil) in the area. These rocks with dead oil were found in the vicinity of the present Roosevelt Dam Construction. Laboratory analysis did indicate some high grade paraffine oil however, specific details on the old tests are completely unobtainable at this point. Much action was taken at that time with respect to leasing however, plans for the present reservoir curtailed activity at that time. Since then no drilling or any activity has been of concern within about forty miles of the area of discussion. It has been also reported in numerous publications that some early settlers in the area mined the "dead oil" bearing rock and extracted oil by heating it or firing it.

Figure 1 shows the location of the leases of this report with respect to Roosevelt Lake.

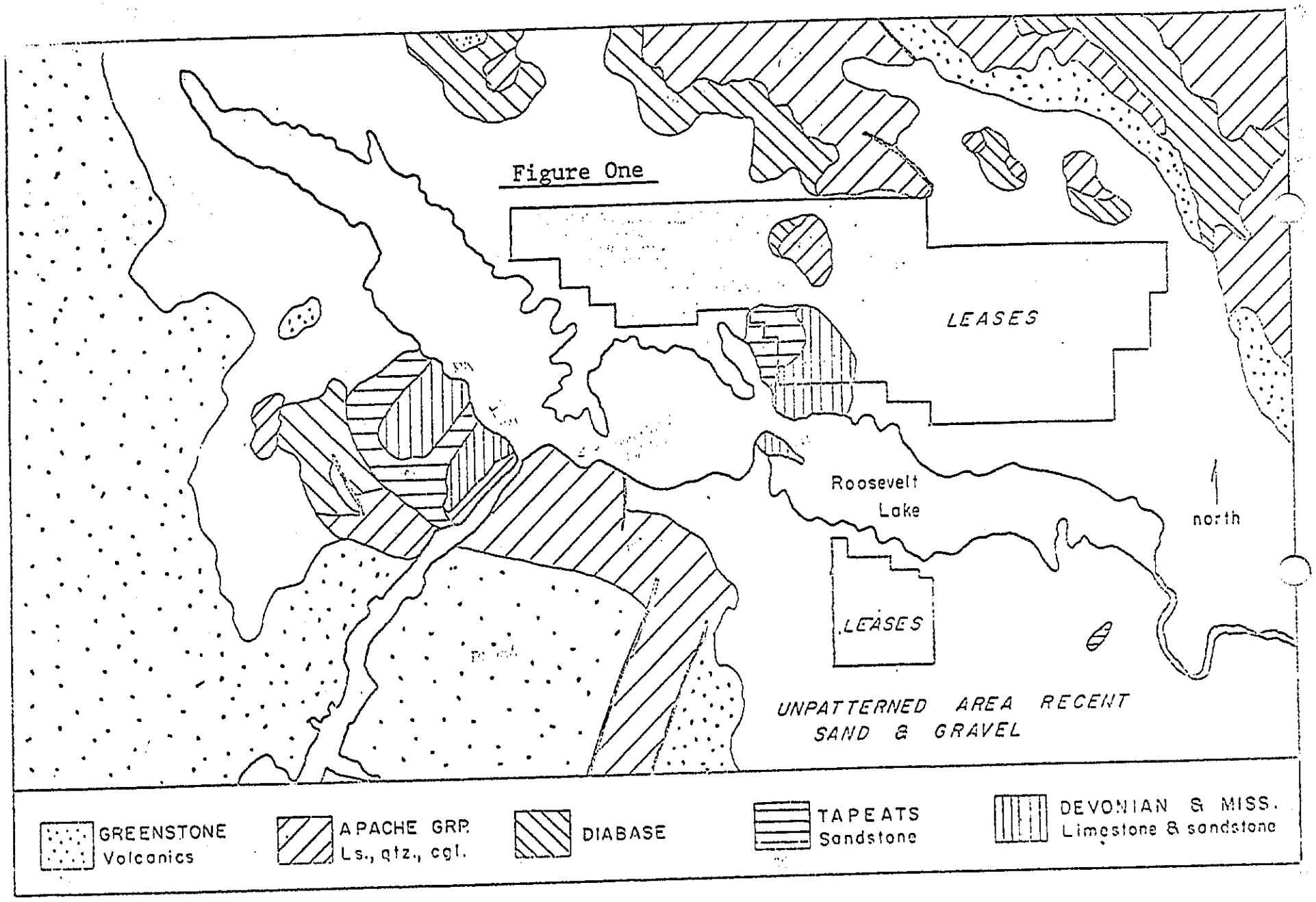
This writer visited the site of the dam and studied all of the rocks in the immediate vicinity of the dam and can confirm beyond any doubt that there is indeed petroliferous rocks in the area bearing dead oil and gas smells. This writer found numerous formations in the mountains adjoining the dam site and samples collected indicated the presence of dead oil under inspection with the ultra violet light. All rock gave off an extreme gassy odor.

GENERAL GEOLOGY:

Since no drilling has been done in the Tonto Basin, geologic facts are only projected and could vary considerably upon actual drilling. The Tonto Basin is a down faulted and down folded area located between two geologic features of major importance. On the northeast end of the area we find the defiance uplift and to the south we find the very complicated structures of the Mazatzal Mountains. The thickness of sedimentary rocks in this area is fairly thin because of numerous errosional stages. At the end of what is known as PreCambrian time, considerable errosion took place and in many areas the rocks of what are called Devonian Age formations are lying unconformibly on the older rocks of the Pre-Cambrian. This means that a section of approximetely two hundred million years is missing. After the deposition of the Devonian rocks (the target rocks) much errosion took place in the area leaving very thin thinknesses of these Devonian rocks. After this post Devonian errosion, uplift of the Mazatzal Mountains dammed up drainages in the area and an extremely large lake was formed over the entire region of study. Because of this much of the Tonto Basin area is covered by thick deposits of recent limestones, sands, and marl type deposits. These deposits are all flat lying or nearly horizontal and have no reflection whatsoever of the underlying structure or potential.

Figure 1 shows the general surface geology as found in the

Figure One


LEASES
Roosevelt
Lake
north
LEASES
UNPATTERNED AREA RECENT
SAND & GRAVEL
GREENSTONE
Volcanics
APACHE GRP.
Ls., qtz., cgl.
DIABASE
TAPEATS
Sandstone
DEVONIAN & MISS.
Limestone & sandstone

the area. Most of the area is covered by the younger deposits and thus mask or hide any information on the underlying geology. By a study of the surrounding rock exposures in the hills and mountains around the area of interest, it is felt that sufficient folding and faulting have occured to give numerous potential structures in the Tonto Basin under these recent sediments. Study of some of the general dips on both sides of the lake also indicate reversals of the dips are no doubt evident in the area which would in general back up any potential traps which would be present in the area. Since this area is covered extensively by these recent deposits it was determined that the most logical method of exploration would be the Ra-Mag study whereby we could map structure directly and also test fot the indication of hydrocarbon accumulation.

The general geology or geologic section which would be expected in any drilling is as follows:

Depth	Description
Surface	RECENT - Sand, gravel, cobbles and silts of recent origin.
300'	TERTIARY - Limestones, siltstones and calcareous marl
1300'	DEVONIAN - Green shale with sandstone
1500'	DEVONIAN - Sandstones and siltstones, some reefs
1700'	DEVONIAN - Limestone, massive with reefing
1800'	DEVONIAN - Sandstone, coarse grained (Beekers Butte)
1900'	DEVONIAN - Interbedded dolomite and sandstone.
2100'	DEVONIAN - Dolomitic limestone
2200'	DEVONIAN - Sandstone, coarse, conglomeratic.
2300'	PreCambrian - Quartzite

After study of the potential section in the area and the our cropping rocks near the dam site, it is felt that any well drilled in the area should be located as shown on Figure 2 which is a reproduction of the location map of the Ra-Mag profiles. A well in this area should be taken to a depth of three thousand feet to sufficiently test the entire section. There are numerous potential

zones in this section which could yield oil and gas and in outcrop has certainly indicated excellent porosity and permeability. All of the rocks in the area which are to be of interest, have been described and shown to be of marine origin which is of course very important for oil and gas.

Details of the Ra-Mag survey presented in a separate report do verify the fact that much folding and probably faulting has occured. It also verifies the fact that hydrocarbons are indeed present in this area or have been present in quantities. It is possible that recent faulting, if it exists, has sufficiently crisscrossed and folds or traps in the area and allowed any gas or oil to escape to the surface. Such faulting has not been documented and this writer feels that it is unlikely that such is the case, however it certainly is necessary to be aware of at this possibility. If no faulting has occurred in recent time, these structures as indicated by Ra-Mag studies should be oil and gas productive,

CONCLUSIONS

After a study of the area the following conclusions and recommendations can be made.

1. It is felt that the entire area satisfies all of the general conditions for oil and gas production, that is, there is a source for the oil and gas (marine sediments), oil and gas shows have been found in the rocks in the surrounding area, and structures which could contain the oil and gas have been found in the subsurface. All rocks indicate ample porosity and permeability to produce oil if it is present.

2. The Ra-Mag study presented in a separate report has indicated definite structrual tendencies under the recent lake sediments and the precence of hydrocarbon materials associated with these structures is also indicated.

3. It is recommended that a test be conducted in the area in one of the locations as shown in Figure 2. Complete descriptions of these test locations are found in the Ra-Mag study.

4. It is highly recommended that a detailed Ra-Mag study be undertaken of the area on a half section spacing to allow detailed mapping of the entire area. This recommendation is made in conjunction with detailed geologic mapping of the immediate surrounding vicinity. It is felt that such a detailed Ra-Mag study should be made prior to the actual drilling of the well however, this should not hold up proceedings on getting things in order to begin the first test well. Since it still takes a number of weeks and perhaps a couple months to get all particulars taken care of to drill a well, a Ra-Mag study could be completed in detail on the lease area prior to that time. If this study is not undertaken prior to drilling, it is this writers opinion that it is imparative that this study be taken immediately after drilling if production is encountered. This is necessitated by the fact that there are numerous smaller structures in the area and many dry holes could result by not knowing the exact configuration of these structural areas.

5. Because of the nature of the area and the unknowns in the section to be drilled, it is highly recommended by this writer that a cable tool drill be utilized as opposed to rotary drilling. It is definitely slower to drill with cable tools however, much better data would be acquired and the useful end of trying to develop an oil well would be better served by this type of drilling.

All data has been checked so far as is possible by this writer and presented only where reliability was determined.

Respectfully submitted,
CARPENTER DEVELOPMENT, INC.

Gene C. Carpenter
Consulting Geologist

GENE C. CARPENTER
Date Signed 3/28/69
ARIZONA, U.S.A.

March 28, 1969

OIL AND GAS POSSIBILITIES
SOUTHWEST TONTO BASIN
Gila County, Arizona

INTRODUCTION

An investigation into the oil and gas possibilities of Devonian rocks of the southwest part of the Tonto Basin, Arizona, was prompted by a reported oil outcrop near the Roosevelt Dam site. Further study of the literature and an on-the-ground inspection indicated that the area warranted a detailed geological study that could possibly lead to a recommendation to drill a test well in the area.

In the interum, sufficient indications that oil and gas accumulation in commercial quantities could be present in reservoir beds of the Devonian led to the acquisition of oil and gas leases on a sizeable acreage block. All of this acreage is on U. S. Bureau of Land Management land and within the confines of the Tonto National Forest. See attached Map I for location of acreage.

CONCLUSIONS AND RECOMMENDATIONS

1. The Tonto Basin of Arizona is of sufficient size and depth to provide source beds for commercial accumulations of hydrocarbons.

2. Possible reservoir rocks as seen on surface outcrops are of a quality that will allow for the migration and where traps exist, accumulation of oil and gas.

3. The Tonto Basin has been relatively stable since Devonian time and traps formed by structural movement such as folding or faulting occurred during the Mississippian time.

4. A test well for oil and gas should be drilled near the center of the acreage block with the exact location to be determined by additional surface investigation of the geology.

5. The objective horizon of such a test well, to be drilled to a projected total depth of 2000 feet, is the Beckers Butte sandstone.

DISCUSSION

As early as 1913, oil outcrops in Devonian sandstones were known to exist in the Tonto Basin. Early prospectors staked claims near the Roosevelt Dam site and reportedly mined the oil bearing rock and extracted its oil content with heat.

Years later, studies by various geologists reported strong petroleum odors in the rocks near the dam site as well as other parts of the Tonto Basin. (1) This appears to confirm "shows" within this basin.

Strictly speaking, the Tonto Basin is a minor down warping located in the transition zone between the Defiance uplift to the northeast and the Mazatzal Mountains of the southwest. Further westward, the Basin Range province of the Great Basin Area of the United States is the dominant structural feature.

As the close of the Paleozoic, continued erosion removed much of the rock deposits. As down working of the basin and uplift of the Mazatzal continued, a great lake was formed by the damming up of the waters flowing from the north. For this reason, a large part of the Tonto Basin is covered with a thick bed of comparatively recent sediments.

Later, the large lake was drained by the cutting through of the barrier by erosion and scouring out of the existing gorge of the Salt Run channel below the site of Roosevelt Dam.

Deposition and rapid scouring out of recent alluvial deposits continue to the present time in a typically arrid landscape.

Along the Mazatzal granitic uplift, sediments of Cambrian, Devonian, Mississippian and traces of Pennsylvanian are found. Dip is generally to the northeast. At Windy Hill on Roosevelt Lake this northeast dip is reversed and this trend carries through to the north side of the lake. Further to the southwest, the beds turn generally to a northeast, southwest strike indicating a reversal in this part of the basin. These changes in regional dip, indicating a flattening or folding of the rock, were noted on aerial photographs and by observation on a field trip to the area. Structures are apparent within the area of interest although a detailed study of surface geology will be required to establish the extent and nature of these structures.

(1) Devonian and Mississippian rocks of Central Arizona. Prof. Paper #233 by J. W. Huddle and Ernest Dobrovolny, Page 67-112.

Stratigraphic traps for oil and gas accumulation created by channel fill in pre-Cambrian basement rocks are a distinct possibility. Curt Teichert (2) describes this occurrence and names this sandstone fill the Beckers Butte. Sections of this sandstone in channel fill run as thick as 200 feet in the basin with 90 feet being measured at the Roosevelt Dam site.

It is the Beckers Butte sandstone that is overlain by a dolomite approximatoly 2 feet thick that produces a strong petroleum odor on a fresh break. This zone correlates with the fetid dolomite described by Teichert (footnote 2). The feted odor was present up in the section, above the Beckers Butte sandstone, but the dolomite layer with the petroleum odor was traced along the entire contact between these two zones. It is believed that the Beckers Butte sandstone is the principal objective for an oil and gas test in the Tonto Basin. Occurrence of hydrocarbons in this zone is indicated from surface outcrops and the characteristic of the sandstone suggest a good reservoir rock. Both stratigraphic and structural traps are a possibility for the Beckers Butte sandstone.

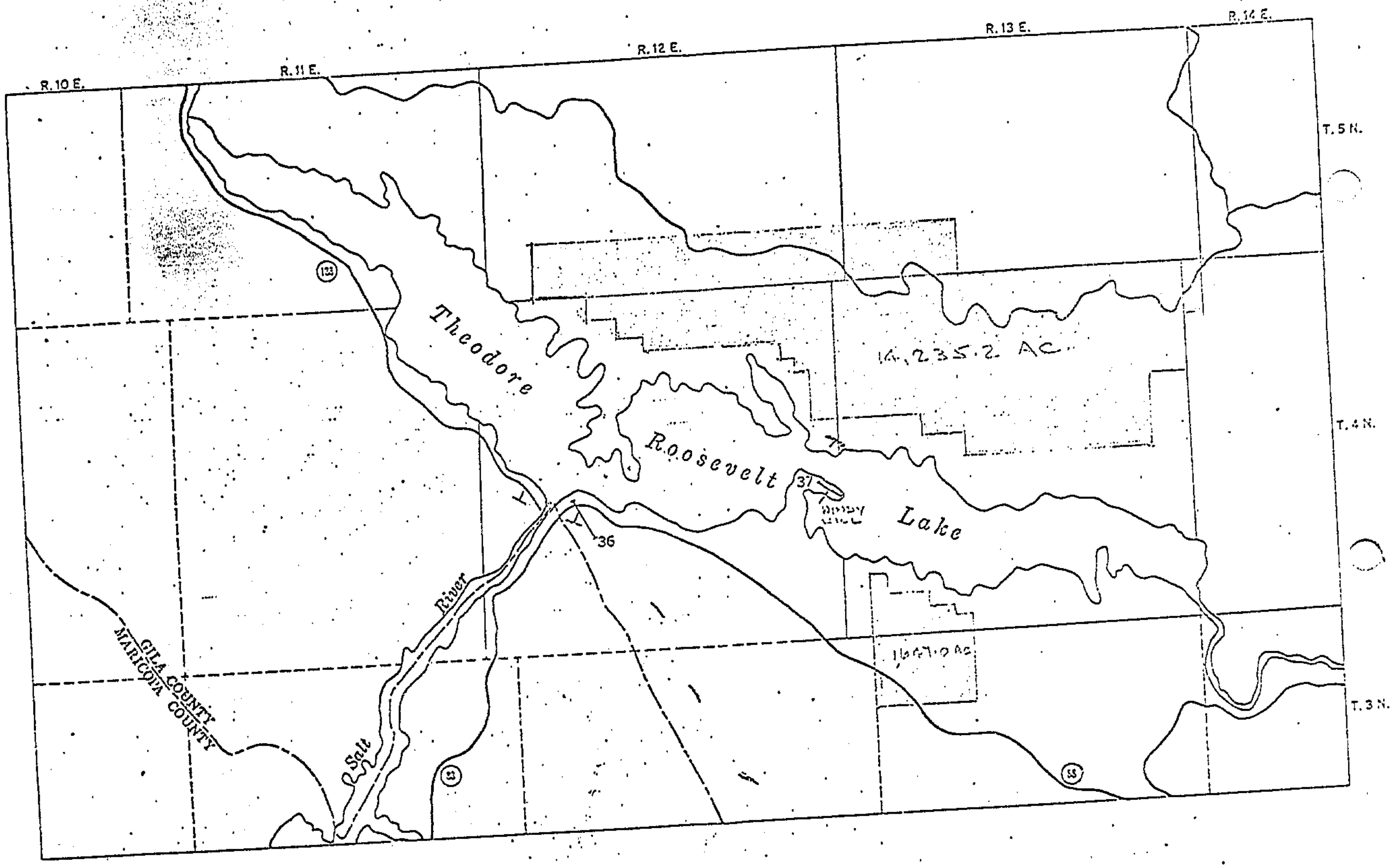
(2) Devonian Rocks and Paleogeography of Central Arizona. Geologic Survey Professional Paper #464, Page 25.

Prepared by

W. H. Williams

W. H. Williams

November 26, 1968


R.10 E.
R.11 E.
R.12 E.
R.13 E.
R.14 E.
T.5 N.
T.4 N.
T.3 N.
Theodore
Roosevelt
Lake
14,235.2 AC.
37
36
Salt
River
GILA COUNTY
MARICOPA COUNTY

EXISTING WELL SITE
ELEV. 2240.0

560'FSL 850 FEL

SECTION 32

T. 5 N., R. 12 E.
G. & S.R.M.

T. 4 N., R. 12 E.
G. & S.R.M.

N 6° 11' 03" W 5854.08'

N 12° 24' 21" E 3732.82'

PROPOSED WELL SITE
FEDERAL 1-4
ELEV. 2190.0

NOTE: WELL TO BE DRILLED 16 FEET SOUTH OF THIS STAKE.

SECTION 4

FOUND U.S.D.A. BRASS CAP
W. 1/16 COR. SEC. 4 - SEC. 9

S 42° 39' 19" E

SECTION 9

LEGEND

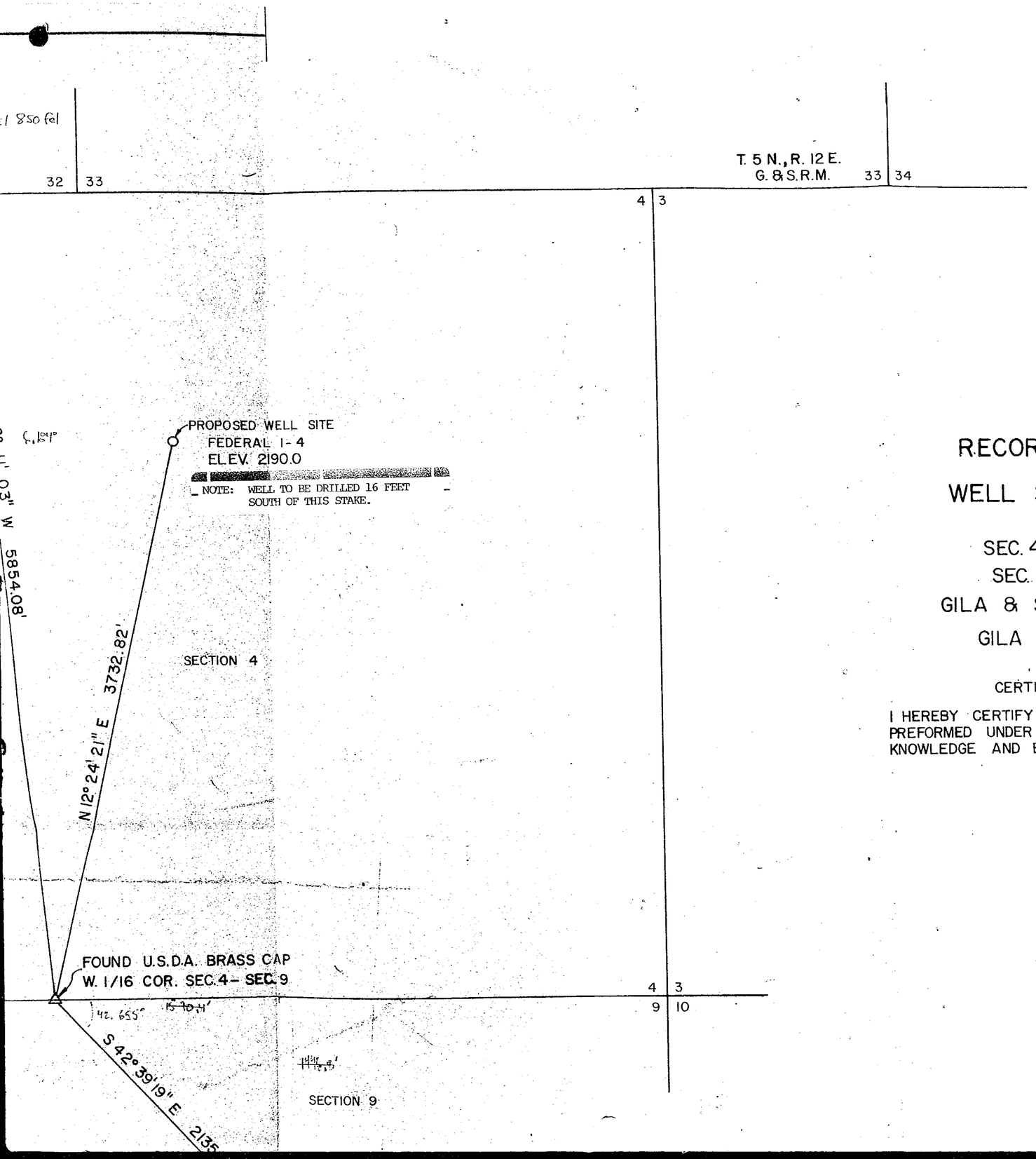
1" = 500'

RECORD OF SURVEY
WELL SITE LOCATIONS

SEC. 4 & 9, T. 4 N., R. 12 E.
SEC. 32, T. 5 N., R. 12 E.
GILA & SALT RIVER MERIDIAN
GILA COUNTY ARIZONA

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT THE SURVEY SHOWN BY THIS PLAT PREFORMED UNDER MY DIRECTION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IS TRUE AND CORRECT.



1" = 500'

RECORD OF SURVEY

WELL SITE LOCATIONS

SEC. 4 & 9, T. 4 N., R. 12 E.

SEC. 32, T. 5 N., R. 12 E.

GILA & SALT RIVER MERIDIAN

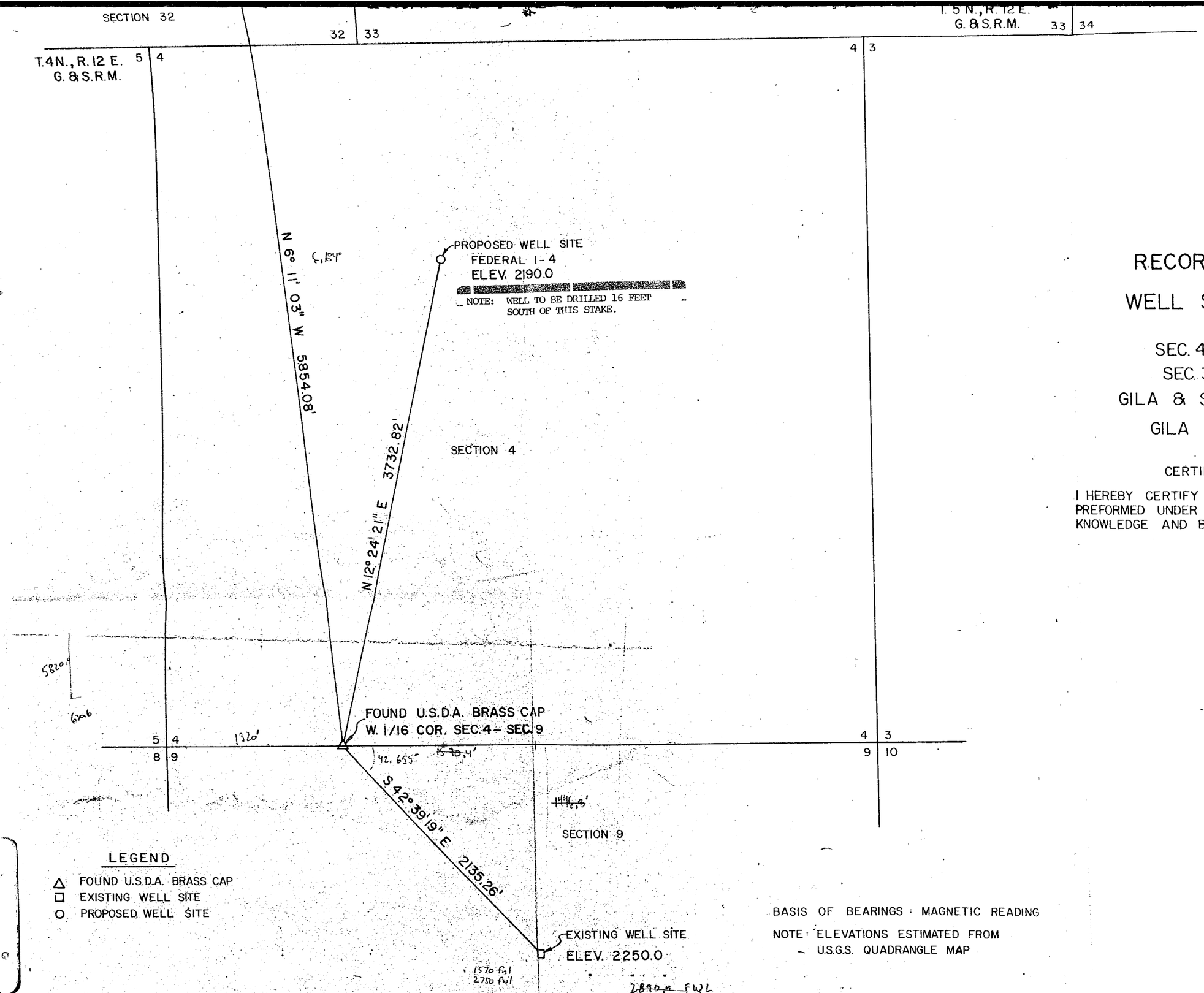
GILA COUNTY ARIZONA

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT THE SURVEY SHOWN BY THIS PLAT WAS PREFORMED UNDER MY DIRECTION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IS TRUE AND CORRECT.

Raymon L. Hamilton

SANCHEZ-O'BRIEN O&G 1-4 FEDERAL
SE NW 4-4N-12E GILA CO.
838



RECORD OF SURVEY

WELL SITE LOCATIONS

SEC. 4 & 9, T. 4 N., R. 12 E.
SEC. 32, T. 5 N., R. 12 E.
GILA & SALT RIVER MERIDIAN
GILA COUNTY ARIZONA

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT THE SURVEY SHOWN BY THIS PLAT W
PREFORMED UNDER MY DIRECTION AND TO THE BEST OF MY
KNOWLEDGE AND BELIEF IS TRUE AND CORRECT.

Raymon A. Garrett
Jan 28

LEGEND

- △ FOUND U.S.D.A. BRASS CAP
- □ EXISTING WELL SITE
- ○ PROPOSED WELL SITE

BASIS OF BEARINGS : MAGNETIC READING

NOTE : ELEVATIONS ESTIMATED FROM U.S.G.S. QUADRANGLE MAP

GARRETT & SMITH LAND SU
P.O. BOX 3162 GLOBE, ARI
PREPARED FOR : SANCHEZ - O'BRE
2212 N.W. 50TH
OKLAHOMA CITY,

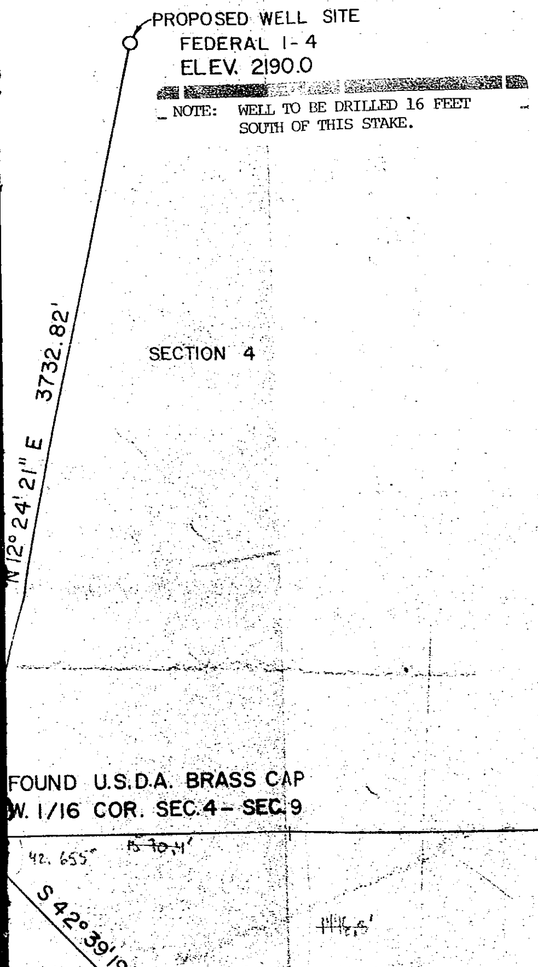
JAN 28, 1983 R.L.G.
1" = 500'

T. 5N., R. 12 E.
G. & S.R.M.

33 | 34

4 | 3

9 | 10



1" = 500'

RECORD OF SURVEY

WELL SITE LOCATIONS

SEC. 4 & 9, T. 4 N., R. 12 E.
SEC. 32, T. 5 N., R. 12 E.
GILA & SALT RIVER MERIDIAN
GILA COUNTY ARIZONA

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT THE SURVEY SHOWN BY THIS PLAT WAS PREFORMED UNDER MY DIRECTION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IS TRUE AND CORRECT.

BASIS OF BEARINGS : MAGNETIC READING

NOTE : ELEVATIONS ESTIMATED FROM U.S.G.S. QUADRANGLE MAP

GARRETT & SMITH LAND SURVEYORS
P.O. BOX 3162 GLOBE, ARIZONA

PREPARED FOR : SANCHEZ-O'BRIEN
2212 N.W. 50TH STREET
OKLAHOMA CITY, OKLA 73112

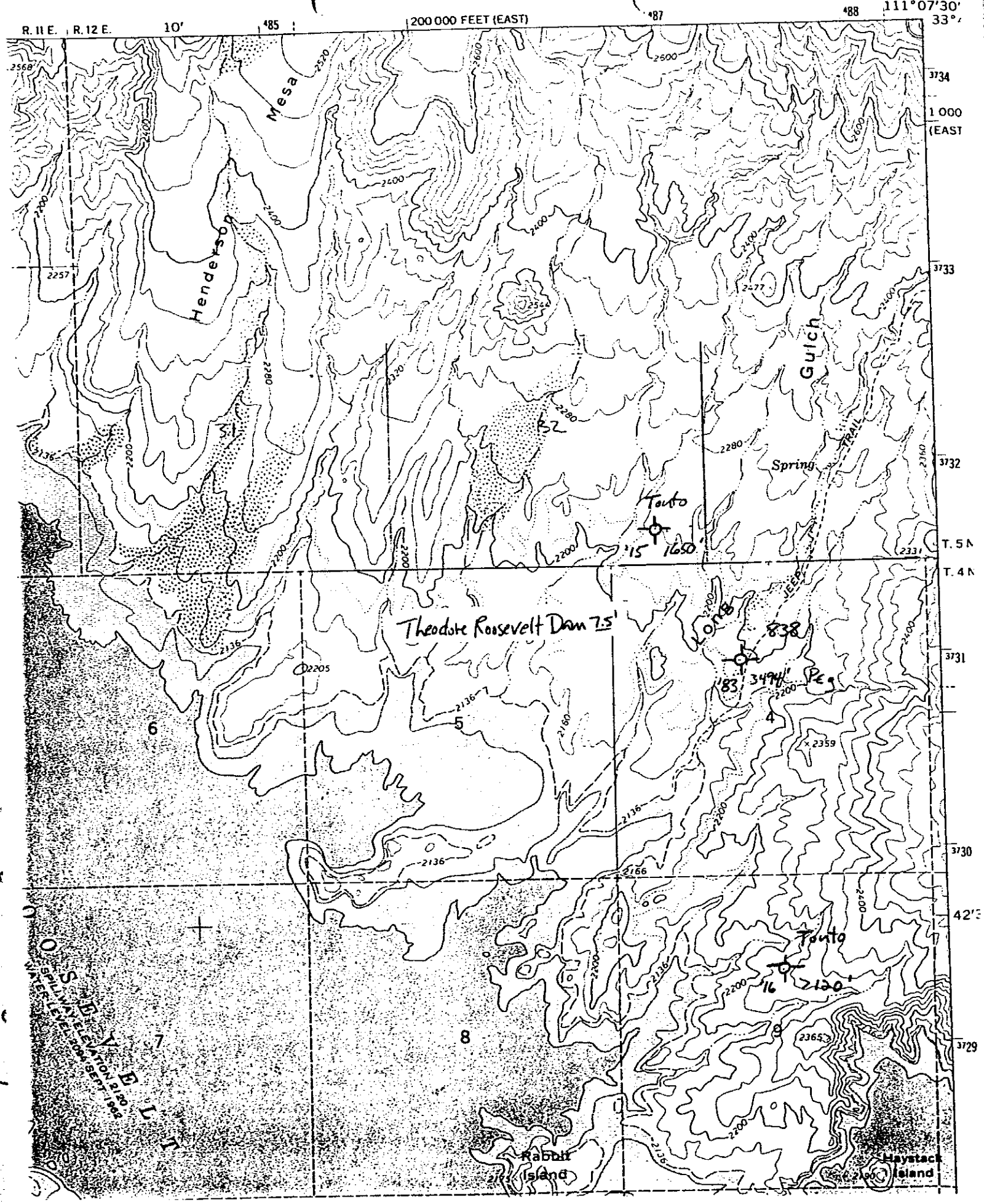
JAN 28, 1983 R.L.G.
1" = 500'
83-004

SANCHEZ-O'BRIEN OKG 1-4 FEDERAL
SE NW 4-4N-12E GILA CO.
838

[redacted]

ARIZONA

7.5 MINUTE SERIES (TOPOGRAPHIC)



Subsurface information from three wells in the Tonto Basin, Gila County Arizona

by
Stephen M. Richard

Open-File Report #99-07

Arizona Geological Survey
416 W. Congress., No. 100, Tucson, Arizona
85701

INTRODUCTION

Three wells drilled in the Tonto Basin have been studied to assist in the interpretation of subsurface geology of the basin. These are the Forest Service Windy Hill Test #1, drilled in 1991, the Sanchez-O'Brien Federal 1-4, drilled in 1983, and the Kerber 1 Federal, drilled in 1969. Locations and other information about the wells are included in Table 1.

GEOLOGIC SETTING

Mountain ranges surrounding the Tonto Basin consist of Early to Middle Proterozoic granitic and metamorphic rocks, overlain by Middle Proterozoic strata of the Apache Group and lower Paleozoic clastic and carbonate strata. Tertiary volcanic rocks overlie these units around the southeastern part of the basin. The physiographic Tonto basin consists of two geologic sub-basins, apparent on the depth-to-bedrock map for Arizona [Oppenheimer and Sumner, 1980]. A bedrock high between the area of Tonto National Monument and Windy Hill, then north from Windy Hill separates the sub-basins. The wells described in this report are from the southern part of the northern sub-basin and the transition zone between the sub-basins.

Paleozoic and Precambrian rocks

In the area of the bedrock high separating the two sub-basins of the Tonto Basin, Devonian and Mississippian sandstone, limestone and dolomite are preserved overlying the Apache Group. Cambrian(?) sandstone is locally preserved in paleovalleys beneath the Devonian strata [Spencer and Richard, in press]. Conodont color alteration indices from Mississippian limestone on Windy Hill and in the southern Sierra Ancha are 2 and 1, respectively [Wardlaw and Harris, 1984], indicating that they are potentially within the thermal maturation window for oil.

The Sierra Ancha, which lies on the north side of the subject area, consists mostly of sandstone, mudstone, quartzite, and limestone of the Apache Group and Troy Quartzite [Shride, 1967]. These strata are intruded by thick diabase sills that crop out over large parts of the mountain range. Northeast of the northern end of Theodore Roosevelt Lake, Middle or Early Proterozoic granitic rocks that underlie the Apache Group are exposed along the southwestern front of the Sierra Ancha [Bergquist et al., 1981].

The southern Mazatzal Mountains consist mostly of a variety of Early Proterozoic granitic rocks. Starting about 4 miles NW of Theodore Roosevelt Dam, and southward onto Two Bar Ridge, these granitic rocks are overlain by sandstone, mudstone, quartzite, and limestone of the Apache Group, and intruded by diabase sills. In the area immediately north and south of the Theodore Roosevelt Dam, Devonian and Mississippian sandstone, limestone and dolomite are preserved overlying the Apache Group.

Tertiary rocks

Tertiary basin fill strata consist of conglomerate, sandstone, and mudstone, with minor evaporite and carbonate beds. Nations [1987, 1988, 1990] identified two facies within this sequence, which he informally named the Tonto Basin formation. These are a basal and basin margin conglomerate facies and an upper and basin center fine-grained facies. The conglomerate facies consists of poorly stratified, very poorly sorted conglomerate. Clasts are locally derived and reflect the rock types present in nearby bedrock exposures. The conglomerate facies in the southern part of the basin contains abundant cobbles and boulders derived from Tertiary volcanic rocks, particularly the Apache Leap Tuff, which crop out around the south side of the Tonto Basin. The basin fill strata are younger than Apache Leap Tuff (18.6

Ma, McIntosh et al., 1998) in the southern part of the basin. The lower age limit is presently bracketed by the presence of a late Miocene or Pliocene vertebrate fossil in the mudstone member in the northern part of the basin. A K-Ar date of 18.6 Ma reported from a tuff interbedded near the top of the section in the northern part of the basin [Nations, 1987] suggests that much of the basin fill sequence in the Punkin Center area is older than the lower conglomerate in the southern part of the basin, and may in fact be correlative with strata referred to as Whitetail conglomerate in the southern part of the basin.

Lance et al. [1962] measured 3 stratigraphic sections in the area around Punkin Center and proposed a stratigraphic sequence as follows: 1) a sequence of red beds, consisting of sandstone and mudstone; 2) a zone up to 300 feet thick of red beds containing abundant gypsum; and 3) a few tens of feet of light colored beds of clay, silt, tuff, and marl, which contains the fossiliferous beds. The gypsiferous zone thins northward, and the red beds (units 1 and 2?) grade into conglomerate exposed around the northern end of the basin.

DISCUSSION OF WELLS

The Windy Hill Test was drilled as a possible water well to provide water for the Windy Hill Campground. At about 1600 feet the well hit limestone, and hydrogen sulfide gas was released from the formation. The well was completed at 1867 feet, and the maximum reported H_2S concentration at the surface was reported at 15-16 ppm [Arizona Geological Survey, Oil and Gas Commission files]. The hydrogen sulfide releases resulted in the evacuation of the Windy Hill campground [Likens, 1991]. A caliper survey, sonic log, and electric log were run in the hole from 130 to 1867 feet. The location of this well reported on the logs (NW1/4, SE1/4, NE1/4 sec. 25, T. 4N., R. 12E) is incorrect. The correct location, reported on the driller's report submitted to the Arizona Department of Water Resources, is SE1/4, NW1/4, NW1/4 Sec. 25, T. 4N, R. 12E (Reg@ 55-531851, File# A(4-12) 25 BBD).

Table 1. Wells included in this report

Name	Lat (N); Long (W)	Year Drilled	T.D. (feet)	Logs	Purpose	Notes
Windy Hill Test #1	33° 39.71', 111° 5.34'	1991	1867	Welenco, 128'-1867' • Caliper; • Sonic/Variable Density Waveform; • Electric Log	Water	H_2S released
Kerber 1 Federal P/N 516	33° 43.17', 111° 3.04'	1969	485	Driller's log in well completion report	Oil and Gas	
Sanchez-O'Brien Federal 1-4 P/N 838	33° 43.21', 111° 8.19'	1983	3490	Mobilog Inc. mud log, 0-3500' Welex, 496-3490' • Caliper • Gamma ray • Dual induction guard log • Compensated density dual spaced neutron log	Oil and Gas	
Tonto Oil Co.	33° 42.38', 111° 8.02'	1914-1916	>120	None	Oil and Gas	Well was still open in 1983

Tonto Headlight Oil Co.	33° 43.57', 111° 8.46'	1915	1650	None	Oil and Gas	Sanchez-O'Brien Co. [1983] reports oil and gas shows at 400', 1150', 1310', 1500', and 1600'; source of this information unknown.

Interest in possible oil production in the Tonto Basin was sparked by early reports of dead oil in Devonian strata exposed at the present location of Theodore Roosevelt Dam [Botsford, 1913]. At least two wells were apparently drilled in 1914-1916 [Sanchez-O'Brien Oil and Gas Corporation, 1983]. These wells were located by surveyors locating the Sanchez-O'Brien Federal 1-4, and the locations are reported in Table 1. A newspaper article in the Oil and Gas Commission files [1915; source of article unknown] reports that petroleum was found in the Tonto Oil Co. well "in small quantities in a six inch bed of sand at a depth between 1100 and 1200 feet." Abandonment of these wells indicates that economic quantities of oil or gas were not proven in these wells.

INTERPRETATION OF LOGS

The Arizona Geological Survey has cuttings in its well cuttings repository from the Sanchez-O'Brien Federal 1-4 well. These were studied, and compared to the mud log and geophysical logs available. These data were taken together to interpret the lithology and stratigraphy of formations penetrated by this well. For the Windy Hill Test #1, no mud logs or cuttings are available. The caliper and density log from the Sanchez-O'Brien Federal 1-4 are surprisingly similar to the caliper and Sonic Density log from the Windy Hill test #1. Basin fill units apparently correlate well, suggesting surprisingly consistent stratigraphy within the basin. The bedrock intercept is clear in both wells, and correlation of bedrock units in the Sanchez-O'Brien Federal 1-4 can be done with some confidence based on examination of the cuttings. Correlation of bedrock units in the Windy Hill Test #1 is much more speculative, and is based largely on the interpretation that the H_2S release from this well was from the Martin Formation, consistent with the sketchy lithologic description available [AZGS, Oil and Gas Commission Files] and reports of dead oil and petroliferous odor in Martin limestone in the area. If the bedrock unit first penetrated was Martin Formation, the similarity of the log traces with the Sanchez-O'Brien Federal 1-4 well suggests the correlations reported in Table 3.

Table 4 summarizes lithologic information from a completion report for the Kerber 1-Federal. This well apparently penetrated mudstone, interbedded mudstone and sandstone, and intercepted Dripping Spring Quartzite at 360'.

Table 2. Data and interpretations for Sanchez-O'Brien Federal 1-4. Ground level 2190', kelly bushing 2195', Surface casing set to 500'. Caving of hole between bottom of casing at 500' and well bore stabilization at 612' suggests that much of the rock fragment and sand material mixed with mud from deeper in the well may be slough. Units of bulk density are grams/cc; units for gamma ray intensity are gamma ray units. Cuttings are stored in vials representing 10' depth intervals. The depth reported for cuttings are for the shallowest part of the interval for each vial. Where depths for lithologic transitions seen in cuttings do not agree with lithologic transitions recorded on geophysical logs, the geophysical logs are taken to be more accurate.

Depth in well (feet below ground level)	Elevation (feet above sea level)	Observations	Interpretations
500-612	1690-1578	Caliper indicates abundant caving of hole, rapid changes in hole diameter; diameter 13" to >18" Bulk density is <2.0, and highly variable, ranges 1.3-2.0 Cuttings: 600--first sample; contains white tuff grains with copper-colored biotite crystals; trace glassy quartz, black biotite flakes, possible hornblende, abundant mudstone/clay in tiny chips and dust.	Sandstone and conglomerate with interbedded tuff or clasts of tuffaceous rocks, not strongly indurated
612-1110	1578-1080	Caliper diameter stable, but less than drill bit diameter; diameter 6-7" to 1000' then diameter to about 8" average, but ranges 7-16", with ~5' thick wash out zones. Bulk density variable, averages 2.05, range 1.9-2.15 Gamma ray intensity avg. 105, range 100-110 Cuttings: 640--trace white tuff, rare angular quartz, no biotite or hornblende seen, much clay 1000--trace white tuff, glassy quartz, detrital biotite, some very fine-grained lithic sand, cuttings form clay balls. 1020--clay balls up to 1 cm diameter, some with medium-grained glassy quartz stuck to them; clay balls effervesce and disaggregate in hydrochloric acid 1090--trace rock fragments present, including some diabase	Abundant swelling clay in formation, probably mostly mudstone, with progressively more interbedded sandstone below 1000'. Tuff clasts or interbedded tuff present.
1110-1300	1080-890	Caliper stable, diameter 13.5±1"; diameter variations rapid. Bulk density averages 2.07, range 1.95-2.2, varies rapidly Gamma ray intensity avg. 98, range 90-107 Cuttings: 1110-1160--fine- to medium-grained lithic sandstone stuck to clay balls; rare light gray microcrystalline tuff?	Less clay in formation, non-swelling clay dominant, probably interbedded sandstone and mudstone; washing out of well bore suggests relatively poorly indurated material
1300-1350	890-840	Caliper 13.5-14.5", diameter increases down hole, rapid small variations Bulk density 2.07-2.17 Gamma ray intensity 100±7	Transition zone; mud log indicates mostly mudstone
1350-1485	840-705	Caliper 14.5"; diameter varies ±1" above 1390, then becomes relatively stable; hole narrows to 13" over bottom 30' of interval Bulk density average 2.17, range 2.1-2.25 Gamma ray intensity 100±7	Mud log indicates still mostly mudstone, but appears to become more homogeneous
1485-1630	705-560	Caliper 13.5-12", diameter decreases down hole Bulk density average increases from 2.15-2.27 down hole, varies ±0.07 Gamma ray intensity 90±10, generally decreases down hole Mud log reports significantly more "conglomerate" below about 1420. 1580--"mudstone, sample eludes 80 mesh screen"	Increasing induration of rock, progressively less clay, density and gamma ray variability suggested interbedded lithology or boulder conglomerate.
1630-1690	560-500	Caliper diameter decreases smoothly 12" to 9" down hole Bulk density average 2.15, range 2.0-2.25 Gamma ray intensity 85±5, generally decreases down hole Mud Log: 1640: reports "free quartz, clear to frosted" 1660: increasing dark minerals, 20% increase in free quartz	Conglomerate, derived from underlying volcanic rocks? Progressively more indurated.
1690-1810	500-380	Caliper diameter stable, 9" Bulk density, 2.65-2.7, drops to ~2.4 in 10' intervals at	Apache Leap tuff??, or conglomerate derived largely from tuff; low density zones may

Depth in well (feet below ground level)	Elevation (feet above sea level)	Observations	Interpretations
		1760 and bottom of interval Gamma ray intensity average 70, range 20-160; more stable in lower part Cuttings: 1710-1760, glassy quartz grains that look like quartz from phenocrysts in volcanic rock present 1750-very round, frosted quartz grains 1780-glassy quartz rare, spherical frosted quartz present, tiny biotite grains, cuttings have pinkish-tan color typical of Apache Leap tuff 1800-white calcite grains, and sparry, clear calcite cleavage rhombs, white tuff fragments, one with sanidine phenocryst Mud Log: 1740-1780--reports "chalky, in pit"	be non-welded intervals.
1810-1880	380-310	Caliper diameter stable, 9-10", diameter increases in middle of interval Bulk density average 2.4, range 2-2.55; lower density in middle part Gamma ray intensity: 30-200, monotonic increase down section. Cuttings: 1820--yellowish tan microcrystalline carbonate grains appear	Martin Formation or Mescal Limestone? Relative dense, low-clay carbonate unit at top, increasing clay or mica down section; apparent stabilization of well bore in lower part seems more consistent with relatively competent Beckers Butte sandstone at base of Martin than nodular silty carbonate unit and breccias seen at base of Mescal.
1880-1910	310-280	Caliper diameter decreases 9" to 8" downward Bulk density avg. 2.4 Gamma ray intensity 90±10 Cuttings: 1880--pyrite and limonite after pyrite, light greenish microcrystalline aggregates, reddish brown quartzite 1900--cuttings are coarser grained (mud density change?)	Bolsa Quartzite?, less clay than Martin, less K-spar than Dripping Spring
1910-2040	280-150	Caliper diameter stable, 8" to 2000' then increases to 10" at bottom of interval Bulk density 2.3-2.4 Gamma ray intensity 40-200, highly variable Cuttings: 1920--pinkish fine-grained arkose, silica cemented 1980--dark red brown fine-grained feldspathic(?) quartzite	Dripping Spring quartzite?, alternating quartz arenite and K-feldspar rich arkose
2040-3245	150- (-1055)	Caliper diameter stable 8-9" Bulk density stable 2.75-2.8, drops to ~2.5 in many 10' intervals Gamma ray intensity 20-30, very stable Cuttings: 2030--diabase appears 3220--rare K-feldspar fragments 3230--rare K-feldspar, rare red brown fine-grained quartzite	Diabase; lower density intervals may be crush zones
3245-3320	(-1055)- (-1130)	Caliper stable, 8" Bulk density 2.55±0.05 Gamma ray intensity 40-300, mostly around 100±20, with sharp peak to 300 at 3250. Cuttings: 3260--sparse red brown quartzite 3270--abundant medium to coarse grained red-brown arkose 3300--coarse- to very coarse-grained red brown arkose with glassy sub-rounded quartz grains	Pioneer Formation? Potassium or uranium concentration near diabase contact?

Depth in well (feet below ground level)	Elevation (feet above sea level)	Observations	Interpretations
3320-3365	(-1130)-(-1175)	Caliper stable, 8" Bulk density 2.55±0.05 Gamma ray intensity around 200±20, with sharp peak to 300 at 3355. Cuttings: 3320--1-2 mm diameter angular quartz grains 3340--very fine-grained granitic rock with tiny clots of opaque grains 3360--fine to very fine grained pink granitoid, diabase becomes more abundant	Granitic rock
3365-3490	(-1175)-(-1300)	Caliper stable, 8" Bulk density 2.9±0.1 Gamma ray intensity 50±5 Cuttings: 3400--about 70% diabase 3470--about 90% diabase	Diabase

Table 3. Data and interpretations for Windy Hill Test #1. Ground level 2200'. Interval transit times are in microseconds/foot. Descriptions are from notes taken during a telephone conversation by S. Rauzi [AZGS Oil and Gas Commission files]

Depth in well (feet below ground level)	Elevation (feet above sea level)	Observations	Interpretations
130-640	2070-1560	Caliper: much caving; diameter 10-15" (caliper pegs at 15") Interval transit time: 130-220, average ~180, highly variable Description: "a lot of clay, unconsolidated river gravels to 1600'"	Poorly indurated sand, mud and gravel?; transit time and caliper variations resemble density and caliper variations suggest correlation with 500-612 interval from Sanchez-O'Brien 1-4 Federal (SOB1-4).
640-1100	1560-1100	Caliper: highly variable, less caving than overlying interval; diameter 11-15", mostly stays on scale Interval transit time: 110-170, average ~135 Description: see above	Mostly mud, with sand and gravel layers?; logs suggest correlation with 612-1110 interval from SOB1-4.
1100-1150	1100-1050	Caliper: stable, diameter progressively decreases from 11.5 to 10.5" Interval transit time: 110-160, average 130	Transition zone
1150-1300	1050-900	Caliper: stable, diameter 10"; slight variations suggest beds about 10' thick Interval transit time: 135±5	Mudstone and sandstone: more indurated: logs suggest correlation with 1110-1300 interval from SOB1-4.
1300-1330	900-870	Caliper: diameter decreases to 9", thin wash-outs ±1" Interval transit time: decreases from 140 to 120, ±10	Transition zone
1330-1640	870-560	Caliper: diameter stable at 9" Interval transit time: decreases steadily from 115-90, ±10 in upper part, ±5 in lower part	Increasing induration, probably less clay and more conglomerate; logs suggest correlation with 1350-1690 intervals in SOB1-4.
1640-1685	560-515	Caliper: diameter 9-10", variations suggest 2-5' thick beds of slightly different competence Interval transit time: decreases from 80 to 60, ±10-20; rapid variations on 2-7' scale. Description: limestone bed at about 1600 feet, increasing H2S smell.	Martin Formation or Mescal Limestone; transit time and caliper variations resemble density and caliper variations in logs from SOB1-4, suggesting correlation.
1685-1720	515-480	Caliper: 9.25" diameter; slight variations on 2-5' scale suggest beds of slightly different competence. Interval transit time: 52 ±3, rapid variations on 2' scale in upper part.	Sandstone of Beckers Butte Member of Martin Formation, Bolsa Quartzite, or Dripping Spring Quartzite? Unit appears more homogeneous than underlying or overlying units

Depth in well (feet below ground level)	Elevation (feet above sea level)	Observations	Interpretations
1720-1850	480-350	Caliper: 9" diameter, very stable; caliper diameter drops to <0.5" at 1805, suggesting problem with tool. Interval transit time: 70±10, rapid variations on 2-10' scale	Dripping Spring Quartzite? Transit time and caliper variations resemble density and caliper variations in logs from SOB1-4, suggesting correlation.
1850-1867	350-333	Caliper: NA Interval transit time: 115±20, rapid variations on 5' scale	Diabase? Transit time variations resemble density variations seen in SOB1-4 at Dripping Spring-Diabase contact.

Table 4. Data and interpretations for Kerber 1-Federal. Ground level 2669'. Interval transit times are in microseconds/foot. Descriptions are verbatim from completion report for well [AZGS Oil and Gas Commission files]

Depth in well (feet below ground level)	Elevation (feet above sea level)	Description	Interpretations
0-50	2669-2619	Sand and gravel, with boulders, mixture of basalts andesite, quartzite, quartz.	Pediment veneer gravel
50-270	2619-2399	Clay Brown, buff, silty, and sand. About 20% quartz	Mudstone, some interbedded sand
270-360	2399-2309	Clay, as above, with about 40% silt and quartz sand	Mudstone, more interbedded sand
360-435	2309-2234	Quartzite, red-brown, fine grained, ¼ to ½ mm, iron stained. Thin streaks asphalt residue (colored the mud black) in middle and lower part. Slightly coarser ground at bottom.	Dripping Spring Quartzite. Black mud may indicate dark siltstone of middle Dripping Spring, or possibly diabase.
435-485	2234-2184	Quartzite, as above only slightly finer grained and somewhat harder, not as fine-grained in lower part. Fault with approximate 45° dip at 464'.	Dripping Spring Quartzite. Fine grained quartzite suggests middle or upper part of formation.

Acknowledgements. Steve Rauzi provided assistance and advice with locating cuttings from the well and interpreting the logs.

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sent 10:03am LC

State of Arizona

Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

FAX TRANSMITTAL COVER SHEET

DATE: 10/30/92

3 **PAGES** (including cover sheet)

TO:

NAME: Ken Bernstein *

COMPANY:

FAX NO: 497-4527 **CITY:** Phoenix

FROM: Steven L. Rauzi

OUR FAX NO: (602) 628-5106

IF THERE ARE ANY QUESTIONS, RESPONSES, OR PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL THE SENDER AT (602) 882-4795. THANK YOU.

MESSAGE: Enclosed page 1 and 2 of completion report. Page 2 lists formations penetrated and information on fresh water.

* Ken Bernstein (Bird's Seismic Surveys) requested formation top & water info from this well. ~~He is apparently locating water wells in this area for some client~~ sue

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Oil and Gas Conservation Commission
STATE OF ARIZONA
5150 N. 16th STREET, SUITE B-141
PHOENIX, ARIZONA 85016
PHONE: (602) 255-5161

July 12, 1990

Mr. James H. Burton
Laboratory of Archaeology
University of Wisconsin - Madison
5240 Social Science Bldg.
Madison, WI 53706

RE: Sample Set #1849, Sanchez-O'Brien #1-4 Federal

Dear James:

This letter is a follow-up to our phone conversation on June 6, 1990, regarding the above referenced samples. We would appreciate the return of these samples at your earliest convenience, assuming of course that you have completed your analysis.

Pursuant to the terms of our sample policy, the results of any studies or analyses are to be provided to this Commission within 30 days of their completion. We do look forward to receiving the results of your study.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Specialist

Samples returned 8-28-90 SLR

Oil and Gas Conservation Commission
STATE OF ARIZONA
5150 N. 16th STREET, SUITE B-141
PHOENIX, ARIZONA 85016
PHONE: (602) 255-5161

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Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Specialist

Samples returned 8-28-90 SLR

RECORD OF OGCC MATERIAL TAKEN FROM OFFICE TO BE RETURNED

Description of Material:

Well Samples - Sanchez-O'brien #1-4 Federal, Permit # 838
Sec 4-4N-12E, 3 boxes - Sample # 1849

I, (print) James Burton 1-608-262-4505 1234, representing University of Wisconsin - Madison, whose address is Madison, WI 53706, and whose phone number is _____, am in receipt of the above described material this _____ day of _____ 19__, and will return same to the OGCC office on the _____ day of _____ 19__.

Samples returned 8-28-90 SCR

_____
(Signature)

Authorized by:

SCR

Called 2/27/90 - discussed problem of bluffing in interpreting samples.
- should be through with samples soon.

Called 6/21/90 - Will return samples before going to the field this summer.

United Parcel Service

PICKUP RECORD
(One Time)

PICKUP CONTROL NUMBER	777559472-3
PICKUP DATE	09/26/89
NAME	THE AZ OIL AND GAS COMM.
ADDRESS	5150 N 16TH ST #3141
CITY	PHOENIX
STATE	AZ
ZIP	85016
TAKEN BY	NWK
TELEPHONE NUMBER	602-255-5161
CALLER	STEVE RAUZI
CLOSING TIME	430
PICKUP INSTRUCTIONS	FD

AZ 871-X17

PHOENIX EAST

NAME ADDRESS	CITY	ST	ZIP CODE	GROUND ZONE	GROUND LBS.	AIR ZONE	AIR LBS.	DECLARED VALUE IF IN EXCESS OF $100.00 / CALL TAG OR OVERSIZE (O.S.)	C.O.D. AMOUNT / A.O.D.	SHIPPING CHARGE
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CALL TAG CHARGE	
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EXCESS VALUATION CHARGE	
SERVICE CHARGE	4.00
TOTAL CHARGES	10.92

THANK YOU

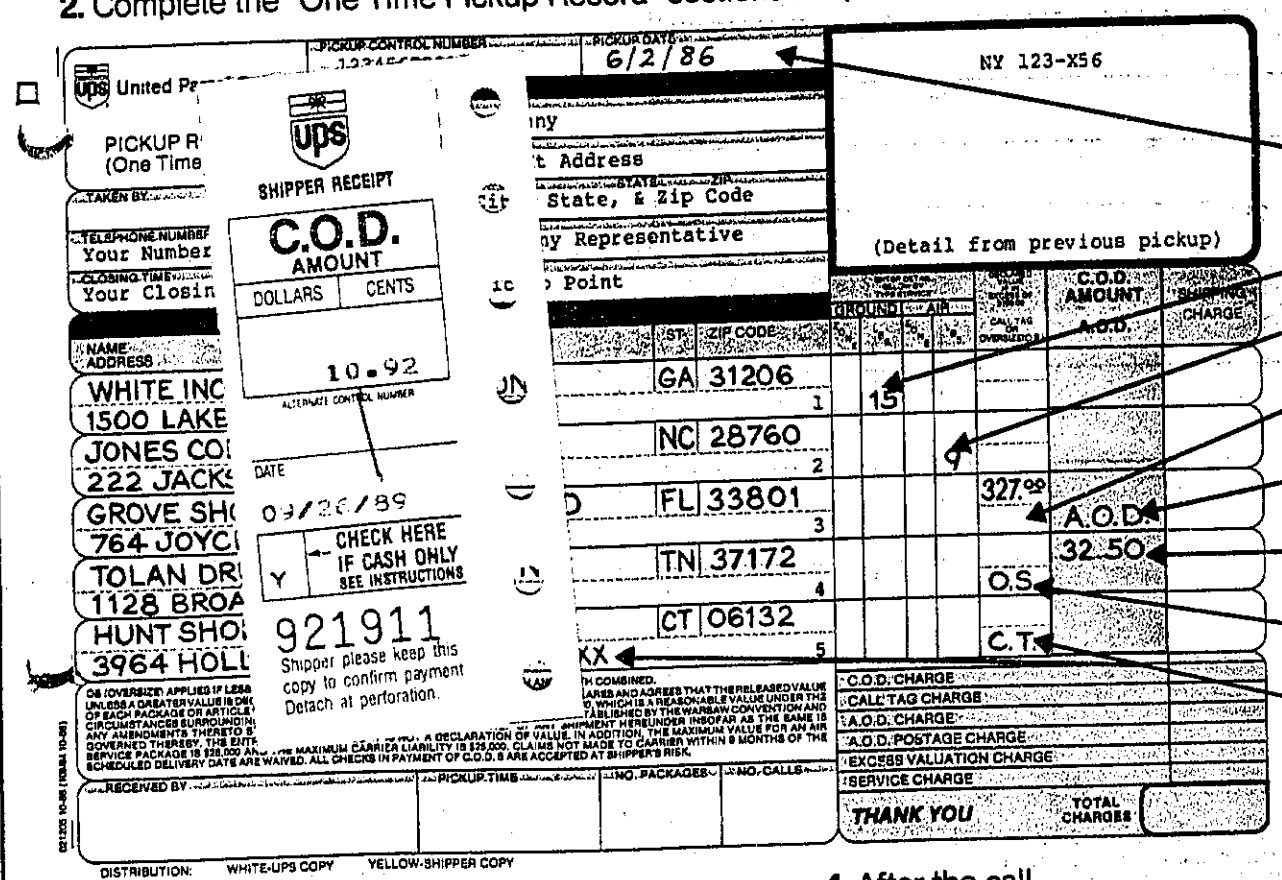
OS (OVERSIZE) APPLIES IF LESS THAN 25 LBS. AND MORE THAN 84 INCHES IN LENGTH AND GIRTH COMBINED. UNLESS A GREATER VALUE IS DECLARED IN WRITING ON THIS RECEIPT, THE SHIPPER HEREBY DECLARES AND AGREES THAT THE RELEASED VALUE OF EACH PACKAGE OR ARTICLE NOT ENCLOSED IN A PACKAGE COVERED BY THIS RECEIPT IS $100, WHICH IS A REASONABLE VALUE UNDER THE CIRCUMSTANCES SURROUNDING THE TRANSPORTATION. THE RULES RELATING TO LIABILITY ESTABLISHED BY THE WARSAW CONVENTION AND ANY AMENDMENTS THERETO SHALL APPLY TO THE INTERNATIONAL CARRIAGE OF ANY SHIPMENT HEREUNDER INSOFAR AS THE SAME IS GOVERNED THEREBY. THE ENTRY OF A C.O.D. AMOUNT IS NOT A DECLARATION OF VALUE. IN ADDITION, THE MAXIMUM VALUE FOR AN AIR SERVICE PACKAGE IS $25,000 AND THE MAXIMUM CARRIER LIABILITY IS $25,000. CLAIMS NOT MADE TO CARRIER WITHIN 9 MONTHS OF THE SCHEDULED DELIVERY DATE ARE WAIVED. ALL CHECKS IN PAYMENT OF C.O.D.'S ARE ACCEPTED AT SHIPPER'S RISK.

RECEIVED BY	PICKUP TIME	NO. PACKAGES	NO. CALLS
[signature]	205	1	0

DISTRIBUTION: WHITE-UPS COPY YELLOW-SHIPPER COPY

INSTRUCTIONS FOR "READY" CUSTOMERS

1. Package your merchandise carefully, following the methods outlined in our "Packaging Tips" brochure.
2. Complete the "One Time Pickup Record" sections as specified below.



EXPLANATION OF ENTRIES

Pickup Date—Enter date package(s) will be picked up.

Ground Packages—Enter weight under lbs. in Ground column.

Air Packages—Enter weight under lbs. in Air column.

Declared Value (If in excess of $100) —Enter full declared value.

A.O.D. (Acknowledgment of Delivery)—Enter letters A.O.D.

C.O.D. (Collect On Delivery) —Enter C.O.D. amount.

Oversize (Over 84" length & girth) —Enter letters O.S.

Call Tag—Enter Call Tag Number and the letters C.T.

3. Call UPS.

A. Announce "I Am a 'Ready' Customer."
B. Be prepared to give your telephone number (including area code), and for each package, the consignee zip code and weight.
C. Record zone and charge in proper block when UPS representative gives them to you.

4. After the call.

A. Place package(s) and complete pickup record in designated area for pickup by UPS driver.
B. Include payment for total charges (as given by UPS representative). If paying by check, make payable to United Parcel Service.
C. UPS driver will sign pickup record, give you your copy, and affix shipper number labels and any appropriate additional forms to the package(s). He will also supply you with additional pickup form(s) for future use.

University of Wisconsin—Madison

LABORATORY OF ARCHAEOLOGY
5240 SOCIAL SCIENCE BUILDING

MADISON, WISCONSIN 53706

September 15, 1989

Steven L. Rauzi
Oil & Gas Conservation Commission
3110 N. 19th Ave., Suite 190
Phoenix, AZ 85015

I would like to receive, on loan, the samples from the Sanchez-O'Brien No. 1-4 Federal (Sec. 4-T4N-R12E, State Permit #838), retained in three boxes. I have read your "Sample Policy" and agree to abide by those terms, and to pay the costs of shipping and return.

Thank you for your help in locating the appropriate well samples,

James H Burton

Associate director,

Laboratory for
Archaeological Chemistry

Sample box # 1849 shipped UPS C.O.D. on 9/26/89 SLR
($10.92)

Samples returned 8-28-90 SLR

Oil and Gas Conservation Commission
STATE OF ARIZONA
3110 N. 19th AVENUE, SUITE 190
PHOENIX, ARIZONA 85015
PHONE: (602) 255-5161

August 14, 1989

Mr. Jim Burton
Dept. of Anthropology
1180 Observatory Drive
University of Wisconsin
Madison, WI 53706

608-262-1234

RE: Well Sample Request
Sanchez-O'Brien No. 1-4 Federal
Sec. 4-T4N-R12E
State Permit No. 838

Sample # 1849

Dear Jim:

Before loaning well samples for off-premise use we would require a written request on your part. In addition, you should indicate your willingness to abide by the Oil & Gas Conservation Commission Sample Policy. A copy of the Sample Policy is enclosed for your review. Please note item No. 6 in regard to maintaining the integrity and volume of each individual sample.

Cost of shipping samples is the responsibility of the borrower. Thus we will ship the samples but must bill you for freight charges.

Samples for this well are contained in three boxes. Without going to the warehouse, I cannot say what the range of samples in each box would be. However, I am enclosing a lithologic description of the samples in case you want to limit the range (i.e. boxes) of samples sent.

Please don't hesitate to call if you have any questions or if I can be of further assistance.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Specialist

Encl.

OIL & GAS CONSERVATION COMMISSION

SAMPLE POLICY

The Oil and Gas Commission hereby adopts the following as its policy regarding samples and cores. In the declaration of policy "samples" is meant to include rotary and cable tool cuttings and chips and cores, core slabs and core chips.

1. Samples received by the Commission under Rule 12-7-21 shall be preserved and maintained in good order.

2. A record or file shall be kept indicating the location of samples from each well.

3. Samples are to be maintained for use as a public library.

4. Samples may be examined on the premises by any person requested to do so. Reasonable notice for retrieval of the samples may be required.

5. Samples may be loaned for use off-premises to any responsible person at the discretion of the Commission.

6. Users of samples shall take reasonable and customary measures to maintain the integrity and volume of each individual sample and shall not mix samples together.

   a. Users may use ordinary tests for mineralogical determination. Acid must not be placed in the bulk sample, rather one or two individual grains may be removed to a separate container for acid tests.

   b. Solvents must not be placed in the bulk sample, rather one or two individual grains may be removed to a separate container for solvent tests.

   c. In no case shall bulk solvent extraction, pyrolosis or other destructive tests be run on any samples without prior permission of the Commission.

7. Users shall return all individual samples to their original containers. If the container is damaged beyond use, a new container shall be provided.

8. Users shall replace all samples in order from top of the hole down in the original sample box.

9. Users shall provide the Commission, within 30 days of their completion, copies of all logs, paleontological and other reports, maturation studies, source rock analysis and any other study or analysis made possible by use of samples from the Commission's library. The Commission will grant a 6-month confidentiality period if so requested by the owner of the report and may grant one six-month extension of the period of confidentiality if so requested.

11/21/86 - ADOPTED AS REVISED BY THE OIL AND GAS CONSERVATION COMMISSION.

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 255-5161

July 22, 1985

Mr. R. V. Lunday
Accounting Manager
Sanchez-O'Brien Oil and Gas Corp.
P. O. Box 2986
Laredo, Tx. 78044-2986

Re: Bond No. 470-4747
Sanchez-O'Brien Oil & Gas Corp.

Dear Mr. Lunday:

This is in response to your letter of July 11, 1985, requesting release of subject bond.

Our records show that all wells drilled in Arizona by Sanchez-O'Brien have been drilled and plugged and abandoned in compliance with Commission rules and regulations. Therefore, consider this letter as approval to release your bond.

Thank you for doing business in Arizona and we hope that in the future, under more favorable conditions, you will return and help us find additional oil and gas reserves.

If I can be of any assistance, please call.

Sincerely,

R. A. Ybarra

R. A. Ybarra
Enforcement Director

lr

RECEIVED
JUL 15 1985
O & G CONS. COMM.

SANCHEZ-O'BRIEN
OIL & GAS CORPORATION

706 MAHER
P.O. BOX 2986
LAREDO, TEXAS 78044-2986
TEL. AC 512 / 722-8092

P/N 838

July 11, 1985

Oil and Gas Conservation Commission
State of Arizona
1645 West Jefferson, Suite 420
Phoenix, Arizona 85007

ATTENTION: Mr. R. A. Ybarra
Enforcement Director

REFERENCE: Performance Bond #450-4747

Dear Mr. Ybarra:

Please release Hartford Accident & Indemnity Insurance Company and Sanchez-O'Brien Oil & Gas Corporation from the above bond. Sanchez-O'Brien does not at this time have any plans for drilling active in the state of Arizona.

Very truly yours,

R. V. Lunday
Accounting Manager

gmr

cc Olga Flores
Ward-Jackson Inc.

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 255-5161

August 13, 1984

United States Fidelity
and Guaranty Company
300 Tower Life Building
310 S. St. Mary's Street
San Antonio, Texas 78205

Attention Rosanna Robertson
Fidelity-Surety Dept.

Re: Bond No. 72 0130 12283 81 5
Sanchez-O'Brien Oil & Gas Corporation
Performance Bond

Gentlemen:

This is to acknowledge your letter received August 13, 1984 pertaining to the above-referenced bond. Inasmuch as the replacement bond has been filed with this office, you may take this letter as your authority to cancel your liability under your bond 72 0130 12283 81 5.

Incidentally, our files do not reflect any prior request for cancellation.

Sincerely,

A. K. Doss
Executive Director

/kb

cc: Sanchez-O'Brien Oil
& Gas Corporation
706 Maher
P. O. Box 2986
Laredo, Texas 78041

Certified Mail No. 398 972 651

RECEIVED
AUG 13 1984
O & G CONS. COMM.

UNITED STATES FIDELITY AND GUARANTY COMPANY
SAN ANTONIO OFFICE
300 TOWER LIFE BLDG. - 310 S. ST. MARY'S STREET
SAN ANTONIO, TEXAS 78205
LOGAN A. HIPP, JR., MANAGER
TELEPHONE: 512/224-9261

March 16, 1984

State of Arizona
Oil & Gas Conservation Commission
Capitol Building
Phoenix, Arizona 85001

Second Request
Please advise 7-31-84
Certified Mail No. 650 876 411

Re: Bond No. 72 0130 12283 81 5
Sanchez-O'Brien Oil & Gas Corporation
Performance Bond

Gentlemen:

Our company serves as Surety in connection with the above captioned bond - a copy of which is attached for your reference. Please note that this bond was filed with your department on or about October 27, 1981.

It has come to our attention that a replacement bond has been filed with your department by the Hartford Accident & Indemnity Company showing their bond number of 4504727. In view of the replacement bond being filed we request that our liability in connection with bond number 72 0130 12283 81 5 be cancelled. Please advise concerning the earliest date we may consider our liability cancelled at your earliest convenience.

Your attention to this matter is appreciated.

Very truly yours,

Rosanna Robertson
Fidelity-Surety Dept.

r/s

cc: Ward-Jackson, Inc., Laredo, Texas

cc: Sanchez-O'Brien Oil & Gas Corporation, Laredo, Texas

cc: Home Office Surety Dept., Baltimore, Md.

State of Arizona
Oil and Gas Commission
1645 West Jefferson
Phoenix, Arizona 85007

January 10, 1984

Mr. R. V. Lunday
General Accounting Manager
Sanchez-O'Brien Oil & Gas Corp.
P. O. Box 2986
Laredo, Texas 78041

Re: Blanket Bond No. 450-4727

Dear Mr. Lunday:

This will acknowledge receipt and approval of subject bond, which replaces Blanket Bond No. 72-0130-12283-81-5. I am returning an approved copy of the bond for your files.

If I can be of further assistance, please advise.

Sincerely,

R. A. Ybarra
Enforcement Director

/sjb

Enclosure

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 255-5161

January 6, 1984

Mr. Charles Tucker
Sanchez-O'Brien Corporation
2212 N.W. 50th Street, Suite 245
Oklahoma City, Oklahoma 73112

Re: Well No. 1-4 Federal
Sec. 4-T.4N - R.12E, GSRM
Gila County

Dear Mr. Tucker:

We have received several inquiries on subject well, especially regarding the geology.

Upon checking our files, I noted that the completion report (Form No. 4) was missing. This report is required on all wells drilled, whether completed to production or plugged and abandoned.

I am enclosing Form No. 4 for you to complete and submit to us. Please complete both sides. Thank you.

If I can be of any help to you in the future, please advise.

Sincerely,

R. A. Ybarra
Enforcement Director

/sjb

Enclosures

RECEIVED
DEC 23 1983
O & G CONS. COMM.

SANCHEZ-O'BRIEN
OIL & GAS CORPORATION

706 MAHER
P.O. BOX 2986
LAREDO, TEXAS 78041
TEL. AC 512 / 722-8092

December 15, 1983

Mr. R. A. Ybarra
Enforecement Director
Office of Oil and Gas
Conservation Commission
State of Arizona
1645 West Jefferson, Suite 420
Phoenix, Arizona 85007

Dear Mr. Ybarra:

Enclosed is Performance Bond # 450 4747 which replaces Blanket Bond # 72-0130-12283-81-5.

Should you have any questions, please do call me.

Sincerely,

R. V. Lunday
General Accounting Manager

RVL:viv

RECEIVED
NOV 25 1983
O & G CONS. COMM.

RECEIVED
DEC 23 1983
O & G CONS. COMM.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 450 4727

That we: Sanchez-O'Brien Oil & Gas Corporation, P.O. Box 2986, Laredo,

of the County of Webb in the State of Texas

as principal, and Hartford Accident & Indemnity Insurance Co.

of Branch Office, P.O. Box 33015, San Antonio, Texas 78233

AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Twenty-five thousand ($25,000) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

State Wide

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. § 27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantites, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 14th day of October 1983

Sanchez-O'Brien Oil & Gas Corporation

Principal

WITNESS our hands and seals this 23rd day of November 19 83

CANCELLED

Hartford Accident & Indemnity Insurance Co.

Jerry A. Underwood Attorney-in-Fact

Surety

Arizona Resident Agent

Surety, Resident Arizona Agent
If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved Date 1-9-84

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

By: R. A. Yrana

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

Bond

File Two Copies

Form No. 2

Permit No. Blanket
838

Cancelled 7-22-85

HARTFORD ACCIDENT AND INDEMNITY COMPANY

Hartford, Connecticut

560008

RECEIVED
DEC 23 1983
O & G CONS. COMM.

POWER OF ATTORNEY

Know all men by these Presents, That the HARTFORD ACCIDENT AND INDEMNITY COMPANY, a corporation duly organized under the laws of the State of Connecticut, and having its principal office in the City of Hartford, County of Hartford, State of Connecticut, does hereby make, constitute and appoint

JERRY A. UNDERWOOD of PHOENIX, ARIZONA

its true and lawful Attorney(s)-in-Fact, with full power and authority to each of said Attorney(s)-in-Fact, in their separate capacity if more than one is named above, to sign, execute and acknowledge any and all bonds and undertakings and other writings obligatory in the nature thereof on behalf of the company in its business of guaranteeing the fidelity of persons holding places of public or private trust; guaranteeing the performance of contracts other than insurance policies; guaranteeing the performance of insurance contracts where surety bonds are accepted by states and municipalities, and executing or guaranteeing bonds and undertakings required or permitted in all actions or proceedings or by law allowed,

and to bind the HARTFORD ACCIDENT AND INDEMNITY COMPANY thereby as fully and to the same extent as if such bonds and undertakings and other writings obligatory in the nature thereof were signed by an Executive Officer of the HARTFORD ACCIDENT AND INDEMNITY COMPANY and sealed and attested by one other of such Officers, and hereby ratifies and confirms all that its said Attorney(s)-in-Fact may do in pursuance hereof.

This power of attorney is granted by and under authority of the following provisions:

(1) By-Laws adopted by the Stockholders of the HARTFORD ACCIDENT AND INDEMNITY COMPANY at a meeting duly called and held on the 10th day of February, 1943.

ARTICLE IV

SECTION 8. The President or any Vice-President, acting with any Secretary or Assistant Secretary, shall have power and authority to appoint, for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, one or more Resident Vice-Presidents, Resident Assistant Secretaries and Attorneys-in-Fact and at any time to remove any such Resident Vice-President, Resident Assistant Secretary, or Attorney-in-Fact, and revoke the power and authority given to him.

SECTION 11. Attorneys-in-Fact shall have power and authority, subject to the terms and limitations of the power of attorney issued to them, to execute and deliver on behalf of the Company and to attach the seal of the Company thereto any and all bonds and undertakings, and other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed by an Executive Officer and sealed and attested by one other of such Officers.

(2) Excerpt from the Minutes of a meeting of the Board of Directors of the HARTFORD ACCIDENT AND INDEMNITY COMPANY duly called and held on the 11th day of June, 1976:

RESOLVED: Robert N. H. Sener, Assistant Vice-President and Thomas F. Delaney, Assistant Vice-President, shall each have as long as he holds such office the same power as any Vice-President under Sections 6, 7 and 8 of Article IV of the By-Laws of the Company.

This power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Directors of the HARTFORD ACCIDENT AND INDEMNITY COMPANY at a meeting duly called and held on the 6th day of August, 1976.

RESOLVED, That, whereas Robert N. H. Sener, Assistant Vice-President and Thomas F. Delaney, Assistant Vice-President, acting with any Secretary or Assistant Secretary, each have the power and authority, as long as he holds such office, to appoint by a power of attorney, for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, one or more Resident Vice-Presidents, Assistant Secretaries and Attorneys-in-Fact;

Now, therefore, the signatures of such Officers and the seal of the Company may be affixed to any such power of attorney or to any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

In Witness Whereof, the HARTFORD ACCIDENT AND INDEMNITY COMPANY has caused these presents to be signed by its Assistant Vice-President, and its corporate seal to be hereto affixed, duly attested by its Secretary, this 9th day of August, 1976.

Attest:

HARTFORD ACCIDENT AND INDEMNITY COMPANY

Mary Scharf
Mary Scharf, *Secretary*

Thomas F. Delaney
Thomas F. Delaney
Assistant Vice-President

STATE OF CONNECTICUT, }
COUNTY OF HARTFORD, } ss.

On this 9th day of August, A.D. 1976, before me personally came Thomas F. Delaney, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Assistant Vice-President of the HARTFORD ACCIDENT AND INDEMNITY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of the said corporation; that the seal affixed to the 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.

Gloria Mazotas
Gloria Mazotas, *Notary Public*
My Commission Expires March 31, 1983

STATE OF CONNECTICUT, }
COUNTY OF HARTFORD, } ss.

CERTIFICATE

I, the undersigned, Assistant Secretary of the HARTFORD ACCIDENT AND INDEMNITY COMPANY, a Connecticut Corporation, DO HEREBY CERTIFY that the foregoing and attached POWER OF ATTORNEY remains in full force and has not been revoked; and furthermore, that Article IV, Sections 8 and 11, of the By-Laws of the Company, and the Resolutions of the Board of Directors, set forth in the Power of Attorney, are now in force.

Signed and sealed at the City of Hartford. Dated the 23rd day of November 19 83

John E. Lukens
John E. Lukens
Assistant Secretary

Form S-3507-9 Printed in U.S.A.

RECEIVED
DEC 12 1983
O & G CONS. COMM.

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 255-5161

December 6, 1983

Ms. Minita M. Freeman
Sanchez-O'Brien Oil & Gas Corporation
P. O. Box 2986
Laredo, Texas 78041

Re: Blanket Bond No. 450-4727

Dear Ms. Freeman:

This letter is to acknowledge that subject bond has been received in this office.

Please note that the corporate seal of the principal, Sanchez-O'Brien Oil & Gas Corporation, was not affixed to the bond. Please make this correction and return two copies to me.

I presume that this bond is to replace Blanket Bond No. 72-0130-12283-81-5 filed with this office on January 8, 1982. Please advise.

If you have any questions on this matter, please call.

Sincerely,

R. A. Ybarra
R. A. Ybarra
Enforcement Director

RAY:sjb

Enclosures

Please se att

1-6-84
Karabees / Ybarra
John talked to SOB regarding bond as filed w/ Comm. Bond w/ be filed (refiled) correctly in due time

RECEIVED
DEC 12 1983
O & G CONS. COMM.

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 255-5161

December 6, 1983

Ms. Minita M. Freeman
Sanchez-O'Brien Oil & Gas Corporation
P. O. Box 2986
Laredo, Texas 78041

Re: Blanket Bond No. 450-4727

Dear Ms. Freeman:

This letter is to acknowledge that subject bond has been received in this office.

Please note that the corporate seal of the principal, Sanchez-O'Brien Oil & Gas Corporation, was not affixed to the bond. Please make this correction and return two copies to me.

I presume that this bond is to replace Blanket Bond No. 72-0130-12283-81-5 filed with this office on January 8, 1982. Please advise.

If you have any questions on this matter, please call.

Sincerely,

R. A. Ybarra
Enforcement Director

RAY:sjb

Enclosures

Please see attached.

M. M. Freeman

Operator SANCHEZ-O'BRIEN OIL & GAS CORP.

Bond Company UNITED STATES FIDELITY & GUARANTY CO. **Amount** 25,000

Bond No. ~~72-0130-12209-81-5~~ 450-4727 **Date Approved** 1-11-82

Permits covered by this bond:

838

839

SANCHEZ-O'BRIEN
OIL & GAS CORPORATION

SUITE 245
2212 N.W. 50TH STREET
OKLAHOMA CITY, OKLA. 73112
TEL. AC 405/848-1851

RECEIVED
MAY 20 1983
O & G CONS. COMM.

May 17, 1983

Mr. A. K. Doss, Executive Director
Arizona Oil & Gas Conservation Commission
1645 W. Jefferson
Suite 420
Phoenix, AZ 85007

RE: Sanchez-O'Brien Oil & Gas Corp.
Federal 1-4 Fed. Lease No. a-9039
4-4N-12E GSRM
Gila County, Arizona

Dear Mr. Doss:

Attached are lab reports on the water zones in the above well. I have calculated Rw values as follows:

846'	-	Rw	.36
1521'	-	Rw	6.69
1900'	-	Rw	3.70.

The 1521' zone made about a 1" stream flowing. The 1900' zone made about a 2½' stream flowing and had 63 psi instant shut in pressure (this is a good Artesian reservoir.)

Submitted by,

Charles O. Tucker
Consulting Geologist

COT/lmt
enclosures

KARABEES AGENCIES

5513 NORTH 79TH PLACE
SCOTTSDALE, ARIZONA 85253
(602) 941-8763

#4210

Permit 838

April 24, 1983

Arizona Bureau of Mines
University of Arizona
Tucson, Arizona 85721

Subject: SOBOG Federal 1-4, Gila County, Arizona
4-T4N, R12E

Gentlemen:

In accordance with regualtion 119., enclosed is a set of cuttings from the subject well for your records.

The subject well will remain in confidential status for 6 months following its plugging on April 23, 1983.

Very truly yours,

John J. Karabees
Agent for Sanchez-O'Brien Oil and Gas Corporation

cc: Mr. Charles O. Tucker, Sanchez-O'Brien

RECEIVED
JAN 8 1982
O & G CONS. COMM.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 72-0130-12283-81-5

That we: SANCHEZ-O'BRIEN OIL & GAS CORPORATION, P. O. BOX 2986, LAREDO

of the County of WEBB in the State of TEXAS 78041

as principal, and UNITED STATES FIDELITY AND GUARANTY COMPANY

of BRANCH OFFICE AT 300 TOWER LIFE BUILDING, SAN ANTONIO, TEXAS 78205

AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Twenty Five Thousand ($25,000.00) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

State Wide

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. § 27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantites, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

CANCELLED 8-13-84

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 27th day of October, 19 81

SANCHEZ-O'BRIEN OIL & GAS CORPORATION

M. M. Freeman

M. M. FREEMAN Principal SR. VICE PRESIDENT

WITNESS our hands and seals this 27th day of October, 19 81

UNITED STATES FIDELITY & GUARANTY COMPANY

Surety

W. W. Ridout

W. W. Ridout Surety, Resident Arizona Agent (If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved Date 1-11-82

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

By: R. A. Yrana

Permit No. Blanket

CANCELLED

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

Bond
File Two Copies

Form No. 2

DATE 8-13-84

CERTIFIED COPY

GENERAL POWER OF ATTORNEY

No. 81778

Know all Men by these Presents:

That UNITED STATES FIDELITY AND GUARANTY COMPANY, a corporation organized and existing under the laws of the State of Maryland, and having its principal office at the City of Baltimore, in the State of Maryland, does hereby constitute and appoint

George O. Jackson, Alan G. Jackson and Olga Flores

of the City of Laredo, State of Texas, its true and lawful attorneys in and for the State of Texas

for the following purposes, to wit:

To sign its name as surety to, and to execute, seal and acknowledge any and all bonds, and to respectively do and perform any and all acts and things set forth in the resolution of the Board of Directors of the said UNITED STATES FIDELITY AND GUARANTY COMPANY, a certified copy of which is hereto annexed and made a part of this Power of Attorney; and the said UNITED STATES FIDELITY AND GUARANTY COMPANY, through us, its Board of Directors, hereby ratifies and confirms all and whatsoever anyone of the said George O. Jackson and the said Alan G. Jackson and the said Olga Flores

may lawfully do in the premises by virtue of these presents.

In Witness Whereof, the said UNITED STATES FIDELITY AND GUARANTY COMPANY has caused this instrument to be sealed with its corporate seal, duly attested by the signatures of its Vice-President and Assistant Secretary, this 19th day of February, A. D. 19 71

UNITED STATES FIDELITY AND GUARANTY COMPANY.

(Signed) By Karl H. Doerre
Vice-President.

(SEAL)

(Signed) Charles O. Mullennix
Assistant Secretary.

STATE OF MARYLAND, BALTIMORE CITY, } ss:

On this 19th day of February, A. D. 1971, before me personally came Karl H. Doerre, Vice-President of the UNITED STATES FIDELITY AND GUARANTY COMPANY and Charles O. Mullennix, Assistant Secretary of said Company, with both of whom I am personally acquainted, who being by me severally duly sworn, said that they resided in the City of Baltimore, Maryland; that they, the said Karl H. Doerre and Charles O. Mullennix were respectively the Vice-President and the Assistant Secretary of the said UNITED STATES FIDELITY AND GUARANTY COMPANY, the corporation described in and which executed the foregoing Power of Attorney; that they each knew the seal of said corporation; that the seal affixed to said Power of Attorney was such corporate seal, that it was so fixed by order of the Board of Directors of said corporation, and that they signed their names thereto by like order as Vice-President and Assistant Secretary, respectively, of the Company.

My commission expires the first day in July, A. D. 19.74.....

(SEAL) (Signed) Herbert J. Aull
Notary Public.

STATE OF MARYLAND BALTIMORE CITY, } Sct.

I, Robert H. Bouse, Clerk of the Superior Court of Baltimore City, which Court is a Court of Record, and has a seal, do hereby certify that Herbert J. Aull, Esquire, before whom the annexed affidavits were made, and who has thereto subscribed his name, was at the time of so doing a Notary Public of the State of Maryland, in and for the City of Baltimore, duly commissioned and sworn and authorized by law to administer oaths and take acknowledgments, or proof of deeds to be recorded therein. I further certify that I am acquainted with the handwriting of the said Notary, and verily believe the signature to be his genuine signature.

In Testimony Whereof, I hereto set my hand and affix the seal of the Superior Court of Baltimore City, the same being a Court of Record, this 19th day of February, A. D. 19 71

(SEAL) (Signed) Robert H. Bouse
Clerk of the Superior Court of Baltimore City.

FS 3 (9-67)

COPY OF RESOLUTION

That Whereas, it is necessary for the effectual transaction of business that this Company appoint agents and attorneys with power and authority to act for it and in its name in States other than Maryland, and in the Territories of the United States and in the Provinces of the Dominion of Canada and in the Colony of Newfoundland.

Therefore, be it Resolved, that this Company do, and it hereby does, authorize and empower its President or either of its Vice-Presidents in conjunction with its Secretary or one of its Assistant Secretaries, under its corporate seal, to appoint any person or persons as attorney or attorneys-in-fact, or agent or agents of said Company, in its name and as its act, to execute and deliver any and all contracts guaranteeing the fidelity of persons holding positions of public or private trust, guaranteeing the performances of contracts other than insurance policies and executing or guaranteeing bonds and undertakings, required or permitted in all actions or proceedings, or by law allowed, and

Also, in its name and as its attorney or attorneys-in-fact, or agent or agents to execute and guarantee the conditions of any and all bonds, recognizances, obligations, stipulations, undertakings or anything in the nature of either of the same, which are or may by law, municipal or otherwise, or by any Statute of the United States or of any State or Territory of the United States or of the Provinces of the Dominion of Canada or of the Colony of Newfoundland, or by the rules, regulations, orders, customs, practice or discretion of any board, body, organization, office or officer, local, municipal or otherwise, be allowed, required or permitted to be executed, made, taken, given, tendered, accepted, filed or recorded for the security or protection of, by or for any person or persons, corporation, body, office, interest, municipality or other association or organization whatsoever, in any and all capacities whatsoever, conditioned for the doing or not doing of anything or any conditions which may be provided for in any such bond, recognizance, obligation, stipulation, or undertaking, or anything in the nature of either of the same.

I, **Richard Calder**, an Assistant Secretary of the UNITED STATES FIDELITY AND GUARANTY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney given by said Company to

George O. Jackson, Alan G. Jackson and Olga Flores

of **Laredo, Texas**, authorizing and empowering **them** to sign bonds as therein set forth, which power of attorney has never been revoked and is still in full force and effect.

And I do further certify that said Power of Attorney was given in pursuance of a resolution adopted at a regular meeting of the Board of Directors of said Company, duly called and held at the office of the Company in the City of Baltimore, on the 11th day of July, 1910, at which meeting a quorum of the Board of Directors was present, and that the foregoing is a true and correct copy of said resolution, and the whole thereof as recorded in the minutes of said meeting.

In Testimony Whereof, I have hereunto set my hand and the seal of the UNITED STATES FIDELITY AND GUARANTY COMPANY on October 27, 1981.
(Date)

Assistant Secretary.

February 9, 1983

Mr. Charles O. Tucker, Agent
Sanchez-O'Brien Oil & Gas Corp.
2212 N.W. 50th St., Ste. 245
Oklahoma City, OK 73112

Re: State Permit 838
Sanchez-O'Brien 1-4 Federal

Dear Mr. Tucker:

Enclosed are approved Performance Bond, approved Application for Permit to Drill, Permit to Drill, receipt, and instructions for progress reports and handling of samples. Also enclosed are forms for well completion and plugging.

If we can be of further assistance, please advise.

Sincerely,

R. A. Ybarra
Enforcement Director

/os
Encl.

2212 N.W. 50 th Street
Oklahoma City, OK 73112
February 7, 1983

RECEIVED
FEB 7 1983
O & G CONS. COMM.

Mr. A. K. Doss
Executive Director
Arizona Oil & Gas
Conservation Commission
1645 W. Jefferson
Suite 420
Phoenix, Arizona 85007

Subject: Sanchez-O'Brien Oil & Gas Corporation
Roosevelt Lake Area Proposed Drilling Locations

Dear Mr. Doss:

Sanchez-O'Brien Oil & Gas Corporation elects to classify the data to be obtained from the Federal No. 1-4, T4N, R12E, Section 4; and the Federal No. 1-5, T4N, R13E, Section 5, as confidential.

Your cooperation in this matter will be greatly appreciated.

Very truly yours,

Charles O. Tucker
Agent for Sanchez-O'Brien Oil & Gas Corporation

ORGANIZATION REPORT

RECEIVED
FEB 7 1983
O & G CONS. COMM.

Full Name of the Company, Organization, or Individual
Sanchez-O'Brien Oil & Gas Corporation

Post Office Address (Box or Street Address)
P. O. Box 2986, Laredo, Texas 78041

Plan of Organization (State whether organization is a corporation, joint stock association, firm or partnership, or individual)
Corporation

Purpose of Organization (State type of business in which engaged)
Oil and Gas Exploration

If a reorganization, give name and address of previous organization.
N/A

If a foreign corporation, give (1) State where incorporated	(2) Name and post office address of state agent	(3) Date of permit to do business in state
Delaware	CT Corporation System 14 North 18th Avenue Phoenix, Arizona	6/28/78

Principal Officers or Partners (if partnership) NAME	TITLE	POST OFFICE ADDRESS
Brian O'Brien	President	19 Briar Hollow Lane, Suite 200 Houston, Texas 77027
Minita M. Freeman	Sr. V. P. and Treasurer	P. O. Box 2986 Laredo, Texas 78041
Woodrow Epperson	V. P. and Secretary	19 Briar Hollow Lane, Suite 200 Houston, Texas 77027

DIRECTORS NAME	POST OFFICE ADDRESS
A. R. Sanchez, Sr., Chairman	P. O. Box 2986, Laredo, Texas 78041
A. R. Sanchez, Jr. Vice Chairman	P. O. Box 2986, Laredo, Texas 78041
Brian O'Brien	19 Briar Hollow Lane, Suite 200, Houston, TX
Minita M. Freeman	P. O. Box 2986, Laredo, Texas 78041

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Agent of the Sanchez-O'Brien Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

2-7-83
Date

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Organization Report
File One Copy
Form No. 1

4/82

RECEIVED
JAN 8 1982
O & G CONS. COMM.

SANCHEZ-O'BRIEN
OIL & GAS CORPORATION

706 MAHER
P.O. BOX 2986
LAREDO, TEXAS 78041
TEL. AC 512 / 722-8092

AKD
RAY ✓
BOB
OB.

January 5, 1982

State of Arizona
Oil & Gas Conservation Commission
1645 W. Jefferson, Suite 420
Phoenix, Arizona 85007

Dear Sirs:

Enclosed is application for a state wide performance bond and an organization report.

Should you have any questions, please do call me.

Sincerely,

R. V. Lunday
General Accounting Manager

RVL:vdv

Enclosure