



TXP Operating Company
Transco Exploration Company, Managing General Partner

2800 Post Oak Boulevard
P. O. Box 1396
Houston, Texas 77251
713-439-2000
April 26, 1985

State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: Arlene Sollis

Re: TXPOC #1-16 Square Tower Well
Wildcat Field
Section 16, T39S, R26E
San Juan County, Utah

Dear Ms. Sollis:

Attached in triplicate is the Application for Permit to Drill the above referenced well. A survey plat is included. For your information a Bond of Lessee is on file with the State of Utah and is Bond Number 98505683. A copy of the Utah Division of Water Rights' approval will be submitted to your office as soon as it is received.

If you require additional information, please contact John Rosata, Jr. at (713) 439-3502 or me at (713) 439-3503.

Sincerely,

TXP OPERATING COMPANY
By: Transco Exploration Company
its Managing General Partner

Cammye Singletary
Cammye Singletary - Drilling Technician
Regulatory and Environmental Affairs

Attachments

CC: State of Utah, Department of Natural Resources
Division of State Lands & Forestry
355 West North Temple
3 Triad Center, Suite 400
Salt Lake City, Utah 84180
Attention: Mr. Ed Bonner

State of Utah, Division of State History
300 Rio Grande
Salt Lake City, Utah 84101
Attention: Mr. Lamar Lindsey

CS/1b

RECEIVED

APR 29 1985

DIVISION OF OIL
GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)

15

5. Lease Designation and Serial No.
State Lease ML-36203

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
 DRILL DEEPEN PLUG BACK
 b. Type of Well
 Oil Well Gas Well Other Single Zone Multiple Zone

6. If Indian, Allottee or Tribe Name
N/A

7. Unit Agreement Name
N/A

8. Farm or Lease Name
TXPOC-Square Tower

2. Name of Operator
TXP Operating Company, ATTN: John Rosata, Jr.

9. Well No.
1-16

3. Address of Operator
P.O. Box 1396, Houston, Texas 77251

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements.)*
 At surface 580' FSL & 1850' FEL of Sec. 16 (SW $\frac{1}{4}$ SE $\frac{1}{4}$)
 At proposed prod. zone Vertical Well

11. Sec., T., R., M., or Bk. and Survey or Area
Sec 16, T9-S, R26-E

14. Distance in miles and direction from nearest town or post office*
43.5 miles east of Cortez, Colorado

12. County or Parrish 13. State
San Juan County, Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. line, if any) 580' FSL

16. No. of acres in lease
640

17. No. of acres assigned to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft. N/A

19. Proposed depth
6100'

20. Rotary or cable tools
Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
5251.6' (ground level)

22. Approx. date work will start*
July 15, 1985

PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
Preset	13-3/8"	Culvert pipe	100'	cement to surface
12 $\frac{1}{2}$	9-5/8"	36 ppf K-55	2300'	1440 ft ³ (800 sxs)
8-3/4	5-1/2"	17# N-80	6100'	1400 ft ³ (520 sxs)

Transco proposes to drill this well to 6100' TD to the Akah Salt Formation. The primary objective is the Upper Ismay with the Lower Ismay and Honaker Trail being the secondary objectives. If productive, we will run casing to TD and complete. If dry, we will plug and abandon in accordance with Utah State Regulations.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. John L. Burja
 Signed: _____ Title: Manager-Drilling Operations Date: 04-25-85
 (This space for Federal or State office use)

Permit No. _____ Approval Date _____
 Approved by _____ Title _____ Date _____
 Conditions of approval, if any:

TRANSCO EXPLORATION COMPANY

DRILLING PROGNOSIS

1. Surface Formation:

Cretaceous Dakota Undifferentiated

2. Formation Tops:

Ground Elevation: 5251.6 (ungraded)

A. Burro Canyon	13'
B. Morrison	76'
C. Summerville	1033'
D. Entrada	1067'
E. Carmel	1206'
F. Navajo	1227'
G. Kayenta	1469'
H. Wingate	1535'
I. Chinle	1965'
J. Shinarump	2712'
K. Moenkopi	2802'
L. Cutler	2956'
M. Honaker Trail	4716'
N. Paradox	5201'
O. Sitton	5598'
P. Upper Ismay	5811'
Q. Horenweep Shale	5909'
R. Lower Ismay	5911'
S. Gothic Shale	5951'
T. Upper Desert Creek	5959'
U. Lower Desert Creek	6025'
V. Chimney Rock Shale	6044'
W. Akah	6060'
X. Salt	6091'
Y. Total Depth	6100'

3. If any water zones are encountered, they will be adequately protected and reported; none are anticipated. The 2300' at surface casing will protect any near surface fresh water zones.

4. Casing and Cement Program (All new casing)

<u>Hole Size</u>	<u>Interval</u>	<u>Size</u>	<u>Weight/Grade</u>	<u>Cement Type</u>
		13-3/8"	Culvert	Preset
12-1/4"	0-2300'	9-5/8"	36#, K-55	Halliburton Light & "B"
7-7/8"	2300-6100'	5-1/2"	17#, N-80	Halliburton Light & "H"

TRANSCO EXPLORATION COMPANY
 DRILLING PROGNOSIS
 (Page 2)

5. Minimum Pressure Control Equipment: (Schematic Attached)

Type: 10" -900 series (Double gate hydraulic with manual and central controls)

Pressure Rating: 3000 psi

Testing Procedure: Equipment will be pressure tested to 70%. Interval yield strength surface casing and operational checks will be made daily and recorded on tour sheets.

6. Mud Program: (Visual Monitoring)

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Weight ppg</u>	<u>Viscosity</u>	<u>W.L.</u>
0-2300	Water, Gel	8.33 - 9.0	25 - 35	N.C.
2300-9600	LSND	9.0 - 10.5	35 - 45	10 - 20 cc

Sufficient mud inventory will be maintained on location during drilling to handle any adverse conditions that may arise. Mud inventory to be stockpiled on location will not be less than the amount needed for the mud system as required to drill the well.

7. Auxiliary Equipment:

- A. A lower kelly cock will be kept in the string at all times.
- B. Periodic checks will be made each tour of the mud system.
- C. A stabbing valve will be kept on the floor to be stabbed into the drill pipe, whenever the kelly is not in the string.
- D. No bit float will be used.
- E. Monitoring of the mud system will be visual and flow sensor device.

8. Evaluation Program:

<u>Logs:</u>	<u>2100' - 0'</u>	<u>6100' - 2100'</u>	<u>6100' - 5700'</u>
	GR	DIL/SONIC FDC/CNL with GR Proximity minilog BHC acoustilog - GR- caliper	HRD

TRANSCO EXPLORATION COMPANY
DRILLING PROGNOSIS
(Page 3)

Cores:

1. One core in Upper Ismay (5811' - 5905')
2. One possible core in Lower Desert Creek (6025' - 6044')

DST:

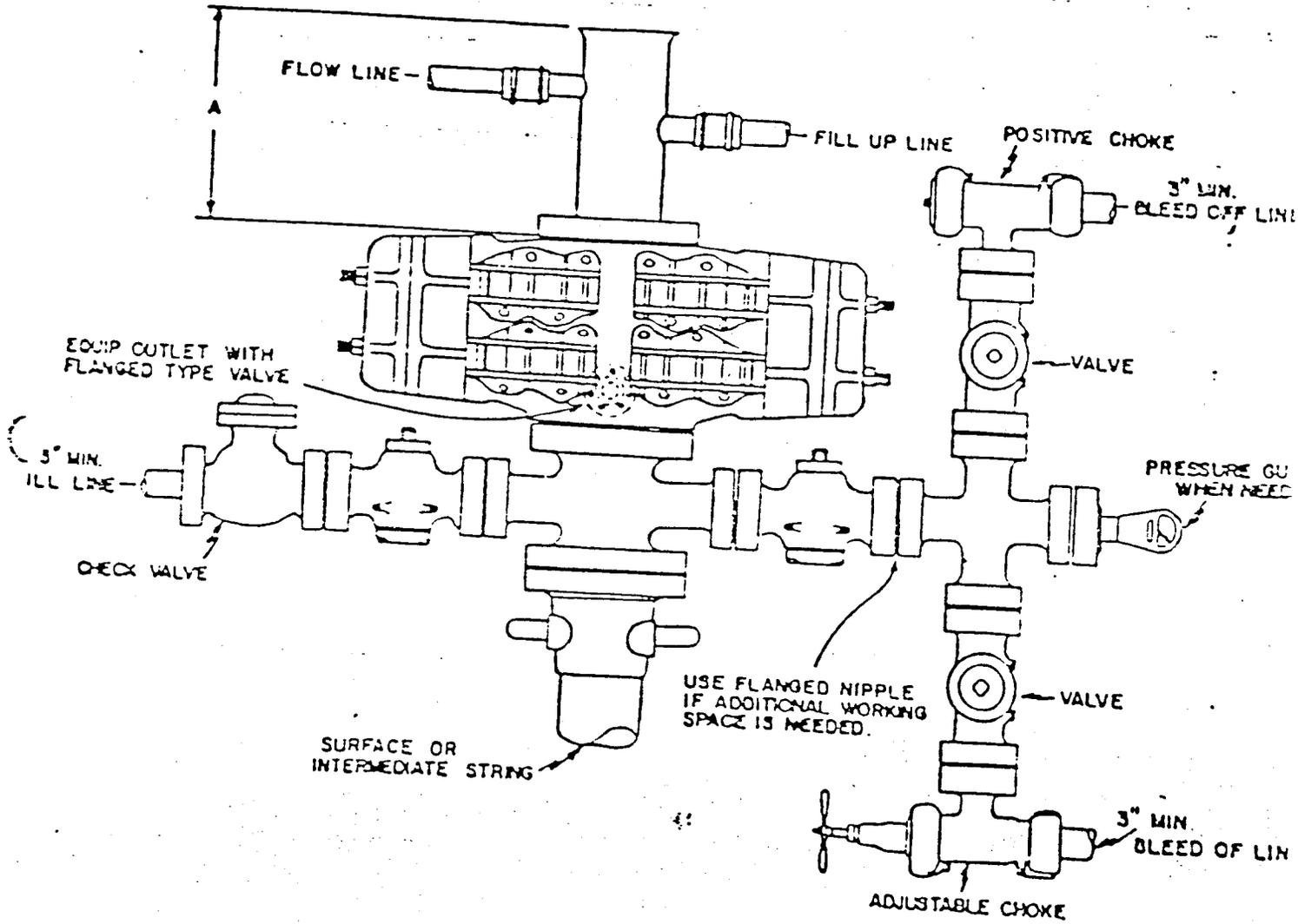
1. Upper Ismay (5811'-5905')
2. Possible Lower Ismay (5911'-5951')
3. Possible Desert Creek (6025'-6044')
4. Possible Honaker Trail (4710'-5811')

9. Abnormal Conditions:

H₂S equipment will be in operation 4700', Honaker Trail, as a precautionary measure as no H₂S is expected. It is not anticipated that abnormal temperatures, pressures or toxic gases will be encountered.

10. Drilling Activity:

Anticipated Commencement Date:	July 15, 1985
Required Drilling Days:	Approximately 30 Days
Required Completion Days:	Approximately 30 Days



BLOWOUT PREVENTER

9-10 inch

3000 psi

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT TRIPPLICATE*
(Other instructions on reverse side)

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1a. Type of Work
DRILL DEEPEN PLUG BACK

b. Type of Well
Oil Well Gas Well Other
Single Zone Multiple Zone

2. Name of Operator
TXP Operating Company, ATTN: John Rosata, Jr.

3. Address of Operator
P.O. Box 1396, Houston, Texas 77251

4. Location of Well (Report location clearly and in accordance with any State requirements.)*
At surface: '580' FSL & 1850' FEL of Sec. 16 (SW $\frac{1}{4}$ SE $\frac{1}{4}$)
At proposed prod. zone: Vertical Well

14. Distance in miles and direction from nearest town or post office*
43.5 miles east of Cortez, Colorado

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any) 580' FSL

16. No. of acres in lease 640

17. No. of acres assigned to this well 40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft. N/A

19. Proposed depth 6100'

20. Rotary or cable tools Rotary

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5251.6' (ground level)

22. Approx. date work will start*
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24. John J. Burja Title: Manager-Drilling-Operations Date: 04-25-85

(This space for Federal or State office use)

Permit No. _____ Approval Date _____

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Well Location
TXPOC Square-Tower 1-16

16

HOVENWEEPEE
NATIONAL
MONUMENT

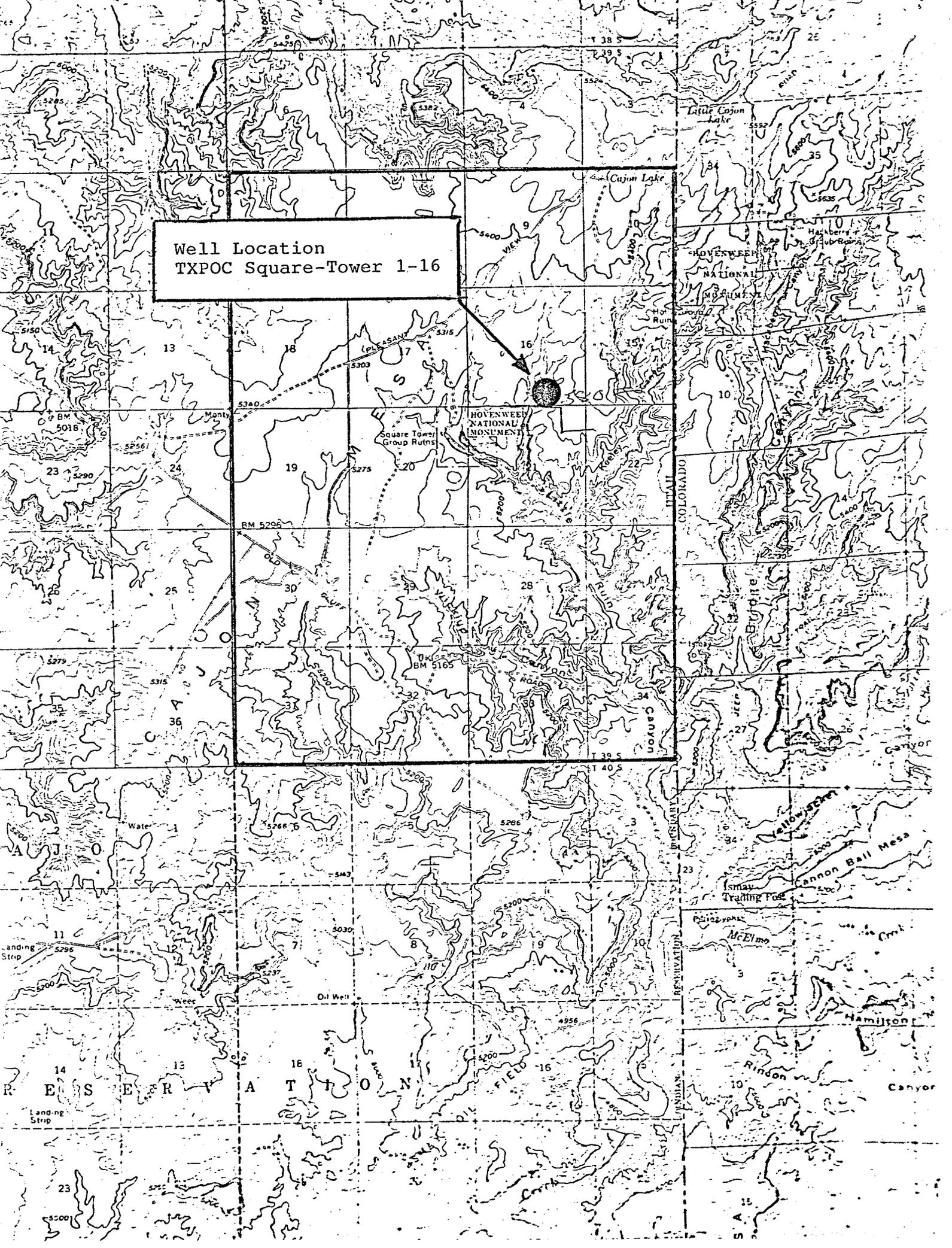
Square Tower
Group Ruins

UTAH
COLORADO

UTAH
COLORADO

UTAH
COLORADO

UTAH
COLORADO



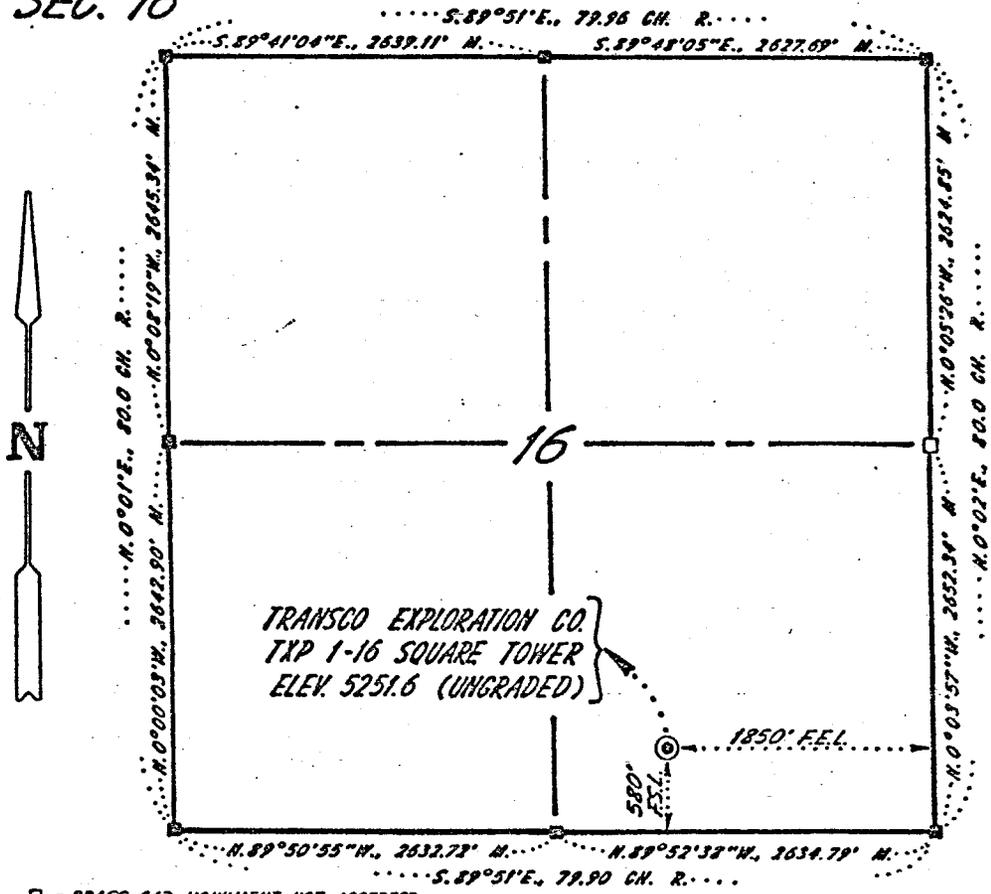


300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809

PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

T.39S., R.26E., S.L.B. & M., SAN JUAN CO., UTAH
SEC. 16



- = BRASS CAP MONUMENT NOT ACCEPTED
- = FD. GOVT BRASS CAP MONUMENT
- R = RECORD DATA
- M = MEASURED DATA THIS SURVEY

BASIS OF BEARINGS - SOLAR OBSERVATION IN THE NW 1/4 OF SEC. 16 - BEARINGS EXHIBITED ARE PLANIMETRIC

SCALE: 1" = 1000'

⊙ = SURVEYED WELL LOCATION

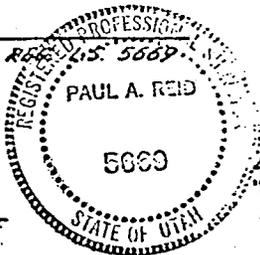
PLATTED FIELD NOTES OF A SURVEY
MARKING WELL LOCATION
TXP 1-16 SQUARE TOWER
SW 1/4 SE 1/4 SEC. 16, T.39S., R.26E.,
SALT LAKE BASE & MERIDIAN,
SAN JUAN CO., UTAH

SURVEYORS CERTIFICATE

STATE OF WYOMING)
COUNTY OF NATRONA) S.S.

I, PAUL A. REID, HEREBY STATE THAT I AM A REGISTERED LAND SURVEYOR IN THE STATE OF UTAH UNDER THE PROVISIONS OF UTAH LAW. I FURTHER STATE THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME ON APR. 9, 1985 FOR THE PURPOSE OF AN APPLICATION FOR PERMIT TO DRILL. ANY OTHER USE OF THIS PLAT WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SURVEYOR IS PROHIBITED.

Paul A. Reid
PAUL A. REID UTAH REGISTERED LAND SURVEYOR



UNGRADED ELEVATIONS OF REFERENCE POINTS SET WITH 12" x 3/8" SPIKES

NORTH	2000 FEET	5249.5
SOUTH	"	5250.5
EAST	"	5274.2
WEST	"	5236.7

JOB NO.: 029-04 85
DATE: APRIL 15, 1985
NOTES: LOOSELEAF IN FILE

BASIS OF ELEVATIONS: U.S.G.S. 15' QUAD, "CAJON MESA", UTAH-COLORADO BENCHMARK D-63 IN THE NW 1/4 SEC. 30, PRINTED ELEV. 5296

TRANSCO EXPLORATION COMPANY

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TRANSCO EXPLORATION COMPANY
 DRILLING PROGNOSIS
 (Page 2)

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TRANSCO EXPLORATION COMPANY
DRILLING PROGNOSIS
(Page 3)

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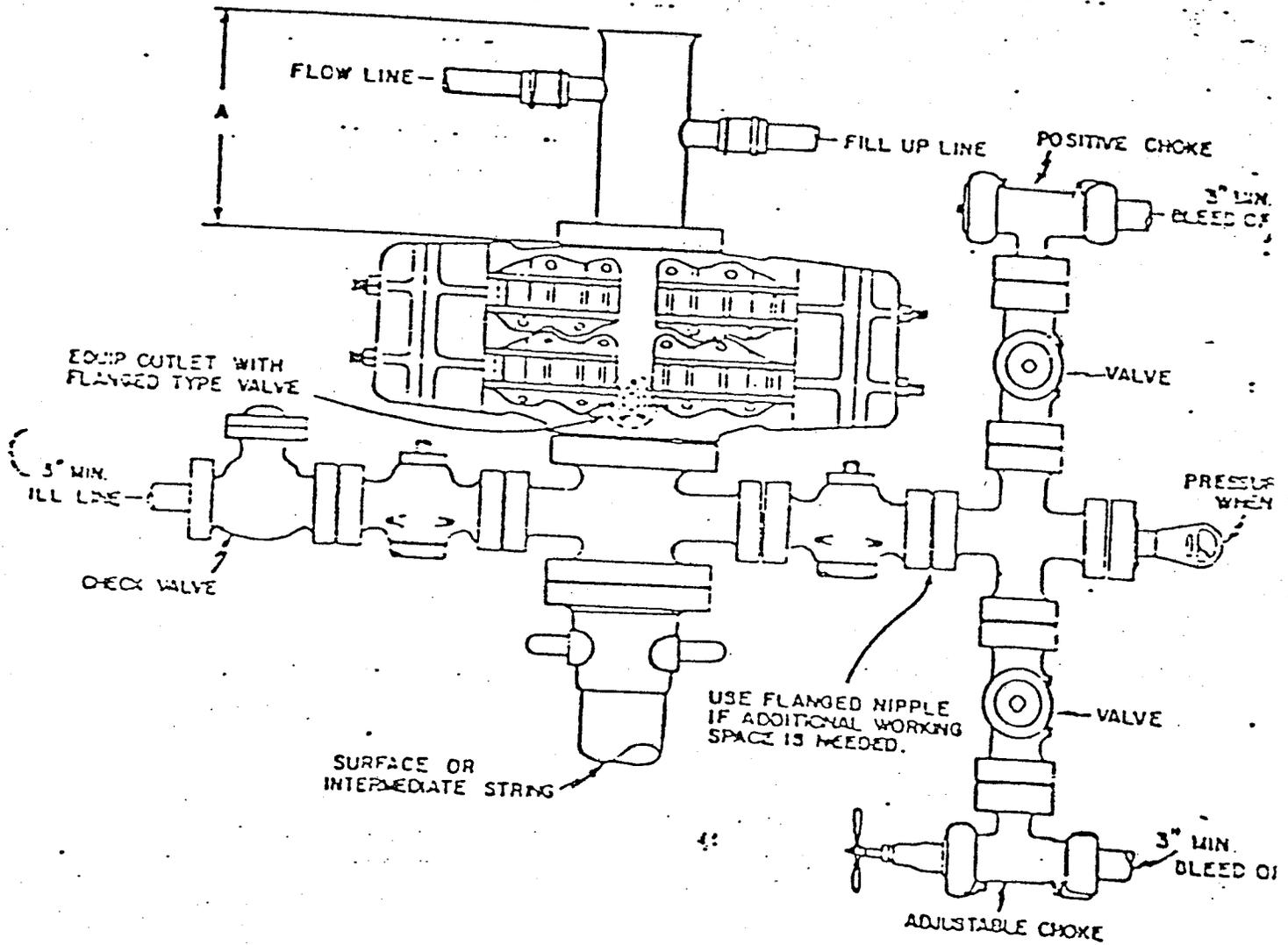
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Anticipated Commencement Date:	July 15, 1985
Required Drilling Days:	Approximately 30 Days
Required Completion Days:	Approximately 30 Days



BLOWOUT PREVENTER

9-10 inch

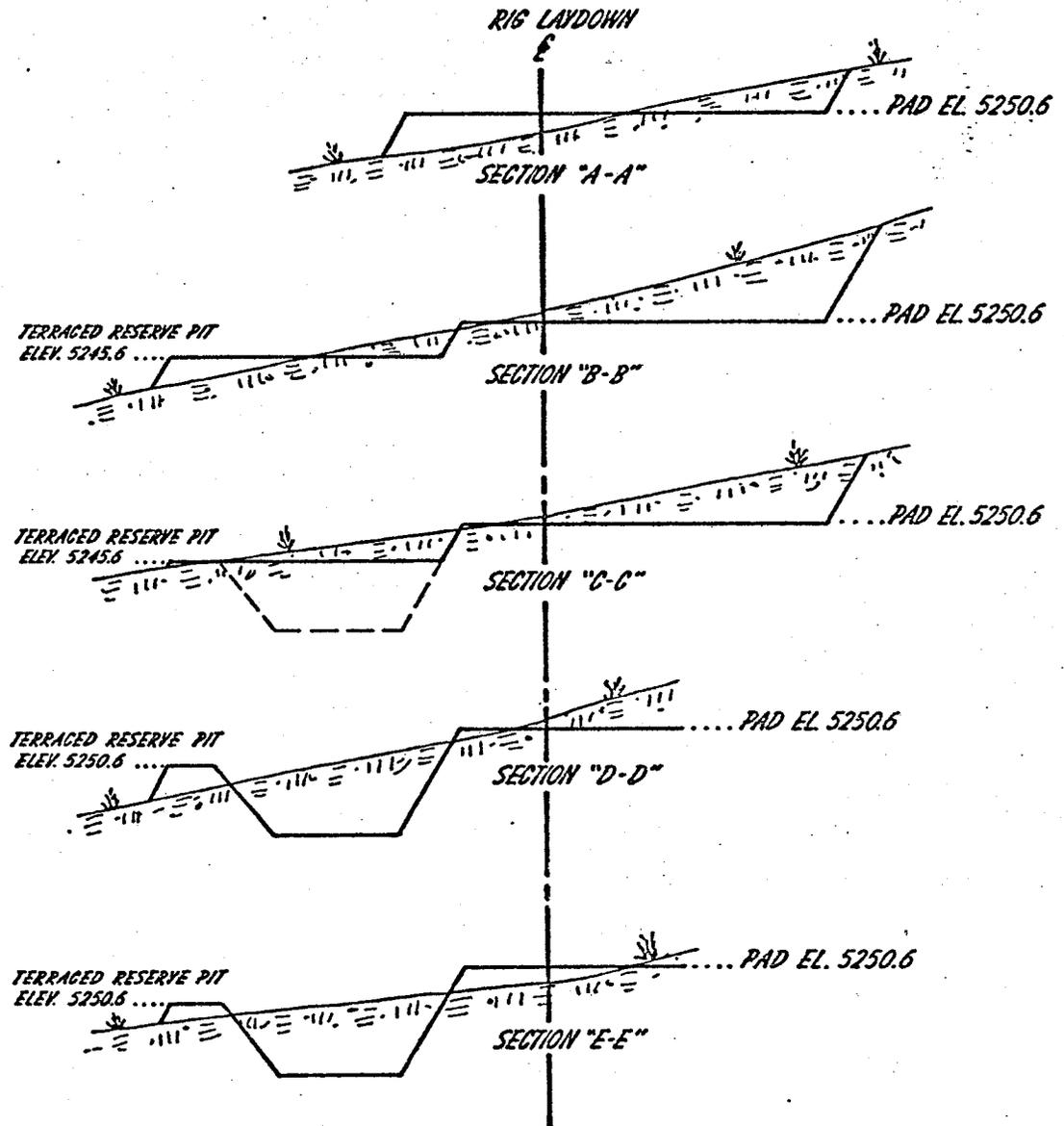
3000 psi



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



APPROXIMATE EARTHWORK VOLUMES

<u>PAD</u>		<u>RESERVE PIT</u>	
CUT	4,860 CU. YDS.	CUT	2,695 CU. YDS.
FILL	4,775 " " AT 15%	SPOIL	2,695 " "
SPOIL	85 " " SHRINKAGE	CAPACITY	12.96 BARRELS AT 10' DEPTH
TOPSOIL	1,780 " " AT 9" DEPTH		

PROPOSED PAD AND RESERVE PIT CROSS-SECTIONS

TRANSCO EXPLORATION CO.
TWP 1-16 SQUARE TOWER

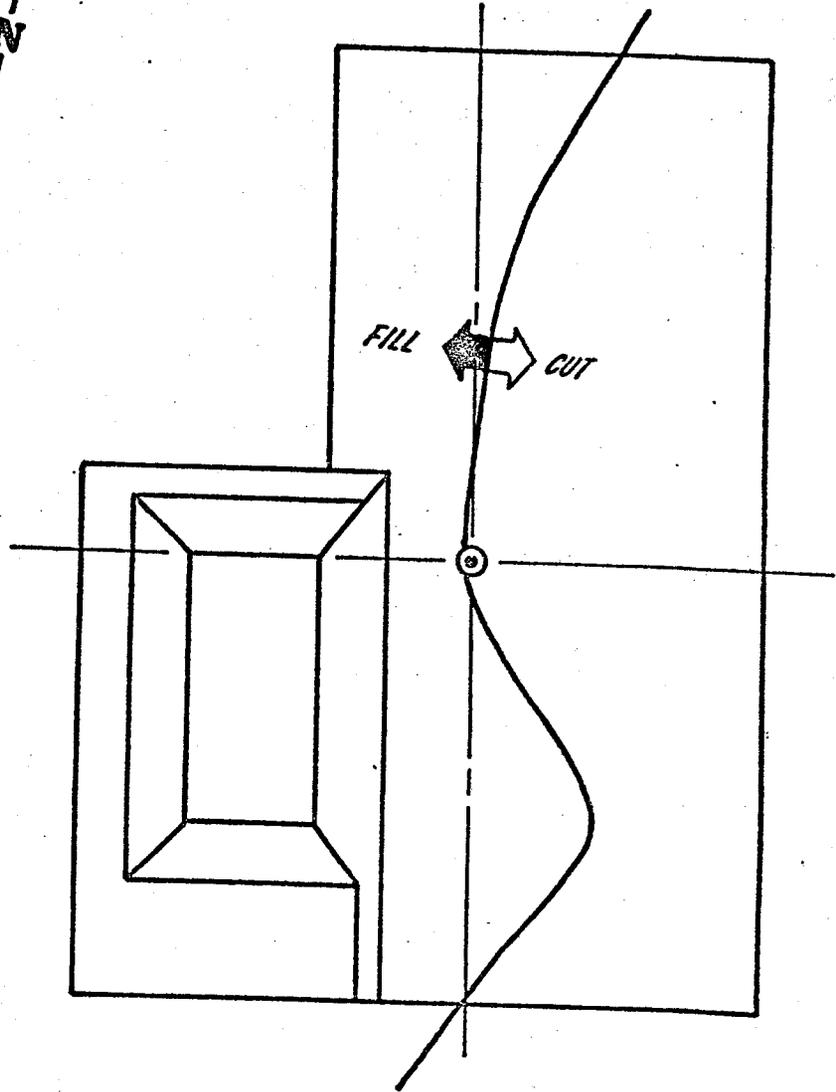
SCALE: 1" = 50' HORIZ.
1" = 20' VERT.



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



PROPOSED PRODUCTION FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

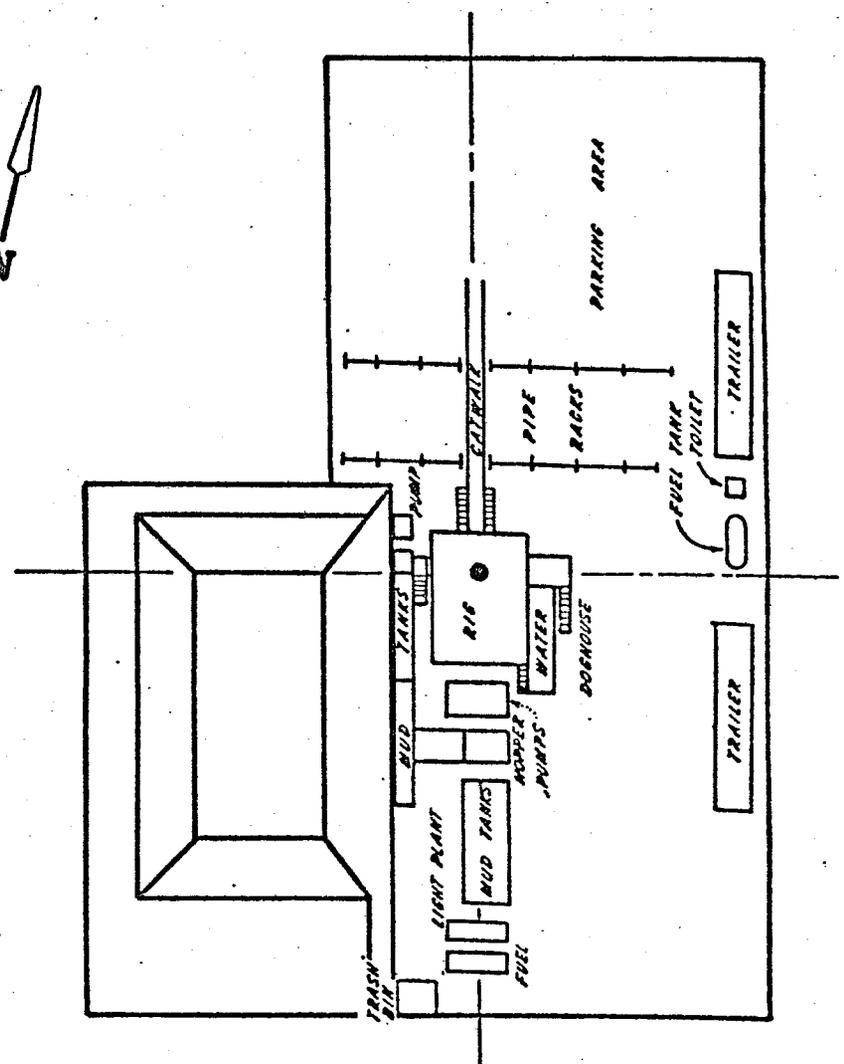
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



PROPOSED RIG LAYOUT FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

SCALE: 1" = 50'

Attachment #5



United States Department of the Interior

NATIONAL PARK SERVICE

Mesa Verde National Park

Colorado 81330

IN REPLY REFER TO:

L30 (MEVE-S)

May 9, 1985

RECEIVED

MAY 13 1985

DIVISION OF OIL
GAS & MINING

Mr. Pat deGruyder
Utah, Division of Oil, Gas and Mining
Department of Natural Resources
616 Hunt Ridge
Moab, Utah 84532

Dear Mr. deGruyder:

We appreciated the opportunity to meet last week with you and Mr. Baker on the site of the oil well proposed by Transco Exploration Company near the north boundary of the Square Tower unit of Hovenweep National Monument.

As we agreed, we would reduce our concerns to written form so that your organization can reach a decision on drilling permit stipulations with proper input from the National Park Service. We have nine points of concern which we would like considered in the permitting and approval process.

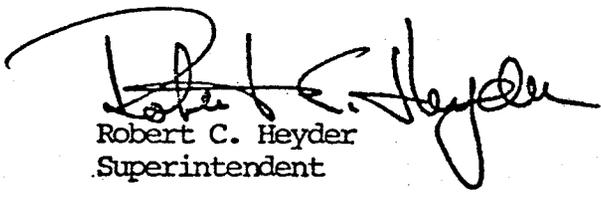
1. The road to the preferred drilling site TXP 1-16 was to be constructed along the north boundary fence of the Square Tower unit. This road, according to Transco representative, Mr. Robert McKenzie, was to be constructed with a 30 foot right-of-way. It would be used by large trucks to haul pipe and equipment during the drilling stage, and later, if the well proved productive, to haul oil off the lease. As we explained last week, such a road along the north boundary of the monument would be a visual intrusion on the park and would present traffic control problems where the exit to the county road is at the monument entrance. The present location of the proposed access road is also in conflict with the development plans for the monument which include relocating the ranger contact station.
We were most pleased with the agreement reached Friday to use the seismic road as an access to the drilling sites of TXP 1-16 and 2-16. This will alleviate our concerns about the construction of a road along the north boundary.
2. We do have serious health and air quality concerns about hydrogen sulfide gas. We feel that to protect the park staff in residence and the park visitors in the campground, a predrilling contingency plan for both the drilling and possible subsequent production period is needed. That plan should include the method proposed for monitoring and for reacting to any encounters with hydrogen sulfide, including warning the staff and park visitors of any potential danger.

3. If the site proves unproductive or after the well begins production, the site should be developed to restore the native flora. We are concerned that only native species, local to the area, be used in any reclamation program. We would be most happy to work on the development of such a program.
4. It is our understanding that the pit will be lined and the site diked in a manner that will prevent any spill or flow of waste into the drainage that passes through the monument. Further, if such a flow does occur, we ask that Transco Exploration Company be responsible for restoring the drainage to my satisfaction and use methods prescribed by me or my representative at the monument.
5. We understand that the State will provide for the necessary blowout prevention contingencies as part of the permitting process.
6. It is our understanding gas may have to be flared during drilling but once the well is producing, Transco, as a matter of routine operation does not flare. Instead the gas will be used in the operation of the production equipment. We would appreciate a stipulation ensuring no flaring or venting of gas except as an emergency procedure.
7. Since the monument water supply well is 1437 feet deep and is approximately 3000 feet from the proposed 1-16 well, we have concerns whenever a new well penetrates the formation which is the source of water to the monument. It is our understanding that state regulations require the well be drilled and cased in a manner that will protect and seal off the fresh water formations from contamination. We ask that Utah inspect the well while casing and cementing to ensure that proper precautions are taken to protect the public interest.
8. Considering the close proximity of the well site to the monument resources, it would be appreciated if the unit manager at Hovenweep NM could be notified of and accompany state well inspectors or other personnel on visits to the site.
9. Also, due to the close proximity and visual line of sight between the monument and the well, the park service would like to have input into the color of production facilities that will be used, should the well prove productive.

Your consideration of our above concerns will be greatly appreciated. In addition to the above concerns, we feel the State, due to our discussion last Friday, recognizes the potential that the proposed well may tap federal reserves since it is so close to the monument boundary. This question will be dealt with if the well proves productive and the size of pool is determined.

If we can be of any assistance, please feel free to contact me at (303)529-4465.

Sincerely yours,



Robert C. Heyder
Superintendent

cc:
Regional Director, Rocky Mountain Region w/enc.
Don Gillespie, Assistant to the Regional Director
for Utah w/enc.

Attachment #6



TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

One United Bank Center
1700 Lincoln, Suite 2100
Denver, Colorado 80203
303-863-3600

May 13, 1985

RECEIVED

MAY 13 1985

DIVISION OF OIL
GAS & MINING

Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

ATTN: Mr. Ronald J. Firth,
Associate Director of Oil & Gas

RE: TXP's Square Tower Prospect
TXP #1-16 Square Tower Well
Township 39 South, Range 26 East
Section 16: SW/4SE/4
San Juan County, Utah

Gentlemen:

On April 10, 1985, Transco conducted an on-site meeting to stake the subject well location and to further determine the access route to the proposed location. In addition to Transco's representatives at this meeting, Mr. Pat DeGruyter of your Moab Office and Mr. Stan Baker with the State Lands and Forestry Office were also in attendance. At this meeting, Transco proceeded to stake the subject well location, and the determination was made to access the location off of the existing county road and enter Section 16 at the southwest corner and proceed along the southern border to the actual location.

Transco's Denver Office was subsequently contacted the week of April 29, 1985 by Mr. Pat DeGruyter, advising that his office had been contacted by the National Park Service which is the managing agency for the Hovenweep National Monument which is situated south of the proposed well location. The National Park Service had raised questions concerning Transco's proposed access to the location, and had requested that Mr. DeGruyter meet with their representative, Mr. Robert Heyder so that they could possibly present Transco with an alternate access route. Representatives from Transco met with Mr. Heyder and Mr. DeGruyter on May 3, 1985. At that time, the National Park Service had suggested that Transco access the proposed location from an existing seismic road which could be entered from the mid point of the northwest corner of Section 16. Additional concerns were expressed by the National Park Service. Transco was to review the objections and in addition set up another on-site and arrange for an archeologist to clear the drillsite as well as the new access route.

On May 8, 1985, an additional on-site meeting was held with representatives from the National Park Service and the Oil & Gas Commission. Ms. Debbie Foldi with Abajo Archeological Services verbally advised Transco that the proposed access route would be acceptable. Ms. Foldi's report will be available the week of May 13th, 1985. During this meeting, the additional issues that were

previously raised by the National Park Service were discussed and resolved on a preliminary basis.

On May 9th, 1985, Ms. Connie J. Goers of this office met with Ms. Lorraine Mintzmyer, the Regional Director of the National Park Service. Ms. Goers was provided a preliminary copy of the letter from Mr. Heyder, of the National Park Service directed to Mr. Patrick DeGruyter of the Moab Office with the Oil & Gas Commission. The issues involved in the subject letter were verbally discussed, and Transco respectfully submits its response to the following issues:

1. The National Park Service had questioned the original access route in which Transco had proposed to use to access the location. After conducting the additional on-site meeting, Transco has elected to access the location from approximately the midpoint of the westerly line of Section 16, as originally suggested by the National Park Service. Entering from this location will require Transco to build approximately 5,000 feet of road in lieu of 3200 feet of road; however, Transco feels that this will alleviate the National Park Services' concerns about the construction of an access road along the northern boundary of the monument.

2. The National Park Service raised concerns about Transco's drilling operations which they feel has the possibility of encountering hydrogen sulfide gas. As stated in Transco's drilling prognosis which was submitted with our Application to Drill; H₂S equipment would be in operation at a depth of 4700 feet as a precautionary measure. It is Transco's position that it will not encounter H₂S at its projected total depth of 6100 feet; however, Transco submits for your review an example of an H₂S Contingency Plan which is currently being prepared for the drilling and potential production operations on the proposed well location. It is anticipated that the H₂S Contingency Plan will be submitted for your review no later than May 17, 1985.

3. The National Park Service raised a concern that should the subject well location prove to be unproductive or should the well enter a production stage; that the site would be developed to restore the native flora. Reclamation of the subject location would be in accordance with the terms and provisions of the issued by the Oil & Gas Lease, State Lands and Forestry; in addition to regulations imposed by the State of Utah Oil & Gas Commission. Additional information concerning this matter is detailed in the Surface Use Plan which is also being submitted with this letter.

4. The National Park Service questioned the construction of the reserve pit and the possible overflow of waste into the drainage that passes through the monument. As detailed in the Surface Use Plan, the reserve pit will be lined and diked in a manner that complies with the regulations of the State of Utah Oil & Gas Commission.

5. The National Park Service was advised by Transco that it will comply with the State of Utah Oil & Gas Commission's regulations concerning blow-out preventions. Transco's prognosis for handling such a matter, should it be encountered, is more specifically detailed in the Application for Permit to Drill and the Surface Use Plan.

6. The National Park Service raised the issue of flaring gas should the well prove to be productive. Transco will comply with the State of Utah Oil & Gas Commission's regulations concerning the flaring of gas during testing operations. Should Transco need to flare gas during the testing period; it could possibly construct a bunker which would obstruct the glare of the gas flare. Concerning the disposition of gas once the well is put on production; Transco would most likely install a compressor to compress the gas and use as maintenance for the production facilities, or transport same off the premises for disposition.

7. The National Park Service has a water supply well which has been drilled to approximately 1,437 feet which is located approximately 3,000 feet from Transco's proposed well location. The Park Service expressed concern of Transco's well penetrating the same formation of its water well. As advised, and more specifically detailed on the application for permit to drill, Transco proposes to set approximately 2300 feet of 9 5/8ths inch surface casing in its proposed well. This amount of surface casing exceeds the amount required under the State of Utah Oil & Gas Commission's regulations.

8. The National Park Service has requested that the Unit Manager of Hoven Weep National Monument be given access to accompany the state inspector on visits to the well location site. Transco has no objection to this matter.

9. The National Parks Service has requested that it have the availability to input into the kind of production facilities that would be used, should the well be proved to be productive. As stated in our surface use plan, Transco will comply with the State Regulations governing such a matter.

In the closing of the National Park Service's letter, it additionally addressed the concerns that it recognizes the potential of the proposed well tapping federal reserves since it is closely located to the monument boundary. Transco would like to note that should this occur, it would consider the possibility of drilling a directional well into the National Monument, providing the National Park Service would be in the position to grant an oil and gas lease to Transco.

In closing, Transco desires to express that it has the same concerns as the National Park Service in retaining the environment as much as possible in its natural state.

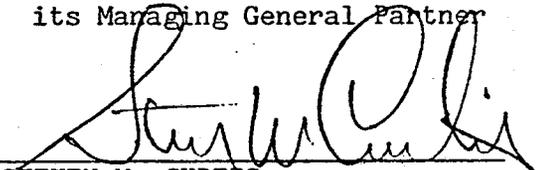
It has indeed been a pleasure and opportunity in meeting with representatives from the National Park Service, Oil & Gas Commission and State Lands and Forestry.

Division of Oil, Gas and Mining
May 13, 1985
Page Four

Should any of the above agencies have any additional questions or comments,
Transco would be pleased to respond.

Sincerely,

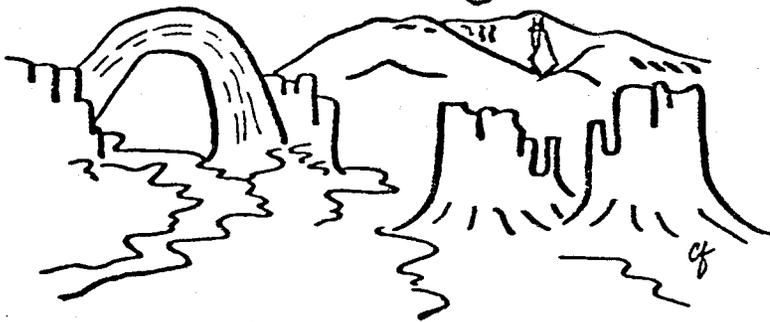
TXP OPERATING COMPANY,
a limited partnership
By: Transco Exploration Company
its Managing General Partner

By: 

STEVEN W. CURTIS
Regional Land Manager

CJG:SWC:cl

Attachment #7



Inviting
Friendly Unforgettable

San Juan County

Monticello, Utah 84535

(801) 587-2231

County Offices

KENNETH R. BAILEY-Commissioner
CALVIN BLACK-Commissioner
JERRY HOLLIDAY-Commissioner
GAIL D. JOHNSON-Clerk and Auditor
MARY LOU MOSHER-Recorder
BARBARA MONTELLA-Assessor
MARIAN BAYLES-Treasurer
S. RIGBY WRIGHT-Sheriff
BRUCE K. HALLIDAY-Attorney
Travel/Development Council

RECEIVED

May 13, 1985

Utah State Department of
Oil, Gas, and Mineral Division
4241 State Office Building
Salt Lake City, Utah

MAY 17 1985

DIVISION OF OIL
GAS & MINING

Dear Gentlemen:

The San Juan County Commission has been approached by Mr. Brian Wood, representing TXP Operating Company. This company expressed its interest in developing and drilling an oil well in Section 16, Township 36 South, Range 25 East, SLB and M., located in an area surrounding the Hovenweep National Monument in San Juan County.

The Commission has no objections in this drilling and is in favor of your office's support in granting the necessary approvals so that TXP may proceed as soon as possible.

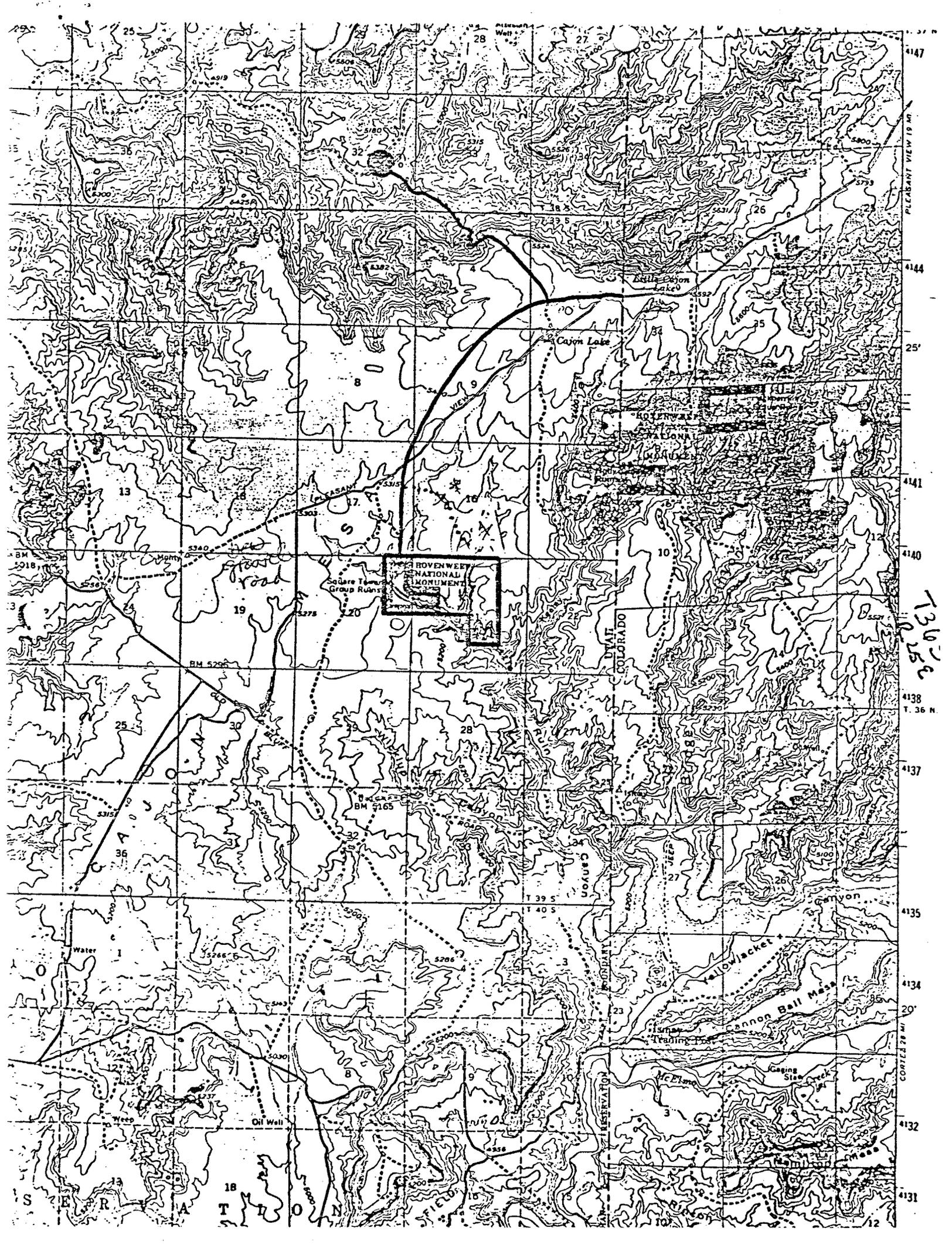
I have included a map of the proposed well with this letter. Thank you for your attention to this matter.

Very Truly,

Calvin Black, Chairman
San Juan County Commission

CB;rmb

Enclosure



Attachment #8



NORMAN H. BANGERTER
GOVERNOR



STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

May 21, 1985

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801 / 533-5755

Chairperson
Resource Development Coordinating Committee
State Planning Office
118 State Capitol
Salt Lake City, Utah 84114

Attn: Mike Christensen

RE: Application for Permit to Drill, Well No. TXPOC-Square Tower 1-16

In Reply Refer to Case No. I063

Dear Chairperson:

The Utah Division of State History has received a State Actions form from the Division of Oil, Gas and Mining concerning TXP's proposal to drill a well in Section 16, Township 39 South, Range 26 East, San Juan County. After review of the State Actions form and the cultural resources management report by Abajo Archaeology, our Division notes that archeological clearance was recommended by Abajo based on four items:

1. That alternate well TXP-2-16 is moved one hundred feet to the southwest of its intended location in order to avoid 42Sa16843.
2. Alternate well TXP-3-16 was counseled to avoid damage to site 42Sa16936.
3. Original access route cancelled to avoid 42Sa16846.
4. The planned alternate access road to follow an old seismographic trail to avoid impacting sites 42Sa1684 and 1645.

Considering these stipulations recommended by the contractor, our office believes the Division of Oil, Gas & Mining has an adequate report to recommend clearance for cultural resources. If you have any questions or concerns, please contact me or the assistant state archeologist, 533-4563.

Sincerely,

David Madsen
State Archeologist

DM:jrc:I063/1657V

Attachment #9



RECEIVED

MAY 21 1985

DIVISION OF OIL
GAS & MINING

MEMORANDUM

TO: John R. Baza
Division of Oil, Gas and Mining

FROM: Rod Millar *ROM*
Utah Energy Office

DATE: May 17, 1985

RE: TXP - Application for Permit to Drill

I am submitting the following comments to you on the proposed well to be drilled by TXP near Hovenweep National Monument:

- It is regrettable that the companies involved entered into a contractual agreement to drill this well during the peak tourist season at the monument. Much of the conflict with and impacts on visitor enjoyment at the National Monument would have been avoided by scheduling the drilling later in the season. Any future drilling permits on this lease should contain a stipulation requiring consideration be given to avoid this type of scheduling conflict.
- The APD clearly shows the type of well to be a GAS well. However, as discovered during the RDCC meeting, TXP is actually proposing to drill an oil well. While this may have been simply an error on the APD, the impact issues are quite different for an oil well. In particular, gas flaring during oil production may cause significant impacts on visitor use and enjoyment at Hovenweep N.M. State law limits the amount of gas that can be flared at producing oil wells primarily as a gas conservation measure. Because of the proximity of this well to the National Monument, any flaring of gas should be required to be the absolute minimum necessary for reasonable production. This is particularly critical during the peak tourist season at the monument (at least May through August). Increased gas flaring may be appropriate during the off-peak season if shown to be necessary for economic production.

John R. Baza
May 17, 1985
Page Two

Such impacts as gas flaring and the possible presence of a pumping unit will have long term (possibly for years) impacts on visitor use at the National Monument. Appropriate and reasonable mitigation measures should be employed if this situation develops.

- Requests for expedited RDCC review of proposed actions should be considered primarily to avoid or reduce impacts when timing is crucial to accomplish those ends. Expedited review merely to accommodate a proposed action, especially when the result is increased impacts, may not be appropriate. In this particular case, there are no exogenous factors requiring an expedited review; only those created by the applicants themselves.

Attachment #10



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

May 30, 1985

RDCC Coordinator
State Clearing House
124 State Capitol
Salt Lake City, Utah 84114

Gentlemen:

RE: Application for Permit to Drill Submitted By TXP Operating Company, for a Well in San Juan County, Utah

This letter will serve to summarize the Division of Oil, Gas and Mining staff's position concerning approval for the application for permit to drill, Well No. TXPOC-Square Tower 1-16, T.39S, R.26E, San Juan County, Utah. After reviewing both the application and comments received during the 15-day comment period allowed by the RDCC, it is the opinion of the Division staff that approval should be granted to drill the subject well based on a technical review of all available data. It appears that the action proposed by TXP Operating Company will promote development, prevent waste, and protect other valuable natural resources. The following paragraphs present a summary of the critical technical issues and concerns that were considered during the review process. Special stipulations of the approval to drill are also mentioned.

Well Location and Siting

The proposed well location complies with Rule C-3 (b) of the General Rules and Regulations of the Board of Oil, Gas and Mining. The rule states that any well drilled in an area for which special field orders have not been established shall be located a specific distance from lease lines and surveyed section lines. The rule is applied to all such wells in the state of Utah and has proven adequate in protecting the rights of various mineral owners and allowing operators who explore for oil and gas an equivalent advantage at exploiting their correlative share of the resource. Because of the proximity of the proposed well to a National Park boundary, special consideration was given to the potential of developing alternate locations, directional drilling, or otherwise locating the well a greater distance from the National Monument. However, TXP Operating Company has maintained that the proposed well location is the most desirable considering the ultimate resource development, the interpretation of the geologic structure, and the inherent risk of drilling for oil in alternative locations. Therefore, it is the Division staff's opinion that the proposed well location is appropriate because it does not violate any rule or order of the Board.

Underground Water Protection

A review of the application show it to be in compliance with Rules C-8, C-9 and C-18 of General Rules and Regulations. The application states that surface casing is to be set to the depth of 2300' which is sufficient to prevent contamination of national monument water supply well drilled to a depth of 1437'. A special stipulation of the approval shall be that adequate cement must be placed behind the casing to prevent foreign fluid migration into a fresh water aquifer. In addition, if it is determined that the well must be plugged and abandoned the Division shall stipulate proper plugging requirements to ensure protection of underground water.

Blowout Prevention Equipment and Contingency

The proposed action is in compliance with Rule C-8, C-15 of General Rules and Regulations. It has been determined that blowout prevention equipment is adequate considering both the anticipated depths and pressures and established procedure in the area. The application indicates that no abnormal pressures are anticipated. It has also been determined that the mud program and casing program to be used in drilling the well are sufficient for the anticipated pressures to be encountered.

Hydrogen Sulfide Gas Considerations

The application states that no H₂S gas is anticipated. Established practice in the area indicates that H₂S formations will not be encountered by the drilling of this well. Specifically, the surface use plan submitted to the Division indicates that the total depth of the well will still be more than 2000' feet above any possible hydrogen sulfide in the Mississippian zone. However, TXP Operating Company has indicated that hydrogen sulfide protection equipment and contingency plans will be in effect during the drilling of the well. A sample H₂S contingency plan has been submitted to the Division; and, upon approval of the well, a site specific contingency plan will be received, reviewed, and approved by the Division before beginning the drilling of the well. Additional information supplied with the surface use plan indicates that the well is located such that prevailing winds place the well location down wind from the national monument.

Location Construction

The review of the application indicates that the reserve pit will be excavated and lined to adequately protect against

surface and underground water contamination. The surface use plan states that a plastic liner will be used to prevent migration of drilling fluids into the underground water system. Also, the capacity of the reserve pit will be at least twice of what is required during normal drilling operations, allowing ample contingency in the event that additional fluid is produced from the well.

Reclamation Plans

The application states that depending on whether the well is placed on production or plugged and abandoned, all or a portion of a location will be properly reclaimed. Recontouring and reseeding of the location is planned and specifics are indicated in the surface use plan. Any facilities used for production will be painted to blend with surrounding environment. In consideration of comments received from the National Parks Service, Division staff will consult with the National Parks Service to determine the appropriate color of any producing facilities to be placed on location. In addition, the surface use plan has indicated that dikes will be used to protect from any spillage or leakage from surface production facilities.

Gas Flaring or Venting

A stipulation of the approval to drill will indicate that gas produced in conjunction with drilling and testing operations shall be conducted to a safe distance from the wellhead and flared. In addition, any gas produced in conjunction with oil production operations shall be flared or vented in compliance with Rule C-27 of General Rules and Regulations. TXP Operating Company has agreed to construct bunkers to prevent any excessive visual impact of gas flaring or venting. An additional stipulation of approval shall indicate that the bunkers will be of such dimensions to prevent any direct viewing of a gas flare from the National Monument at any time during drilling or production operations.

Other Factors

An archeological review and clearance is being coordinated through the Division of State History. Preliminary review has indicated that there are no potential conflicts with the proposed access road and well location in terms of existing archeological sites. Access routes and right of way have been cleared through the Bureau of Land Management and by representatives of the State Division of Lands and Forestry. It is the opinion of the Division staff that noise could be

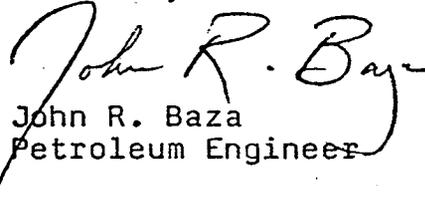
Page 4
RDCC Coordinator
May 30, 1985

reduced by locating the well farther from the park boundary; however, visual impact will not necessarily be alleviated due to the low relief of aeral topography. Because of the previously mentioned reasons, it has been determined that no great benefit would occur from moving the well farther from the National Park boundary.

It is the opinion of the Division staff that the proposed scheduling of drilling of the well is in direct conflict with the maximum tourist use of the national monument. It would be desirable for the timetable of drilling to be shifted by as much as 60 to 120 days as long as weather conditions did not prohibit drilling of the well. However, TXP Operating Company has maintained that if the well is not spudded by the date which they have proposed, that the well may not be drilled which could preclude development of the resource. Therefore, does not create any significant health or safety concerns, nor it is in violation of any rule or order of the Board, is it the opinion of the Division staff that the application to drill should be approved.

Comments received to date have been well appreciated by the Division staff as they provide a basis for a competent technical review of the application to drill. It is felt that TXP Operating Company's proposed action is technically complete and sufficient to protect precious mineral resources, promote development of oil and gas within the State of Utah, prevent waste and protect other valuable natural resources. The Division staff would appreciate any further comment and will appropriately review any comments received as preparation for drilling of the proposed well continues. Thank you for timely consideration of this matter.

Sincerely


John R. Baza
Petroleum Engineer

sb
cc: D.R. Nielson
R.J. Firth
Well File
0090T-98-101

Attachment #11



NORMAN H. BANGERTER
GOVERNOR

DC
ED

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE (801) 533-5755

May 31, 1985

Ms. Diane Nielson Director
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite #350
Salt Lake City, Utah 84101

RE: Application for Permit to Drill, Well No. TXPOC-Square Tower 1-16

In Reply Refer to Case No. I063

Dear Diane:

The Division of State History has had the provision of State Law (UCA 63-18-37) called to its attention. "Any agency of this state proposing projects which will destroy, materially effect or aesthetically diminish any district, site, building or object included on, or eligible for, the state or national registers referred to herein shall, at an early planning stage and before construction is commenced, notify the state historical preservation officer to allow the committee an opportunity to review the recommendations regarding such construction, and to suggest alternative plans which will preserve such district, sites, buildings, or objects."

The concerns expressed relates to I063 our case file number-permit to drill well No. TXPOC-Square Tower 1-16, a project to drill for oil in close proximity to Hovenweep National Monument. Dr. David B. Madsen's letter of 21 May 1985 has responded to other provisions in state laws, but did not address the specific concern for aesthetic impact on Nation Register sites, which Hovenweep is classified as, being a National Historic Monument.

Since a drilling project in close proximity to that National Monument likely would aesthetically diminish that site, we feel the provisions of UCA 63-18-37 do apply. Therefore, we would advise your agency to "notify the state historic preservation officer to allow the committee (Historic and Cultural Sites Review Committee-UCA 63-18-35) an opportunity to review the recommendations regarding such construction and to suggest alternative plans which will preserve such district, sites, buildings or objects."

We interpret the committee's prerogatives to be restricted to recommendations of alternatives, not to prohibition of such projects. We shall respond as promptly as possible to such a request from you.

We appreciate the excellent cooperation we have had from you and your staff.
Call me if there are questions.

Sincerely,



Melvin T. Smith
Director, Division of State
History and State Historic
Preservation Officer

cc: Mike Christensen
Milo Barney

Attachment #12



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 3, 1985

Mr. Melvin T. Smith, Director
Division of State History and
State Historic Preservation Officer
Department of Community and Economic Development
300 Rio Grande
Salt Lake City, Utah 84101-1182

Dear Mel:

RE: Application for Permit to Drill, TXPOC Well No. Square
Tower 1-16

This letter concerns your correspondence of May 31, 1985, regarding the above-referenced well application. It is the Division's position that the Division of State History and, you as its' Director and State Historic Preservation Officer, received notification in accordance with UCA 63-18-37, in the form of RDCC notices. The Division has checked with Carolyn Wright of State Planning and Budget, who confirms that notice was sent concerning this well.

The Division of Oil, Gas and Mining is interested in the comments of the Historic and Cultural Sites Review Committee. We will consider those recommendations as part of our review if they are received by 5 p.m. on Friday, June 14, 1985. This is the date upon which comments would have been received by RDCC under the 45-day comment period.

Thank you for your interest in this issue. If you have any questions, please contact me.

Best regards,

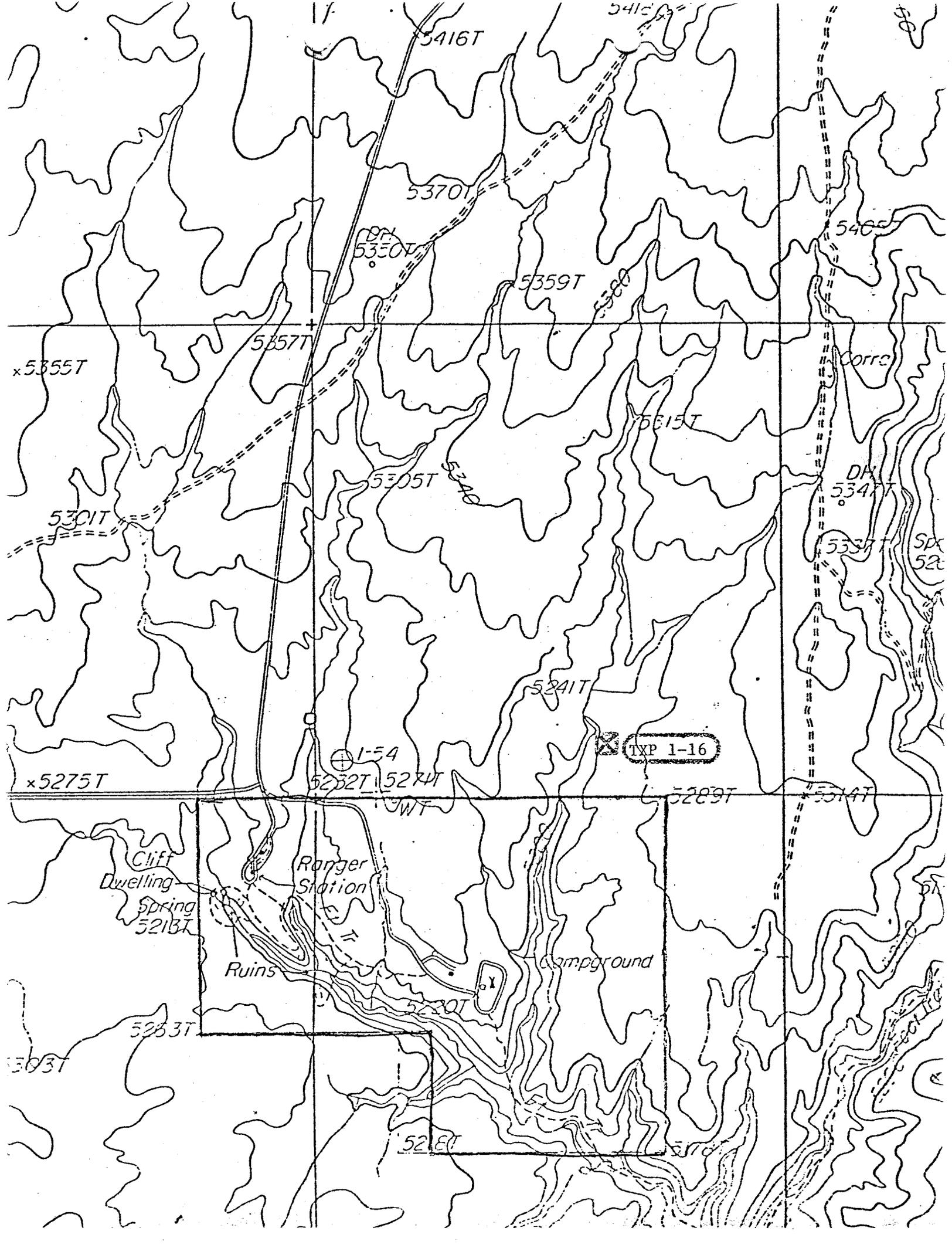
A handwritten signature in cursive script, appearing to read 'Dianne'.

Dianne R. Nielson
Director

cc: M. Christensen, RDCC
C. Wright, RDCC
M. Barney

TXD

Attachment #13





STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

55 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-536-5340

June 3, 1985

Mr. Melvin T. Smith, Director
Division of State History and
State Historic Preservation Officer
Department of Community and Economic Development
300 Rio Grande
Salt Lake City, Utah 84101-1182

Dear Mel:

RE: Application for Permit to Drill, TXPOC Well No. Square
Tower 1-16

This letter concerns your correspondence of May 31, 1985, regarding the above-referenced well application. It is the Division's position that the Division of State History and, you as its' Director and State Historic Preservation Officer, received notification in accordance with UCA 63-18-37, in the form of RDCC notices. The Division has checked with Carolyn Wright of State Planning and Budget, who confirms that notice was sent concerning this well.

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Thank you for your interest in this issue. If you have any questions, please contact me.

Best regards,

Dianne R. Nielson
Director

cc: M. Christensen, RDCC
C. Wright, RDCC
M. Barney



NORMAN H. BANGERTER
GOVERNOR



STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

May 31, 1985

Ms. Diane Nielson Director
Division of Oil, Gas and Mining
305 West North Temple
3 Triad Center, Suite #350
Salt Lake City, Utah 84101

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801 / 533-5755

RE: Application for Permit to Drill, Well No. TXPOC-Square Tower 1-16

In Reply Refer to Case No. 1063

Dear Diane:

The Division of State History has had the provision of State Law (UCA 63-18-37) called to its attention. " Any agency of this state proposing projects which will destroy, materially effect or aesthetically diminish any district, site, building or object included on, or eligible for, the state or national registers referred to herein shall, at an early planning stage and before construction is commenced, notify the state historical preservation officer to allow the committee an opportunity to review the recommendations regarding such construction, and to suggest alternative plans which will preserve such district, sites, buildings, or objects."

The concerns expressed relates to 1063 our case file number-permit to drill well No. TXPOC-Square Tower 1-16, a project to drill for oil in close proximity to Hovenweep National Monument. Dr. David B. Madsen's letter of 21 May 1985 has responded to other provisions in state laws, but did not address the specific concern for aesthetic impact on Nation Register sites, which Hovenweep is classified as, being a National Historic Monument.

Since a drilling project in close proximity to that National Monument likely would aesthetically diminish that site, we feel the provisions of UCA 63-18-37 do apply. Therefore, we would advise your agency to " notify the state historic preservation officer to allow the committee (Historic and Cultural Sites Review Committee-UCA 63-18-35) an opportunity to review the recommendations regarding such construction and to suggest alternative plans which will preserve such district, sites, buildings or objects."

We interpret the committee's prerogatives to be restricted to recommendations of alternatives, not to prohibition of such projects. We shall respond as promptly as possible to such a request from you.

We appreciate the excellent cooperation we have had from you and your staff.
Call me if there are questions.

Sincerely,



Melvin T. Smith
Director, Division of State
History and State Historic
Preservation Officer

cc: Mike Christensen
Milo Barney



United States Department of the Interior

NATIONAL PARK SERVICE

Mesa Verde National Park
Colorado 81330

IN REPLY REFER TO:

L30 (MEVE-S)

May 9, 1985

RECEIVED

MAY 13 1985

DIVISION OF OIL
GAS & MINING

Mr. Pat deGruyder
Utah, Division of Oil, Gas and Mining
Department of Natural Resources
616 Hunt Ridge
Moab, Utah 84532

Dear Mr. deGruyder:

We appreciated the opportunity to meet last week with you and Mr. Baker on the site of the oil well proposed by Transco Exploration Company near the north boundary of the Square Tower unit of Hovenweep National Monument.

As we agreed, we would reduce our concerns to written form so that your organization can reach a decision on drilling permit stipulations with proper input from the National Park Service. We have nine points of concern which we would like considered in the permitting and approval process.

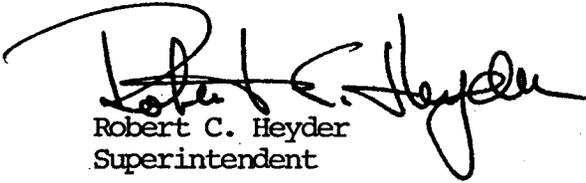
1. The road to the preferred drilling site TXP 1-16 was to be constructed along the north boundary fence of the Square Tower unit. This road, according to Transco representative, Mr. Robert McKenzie, was to be constructed with a 30 foot right-of-way. It would be used by large trucks to haul pipe and equipment during the drilling stage, and later, if the well proved productive, to haul oil off the lease. As we explained last week, such a road along the north boundary of the monument would be a visual intrusion on the park and would present traffic control problems where the exit to the county road is at the monument entrance. The present location of the proposed access road is also in conflict with the development plans for the monument which include relocating the ranger contact station.
We were most pleased with the agreement reached Friday to use the seismic road as an access to the drilling sites of TXP 1-16 and 2-16. This will alleviate our concerns about the construction of a road along the north boundary.
2. We do have serious health and air quality concerns about hydrogen sulfide gas. We feel that to protect the park staff in residence and the park visitors in the campground, a predrilling contingency plan for both the drilling and possible subsequent production period is needed. That plan should include the method proposed for monitoring and for reacting to any encounters with hydrogen sulfide, including warning the staff and park visitors of any potential danger.

3. If the site proves unproductive or after the well begins production, the site should be developed to restore the native flora. We are concerned that only native species, local to the area, be used in any reclamation program. We would be most happy to work on the development of such a program.
4. It is our understanding that the pit will be lined and the site diked in a manner that will prevent any spill or flow of waste into the drainage that passes through the monument. Further, if such a flow does occur, we ask that Transco Exploration Company be responsible for restoring the drainage to my satisfaction and use methods prescribed by me or my representative at the monument.
5. We understand that the State will provide for the necessary blowout prevention contingencies as part of the permitting process.
6. It is our understanding gas may have to be flared during drilling but once the well is producing, Transco, as a matter of routine operation does not flare. Instead the gas will be used in the operation of the production equipment. We would appreciate a stipulation ensuring no flaring or venting of gas except as an emergency procedure.
7. Since the monument water supply well is 1437 feet deep and is approximately 3000 feet from the proposed 1-16 well, we have concerns whenever a new well penetrates the formation which is the source of water to the monument. It is our understanding that state regulations require the well be drilled and cased in a manner that will protect and seal off the fresh water formations from contamination. We ask that Utah inspect the well while casing and cementing to ensure that proper precautions are taken to protect the public interest.
8. Considering the close proximity of the well site to the monument resources, it would be appreciated if the unit manager at Hovenweep NM could be notified of and accompany state well inspectors or other personnel on visits to the site.
9. Also, due to the close proximity and visual line of sight between the monument and the well, the park service would like to have input into the color of production facilities that will be used, should the well prove productive.

Your consideration of our above concerns will be greatly appreciated. In addition to the above concerns, we feel the State, due to our discussion last Friday, recognizes the potential that the proposed well may tap federal reserves since it is so close to the monument boundary. This question will be dealt with if the well proves productive and the size of pool is determined.

If we can be of any assistance, please feel free to contact me at (303)529-4465.

Sincerely yours,



Robert C. Heyder
Superintendent

cc:

Regional Director, Rocky Mountain Region w/enc.
Don Gillespie, Assistant to the Regional Director
for Utah w/enc.

William J. Lockhart
P.O. Box 8672
Salt Lake City, UT 84108
Attorney for
The National Parks and Conservation Association

MAY 10 1985

DIV. OIL, GAS, MINING

BEFORE THE BOARD OF OIL, GAS AND MINING,

STATE OF UTAH

In re Application for Permit to Drill)	
by TXP OPERATING COMPANY)	PETITION FOR LEAVE
for Well No. TXPOC - Square Tower -16)	TO INTERVENE
on State Lease ML-36203)	

The National Parks and Conservation Association ("Petitioner") hereby moves the Board for permission to intervene in all proceedings for consideration of the above-entitled Application for Permit To Drill filed on behalf of TXP Operating Company under date of April 25, 1985. In support of this motion, Petitioner submits that:

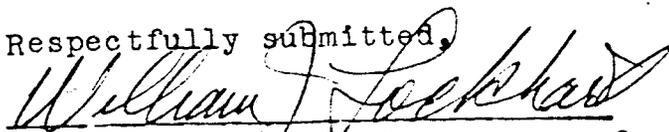
1. The National Parks and Conservation Association is a national membership organization, with an active paid membership in the State of Utah, devoted to the protection, preservation and wise use of our national parks. Members of the National Parks and Conservation Association use and enjoy Hovenweep National Monument, including areas of the Monument adjacent to the drilling and road construction proposed under the above Application. The Rocky Mountain Regional Representative of the National Parks and Conservation Association, Terri Martin, is officed

in Salt Lake City, Utah; and her business address is at P.O. Box 1563, Salt Lake City, UT 84110.

2. The National Parks and Conservation Association seeks to intervene in the above Application proceeding in order to present its concerns about the impact of the proposed drilling activity upon Hovenweep National Monument and upon the experience of its members and other persons visiting the Monument. In particular, NPCA seeks opportunity to present concerns about the Applicant's proposals for drilling and road construction in close proximity to the Monument, possible effects upon features of the Monument from drilling and road construction, and risks of hydrogen sulphide release in close proximity to Monument visitors. NPCA will request the Board's consideration of appropriate modifications of the proposed drill site and related activities in order to minimize the impact and risk from those activities.

3. It is requested that NPCA be granted a brief extension of time within which to supporting materials and argument.

Respectfully submitted,

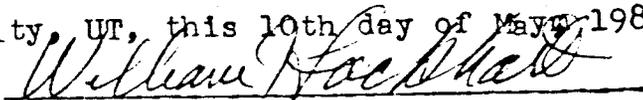


William J. Lockhart, Attorney for
The National Parks and
Conservation Association

Proof of Service

I hereby certify that I have this day served the foregoing instrument upon all parties of record in this proceeding known to the undersigned by mailing a copy thereof, properly addressed with postage prepaid, to TXP Operating Company, P.O. Box 1396, Houston, TX 77251.

Dated at Salt Lake City, UT, this 10th day of May, 1985.



William J. Lockhart

STATE ACTIONS

14 01 09

to: A-95 Coordinator, State Clearinghouse, 124 State Capitol, SLC, Utah 84114, 533-4971

Applicant

DIVISION OF OIL, GAS AND MINING
355 WEST NORTH TEMPLE
3 TRIAD CENTER, SUITE # 350
SALT LAKE CITY, UTAH 84180-1203

2. State Application Identifier Number

3. Approximate date project will start

JULY 1, 1985

Areawide clearinghouse(s) receiving copy of STATE ACTION: (to be sent out by applicant)

Southeastern Utah Association of Local Governments

Type of action: Lease Permit License Land Acquisition
 Land Sale Land Exchange Other: _____

Title of proposed action: Application for Permit to Drill, TXP Operating Company, Well No. TXPOC-Square Tower 1-16

Description:

TXP Operating Company proposes to drill a well to explore for gas in Sec. 16, T.39S, R.26E, San Juan County. The proposed well site is located on State land adjacent to Hovenweep National Monument. Predrill site inspections and archeological surveys have been performed.

TXP Operating Company representative: John Rosata (713) 439-3506

3. Land affected (Site location map required) (Indicate county)

Section 16, T.39S, R.26E, San Juan County

9. Has the city/county been contacted regarding necessary zoning & building permits? No

10. Possible significant impacts likely to occur:

Archeological clearance from Division of State History is pending. It is anticipated that surface location preparation and access road construction will create minimal disturbance for campers and tourists to Hovenweep National Monument. Drilling rig operations likewise will create minimal disturbance.

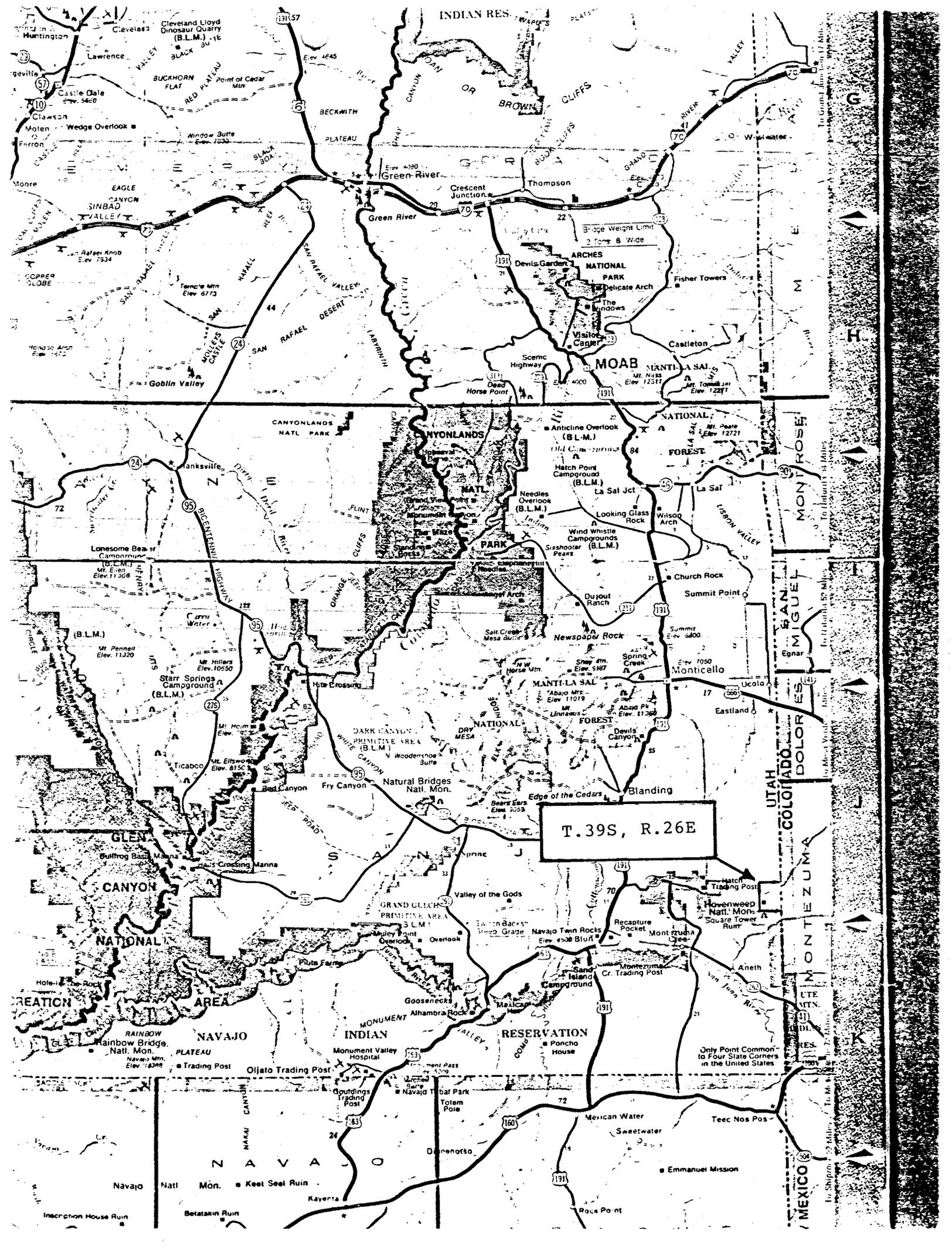
11. Name and phone number of district representative from your agency near project site, if applicable. None

2. For further information, contact:

John R. Baza, R.J. Firth
Phone: 538-5340

13. Signature and title of authorized official

John R. Baza JOHN R. BAZA. PETROLEUM ENGR
Date: 5/6/85



T. 39S, R. 26E

UTAH
COLORADO
NEW MEXICO
ARIZONA

To Grants, 11 Miles
To Hatch, 30 Miles
To Monticello, 17 Miles
To Shiprock, 22 Miles
To Mabel, 11 Miles
To Hatcher's 5 Miles
To Hatch, 30 Miles
To Mabel, 11 Miles
To Shiprock, 22 Miles
To Hatcher's 5 Miles

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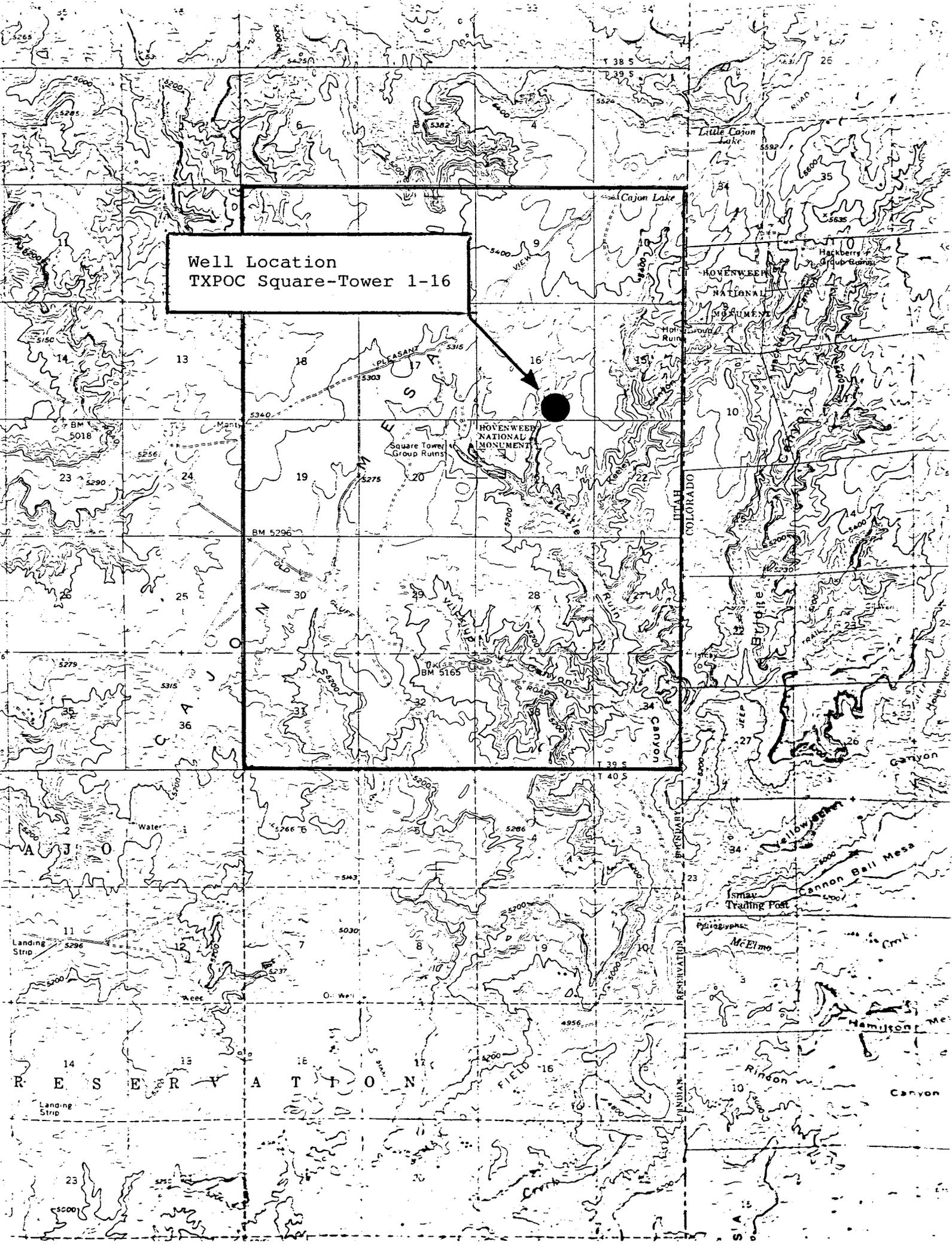
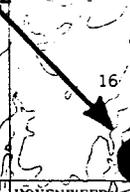
M

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O

P

Well Location
TXPOC Square-Tower 1-16



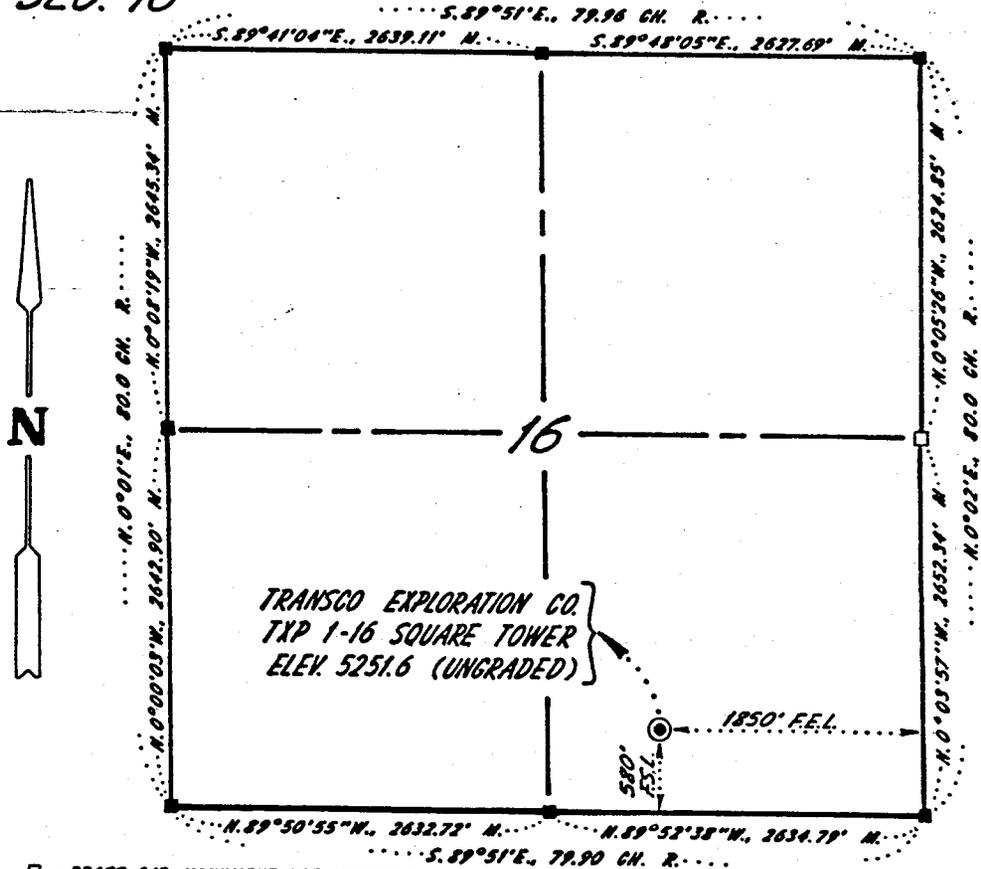


PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809

T.39S., R.26E., S.L.B. & M., SAN JUAN CO., UTAH
SEC. 16



- = BRASS CAP MONUMENT NOT ACCEPTED
- = FD. GOV'T BRASS CAP MONUMENT
- R = RECORD DATA
- M = MEASURED DATA THIS SURVEY

SCALE: 1" = 1000'

⊙ = SURVEYED WELL LOCATION

SURVEYORS CERTIFICATE

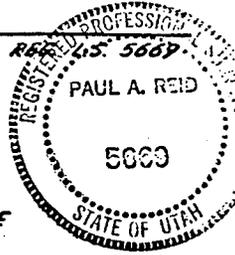
STATE OF WYOMING)
COUNTY OF NATRONA) S.S.

BASIS OF BEARINGS - SOLAR OBSERVATION IN THE
NW 1/4 OF SEC. 16 - BEARINGS EXHIBITED ARE PLANIMETRIC

PLATTED FIELD NOTES OF A SURVEY
MARKING WELL LOCATION
TYP 1-16 SQUARE TOWER
SW 1/4 SE 1/4 SEC. 16, T.39S., R.26E.,
SALT LAKE BASE & MERIDIAN,
SAN JUAN CO., UTAH

I, PAUL A. REID, HEREBY STATE THAT I AM A REGISTERED LAND SURVEYOR IN THE STATE OF UTAH UNDER THE PROVISIONS OF UTAH LAW. I FURTHER STATE THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME ON APR. 9, 1985 FOR THE PURPOSE OF AN APPLICATION FOR PERMIT TO DRILL. ANY OTHER USE OF THIS PLAT WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SURVEYOR IS PROHIBITED.

Paul A. Reid
PAUL A. REID UTAH REGISTERED LAND SURVEYOR



UNGRADED ELEVATIONS OF REFERENCE POINTS SET WITH 12" x 3/8" SPIKES.

NORTH	2000 FEET	5249.5
SOUTH	"	5250.5
EAST	"	5274.2
WEST	"	5236.7

JOB NO.: 029-04 85
DATE: APRIL 15, 1985
NOTES: LOOSELEAF IN FILE

BASIS OF ELEVATIONS: U.S.G.S. 15' QUAD.
"CAJON MESA", UTAH-COLORADO, BENCHMARK
D-63 IN THE NW 1/4 SEC. 30, PRINTED
ELEV. 5296

TRANSCO EXPLORATION COMPANY
DRILLING PROGNOSIS

1. Surface Formation:

Cretaceous Dakota Undifferentiated

2. Formation Tops:

Ground Elevation: 5251.6 (ungraded)

A. Burro Canyon	13'
B. Morrison	76'
C. Summerville	1033'
D. Entrada	1067'
E. Carmel	1206'
F. Navajo	1227'
G. Kayenta	1469'
H. Wingate	1535'
I. Chinle	1965'
J. Shinarump	2712'
K. Moenkopi	2802'
L. Cutler	2956'
M. Honaker Trail	4716'
N. Paradox	5201'
O. Sitton	5598'
P. Upper Ismay	5811'
Q. Horenweep Shale	5909'
R. Lower Ismay	5911'
S. Gothic Shale	5951'
T. Upper Desert Creek	5959'
U. Lower Desert Creek	6025'
V. Chimney Rock Shale	6044'
W. Akah	6060'
X. Salt	6091'
Y. Total Depth	6100'

3. If any water zones are encountered, they will be adequately protected and reported; none are anticipated. The 2300' at surface casing will protect any near surface fresh water zones.

4. Casing and Cement Program (All new casing)

<u>Hole Size</u>	<u>Interval</u>	<u>Size</u>	<u>Weight/Grade</u>	<u>Cement Type</u>
12-1/4"	0-2300'	13-3/8"	Culvert	Preset
7-7/8"	2300-6100'	9-5/8"	36#, K-55	Halliburton Light & "B"
		5-1/2"	17#, N-80	Halliburton Light & "H"

TRANSCO EXPLORATION COMPANY
 DRILLING PROGNOSIS
 (Page 2)

5. Minimum Pressure Control Equipment: (Schematic Attached)

Type: 10" -900 series (Double gate hydraulic with manual and central controls)
 Pressure Rating: 3000 psi
 Testing Procedure: Equipment will be pressure tested to 70%. Interval yield strength surface casing and operational checks will be made daily and recorded on tour sheets.

6. Mud Program: (Visual Monitoring)

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Weight ppg</u>	<u>Viscosity</u>	<u>W.L.</u>
0-2300	Water, Gel	8.33 - 9.0	25 - 35	N.C.
2300-9600	LSND	9.0 - 10.5	35 - 45	10 - 20 cc

Sufficient mud inventory will be maintained on location during drilling to handle any adverse conditions that may arise. Mud inventory to be stockpiled on location will not be less than the amount needed for the mud system as required to drill the well.

7. Auxiliary Equipment:

- A. A lower kelly cock will be kept in the string at all times.
- B. Periodic checks will be made each tour of the mud system.
- C. A stabbing valve will be kept on the floor to be stabbed into the drill pipe, whenever the kelly is not in the string.
- D. No bit float will be used.
- E. Monitoring of the mud system will be visual and flow sensor device.

8. Evaluation Program:

<u>Logs:</u>	<u>2100' - 0'</u>	<u>6100' - 2100'</u>	<u>6100' - 5700'</u>
	GR	DIL/SONIC FDC/CNL with GR Proximity minilog BHC acoustilog - GR- caliper	HRD

Cores:

1. One core in Upper Ismay (5811' - 5905')
2. One possible core in Lower Desert Creek (6025' - 6044')

DST:

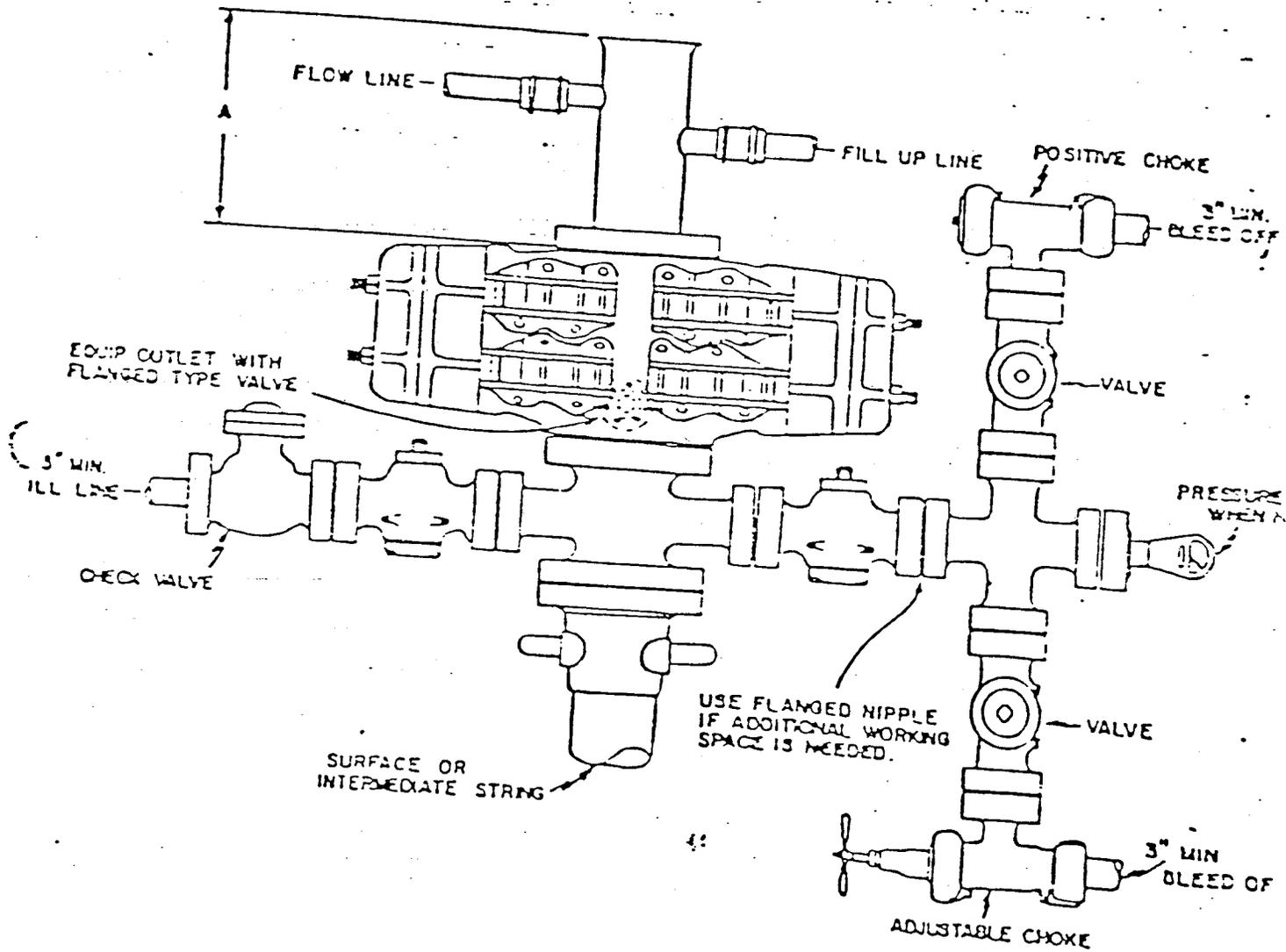
1. Upper Ismay (5811'-5905')
2. Possible Lower Ismay (5911'-5951')
3. Possible Desert Creek (6025'-6044')
4. Possible Honaker Trail (4710'-5811')

9. Abnormal Conditions:

H₂S equipment will be in operation 4700', Honaker Trail, as a precautionary measure as no H₂S is expected. It is not anticipated that abnormal temperatures, pressures or toxic gases will be encountered.

10. Drilling Activity:

Anticipated Commencement Date:	July 15, 1985
Required Drilling Days:	Approximately 30 Days
Required Completion Days:	Approximately 30 Days



BLOWOUT PREVENTER

9-10 inch

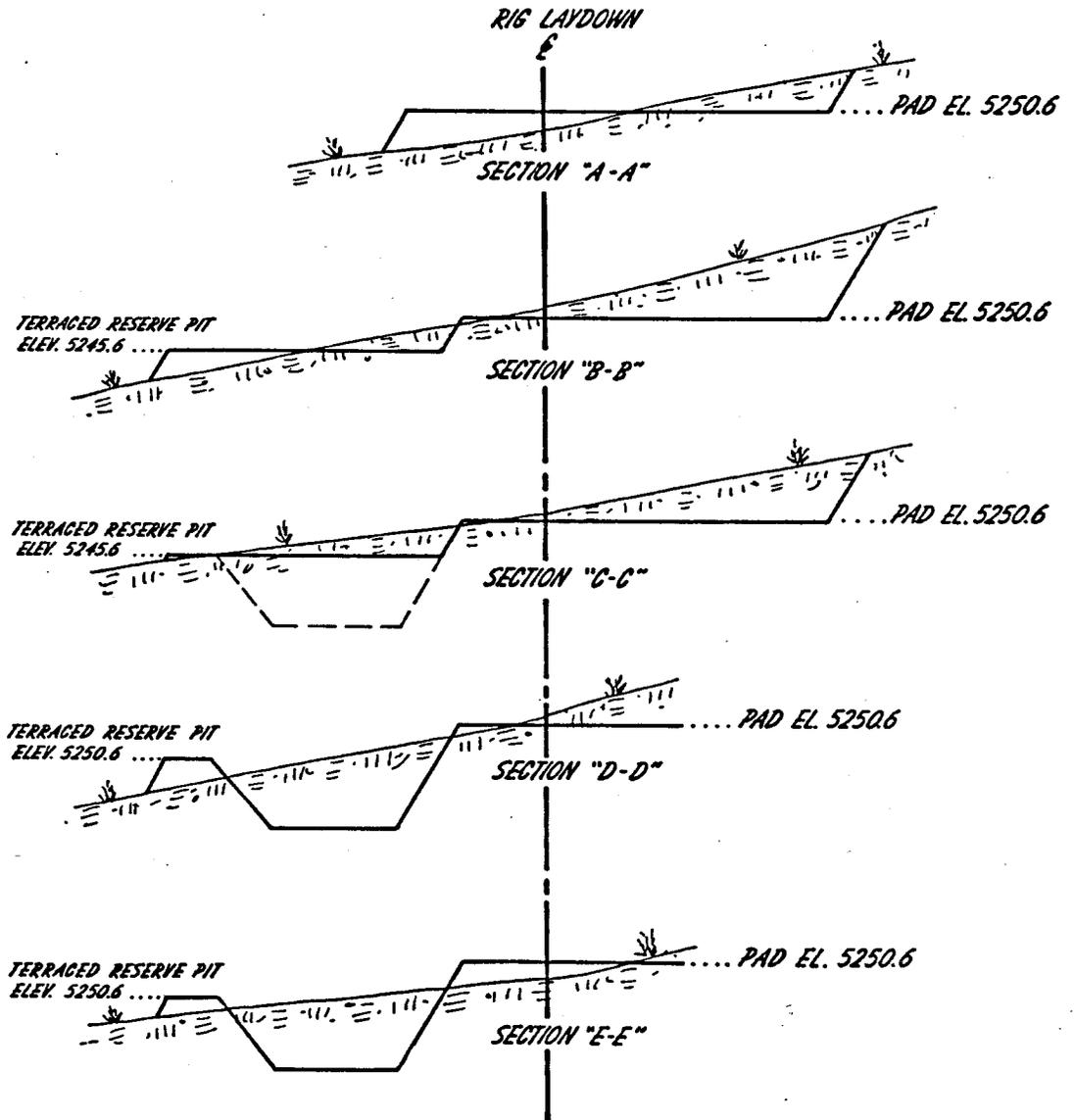
3000 psi



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



APPROXIMATE EARTHWORK VOLUMES

<u>PAD</u>		<u>RESERVE PIT</u>	
CUT	4,860 CU. YDS.	CUT	2,695 CU. YDS.
FILL	4,775 " " AT 15%	SPOIL	2,695 " "
SPOIL	85 " " SHRINKAGE	CAPACITY	12,960 BARRELS AT 10" DEPTH
TOPSOIL	1,780 " " AT 9" DEPTH		

PROPOSED PAD AND RESERVE PIT CROSS-SECTIONS

TRANSCO EXPLORATION CO.
TWP 1-16 SQUARE TOWER

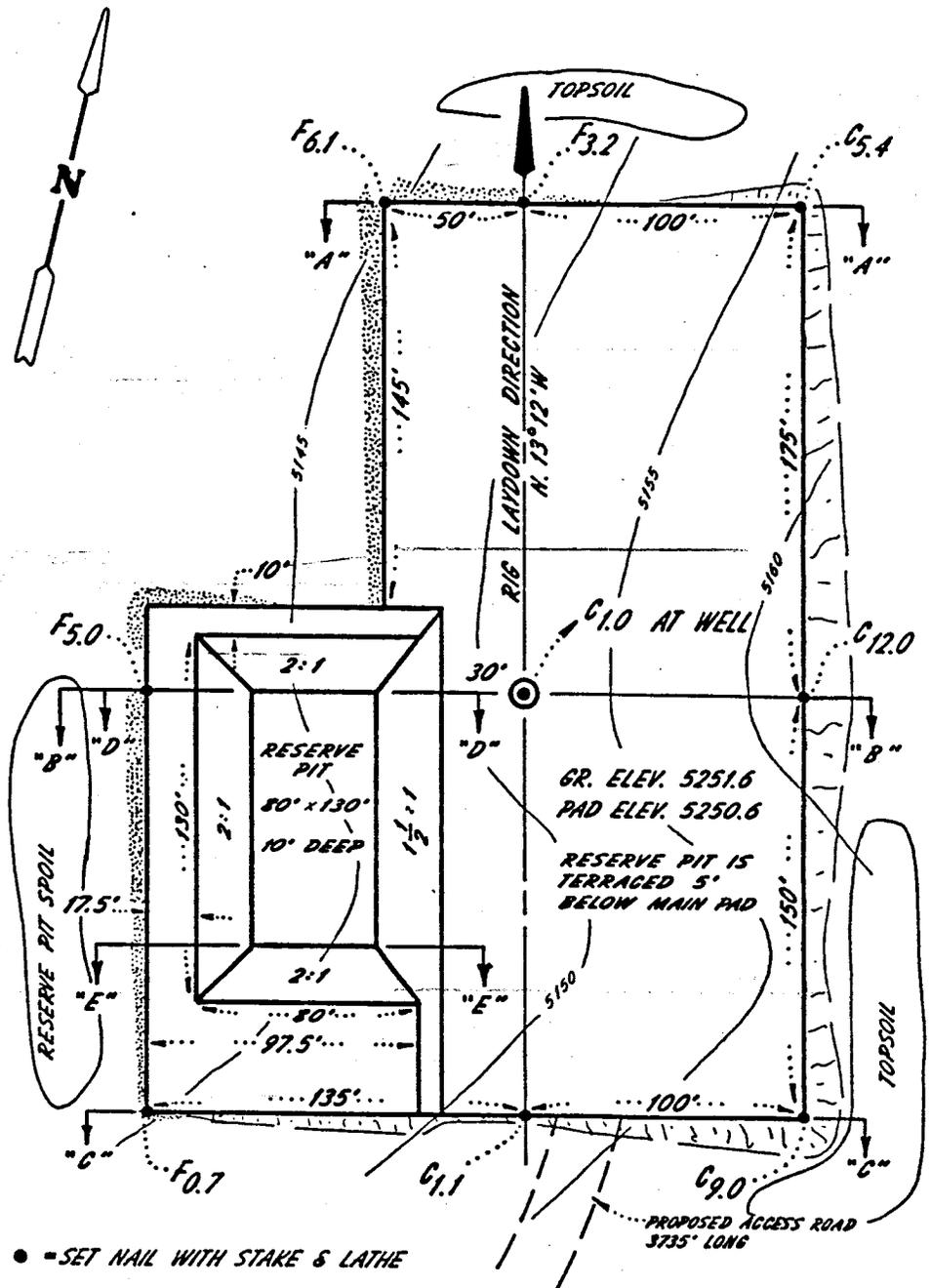
SCALE: 1" = 50' HORIZ.
1" = 20' VERT.



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



GENERAL WELLSITE TOPOGRAPHY

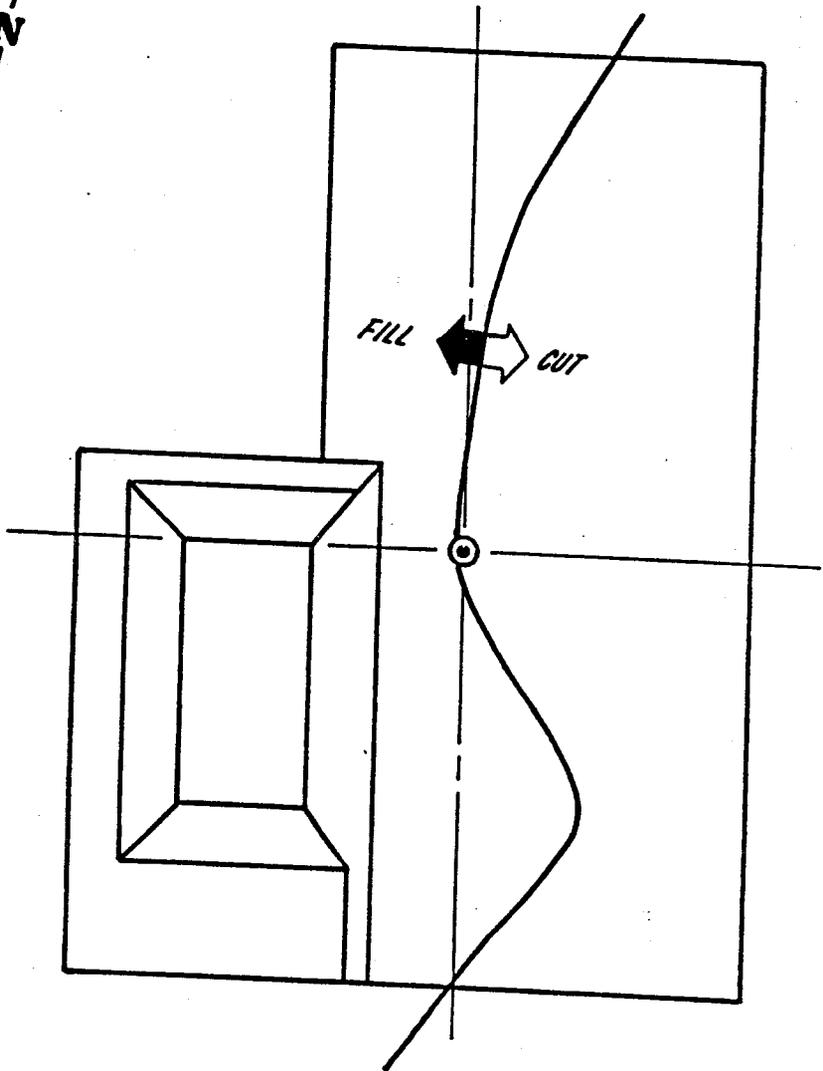
TXP 1-16 SQUARE TOWER
580' F.S.L., 1850' F.E.L., SEC. 16,
T.39S., R.26E., S.L.B.&M.
SAN JUAN CO., UTAH
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



PROPOSED PRODUCTION FACILITIES

TRANSCO EXPLORATION CO.

TXP 1-16 SQUARE TOWER

SCALE: 1" = 50'



TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

One United Bank Center
1700 Lincoln, Suite 2100
Denver, Colorado 80203
303-863-3600

May 13, 1985

RECEIVED

MAY 13 1985

DIVISION OF OIL
GAS & MINING

Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

ATTN: Mr. Ronald J. Firth,
Associate Director of Oil & Gas

RE: TXP's Square Tower Prospect
TXP #1-16 Square Tower Well
Township 39 South, Range 26 East
Section 16: SW/4SE/4
San Juan County, Utah

Gentlemen:

On April 10, 1985, Transco conducted an on-site meeting to stake the subject well location and to further determine the access route to the proposed location. In addition to Transco's representatives at this meeting, Mr. Pat DeGruyter of your Moab Office and Mr. Stan Baker with the State Lands and Forestry Office were also in attendance. At this meeting, Transco proceeded to stake the subject well location, and the determination was made to access the location off of the existing county road and enter Section 16 at the southwest corner and proceed along the southern border to the actual location.

Transco's Denver Office was subsequently contacted the week of April 29, 1985 by Mr. Pat DeGruyter, advising that his office had been contacted by the National Park Service which is the managing agency for the Hovenweep National Monument which is situated south of the proposed well location. The National Park Service had raised questions concerning Transco's proposed access to the location, and had requested that Mr. DeGruyter meet with their representative, Mr. Robert Heyder so that they could possibly present Transco with an alternate access route. Representatives from Transco met with Mr. Heyder and Mr. DeGruyter on May 3, 1985. At that time, the National Park Service had suggested that Transco access the proposed location from an existing seismic road which could be entered from the mid point of the northwest corner of Section 16. Additional concerns were expressed by the National Park Service. Transco was to review the objections and in addition set up another on-site and arrange for an archeologist to clear the drillsite as well as the new access route.

On May 8, 1985, an additional on-site meeting was held with representatives from the National Park Service and the Oil & Gas Commission. Ms. Debbie Foldi with Abajo Archeological Services verbally advised Transco that the proposed access route would be acceptable. Ms. Foldi's report will be available the week of May 13th, 1985. During this meeting, the additional issues that were

previously raised by the National Park Service were discussed and resolved on a preliminary basis.

On May 9th, 1985, Ms. Connie J. Goers of this office met with Ms. Lorraine Mintzmyer, the Regional Director of the National Park Service. Ms. Goers was provided a preliminary copy of the letter from Mr. Heyder, of the National Park Service directed to Mr. Patrick DeGruyter of the Moab Office with the Oil & Gas Commission. The issues involved in the subject letter were verbally discussed, and Transco respectfully submits its response to the following issues:

1. The National Park Service had questioned the original access route in which Transco had proposed to use to access the location. After conducting the additional on-site meeting, Transco has elected to access the location from approximately the midpoint of the westerly line of Section 16, as originally suggested by the National Park Service. Entering from this location will require Transco to build approximately 5,000 feet of road in lieu of 3200 feet of road; however, Transco feels that this will alleviate the National Park Services' concerns about the construction of an access road along the northern boundary of the monument.

2. The National Park Service raised concerns about Transco's drilling operations which they feel has the possibility of encountering hydrogen sulfide gas. As stated in Transco's drilling prognosis which was submitted with our Application to Drill; H₂S equipment would be in operation at a depth of 4700 feet as a precautionary measure. It is Transco's position that it will not encounter H₂S at its projected total depth of 6100 feet; however, Transco submits for your review an example of an H₂S Contingency Plan which is currently being prepared for the drilling and potential production operations on the proposed well location. It is anticipated that the H₂S Contingency Plan will be submitted for your review no later than May 17, 1985.

3. The National Park Service raised a concern that should the subject well location prove to be unproductive or should the well enter a production stage; that the site would be developed to restore the native flora. Reclamation of the subject location would be in accordance with the terms and provisions of the issued by the Oil & Gas Lease, State Lands and Forestry; in addition to regulations imposed by the State of Utah Oil & Gas Commission. Additional information concerning this matter is detailed in the Surface Use Plan which is also being submitted with this letter.

4. The National Park Service questioned the construction of the reserve pit and the possible overflow of waste into the drainage that passes through the monument. As detailed in the Surface Use Plan, the reserve pit will be lined and diked in a manner that complies with the regulations of the State of Utah Oil & Gas Commission.

5. The National Park Service was advised by Transco that it will comply with the State of Utah Oil & Gas Commission's regulations concerning blow-out preventions. Transco's prognosis for handling such a matter, should it be encountered, is more specifically detailed in the Application for Permit to Drill and the Surface Use Plan.

6. The National Park Service raised the issue of flaring gas should the well prove to be productive. Transco will comply with the State of Utah Oil & Gas Commission's regulations concerning the flaring of gas during testing operations. Should Transco need to flare gas during the testing period; it could possibly construct a bunker which would obstruct the glare of the gas flare. Concerning the disposition of gas once the well is put on production; Transco would most likely install a compressor to compress the gas and use as maintenance for the production facilities, or transport same off the premises for disposition.

7. The National Park Service has a water supply well which has been drilled to approximately 1,437 feet which is located approximately 3,000 feet from Transco's proposed well location. The Park Service expressed concern of Transco's well penetrating the same formation of its water well. As advised, and more specifically detailed on the application for permit to drill, Transco proposes to set approximately 2300 feet of 9 5/8ths inch surface casing in its proposed well. This amount of surface casing exceeds the amount required under the State of Utah Oil & Gas Commission's regulations.

8. The National Park Service has requested that the Unit Manager of Hoven Weep National Monument be given access to accompany the state inspector on visits to the well location site. Transco has no objection to this matter.

9. The National Parks Service has requested that it have the availability to input into the kind of production facilities that would be used, should the well be proved to be productive. As stated in our surface use plan, Transco will comply with the State Regulations governing such a matter.

In the closing of the National Park Service's letter, it additionally addressed the concerns that it recognizes the potential of the proposed well tapping federal reserves since it is closely located to the monument boundary. Transco would like to note that should this occur, it would consider the possibility of drilling a directional well into the National Monument, providing the National Park Service would be in the position to grant an oil and gas lease to Transco.

In closing, Transco desires to express that it has the same concerns as the National Park Service in retaining the environment as much as possible in its natural state.

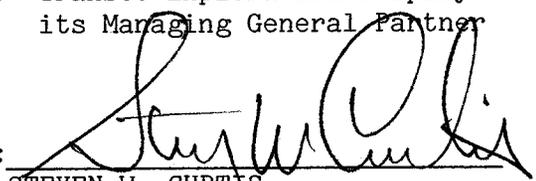
It has indeed been a pleasure and opportunity in meeting with representatives from the National Park Service, Oil & Gas Commission and State Lands and Forestry.

Division of Oil, Gas and Mining
May 13, 1985
Page Four

Should any of the above agencies have any additional questions or comments,
Transco would be pleased to respond.

Sincerely,

TXP OPERATING COMPANY,
a limited partnership
By: Transco Exploration Company
its Managing General Partner

By: 

STEVEN W. CURTIS
Regional Land Manager

CJG:SWC:cl



TXP Operating Company
Transco Exploration Company, Managing General Partner

2800 Post Oak Boulevard
P. O. Box 1396
Houston, Texas 77251
713-439-2000

April 29, 1985

State of Utah
Natural Resources and Energy
Division of Water Rights
74 West Main
Price, Utah 84501

Attention: Mark Page

Regarding: Application to Appropriate Water
TXP #1-16 Square Tower Well
Section 16, T39S, R26E
San Juan County, Utah

Gentlemen:

Attached in duplicate is an Application to Appropriate Water and a check in the amount of \$15.00 for the permit fee. This water is to be used for the purpose of exploratory drilling of the above referenced well.

If you require additional information, please contact me at (713) 439-3502.

Sincerely,

TXP OPERATING COMPANY
By: Transco Exploration Company
its Managing General Partner

John Rosata, Jr. - Supervisor
Regulatory and Environmental Affairs

JRJ/CS/lb

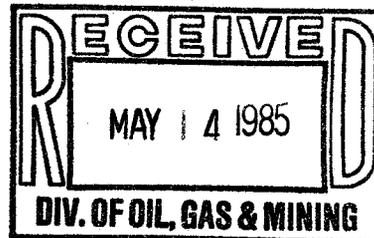
Attachments

CG

LAND DEPARTMENT

MAY 3 - 1985

REC'D TXC-DENVER



TXP OPERATING COMPANY
Transco Exploration Company, Managing General Partner

536957

Detach This Statement of Remittance and Retain for Your Files

Endorsement of Accompanying Check Is Considered a Receipt In Full Settlement of Your Invoice As Listed Below.

Invoice Number	Date	Voucher No.	P.O./Contract No.	Gross	Discount	Net
0005019-05	STATE OF UTAH			-000000000	04/15/85	56-053695
CKREQ850411A	04/11/85	850402378		15.00	.00	15.0

Note: If This Payment Appears Incorrect, Please Return Check To Our Treasury Department Explaining Apparent Error.

GRAND TOTAL 15.00 .00 15.0

*** ATTACHMENTS INCLUDED ***

TXP OPERATING COMPANY
Transco Exploration Company, Managing General Partner

Not Valid 60 Days
After Date of Issue

04/15/85 56-0536957

Citibank (Delaware)
A subsidiary of Citicorp.

Pay The
Sum Of

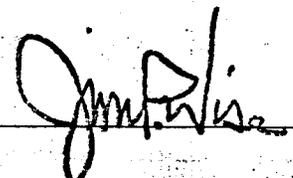
15 Dollars And 00 Cents

Dollars	Cents
*****	15.00

Pay To The
Order Of

- STATE OF UTAH
 - NATURAL RESOURCES AND ENERGY
 - DIVISION OF WATER RIGHTS
 - 74 WEST MAIN
- PRICE UT 84501

By



By

Facsimile Not Valid Above \$15,000.00 Without Countersignature

⑈ 536957 ⑈ ⑆ 031100209 ⑆

38821939 ⑈

to well

Application No. _____

APPLICATION TO APPROPRIATE WATER
STATE OF UTAH

NOTE:—The information given in the following blanks should be free from explanatory matter, but when necessary, a complete supplementary statement should be made on the following page under the heading "Explanatory."

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, for uses indicated by (X) in the proper box or boxes, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah:

- 1. Irrigation Domestic Stockwatering Municipal Power Mining Other Uses
- 2. The name of the applicant is TXP Operating Company (By: Transco Exploration Company)
- 3. The Post Office address of the applicant is P.O. Box 1396, Houston, Texas 77251
- 4. The quantity of water to be appropriated _____ second-feet and/or 7.0 acre-feet
- 5. The water is to be used for Exploratory Drilling from 06-01 to 09-01
(Major Purpose) (Month) (Day) (Month) (Day)
- other use period _____ from _____ to _____
(Minor Purpose) (Month) (Day) (Month) (Day)
- and stored each year (if stored) from _____ to _____
(Month) (Day) (Month) (Day)
- 6. The drainage area to which the direct source of supply belongs is _____
(Leave Blank)
- 7. The direct source of supply is* Cross Creek
(Name of stream or other source)

which is tributary to _____, tributary to _____

*Note.—Where water is to be diverted from a well, a tunnel, or drain, the source should be designated as "Underground Water" in the first space and the remaining spaces should be left blank. If the source is a stream, a spring, a spring area, or a drain, so indicate in the first space, giving its name, if named, and in the remaining spaces, designate the stream channels to which it is tributary, even though the water may sink, evaporate, or be diverted before reaching said channels. If water from a spring flows in a natural surface channel before being diverted, the direct source should be designated as a stream and not a spring.

- 8. The point of diversion from the source is in San Juan County, situated at a point* Sec. 5 T39S, R26E, SW¼, 8 miles north of Hatch Trading Post or 10 miles West of Honenweep National Monument.

*Note.—The point of diversion must be located definitely by course and distance or by giving the distances north or south, and east or west with reference to a United States land survey corner or United States mineral monument, if within a distance of six miles of either, or if at a greater distance, to some prominent and permanent natural object. No application will be received for filing in which the point of diversion is not defined definitely.

- 9. The diverting and carrying works will consist of hauling.

- 10. If water is to be stored, give capacity of reservoir in acre-feet _____ height of dam _____ area inundated in acres _____ legal subdivision of area inundated _____

- 11. If application is for irrigation purposes, the legal subdivisions of the area irrigated are as follows: _____

_____ Total _____ Acres

- 12. Is the land owned by the applicant? Yes _____ No X If "No," explain on page 2.

- 13. Is this water to be used supplementally with other water rights? Yes _____ No X
If "yes," identify other water rights on page 2.

- 14. If application is for power purposes, describe type of plant, size and rated capacity. _____

- 15. If application is for mining, the water will be used in _____ Mining District at the _____ mine, where the following ores are mined _____

- 16. If application is for stockwatering purposes, number and kind of stock watered _____

- 17. If application is for domestic purposes, number of persons _____, or families _____

- 18. If application is for municipal purposes, name of municipality _____

- 19. If application is for other uses, include general description of proposed uses Exploratory drilling of TXPOC #1-16 Square Tower Well.

- 20. Give place of use by legal subdivision of the United States Land Survey for all uses described in paragraphs 14 to 19, incl. _____

- 21. The use of water as set forth in this application will consume 7.0 second-feet and/or acre-feet of water and _____ second feet and/ or acre feet will be returned to the natural stream or source at a point described as follows: _____

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

Paragraph No. 12: The water source is located on property owned by:
Bureau of Land Management

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described

[Handwritten Signature]
Signature of Applicant*

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF Texas }
County of Harris } ss

On the 30 day of APRIL, 1985, personally appeared before me, a notary public for the State of Texas above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

SUSAN BOWMAN
(SEAL) Notary Public, State of Texas
My Commission Expires 2/14/88

Susan Bowman
Notary Public

FEES FOR APPLICATIONS TO APPROPRIATE WATER IN UTAH

Flow rate — c.f.s.	Cost	
0.0 to 0.1	\$ 15.00	
over 0.1 to 0.5	30.00	
over 0.5 to 1.0	45.00	
over 1.0 to 15.0	45.00	plus \$7.50 for each cfs above the first cubic
over 15.0	150.00	foot per second.

Storage — acre-feet		
0 to 20	22.50	
over 20 to 500	45.00	
over 500 to 7500	45.00	plus \$7.50 for each 500 a.f. above the first
over 7500	150.00	500 acre feet.

(This section is not to be filled in by applicant)

STATE ENGINEER'S ENDORSEMENTS

1. Application received ^{by mail} over counter in State Engineer's office by
2. Priority of Application brought down to, on account of
3. Application fee, \$....., received by Rec. No.....
4. Application microfilmed by Roll No.
5. Indexed by Platted by
6. Application examined by
7. Application returned, or corrected by office
8. Corrected Application resubmitted ^{by mail} over counter to State Engineer's office.
9. Application approved for advertisement by
10. Notice to water users prepared by
11. Publication began; was completed
- Notice published in
12. Proof slips checked by
13. Application protested by
14. Publisher paid by M.E.V. No.
15. Hearing held by
16. Field examination by
17. Application designated for ^{approval} rejection
18. Application copied or photostated by proofread by
19. Application ^{approved} rejected
20. Conditions:

This Application is approved, subject to prior rights, as follows:

- a. Actual construction work shall be diligently prosecuted to completion.
- b. Proof of Appropriation shall be submitted to the State Engineer's office by
- c.

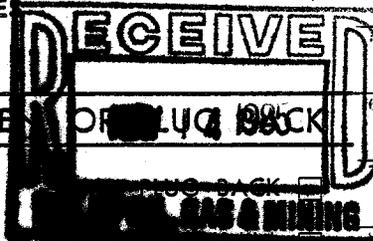
.....
State Engineer

21. Time for making Proof of Appropriation extended to
22. Proof of Appropriation submitted.
23. Certificate of Appropriation, No., issued

Application No.....

15

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING



Lease Designation and Serial No.
State Lease ML-36203
If Indian, Allottee or Tribe Name
N/A
Unit Agreement Name
N/A
Farm or Lease Name
TXPOC-Square Tower

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

1a. Type of Work
DRILL DEEPEN

b. Type of Well
Oil Well Gas Well Other
Zone Zone

2. Name of Operator
TXP Operating Company, ATTN: John Rosata, Jr.

3. Address of Operator
P.O. Box 1396, Houston, TX 77251

4. Location of Well (Report location clearly and in accordance with any State requirements.)*
At surface 580' FSL & 1850' FEL of Sec. 16 (SW $\frac{1}{4}$ SE $\frac{1}{4}$)
At proposed prod. zone Vertical Well

9. Well No.
1-16

10. Field and Pool, or Wildcat
Wildcat

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 16, T39S, R26E

14. Distance in miles and direction from nearest town or post office*
43.5 miles West of Cortez, Colorado

12. County or Parrish 13. State
San Juan County, Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. line, if any)
580' FSL

16. No. of acres in lease
640

17. No. of acres assigned to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.
N/A

19. Proposed depth
6100'

20. Rotary or cable tools
Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
5251.6' (ground level)

22. Approx. date work will start*
upon Approval

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
Preset	13-3/8"	Culvert pipe	100'	cement to surface
12 $\frac{1}{2}$ "	9-5/8"	36 ppf K-55	2300'	1440 ft ³ (800 sxs.)
8-3/4"	5-1/2"	17# N-80	6100'	1440 ft ³ (520 sxs.)

Transco proposes to drill this well to 6100' TD to the Akah Salt Formation. The primary objective is the Upper Ismay with the Lower Ismay and Honaker Trail being the secondary objectives. If productive, we will run casing to TD and complete. If dry, we will plug and abandon in accordance with Utah State Regulations.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 6/17/85
BY: John R. Dura
WELL SPACING: C-3(6)

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. Signed: John L. Durbin Jr. Title: Manager-Drilling Operations Date: 5/10/85

(This space for Federal or State office use)

Permit No. 43-037-31159 Approval Date

Approved by: Title: Date:

Conditions of approval, if any:

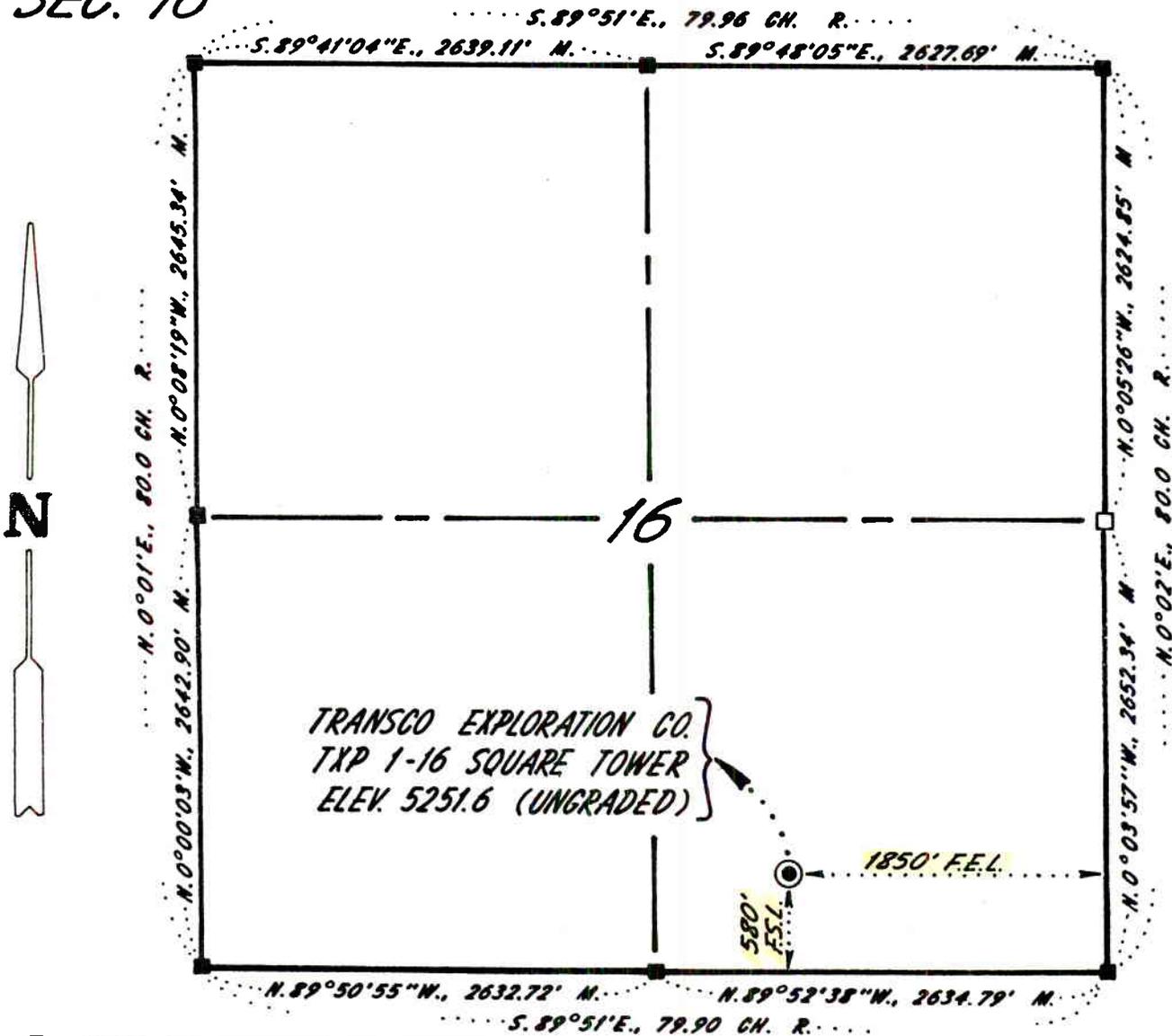


PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809

T.39S., R.26E., S.L.B. & M., SAN JUAN CO., UTAH
SEC. 16



- = BRASS CAP MONUMENT NOT ACCEPTED
- = FD. GOV'T BRASS CAP MONUMENT
- R = RECORD DATA
- M = MEASURED DATA THIS SURVEY

SCALE : 1" = 1000'

⊙ = SURVEYED WELL LOCATION

SURVEYORS CERTIFICATE

STATE OF WYOMING)
COUNTY OF NATRONA) S.S.

BASIS OF BEARINGS - SOLAR OBSERVATION IN THE
NW 1/4 OF SEC. 16 - BEARINGS EXHIBITED ARE PLANIMETRIC

PLATTED FIELD NOTES OF A SURVEY
MARKING WELL LOCATION
TXP 1-16 SQUARE TOWER
SW 1/4 SE 1/4 SEC. 16, T.39S., R.26E.,
SALT LAKE BASE & MERIDIAN,
SAN JUAN CO., UTAH

I, PAUL A. REID, HEREBY STATE THAT I AM A REGISTERED LAND SURVEYOR IN THE STATE OF UTAH UNDER THE PROVISIONS OF UTAH LAW. I FURTHER STATE THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME ON APR. 9, 1985 FOR THE PURPOSE OF AN APPLICATION FOR PERMIT TO DRILL. ANY OTHER USE OF THIS PLAT WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SURVEYOR IS PROHIBITED.

Paul A. Reid
PAUL A. REID UTAH REG. L.S. 5669



UNGRADED ELEVATIONS OF REFERENCE
POINTS SET WITH 12" x 3/8" SPIKES.

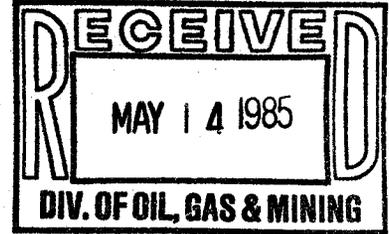
NORTH	2000 FEET	5249.5
SOUTH	" "	5250.5
EAST	" "	5274.2
WEST	" "	5236.7

BASIS OF ELEVATIONS: U.S.G.S. 15' QUAD.
"CAJON MESA", UTAH-COLORADO BENCHMARK
D-63 IN THE NW 1/4 SEC. 30, PRINTED
ELEV. 5296

JOB NO. : 029-04 85
DATE : APRIL 15, 1985
NOTES : LOOSELEAF IN FILE

PERMITS WEST INC.

PROVIDING PERMITS for the ENERGY INDUSTRY
P.O. Box 1105, Monticello, Utah 84535 (801) 587-2087



SURFACE USE PLAN FOR TXP OPERATING COMPANY'S SQUARE TOWER 1-16 WELL

**SW1/4 SE1/4, T. 39 S., R. 26 E.
SAN JUAN COUNTY, UTAH
ML-36203**

**Prepared by
BRIAN WOOD of PERMITS WEST, INC.
MONTICELLO, UTAH
MAY 10, 1985**

TABLE OF CONTENTS

I.	Proposed Action	1
II.	Land Uses & Authorizations	1
III.	Roads	2
IV.	Well Pad	3
V.	Drilling	3
VI.	Waste Disposal	4
VII.	Ancillary Facilities	4
VIII.	Production	4
IX.	Reclamation	5
X.	Emergencies	6
	Maps	
	1:250,000 Topographic Map	7
	1:62,500 Topographic Map	8
	Air Photo	9
	General Wellsite Topography	10
	Cross Sections	11
	Plan View of Cut & Fill	12
	Proposed Rig Layout Facilities	13

cc: Stan Baker, Utah Div. of State Lands & Forestry, Moab, Utah
Pat deGruyter, Utah Div. of Oil, Gas, & Mining, Moab, Utah
Ron Firth, Utah Div. of Oil, Gas, & Mining, Salt Lake City, Utah
Connie Goers, TXP Operating Company, Denver, Co.
Robert Heyder, Nat'l. Park Service, Mesa Verde, Co.
John Rosata, TXP Operating Company, Houston, Tx.

I. Proposed Action

TXP Operating Company proposes to drill a 6,100' deep well to test the Upper Ismay Zone. Secondary objectives are the Lower Ismay and Honaker Trail Zones. If commercial quantities of oil and/or gas are found, the well will be completed as a producer. All drilling and producing operations will be performed in accordance with State of Utah regulations.

The proposed well is located at 580' FSL and 1850' FEL in the SW1/4 SE1/4 of Section 16, Township 39 South, Range 26 East, San Juan County, Utah. This is an orthodox location as determined by the State of Utah spacing regulations.

Construction will begin upon approval. Road and well pad construction will take approximately 5 days. Once construction is finished, drilling will begin and take approximately 30 days. Completing the well as a producer will take another estimated 30 days.

II. Land Uses and Authorizations

The well and 90% of the road construction will be on State of Utah land. The remaining 10% of the road construction will be on Federal land administered by the Bureau of Land Management (BLM). No private land is used or crossed except on public roads.

An Application for Permit to Drill has been submitted to the State of Utah, Dept. of Natural Resources, Div. of Oil, Gas, & Mining. An application for a right-of-way has been submitted to the BLM. An application for an encroachment permit has been submitted to the San Juan County Road Dept. for use of county roads. An application for a temporary permit to appropriate water has been submitted to the State of Utah Water Engineer.

An archaeological clearance has been done by Abajo Archaeology of Bluff, Utah. All sites were avoided.

The land is used for cattle grazing, tourism, and energy exploration. The grazing permittee is Marvin Redburn. His season of use is from November 1 to May 31. South and east of the well are units of Hovenweep National Monument. Energy exploration is directed toward oil, gas, and uranium.

III. Roads

Roads are shown on Pages 7 & 8.

- a) From the Post Office in Pleasant View, Colorado go 1.1 miles southeast on US 666.
- b) Then turn west and go 5.8 miles on the gravel Hovenweep Road to Poplar Junction.
- c) Then turn south and go 18.8 miles southwest on the gravel and dirt Hovenweep Road, crossing the state line *en route*.
- d) Then turn east and go 1.1 miles southeast to the well location on a seismic trail which will be upgraded. (The first 0.1 miles of the trail is on BLM land. A right-of-way application has been filed with BLM.)

No construction will be needed on the existing roads, except where the seismic trail meets the Hovenweep Road. An 18" culvert will be installed there.

The 1.1 miles of seismic trail will be upgraded into a crowned and ditched road. The running surface will be 16' wide. The total disturbed width will be 30', except on curves where it will be accordingly wider. All wash crossings will be low water crossings. No fences will be crossed.

If production results, then additional culverts will be installed and the road graveled. Gravel will be bought from local pits.

If a dry hole results, then the 1.1 miles of upgraded road will be reclaimed as discussed in IX. Reclamation on Page 5.

IV. Well Pad

A 2 acre well pad (235' x 325') will be built on the west slope of a gentle swale. Maximum cut will be 12'. Maximum fill will be 6'. Complete detailed plans and cross sections of the pad are shown on Pages 10-11.

All brush and the top 9" of topsoil will be stripped and stockpiled on the north and east sides of the pad for future reclamation.

The reserve pit will be terraced down on the west side of the pad. The bottom of the pit will be 80' x 130', depth will be 10'. Maximum capacity will be 12,960 barrels, of which at least half will be in cut.

Pond capacity is approximately twice what is needed. In the unlikely event capacity is exceeded, then the excess water will be trucked to State of Utah approved disposal ponds near Hatch Trading Post or Bluff.

Six mil plastic will be used to line the pit. Care will be taken during installation to insure no air is trapped under the plastic which might "bubble" up the liner.

Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling and completion operations are finished. The fence will be kept in good repair while the pit dries.

V. Drilling

A plan view of the drilling layout is on Page 13.

Although hydrogen sulfide is not normally encountered in the zones being tested, a hydrogen sulfide contingency plan will be implemented. Hydrogen sulfide monitoring will begin when drilling reaches 4,900' and continue to total depth, 6,100'. Total depth will still be more than 2,000' above any possible hydrogen sulfide in the Mississippian zones.

Prevailing winds are out of the southwest, thus the pad is downwind from Hovenweep National Monument.

Water will be pumped out of Cross Canyon Creek in Sec. 32, T. 38 S., R. 26. E. It will be trucked to the pad over a San Juan County Road. (No road construction will be necessary.) An application for a temporary permit to appropriate 7.0 acre-feet of water has been submitted to the State of Utah Water Engineer.

VI. Waste Disposal

All trash and garbage will be disposed of in a totally enclosed heavy gauge wire trash cage. When full, it will be hauled to a sanitary landfill near Cortez, Colorado. Trash and garbage will not be thrown in the reserve pit.

Chemical toilets will be used for human waste disposal.

VII. Ancillary Facilities

There will be no ancillary facilities (camps, airstrips, etc.). There will be several camper trailers on location during drilling for use as a mud logging lab and for supervisory personnel (tool pusher, company man). It is anticipated most workers will commute from lodging or housing in nearby towns.

VIII. Production

All permanent above ground facilities will be painted a flat non-reflective color (*e.g.*, Juniper Green) to blend with the surrounding environment.

All tank batteries will be surrounded by dikes of sufficient capacity to contain at least 150% of the storage capacity of the batteries. All load line valves will be placed inside the dikes.

The pad will be fenced and signs posted to deter unauthorized

personnel from entering.

The reserve pit and that portion of the pad not needed for production will be reclaimed as described in IX. Reclamation below. Enough topsoil will be kept to reclaim the remainder of the pad at a future date. This remaining stockpile of topsoil will be seeded in place using the seed mix listed below.

IX. Reclamation

Before any dirt work begins to reclaim the well pad, the reserve pit must be completely dry.

All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts.

The stockpiled topsoil will be spread evenly over the disturbed area. All disturbed areas will be ripped 12" deep with the contour.

Water bars will be built as follows to control erosion:

<u>Grade</u>	<u>Spacing</u>
2%	Every 200'
2-4%	Every 100'
4-5%	Every 75'
5+%	Every 50'

Seed will be broadcast between October 1 and February 28 with the following mix. A harrow or cable or similar implement will be dragged over the area to assure seed cover. Seed will be bought within 50 miles of the well to insure seeds are adapted to the local environment.

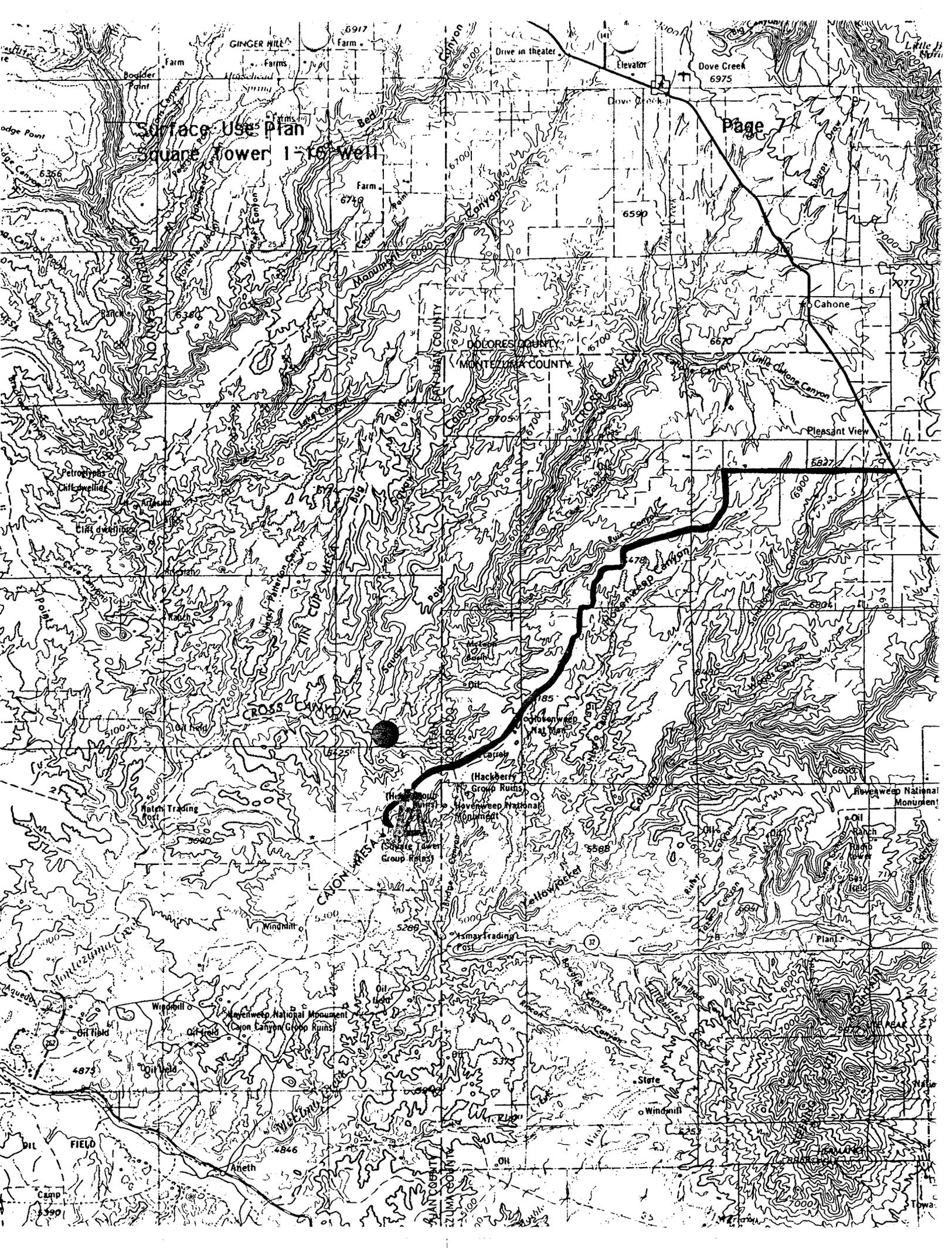
<u>Species</u>	<u>Pounds per Acre</u>
Indian ricegrass (<i>Oryzopsis hymenoides</i>)	2
Galleta or Curleygrass (<i>Hilaria jamesii</i>)	1
Fourwing saltbush (<i>Atriplex canescens</i>)	2
Wild sunflower (<i>Helianthus annua</i>)	1

After seeding is finished, the stockpiled brush will be scattered evenly over the disturbed areas. The reclaimed road will be blocked to prevent vehicular access.

X. Emergencies

In the event of a medical emergency, the closest hospital is 45 miles east in Cortez, Colorado.

Closest gas station, store, cafe, public phone, and gravel airstrip are 20 miles southwest at Montezuma Creek, Utah.



Surface Use Plan
Square Tower I-16 Well

Page 7

GINGER HILL Farm

6917

Drive in theater

Elevator

Dove Creek 6975

Border Point

Farm

Farms

Farms

Farm

Edge Point

6365

Ranch

6380

6740

6725

6710

6700

6690

6680

6670

6660

6650

6640

6630

6620

6610

6600

6590

6580

Petroglyphs

6380

6370

6360

6350

6340

6330

6320

6310

6300

6290

6280

6270

6260

6250

6240

6230

6220

6210

6200

5100

5000

4900

4800

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4600

4500

4400

4300

4200

4100

4000

3900

3800

3700

3600

3500

3400

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3200

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4800

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4600

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4400

4300

4200

4100

4000

3900

3800

3700

3600

3500

3400

3300

3200

3100

3390

3380

3370

3360

3350

3340

3330

3320

3310

3300

3290

3280

3270

3260

3250

3240

3230

3220

3210

3200

Oil Field

4875

4865

4855

4845

4835

4825

4815

4805

4795

4785

4775

4765

4755

4745

4735

4725

4715

4705

4695

Camp

3390

3380

3370

3360

3350

3340

3330

3320

3310

3300

3290

3280

3270

3260

3250

3240

3230

3220

3210

Oil Field

4875

4865

4855

4845

4835

4825

4815

4805

4795

4785

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4695

Camp

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Oil Field

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4795

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4735

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4715

4705

4695

Camp

3390

3380

3370

3360

3350

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3320

3310

3300

3290

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Oil Field

4875

4865

4855

4845

4835

4825

4815

4805

4795

4785

4775

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4755

4745

4735

4725

4715

4705

4695

Camp

3390

3380

3370

3360

3350

3340

3330

3320

3310

3300

3290

3280

3270

3260

3250

3240

3230

3220

3210

Oil Field

4875

4865

4855

4845

4835

4825

4815

4805

4795

4785

4775

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4735

4725

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4705

4695

Camp

3390

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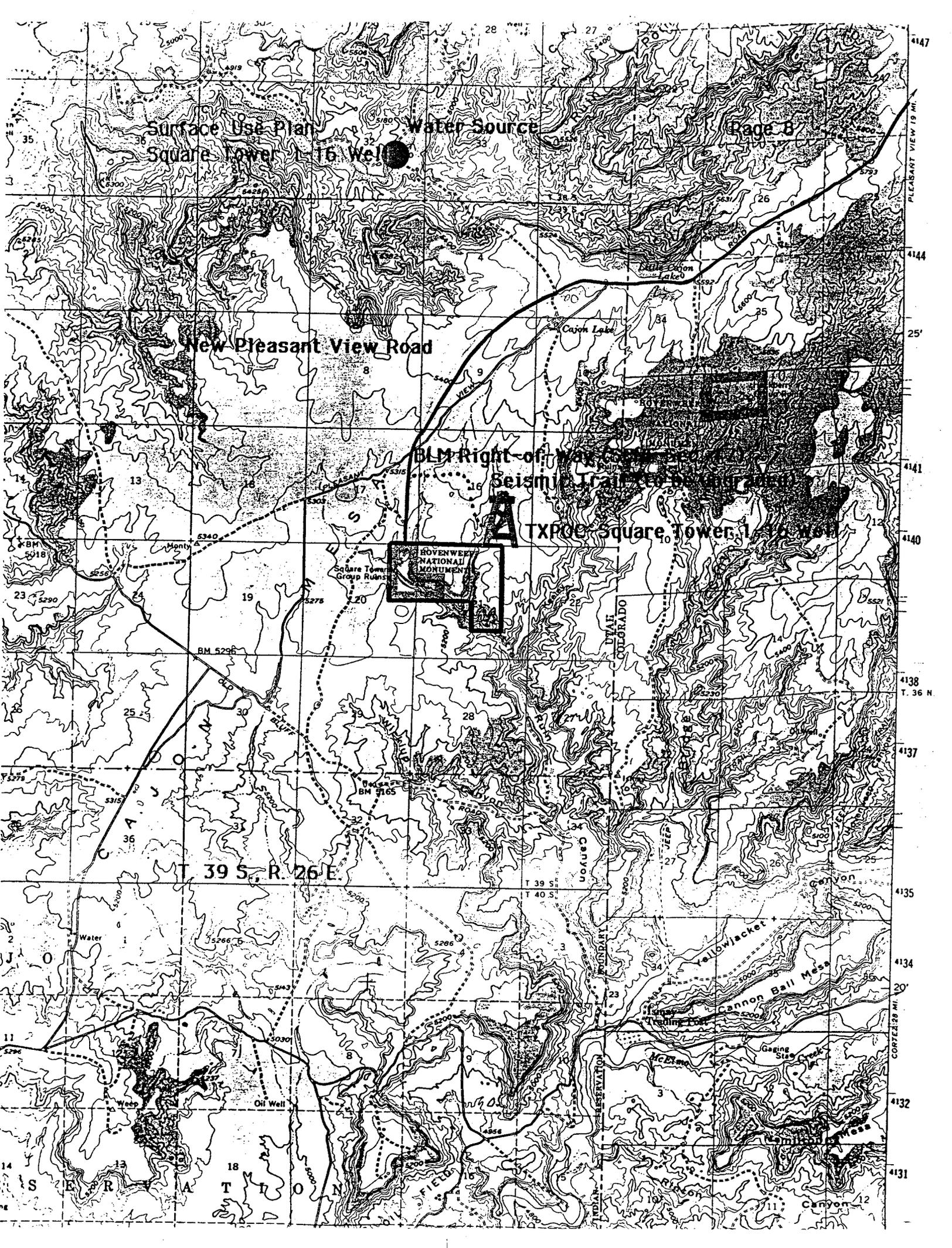
3330

3320

3310

3300

3290



Surface Use Plan
Square Tower

Water Source

Page 8

16 Well

New Pleasant View Road

BLM Right-of-Way

Seismic Trail

TXPOE Square Tower 16 Well



HOVENEWPEE
NATIONAL
MONUMENT

T 39 S, R. 26 E.

Cannon Ball Mesa

Yellowjacket

Cannon

Gaging

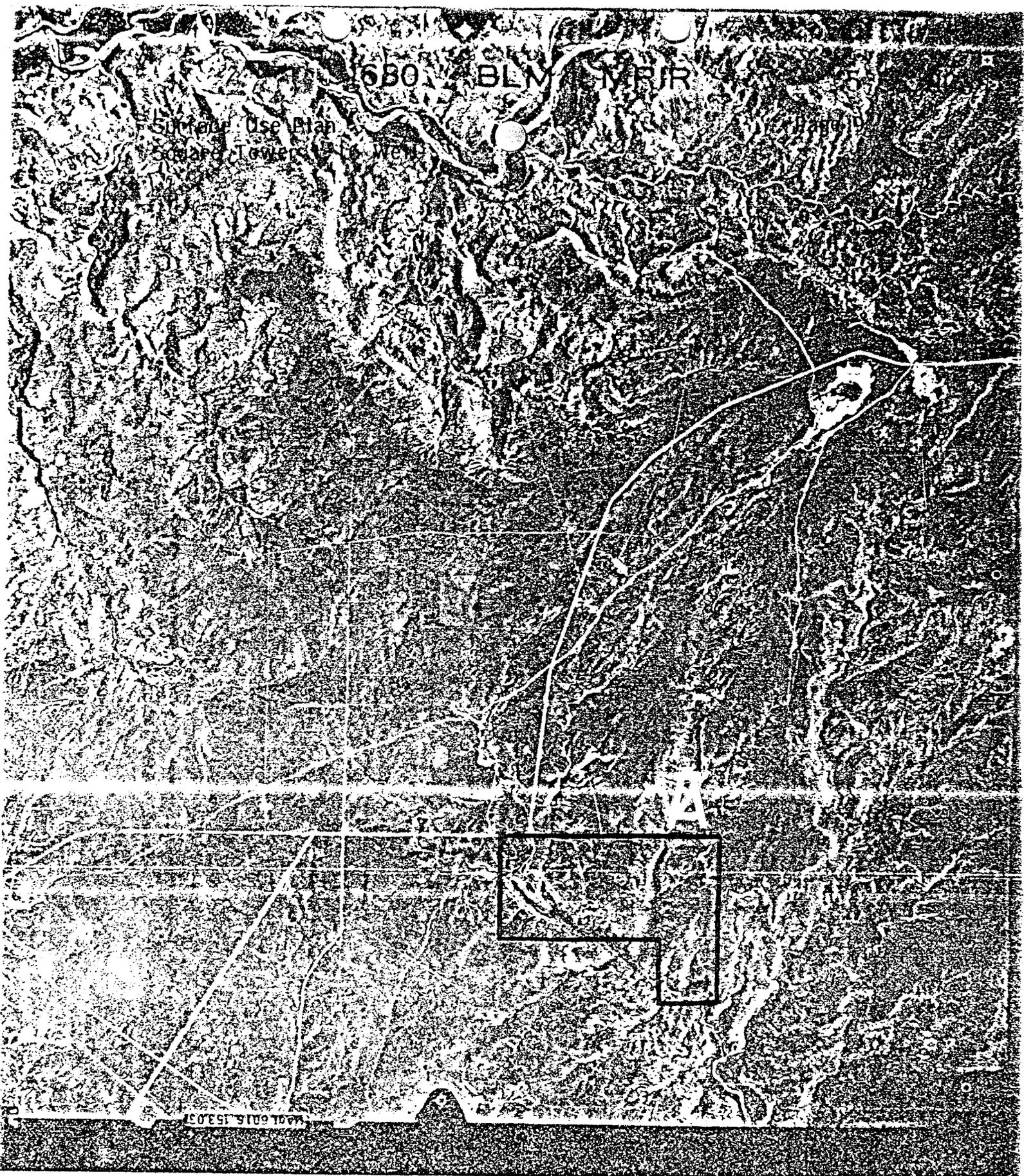
McDermott

Combs

Canyon

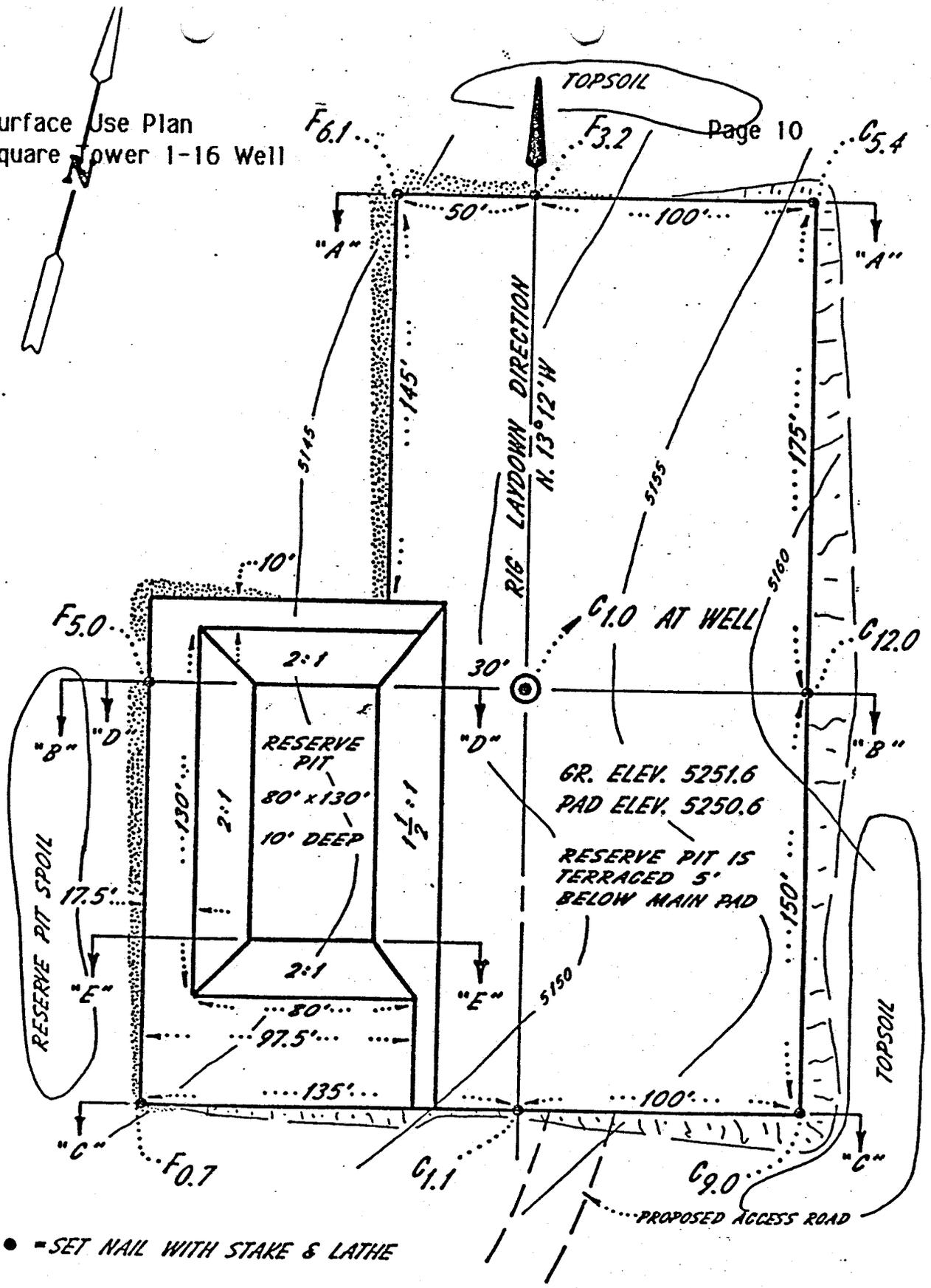
680 BLN YRIP

Surface Use Plan
Coastal Tower



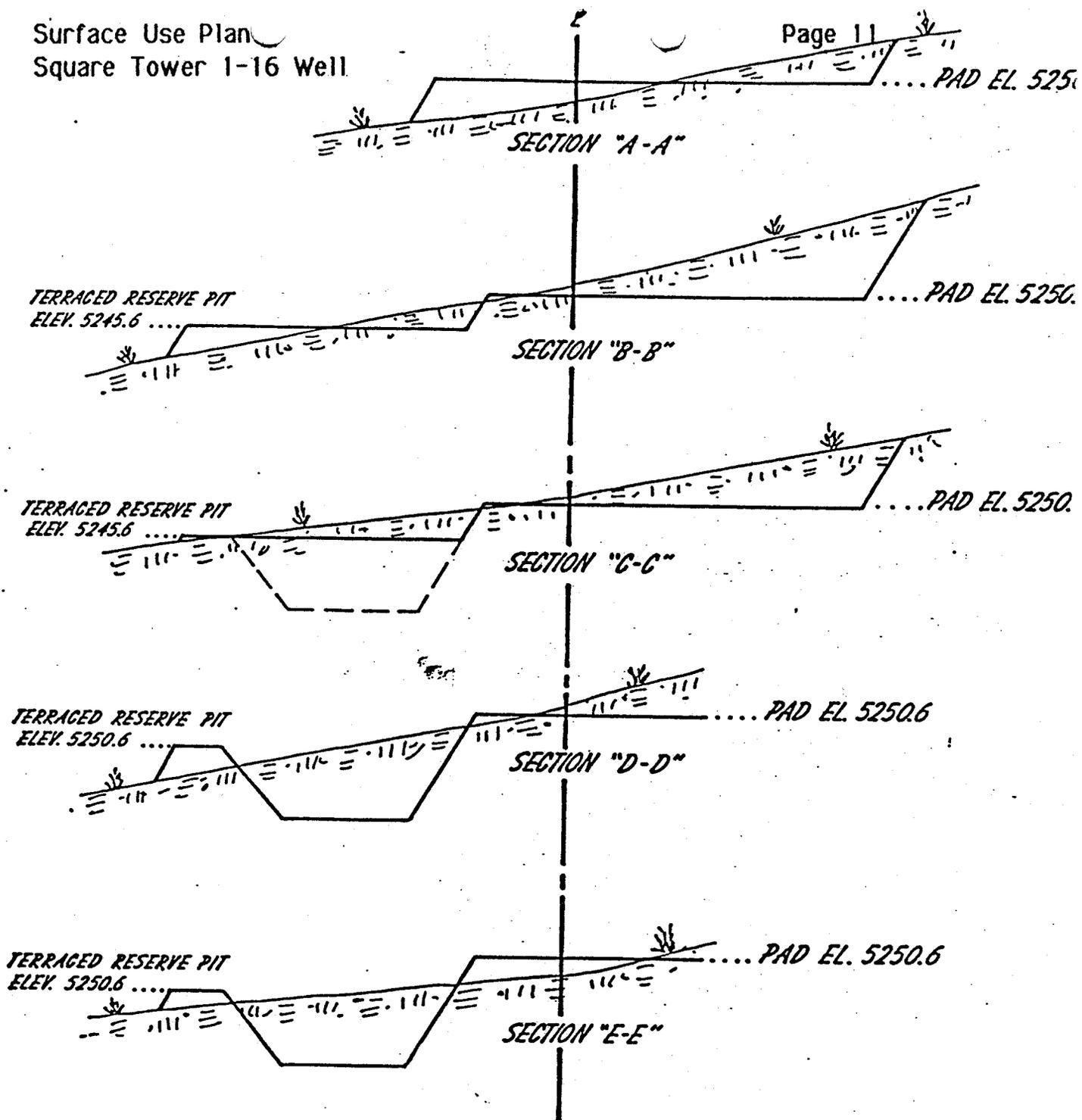
COASTAL TOWER

Surface Use Plan
Square Tower 1-16 Well



GENERAL WELLSITE TOPOGRAPHY

TXP 1-16 SQUARE TOWER
 580' F.S.L., 1850' F.E.L., SEC. 16,
 T.39S., R.26E., S.L.B.&M.
 SAN JUAN CO., UTAH
 SCALE: 1" = 50'



APPROXIMATE EARTHWORK VOLUMES

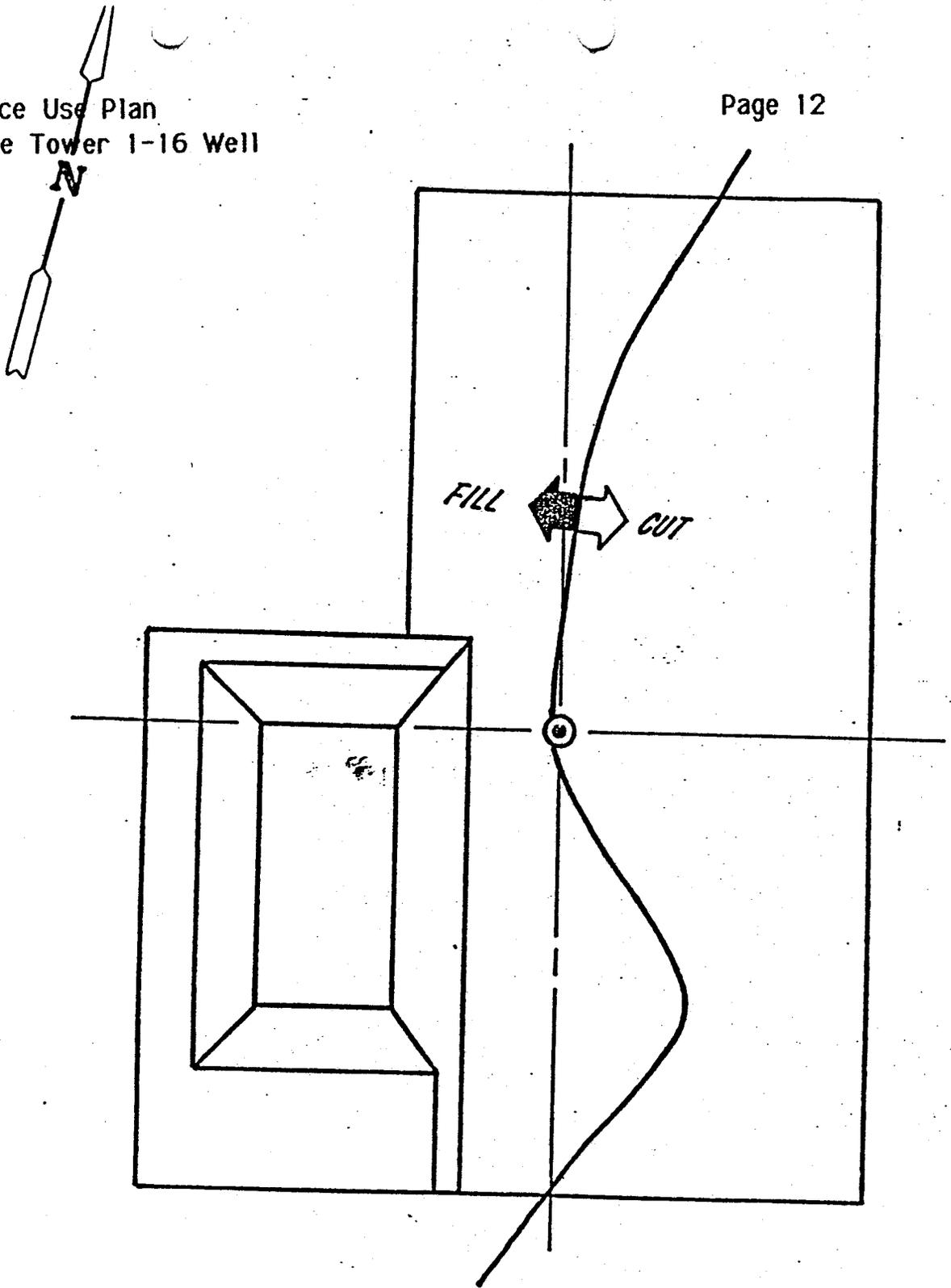
<u>PAD</u>		<u>RESERVE PIT</u>	
CUT	4,860 CU. YDS.	CUT	2,695 CU. YDS.
FILL	4,775 " " AT 15%	SPOIL	2,695 " "
SPOIL	85 " " SHRINKAGE	CAPACITY	12,96 BARRELS A.
TOPSOIL	1,780 " " AT 9" DEPTH		10' DEPTH

PROPOSED PAD AND RESERVE PIT CROSS-SECTIONS

TRANSCO EXPLORATION CO.
 TXP 1-16 SQUARE TOWER
 SCALE: 1" = 50' HORIZ

Surface Use Plan
Square Tower 1-16 Well

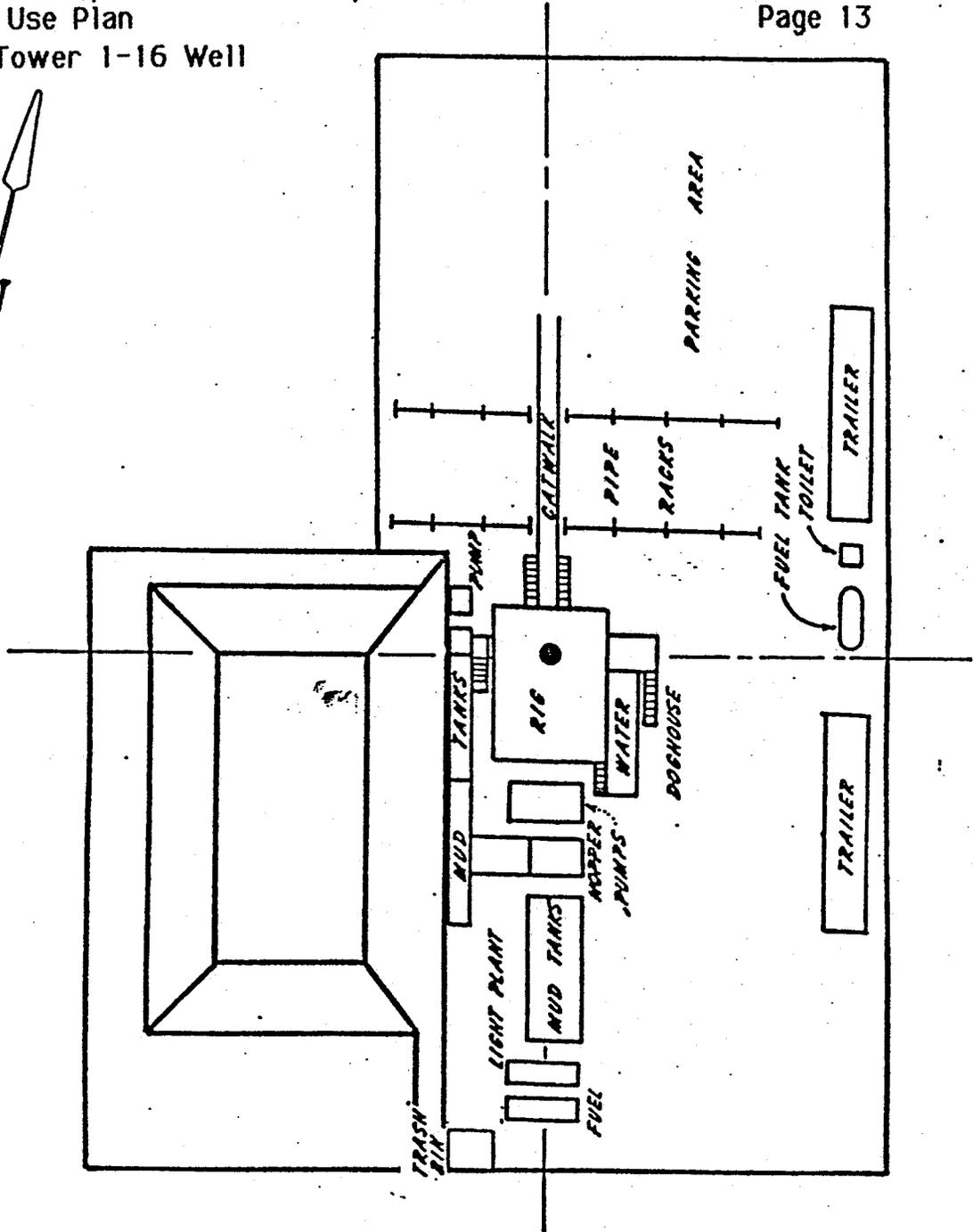
Page 12



PROPOSED PRODUCTION FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

SCALE: 1" = 50'



PROPOSED RIG LAYOUT FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

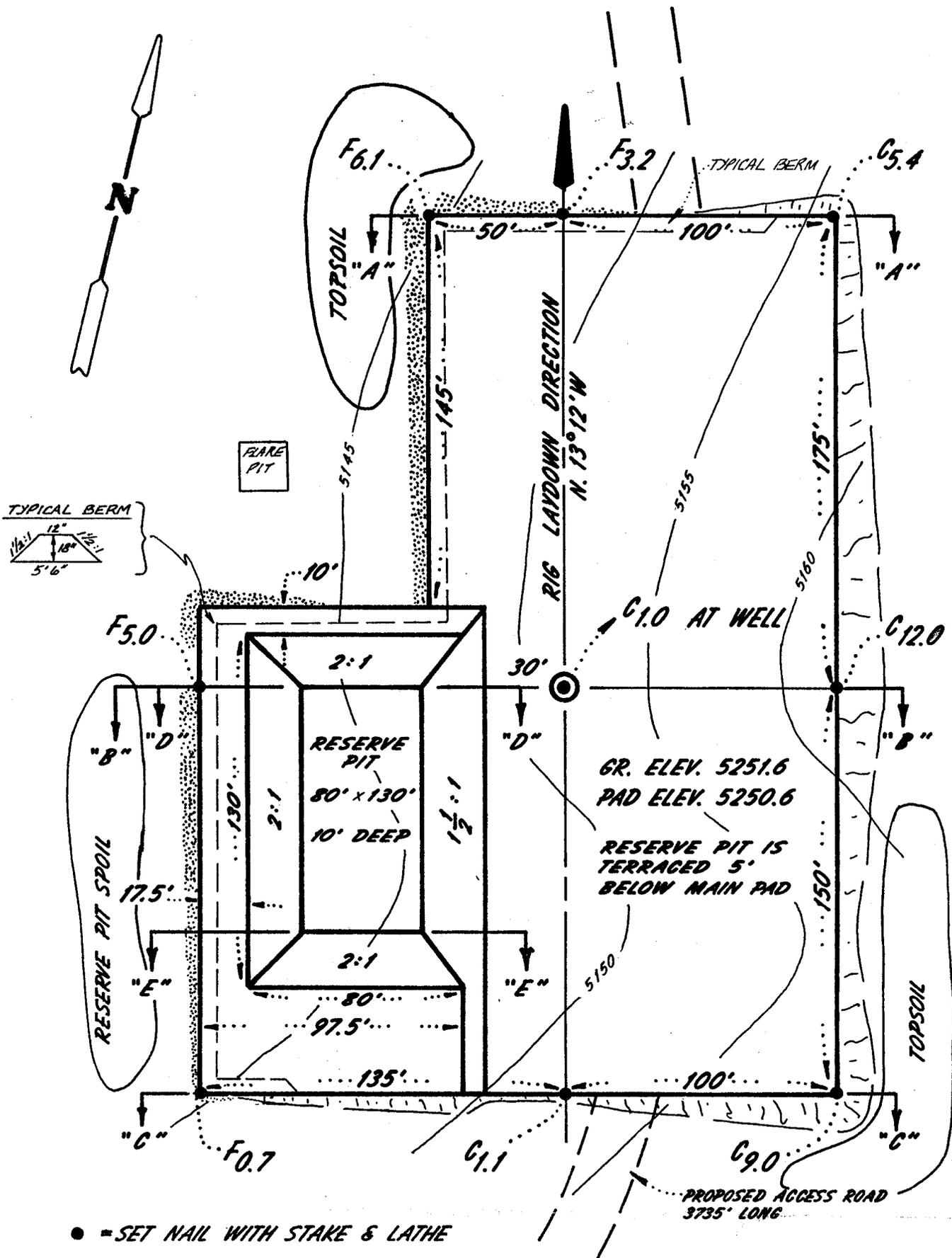
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

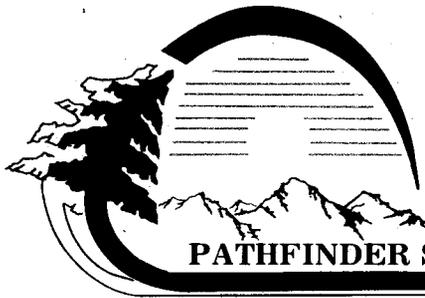
CONSULTING SURVEYORS

300 Country Club Road
 Suite 305
 Casper, Wyoming 82609
 307-266-3809



GENERAL WELLSITE TOPOGRAPHY

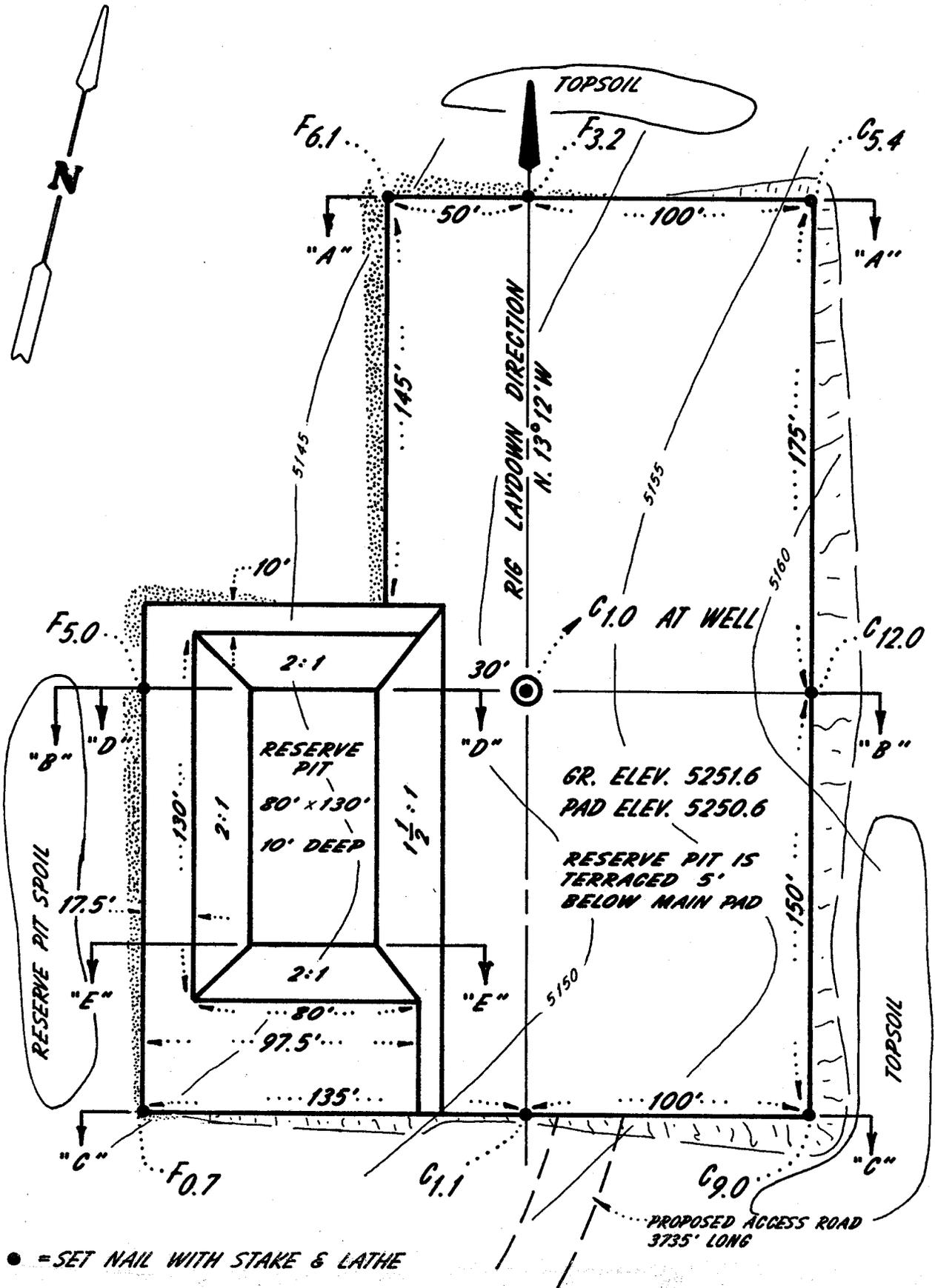
TXP 1-16 SQUARE TOWER
 580' F.S.L., 1850' F.E.L., SEC. 16,
 T.39S., R.26E., S.L.B.&M.
 SAN JUAN CO., UTAH
 SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

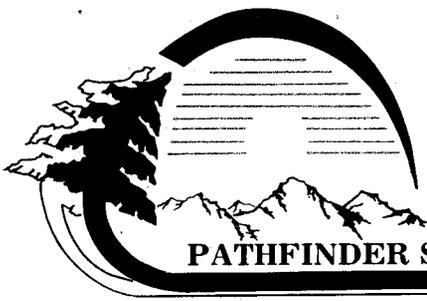
CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



GENERAL WELLSITE TOPOGRAPHY

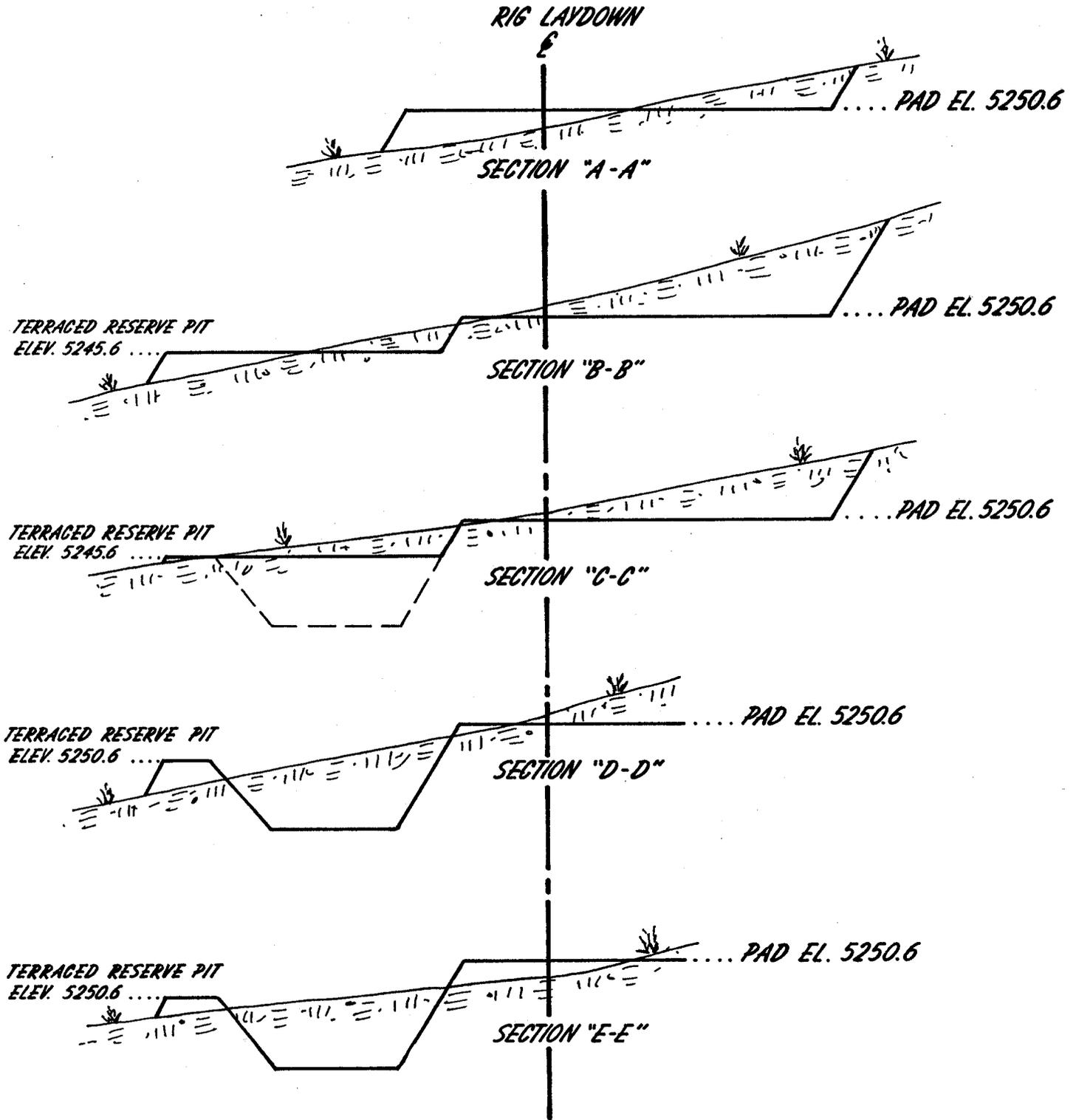
TXP 1-16 SQUARE TOWER
580' F.S.L., 1850' F.E.L., SEC. 16,
T.39S., R.26E., S.L.B.&M.
SAN JUAN CO., UTAH
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



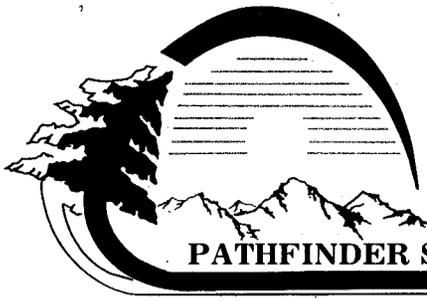
APPROXIMATE EARTHWORK VOLUMES

<u>PAD</u>		<u>RESERVE PIT</u>	
CUT	4,860 CU. YDS.	CUT	2,695 CU. YDS.
FILL	4,775 " " AT 15%	SPOIL	2,695 " "
SPOIL	85 " " SHRINKAGE	CAPACITY	12,960 BARRELS AT 10' DEPTH
TOPSOIL	1,780 " " AT 9" DEPTH		

PROPOSED PAD AND RESERVE PIT CROSS-SECTIONS

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

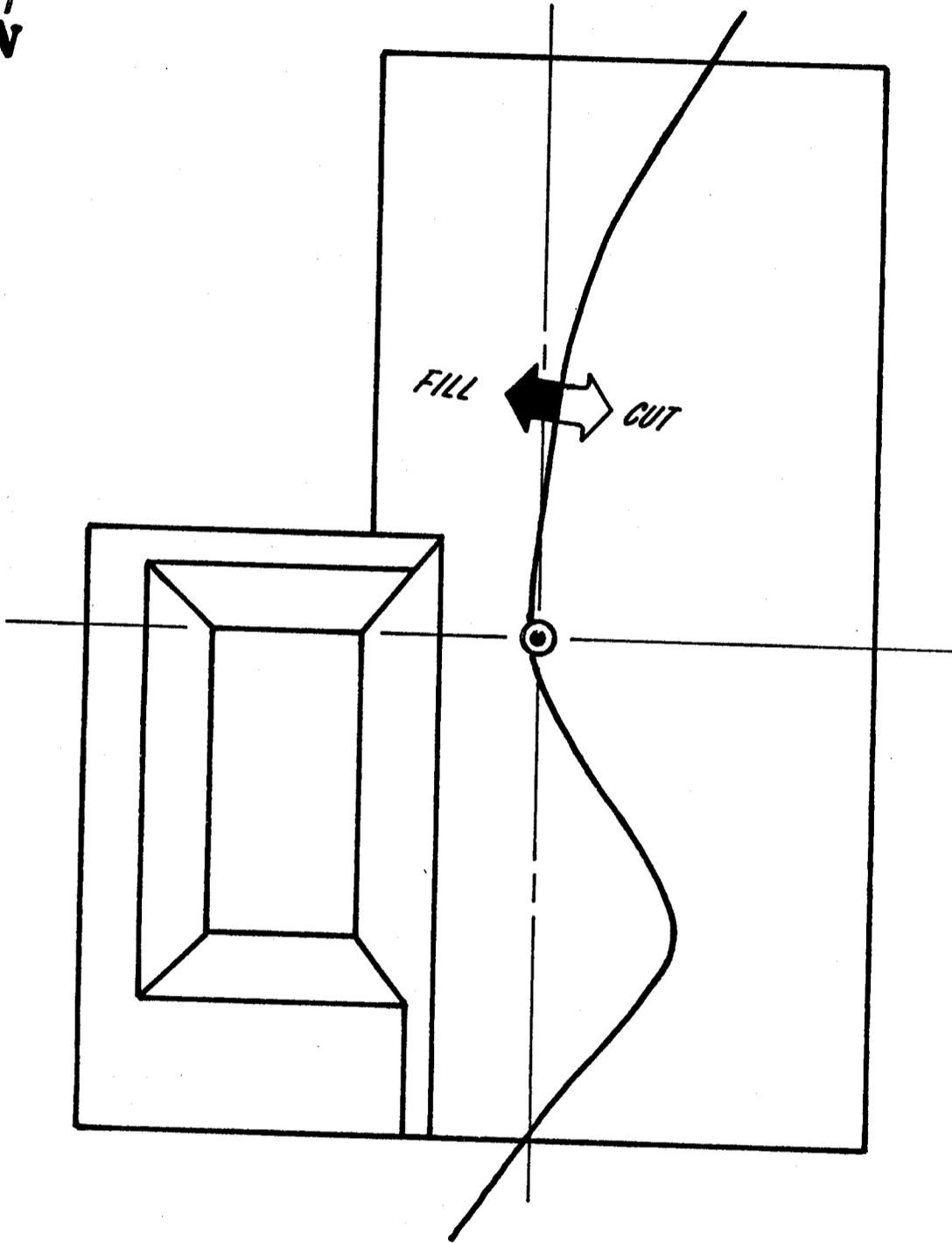
SCALE: 1" = 50' HORIZ.
1" = 20' VERT.



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



PROPOSED PRODUCTION FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

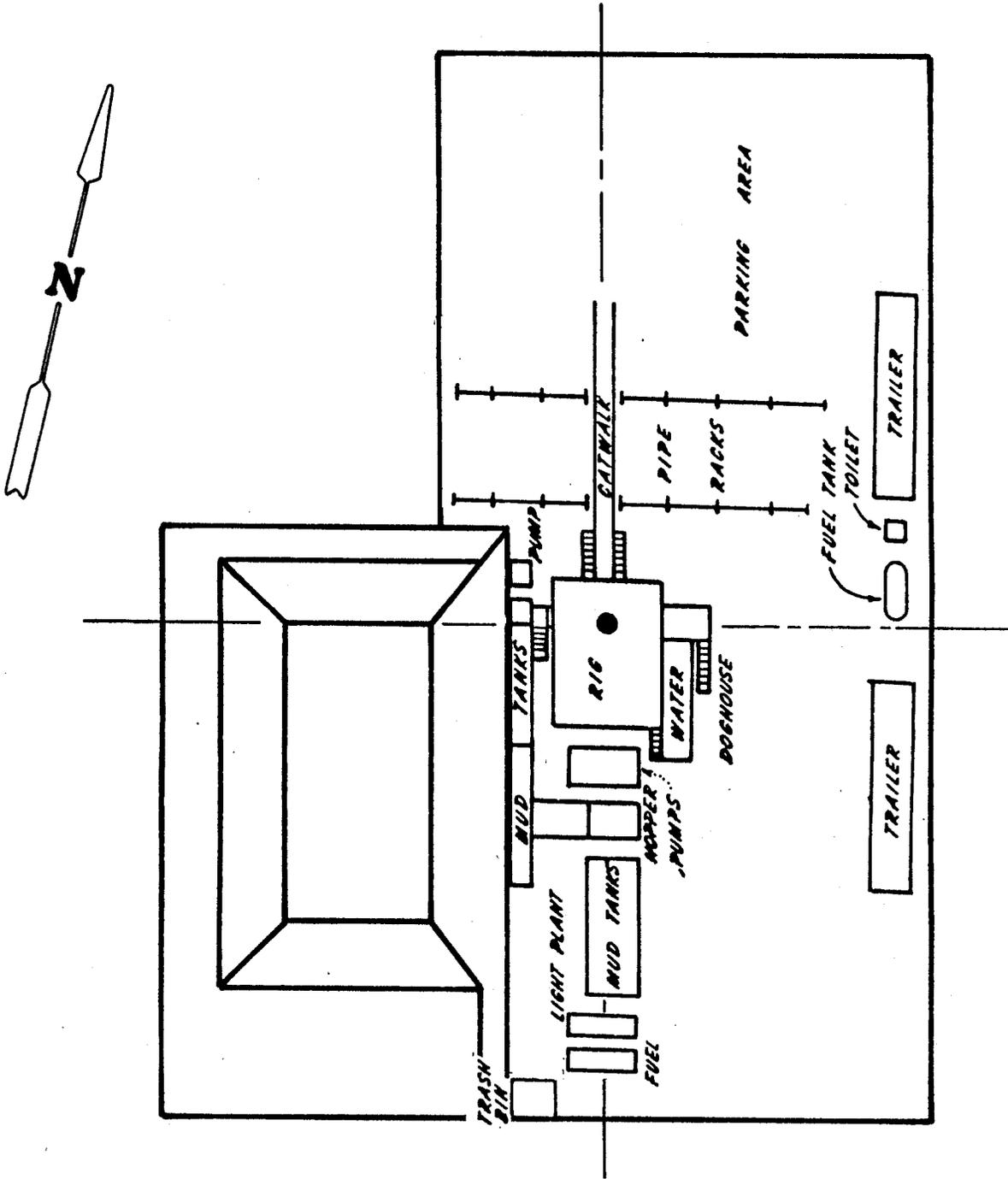
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



PROPOSED RIG LAYOUT FACILITIES

TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER

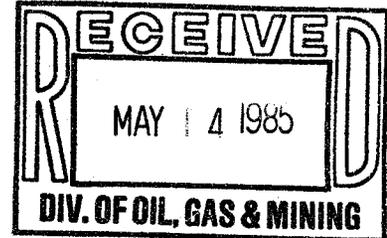
SCALE: 1" = 50'



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



Connie Goers
Transco Exploration Company
1700 Lincoln Ste. 2100
Denver, Colorado 80203

Dear Ms. Goers:

Please find enclosed four completed copies of the access road to the TXP #1-16 Square Tower wellsite located in Section 16, T.39S., R.26E., S.L.B. & M., San Juan County, Utah.

Also enclosed for your use are three blank copies of the access road.

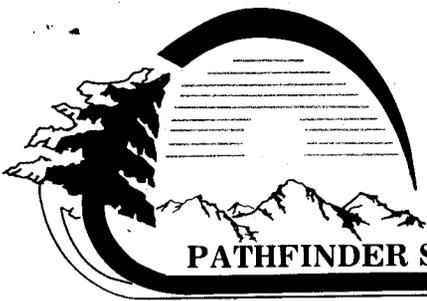
If you have any questions or need more information, please do not hesitate to call me.

Sincerely,

PATHFINDER SURVEYORS, INC.

Paul A. Reid, L.S., M.S.
President

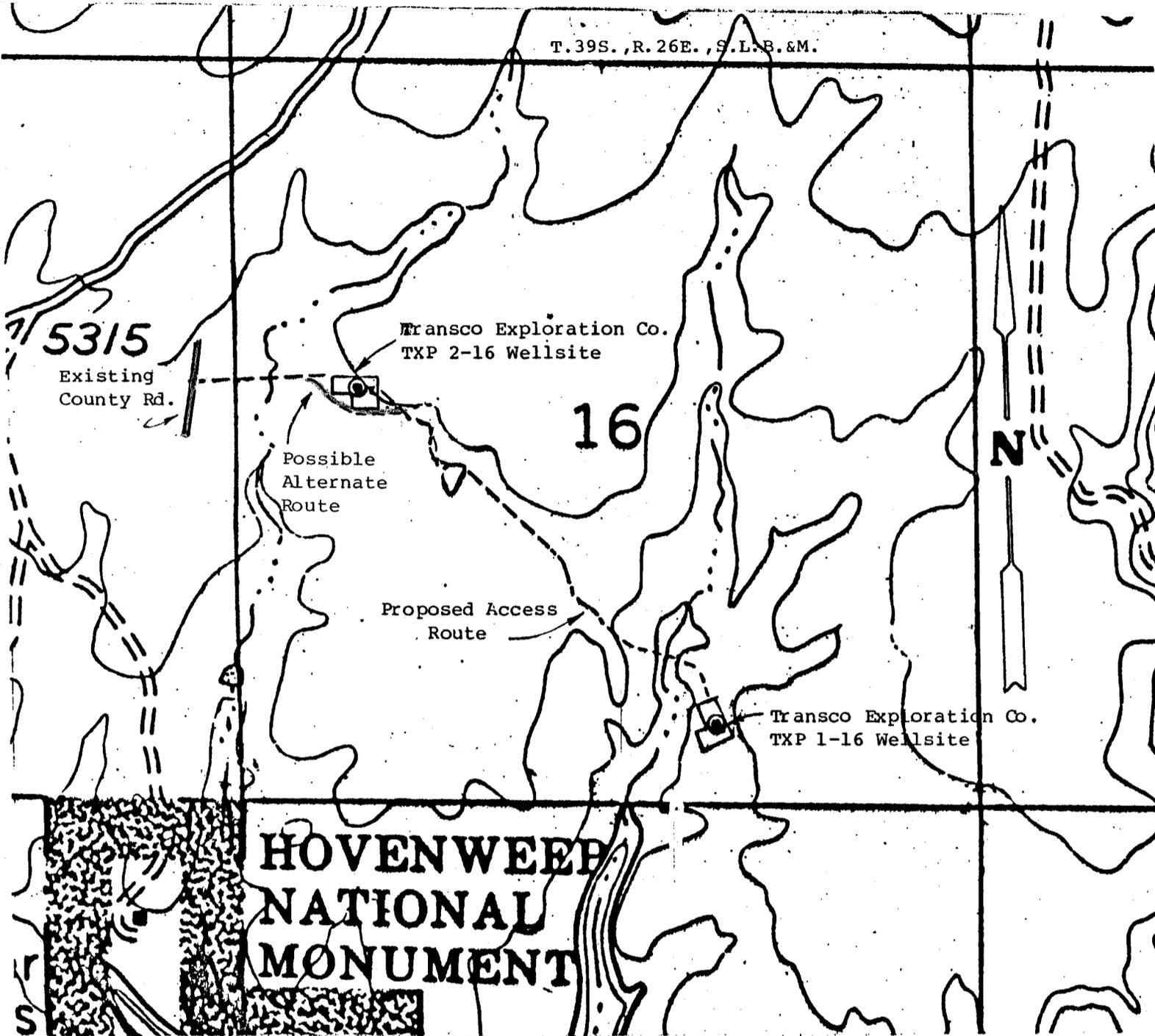
PAR/td
enclosures



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809

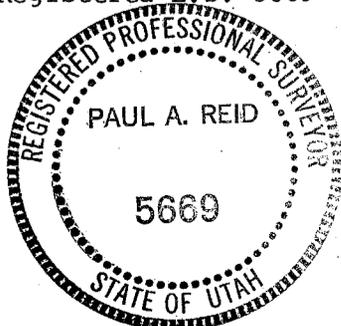


SCALE: 1"=1000'

PROPOSED ACCESS ROUTE
TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER
580'F.S.L., 1850'F.E.L.
SECTION 16, T.39S.,R.26E., S.L.B.&M.

Exhibit Prepared By:

Paul A. Reid Utah Registered L.S. 5669



PERMITS WEST

PROVIDING PERMITS for the ENERGY INDUSTRY
P.O. Box 1105, Monticello, Utah 84535 (801) 587-2087

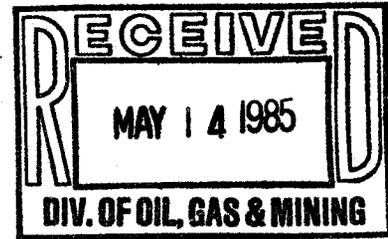
LAND DEPARTMENT

INC. MAY 13 1985

REC'D TXC-DENVER

May 10, 1985

John Rosata, Supervisor
Regulatory & Environmental Affairs
TXP Operating Company
P.O. Box 1396
Houston, Tx. 77251



Dear John,

Enclosed is the approved BLM right-of-way grant for access to the Square Tower 1-16 Well. All necessary documents have been signed. All necessary fees have been paid for the next 5 years, subject to any increased appraisal.

Construction can begin as soon as Urado Construction gives BLM 48 hours advance notice.

Sincerely yours,

A handwritten signature in cursive script that reads "Brian".

Brian Wood

cc: Connie Goers



United States Department of the Interior

U-53841
2800
(U-069)

BUREAU OF LAND MANAGEMENT

Moab District
San Juan Resource Area
P.O. Box 7
Monticello, Utah 4535

RIGHT-OF-WAY

Section A

1. There is hereby granted, pursuant to Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), a nonexclusive, nonpossessory right-of-way to:

TXP Operating Company
P. O. Box 1396
Houston, TX 77251

In case of change of address the holder shall immediately notify the authorized officer.

2. To use, subject to terms and conditions set out below, the following described Public Land.

SE 1/4 NE 1/4 of Section 17, T. 39 S., R. 26 E., SLBM

3. Description of the right-of-way facility and purpose:

The right-of-way is a road to be improved, constructed, maintained and used for access to the holder's State oil and gas lease in Section 16; T. 39 S., R. 26 E., SLBM. The right-of-way width is 30 feet wide and 500 feet in length and contains .34 acres, more or less.

A map showing the location of the right-of-way over the above described public land is attached hereto as Exhibit "A".

TERMS AND CONDITIONS

Section B

1. The right-of-way holder agrees to comply with all the applicable regulations contained in 43 CFR 2800.
2. If the right-of-way holder violates any of the terms and conditions to this grant, the authorized officer, after giving written notice may declare the grant terminated.

3. This grant is subject to all valid rights existing on the effective date of this grant.
4. There is hereby reserved to the Authorized Officer the right to grant additional rights-of-way or permits for compatible uses, on, over, under, or adjacent to the lands involved in this grant.
5. The holder shall comply with the applicable Federal and State laws and regulations concerning the uses of pesticides (i.e., insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The holder shall obtain from the Authorized Officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; the pest insect, fungus, etc., to be controlled; the method of application; the location for storage and disposal of containers; and other information that the Authorized Officer may require. The plan should be submitted no later than December 1 of any calendar year that covers the proposed activities for the next fiscal year (i.e., December 1, 1984, deadline for a fiscal year 1986 action). Emergency use of pesticides may occur. The use of substances on or near the right-of-way shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations if the Secretary has imposed limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.
6. The holder agrees not to exclude any person from participating in employment or procurement activity connected with this grant on the grounds of race, creed, color, national origin, and sex, and to ensure against such exclusions, the holder further agrees to develop and submit to the proper reviewing official specific goals and timetables with respect to minority and female participation in employment and procurement activity connected with this grant. The holder will take affirmative action to utilize business enterprises owned and controlled by minorities or women in its procurement practices connected with this grant. Affirmative action will be taken by the holder to assure all minorities or women applicants full consideration of all employment opportunities connected with this grant. The holder also agrees to post in conspicuous places on its premises which are available to contractors, subcontractors, employees, and other interested individuals, notices which set forth equal opportunity terms; and to notify interested individuals, such as bidders, contractors, purchasers, and labor unions or representatives of workers with whom it has collective bargaining agreements, of the Company's equal opportunity obligations.
7. The right-of-way herein granted is subject to the express covenant that it will be modified adapted, or discontinued if found by the Secretary to be necessary, without liability of expense to the United States, so as not to conflict with the use and occupancy of the land for any authorized works which may be hereafter constructed thereon under the authority of the United States.

8. The Holder shall indemnify the United States against any liability for damage to life and property arising from the occupancy or use of public lands under this grant.
9. All survey monuments, witness corners, reference monuments and bearing trees must be protected against destruction. Any damaged or obliterated markers must be re-established in accordance with accepted survey practices at the expense of the holder.
10. During periods of extreme wet weather when activities would result in excessive resource damage activities may be stopped by the authorized officer. The authorized officer shall have the final determination as to when excessive resource damage is occurring.
11. The right-of-way shall be relinquished to the United States if the authorized uses are no longer needed.
12. All surface protection procedures for road construction operations, and maintenance set forth in the application are accepted herewith and made a part of this grant.
13. All other terms and conditions. Compliance will be in accordance with the terms and conditions as specified herein and in Exhibit "B", attached hereto and made a part hereof.
14. Rental. Pending new regulations on an approved appraisal method to be used by the Bureau of Land Management rental for the right-of-way will be \$25.00 for 5 years. The grant is subject to a rental determination at a later date. Any additional rental that is determined to be due as a result of the rental determination shall be paid upon request.
15. This right-of-way grant shall terminate 30 years from the effective date of this grant unless prior thereto it is relinquished, abandoned, terminated, or otherwise modified pursuant to the terms and conditions of this grant or of any applicable Federal law or regulation.
 - a. This grant is subject to review at the end of 20 years from the date of this decision, and at regular intervals thereafter not to exceed 10 years.
 - b. This grant may be renewed so long as it is still being used for the purposes granted, and is operated and maintained in accordance with all the provisions of this grant and pursuant to the regulations under which it is granted. If renewed the right-of-way will be subject to regulations existing at the time of renewal, and such other terms and conditions deemed necessary to protect the public interest.

Section C

The effective date of this right-of-way grant is the date of execution by the authorized officer.

The undersigned agrees to the terms and conditions of the right-of-way grant.

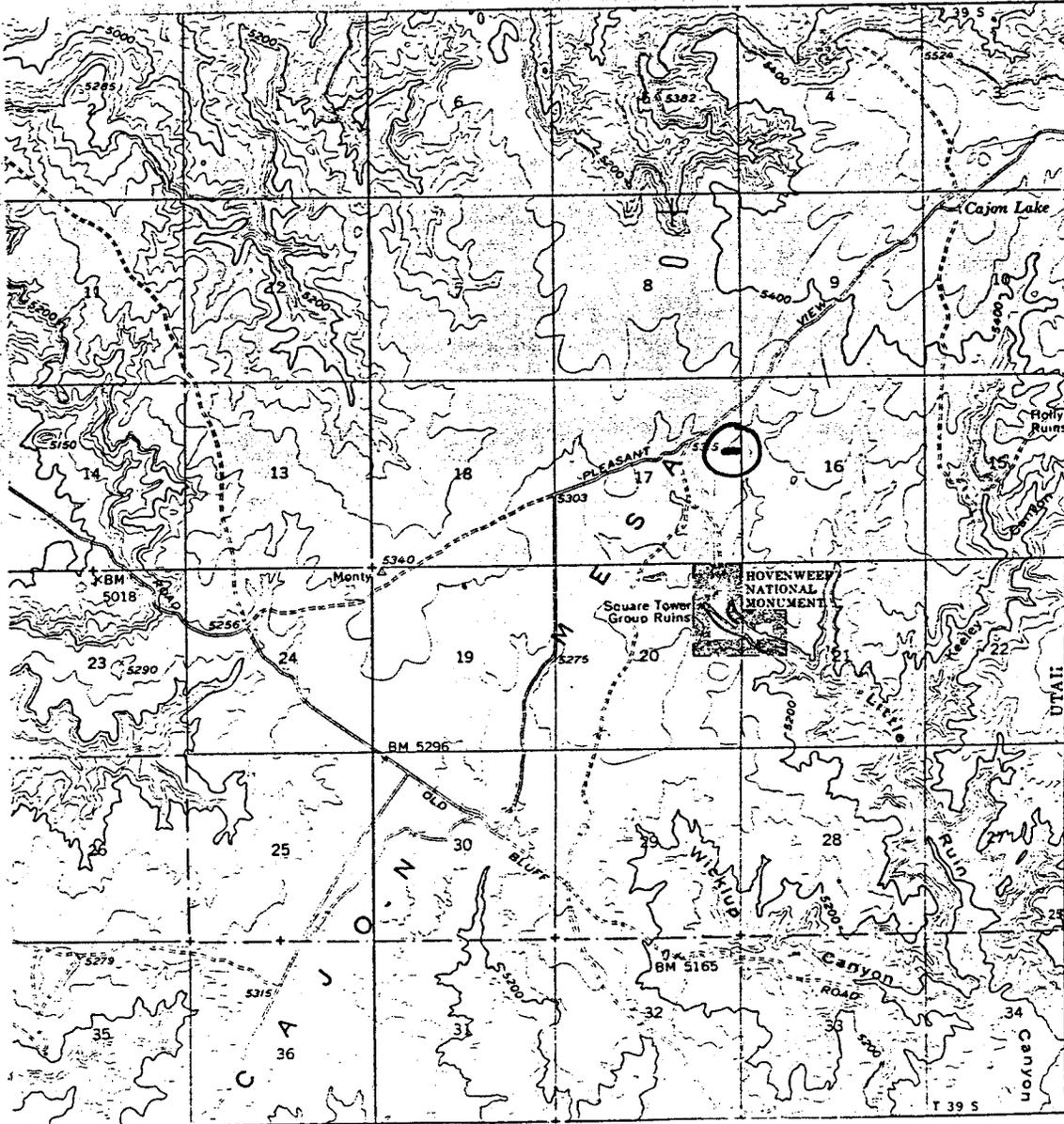
The right-of-way is executed this 10th day of May, 1985

Name of Company R- Wood
By: _____
Title: Agent & Consultant
Date: 5-10-85

for Merwin N. Sandberg
Edward R. Scherick
Authorized Officer

Exhibit A
U-53841

R. 26 E.



T. 39 S.

Scale: 1" = 1 mile

R/W —
(Sec. 17)



EXHIBIT "B"
STIPULATIONS

1. The holder or his contractor will contact the San Juan Resource Area Office, in Monticello, Utah, (801) 587-2201, 48 hours before beginning any work on public land.
2. The holder will give the dirt contractor a copy of the Surface Use Plan and any additional BLM stipulations before any work commences.
3. If subsurface cultural materials are exposed during construction, work in that spot will stop immediately and the San Juan Resource Area Office will be contacted. All people who are in the area will be informed by the operator/holder that they are subject to prosecution for disturbing archaeological sites or picking up artifacts. Salvage or excavation of identified archaeological sites will be done by a BLM approved archaeologist only if damage occurs.



United States Department of the Interior

U-53841
2800
(U-069)

BUREAU OF LAND MANAGEMENT
Moab District
San Juan Resource Area
P.O. Box
Monticello, Utah 84535

CERTIFIED MAIL-RETURN RECEIPT REQUESTED
Certification No. P 647 409 675

MAY 10 1985

DECISION

TXP Operating Company	:	
c/o Permits West, Inc.	:	U-53841
P. O. Box 1105	:	Right-of-Way- Application
Monticello, Utah 84535	:	

Stipulations Required Advance Rental Required

Right-of-Way Application No. U-53841 was filed May 9, 1985.

There appears to be no objection to the granting of the right-of-way, provided the applicant signs two copies of the enclosed proposed grant as indicated. By signing the grant the applicant agrees to all stipulations attached to the grant and the terms and conditions of the grant.

Advance rental of \$25.00 is also due at this time. See Section B(14) of the right-of-way grant for details.

If the applicant is adversely affected by this action, there is a right of appeal to the Board of Land Appeals, Office of the Secretary, in accordance with the regulations in 43 CFR, Part 4, Subpart E. If an appeal is taken, the notice of appeal must be filed in the office shown on enclosed form 1842-1, (not with the Board) so that the case file can be sent to the Board. A copy of the notice of appeal and of any statement of reasons, written arguments, and briefs must be served upon any adverse parties, and in addition, to the Regional Solicitor, U.S. Department of the Interior, Room 6201, Federal Building, 125 S. State, Salt Lake City, Utah 84111, within 15 days of the filing of any specific document. If the procedures set forth in the regulations are not followed, an appeal is subject to dismissal.

Sherwin N. Sandberg
acting
Edward R. Scherick, Area Manager
Authorized Officer

Enclosures (2)
Proposed Grant (In duplicate)
Form 1842-1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

INFORMATION ON TAKING APPEALS TO THE BOARD OF LAND APPEALS

DO NOT APPEAL UNLESS

- 1. This decision is adverse to you,
AND
- 2. You believe it is incorrect

IF YOU APPEAL, THE FOLLOWING PROCEDURES MUST BE FOLLOWED

1. NOTICE OF APPEAL Within 30 days file a *Notice of Appeal* in the office which issued this decision (see 43 CFR Sec. 4.411). You may state your reasons for appealing, if you desire.

2. WHERE TO FILE
NOTICE OF APPEAL

**BUREAU OF LAND MANAGEMENT
P. O. BOX 970
MOAB, UT 84532**

3. STATEMENT OF REASONS Within 30 days after filing the *Notice of Appeal*, file a complete statement of the reasons why you are appealing. This must be filed with the United States Department of the Interior. Office of the Secretary, Board of Land Appeals, 4015 Wilson Blvd., Arlington, Virginia 22203 (see 43 CFR Sec. 4.412). If you fully stated your reasons for appealing when filing the *Notice of Appeal*, no additional statement is necessary.

4. ADVERSE PARTIES Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor or Field Solicitor having jurisdiction over the State in which the appeal arose must be served with a copy of: (a) the *Notice of Appeal*, (b) the Statement of Reasons, and (c) any other documents filed (see 43 CFR Sec. 4.413). Service will be made upon the Associate Solicitor, Division of Energy and Resources, Washington, D.C. 20240, instead of the Field or Regional Solicitor when appeals are taken from decisions of the Director (WO-100) or if the subject matter of the appeals involves mineral activities on the Outer Continental Shelf.

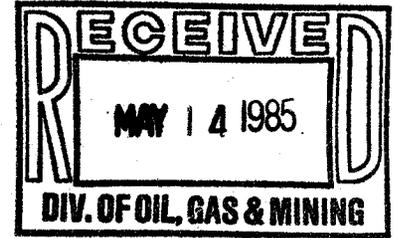
Regional Solicitor, U.S. Dept. of the Interior,
Rm. 6201 Federal Bldg., 125 S. State St., Salt Lake City, UT 84138.

5. PROOF OF SERVICE Within 15 days after any document is served on an adverse party, file proof of that service with the United States Department of the Interior, Office of the Secretary Board of Land Appeals, 4015 Wilson Blvd., Arlington, Virginia 22203. This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (see 43 CFR Sec. 4.401(c)(2)).

Unless these procedures are followed your appeal will be subject to dismissal (see 43 CFR Sec. 4.402). Be certain that all communications are identified by serial number of the case being appealed.

NOTE: A document is not filed until it is actually received in the proper office (see 43 CFR Sec. 4.401(a))

SAMPLE PLAN



HYDROGEN SULFIDE CONTINGENCY PLAN

TXP OPERATING COMPANY
TXP Bedgood Estate Well #1
John Collum Survey, Abstract 167
Cass County, Texas

728' South of North Line
467' West of East Line
467' North of South Line
1380' East of West Line

TABLE OF CONTENTS

- I. EMERGENCY PROCEDURES
- II. TRAINING REQUIREMENTS
- III. SAFETY EQUIPMENT
 - A. SAFETY EQUIPMENT REQUIREMENTS
 - B. CONDITION LEVEL
- IV. EMERGENCY CALL LISTS
 - A. COMPANY CALL LIST
 - B. EMERGENCY CALL LIST
- V. DIAGRAMS
 - A. DIRECTIONS TO LOCATION



INTRODUCTION

The following is a comprehensive H2S Contingency Plan which has been developed for the drilling of TXP Operating Company's TXP Bedgood Estate Well #1, located in the John Collum Survey, Abstract 167, in Cass County, Texas.

This plan outlines the precautionary procedures that will be followed to insure the safe drilling of the above stated well.

The well will be drilled by Nowotny & Conley Drilling Company, of Shreveport, Louisiana. The only zone in which H2S is anticipated is the Smackover formation at an expected depth of 10,500'.

Elements herein outlined include safety equipment requirements, training provisions and procedures to be followed in the event of an emergency. Lists of the public in the area of exposure and public safety personnel are also included and made a part of this plan.

The details of this plan are to be fully implemented 1,000' above estimated top of the H2S formation.



TXP Operating Company
TXP Bedgood Estate Well #1
John Collum Survey, Abstract 167
Cass County, Texas

- A. In the event of any evidence of an H2S level above 20 ppm, the Company Representative or his designated backup will assure the following steps are taken.
 - 1. All operational personnel shall don designated breathing equipment.
 - 2. Order non-operational personnel out of the hazardous area.
 - 3. Determine if the H2S level can be corrected or suppressed.
 - 4. Protect and/or remove any public who may be in a down-wind hazard area. Evacuate and isolate as required. Notify public safety bodies and the RRC of the situation.

- B. If loss of well occurs:
 - 1. Remove all personnel to the upwind safe briefing area.
 - 2. Determine if well should or could be ignited.
 - 3. Notify public safety bodies for establishment of a road block.
 - 4. Evacuate public from area of exposure as needed.
 - 5. Proceed with best plan, at the time, to regain control of the well. Maintain tight security and safety procedures.

- C. Responsibility
 - 1. Company Representative
 - a. The Company Representative shall be responsible for the total implementation of this plan.
 - b. The Company Representative shall be on location at all times while drilling in an H2S zone.
 - c. The Company Representative shall be in complete command during any emergency situation.



- d. The Company Representative shall determine the status levels based on the well condition.
- e. He shall designate someone to act accordingly in the event of his absence.
- f. The Company Representative shall insure the evacuation of the public in the area of exposure.

BLOWOUT CONTROL PROCEDURE NO. 1

RIG CREW ASSIGNMENTS - ON BOTTOM DRILLING

Initiate the procedure by lifting a pit level device float, or equivalent, or by activating alarm device (air horn). One long blast on air horn for actual or simulated blowout control procedure. Time should be less than one minute for reaction time to shut in and less than three minutes for assignment to be completed.

DRILLERS ASSIGNMENT:

1. Mask up.
2. Sound the alarm immediately.
3. Stop the rotary and hoist kelly joint above the rotary table.
4. Stop the circulating pump.
5. Close the Hydril.
6. Open automatic valve at stack to allow pressure to be read at manifold and relieve if necessary.
7. Record the shut in drill pipe pressure.
8. Record the shut in annulus pressure.
9. Record all data reported by the crew.
10. Check all pressure and volume readings.
11. Determine the mud weight increase needed or course of action.

DERRICKMAN ASSIGNMENT:

1. Mask up.
2. Set markers in all pits and estimate fluid gain.
3. Estimate additional volume of mud that pits will contain before overflowing.
4. Weigh the mud in the suction pit.
5. Report to the driller with fluid volumes and mud weight.

NUMBER ONE ROTARY HELPER ASSIGNMENT:

1. Mask up.
2. Check all valves on choke manifold and BOP stack. All appropriate valves should be closed.
3. Check for leaks on BOP stack and choke manifold.
4. Check flowline and choke exhaust lines for flow.
5. Report to driller.

NUMBER TWO ROTARY HELPER ASSIGNMENT:

1. Mask up.
2. Notify the Toolpusher and Operator Representative.
3. Check for open fires and extinguish them.
4. Stop all welding operations.
5. Report to driller.

MOTOR MAN:

1. Mask up.
2. Check and make sure Flare Stack ignited.
3. Go to closing unit and check accumulator pressure.
4. Standby for closing instructions from Driller.



TOOLPUSHER ASSIGNMENT:

1. Mask Up.
2. Report to the floor.
3. Check status of all crew members - make sure proper station.
4. Compile and summarize all information.
5. Calculate proper kill weight.
6. See that proper well kill procedures are put into action.

SAFETY ENGINEER:

1. Mask up.
2. Check status of all personnel.
3. Report to rig floor - check for H2S.

SERVICE PERSONNEL:

- 1.. Mask up.
2. Secure operations as instructed by Company Representative and report to Briefing Area 1 (Safety Trailer).

SPECIAL OPERATIONS

***CORING:**

During drilling operations below surface casing, it may be decided to core; this operation takes on critical complexities when attempted in a sour gas well. Specific coring procedures will be issued for cutting cores. The following practices should be followed during coring operations:

1. After a core has been cut, circulate bottoms up and monitor for H₂S. If coring rate indicates porosity has been cut, put breathing equipment on 30 minutes before bottoms up reaches the surface.
2. Unless hole conditions (and/or detectors) indicate extreme conditions, put on breathing air equipment 10 stands before core barrel reaches the surface. If worse conditions are suspected or the H₂S detector reaches 10 ppm, breathing air equipment should worn by all personnel in the area while the core barrel is pulled, broken out or opened. Drager units and individual detector ampules should then be used to monitor for H₂S around the core barrel. When these detectors indicate a safe atmosphere, the breathing equipment can be removed.
3. Because it is difficult to communicate when using breathing equipment, it is required that either a chalk board and chalk or note pads and pencils be provided during coring operations.
4. The importance of leaving the breathing equipment on must be stressed to personnel connected with the coring operation. The most critical moment is when the core barrel is opened up.
5. All personnel not directly involved in the coring operation shall stay a safe distance upwind from the core barrel.



6. The cores to be transported must be sealed and marked for the presence of H₂S.
7. After the core has been cut, circulate bottoms up and perform a soluble sulfide analysis on the mud filtrate and a total sulfide analysis on the whole mud.

*NOTE: Use ventilation equipment as deemed necessary by the H₂S Safety Technician.



REQUIREMENTS AND SAFETY PROCEDURES

SMACKOVER D.S.T. THROUGH DRILLPIPE

Daylight - from tool opening to recovery.

Stop test - when water cushion, gas, or 100 psi reaches surface.

Stop test - After tool has been opened 30 minutes.

Reverse out drill pipe - Circulating sub required above sampler.

RRC Witness - From tool opening to gas recovery from sampler.

Only rig personnel are required on rig floor during D.S.T

All personnel not involved in D.S.T. will be stationed at safety trailer.

All personnel involved during D.S.T. on drilling floor will be masked up.

"NO SMOKING" during D.S.T. on Rig Floor.



WELL CONTROL PROCEDURE

All efforts should be made to prevent a well kick, which may result from gas cut mud, abnormal pressures, loss of circulation, or swabbing.

The handling of an H₂S kick will normally involve one or two techniques.

1. Pumping it away, or
2. Circulating it out.

The technique selected must be based on the conditions existing at the time of the occurrence. The selected technique will have as its objective, the protection of human life, protection of the environment, and protection of property, in that order.

When high concentrations of H₂S are suspected, and it is operationally feasible, H₂S kicks will be pumped away rather than circulated out. This plan of action has the advantage of minimizing the surface risk to personnel, environment and service equipment.

In some cases, it will be necessary to barite or cement off the H₂S bearing formation to accomplish proper well control.

Where the decision is made to circulate out the H₂S kick, operations should not be initiated until briefings have been held with personnel involved, equipment is made ready, and alert warning signs displayed.



WELL TESTING:

1. Well testing must be performed with the minimum number of personnel required in the immediate vicinity of the rig floor and testing equipment in order to perform the test safely and to maintain the equipment and service adequately.
2. Prior to initiation of the test, special safety meetings must be conducted for all personnel who will be on the drilling facility during the test. Particular emphasis will be placed on the use of wind direction, and familiarity with safety equipment, first-aid procedures and the H2S Contingency Plan will be stressed.
3. During the test, the use of H2S detection equipment will be intensified. All produced gases must be vented and burned through a flare system equipped with continuous pilot and an automatic ignitor. Back-up ignition for each flare must be provided.
4. "NO SMOKING" ruled will be rigorously enforced.

***NOTE:** Use ventilation equipment as deemed necessary by the H2S Safety Technician.



All personnel on the rig floor and all personnel working in other susceptible areas should put on protective equipment when the kick is to be circulated out.

The person in charge should make sure all non-essential personnel are evacuated.



TRAINING REQUIREMENTS

The following training requirements shall be met for the drilling of this well:

1. All personnel, whether regularly assigned or temporary shall be provided with training to meet the criteria as established by the Texas Railroad Commission. Training shall consist of:

- A. H2S Effect Demonstration.
- B. Slide presentation "H2S Safety in Drilling Operations".
- C. Nature and effect of H2S.
- D. Use of Self-Contained Breathing Apparatus and Hoseline Units.
- E. Use of the Oxygen Resuscitator.
- F. Rescue Breathing for Victims of Hydrogen Sulfide Exposure.
- G. Effect of H2S on Metal.
- H. Discussion of the Contingency Plan and Evacuation Procedures.
- I. Safety Equipment on the rig.
- J. Emergency drills and Individual Duty.

2. Service Company Briefing

- A. Each Service Company that well be on this well after the H2S formation is penetrated will be notified that the zone may contain H2S.
- B. Each Service Company representative will be expected to attend a well site briefing.
- C. All Service Company representatives shall have approved breathing equipment available upon arriving at the wellsite.

3. All personnel shall be fully trained in Blowout Procedures.

*Reference Emergency Procedures.

TOXICITY OF HYDROGEN SULPHIDE TO MEN

H ₂ S PER CENT (PPM)**	0-2 MINUTES	2-15 MINUTES	15-20 MINUTES	30 MINUTES 1 HOUR	1-4 HOURS	4-8 HOURS	8-48 HOURS
0.005 (50) 0.020 (100)					Mild Conjunctivitis; respiratory tract irritation		
0.010 (100) 0.015 (150)		Coughing; irritation of eyes; loss of sense of smell	Disturbed respiration; pain in eyes Sleepiness	Throat irritation	Salivation and mucous discharge; sharp pain in eyes; coughing	Increased symptoms*	Hemorrhaging and death
0.015 (150) 0.020 (200)		Loss of sense of smell	Throat and eye irritation	Throat and eye irritation	Difficult breathing; blurred vision; light shy.	Serious irritating effects	Hemorrhaging and death
0.025 (250) 0.035 (350)	Irritation of eyes; loss of sense of smell	Irritation of eyes	Painful secretion of tears; weariness	Light shy; nasal catarrh pain in eyes; difficult breathing	Hemorrhage and death*		
0.035 (350) 0.045 (450)		Irritation of eyes; loss of sense of smell	Difficult respiration coughing; irritation of eyes	Increased irritation of eyes and nasal tract; dull pain in head; weariness; light shy	Dizziness; weakness; increased irritation; death	Death*	
0.050 (500) 0.060 (600)	Coughing; collapse and unconsciousness	Respiratory disturbances; irritation of eyes; collapse	Serious eye irritation; palpitation of heart; few cases of death*	Severe pain in eyes and head; dizziness; trembling of extremities; great weakness and death*			
0.060 (600) 0.070 (700)	Collapse* unconsciousness; death*	Collapse* unconsciousness; death*					
0.080 (800) 0.100 (1000) 0.150 (1500)							

* Data secured from experiments of dogs which have a susceptibility similar to men. ** PPM - parts per million



HYDROGEN SULFIDE FIRST AID PROCEDURES

TREATMENT

1. Victim should be removed to fresh air immediately by rescuers wearing respiratory protective equipment. Protect yourself while rescuing.
2. If the victim is not breathing, begin immediately to apply artificial respiration. (See page _ for the chances for life after breathing has stopped.)
If a resuscitator is available let another employee get it and prepare for use.
3. Treat for shock, keep victim warm and comfortable.
4. Call a doctor. In all cases, victim of poisoning should be attended by a physician.

ARTIFICIAL RESPIRATION

Recommended by the American National Red Cross

①



If victim is not breathing, begin some form of artificial respiration at once. Wipe out quickly any foreign matter visible in the mouth, using your fingers or a cloth wrapped around your fingers.

Mouth-to-Mouth (Mouth-to-Nose) Method

②



Tilt victim's head back (Fig. 1). Pull or push the jaw into a jutting-out position (Fig. 2).

If victim is a small child, place your mouth tightly over his mouth and nose and blow gently into his lungs about 20 times a minute. If victim is an adult (see Fig. 3), cover the mouth with your mouth, pinch his nostrils shut, and blow vigorously about 12 times a minute.

③



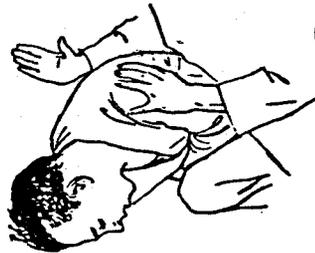
If unable to get air into lungs of victim, and if head and jaw positions are correct, suspect foreign matter in throat. To remove it, suspend a small child momentarily by the ankles or place child in position shown in Fig. 4, and slap sharply between shoulder blades.

If the victim is adult, place in position shown in Fig. 5, and use same procedure.

④



⑤



SAFETY EQUIPMENT REQUIREMENTS

1. Sign

Warning sign located at entrance with the following language:

CAUTION		
POISON GAS CONDITION TODAY IS _____		
Yellow	-	Potential Danger
Orange	-	Moderate Danger
Red	-	Extreme Danger

2. Fresh Air Breathing Equipment

- a. Air units for all personnel on location.
- b. Spare air bottles
- c. Cascade system with hose lines to rig floor and one to the derrick man and other operational areas.
- d. Cascade system for continuous air supply.

3. Wind Socks - Wind Streamers

- a. Two 36" wind socks located as shown on rig lay-out, at height visible from rig floor.
- b. Wind streamers are to be placed at various locations on the well site to insure wind consciousness at all times.

4. Hydrogen Sulfide Detector and Alarms

- a. Three Channel H₂S detector with visual alarm on rig floor set at 10 ppm and audio alarm set at 20 ppm.
- b. H₂S sniffers with H₂S and SO₂ tubes.



5. Condition Flags

Two each of the following sets of flags posted at location entrance indicating the following condition levels:

YELLOW	-	POTENTIAL DANGER
ORANGE	-	MODERATE DANGER
RED	-	EXTREME DANGER
LIGHT & SIREN	-	THREAT TO LIFE!!

Condition flag shall be posted at location entrance.

6. Resuscitator

One oxygen resuscitator for emergency first-aid with spare bottle.

7. Flare Ignition

Two elevated flare stacks will be installed with butane pilots and automatic ignition.

8. Well Ignition

A 25 mm meter type flare gun shall be at rig at all times.

9. Mud-Gas Separator and Flare Lines

Operational and tested at compliance depth.

10. Remote BOP and Choke Control

Operational and tested at compliance depth.

11. Blowout Prevention Equipment

Adequate BOP equipment for H2S service operational and tested at or prior to compliance depth.



CONDITION LEVEL

The following conditions levels shall be used on this well:

CONDITION I: POTENTIAL DANGER

Warning Sign: Yellow
Alarm: Less than 5 ppm - NONE
Characterized by: Routine drilling operations under control in zones that may contain H₂S. This condition remains in effect until H₂S is detected, and does not exceed 10 ppm, it would be necessary to go to Condition II.

General Action: 1. Be alert for a condition change.
2. Check all safety equipment for availability and proper functioning.

CONDITION II: MODERATE DANGER

Warning Flags: Orange
Alarm: ACTUATES AT 10 PPM. Continuous flashing light for one minute.
Characterized by: Drilling operations in zones containing H₂S. This condition will remain in effect until the H₂S can be neutralized by adding chemicals to the mud system or it is necessary to go to Condition III.

General Action: 1. Be alert for a condition change.
2. Check all safety equipment and monitors for availability and proper functioning.
3. Notify the Drilling Foreman or the toolpusher of the change of conditions.



CONDITION III: EXTREME DANGER TO LIFE

Warning Flags: Red/Continuous light and siren for one munite.

Characterized by: Critical well operations, well control problems, or in the extreme, loss of well control. Poisonous gases may be present at or above threshold levels as defined under Table A, Toxicity of Various Gases.

General Actions:

1. All personnel shall put on their breathing equipment. Those personnel not required in the well control operation should evacuate to the "Safe Briefing Area."
2. Follow the instructions of the drilling foreman and supevisors.
3. The Company Representative will initiate appropriate emergency action as provided in the contingency plan.
4. The drilling foreman, after consultatoin with the Oilind Safety advisor, will ignite the well, if deemed necessary as outlined in the contingency plan under "Igniting the Well" Supervisors will conduct necessary operations with an absolute minimum of personnel, all of whom will be wearing self-contained breathing apparatus.
5. If the well is ignited, the burning H₂S will be converted to sulfur dioxide, which is poisonous. THEREFORE, DO NOT ASSUME THE AREA IS SAFE AFTER THE GAS IS IGNITED. CONTINUE TO OBSERVE EMERGENCY PROCEDURES AND FOLLOW THE INSTRUCTIONS OF THE DRILLING FOREMAN AND SUPERVISORS.



H2S SAFETY EQUIPMENT TRAILERS

STANDARD H2S SAFETY CONTENTS AS FOLLOWS:

- 10 - 300 cu. ft. Cylinders, Manifolds, and Refill lines
- 1 - Oxygen resuscitator
- 1 - Drager Gas Detector with H2S and SO2 tubes.
- 1 - Explosimeter for Gas Detection
- 1 - Flag Pole and Assembly with six (6) Warning Flags
- 2 - Wind Sock Holders with Streamers
- 1 - First Aid Kit and Eye Wash Station
- 1 - Flare Pistol and six (6) Flare Shells
- 1 - Stretcher
- Fire Blankets
- 1 - Large sign containing safety instructions
- 1 - Set Briefing Area Signs
- 8 - Work Packs with hoses
- 8 - 30 minute Breathing apparatus
- 3 Channel Monitor - light & siren
- 8 - 300 cu ft cylinder with three 5 - manifolds.



EMERGENCY NUMBERS

TXP OPERATING COMPANY

(713) 439-3285

P. O. Box 1396
Houston, Texas 77251-1396

Company Personnel to be Notified in Case of Emergency

David M. Adams, Drilling Superintendent

Office: (713) 439-3285

Home: (713) 351-9417

Larry W. Mecom, Senior Safety Advisor

Office: (713) 439-3595

Home: (713) 499-7333

John Burba, Drilling Manager

Office: (713) 439-3266

Home: (713) 591-6698

Dennis Langston, Wellsite Supervision

Office: (713) 439-3285

Rig: (214) 796-7931

Larry Bruce, Wellsite Supervision

Office: (713) 439-3285

Rig: (214) 796-7931



EMERGENCY NUMBERS

OILIND SAFETY

1609 West Front Street
Tyler, Texas 75702

(214) 593-4970
24 Hour Service

Scott Williford
Frankie Flym

15333 Drummet Boulevard
Suite 160
Houston, Texas 77032

(713) 449-6922
24 Hour Service

Byron Johnson

NOWOTNY & CONLEY DRILLING CORPORATION

(318) 227-0442

1800 Beck Building
400 Travis Street
Shreveport, Louisiana 71101

Forest Conley, Jr.



EMERGENCY NUMBERS

TXP Operating Company
TXP Bedgood Estate Well #1
John Collum Survey, Abst. 167
Cass, County, Texas

HOSPITALS

Atlanta Memorial Hospital Atlanta, Texas	(214) 796-4151
Brooks Hospital Atlanta, Texas	(214) 796-2873
Linden Municipal Hospital Linden, Texas	(214) 756-5561
New Boston General Hospital Texarkana, Texas	(214) 628-5531

AMBULANCE SERVICES

Air Lift Helicopter Texarkana, Texas	(214) 774-5433
Texarkana Transfer Ambulance Service Texarkana, Texas	(214) 793-1973
Ambulance Service Linden, Texas	(214) 756-5881

POLICE DEPARTMENTS

Atlanta, Texas, City Police Department	(214) 796-7973
Linden, Texas, City Police Department	(214) 756-7511



EMERGENCY NUMBERS

SHERIFF

Cass County Sheriff Department (214) 756-7511
Linden, Texas

Sheriff's residence (214) 796-6616

DEPARTMENT OF PUBLIC SAFETY

Atlanta, Texas (214) 796-6271

Austin, Texas (Main office) (512) 452-0331
Extension 295

ARKANSAS STATE POLICE (501) 773-6286

FIRE STATIONS

Atlanta, Texas, Fire Department (214) 796-5555

Texarkana, Texas, Fire Department (214) 774-4101

RAILROAD COMMISSION

Kilgore, Texas Office - District 6 (214) 984-3026

Austin, Texas Office (512) 445-1100

ENVIRONMENTAL PROTECTION AGENCY

Dallas, Texas (214) 767-2666

TEXAS AIR QUALITY CONTROL BOARD

Austin, Texas (512) 451-5711
Extension 439

Tyler, Texas (214) 595-2639

AMERICAN RED CROSS

Texarkana, Texas (214) 793-5602

Radio Station

KALT-KPYN (214) 796-2817
Atlanta, Texas



EMERGENCY NUMBERS

PUBLIC INVENTORY LIST

- 1.) B. A. Kennedy (214) 796-6851
Route 1, Box 278
Biuins, Texas 75555
- 2.) James Lee Spray Berry (214) 796-6085
Route 1, Box 280
Biuins, Texas 75555
- 3.) Olen Dewayne Parker (214) 796-4331
Route 1, Box 277
Biuins, Texas 75555



DIRECTIONS TO LOCATION

From Tyler, Take Highway 271 North to Gilmer, Texas. From Gilmer, take Highway 155 North to Linden, Texas. From Linden, take Highway 125 East, to McLeod, then in McLeod, turn off of 125 left onto North Street. On North Street, go to the Post Office, continue past the Post Office on North Street for 2-1/10 miles, turn left and the rig will be on the right 1/2 mile down.



TOXIC EFFECTS OF HYDROGEN SULFIDE

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 20 ppm, which is .002% by volume. Hydrogen sulfide is heavier than air (specific gravity = 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in Table I. Physical effects at various hydrogen sulfide exposure levels are in Table II.

TABLE I
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY*	THRESHOLD LIMIT	HAZARDOUS LIMIT**	LETHAL CONCENTRATION***
Hydrogen Cyanide	HCN	0.94	10 ppm	150ppm/hr	300ppm
Hydrogen Sulfide	H ₂ S	1.18	10 ppm # 20 ppm ##	250ppm/hr	600ppm
Sulfur Dioxide	SO ₂	2.21	5 ppm	---	1000ppm
Chlorine	CL ₂	2.45	1 ppm	4ppm/hr	1000ppm
Carbon Monoxide	CO	0.97	50 ppm	400ppm/hr	1000ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	5%	10%
Methane	CH ₄	0.55	90000 ppm(9%)	Combustible above 5% in air	---

*Threshold Limit - concentration at which it is believed that all workers may be repeatedly exposed day without adverse effects.

**Hazardous Limit - concentration that may cause death.

***Lethal Concentration - concentration that will cause death with short-term exposure.

#Threshold Limit - 10ppm 1972 ACGIH (American Conference of Governmental Industrial Hygienists).

##Threshold Limit - 20ppm 1966 ANSI acceptable ceiling concentration for eight-hour exposure (Based on 40-hour week) is 20 ppm. OSHA Rules and Regulations (Federal Register, Volume 37, No. 202, Part II dated October 18, 1972.)

EVACUATION OF THE GENERAL PUBLIC

It is the Northern Natural Gas Company's intention to acquaint ourselves with the help of local, county and state officials, with every necessary detail to alert, warn, and evacuate residents in the area of the well, should the need occur. The procedure to be used in alerting nearby residents in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail, prior to drilling into the hydrogen sulfide formations.

In the event of an actual emergency, the following steps will immediately be taken:

1. The Northern Natural Gas Company's drilling foreman will dispatch two wellsite personnel to immediately warn each resident and any transients downwind within one-half mile and 120° arc from the wellsite.
2. The Northern Natural Gas Company's drilling foreman will immediately notify proper authorities, including Sherriff's Office, Highway Patrol, and any other public officials, as determined in the aforementioned meeting between responsible Northern Natural Gas personnel and public officials, and will enlist their assistance in warning residents and transients up to 3 miles downwind of the wellsite.
3. General
 - a. The area of 1 mile radius \pm is considered to be the zone of maximum hazard. Immediate evacuation of this area in the event of a disaster is imperative. The area beyond this zone of maximum hazard, extending to a radius of three miles, is considered to be a zone

vulnerable to hazard and residences in a 120° arc downwind of the wellsite will be evacuated immediately if a disaster occurs. The remaining residences will be evacuated as soon as possible.

- b. In the event of disaster, after the residences have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including nearby residents. The Northern Natural Gas Company desires to cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or the spread of wild rumors.

We will attempt to have the Northern Natural Gas Company District Engineer at the disaster as soon as possible. The Company's personnel will cooperate with and provide such information to civil authorities as they might require.

- c. Since one of the products of the combustion of hydrogen sulphide gas is sulphur dioxide (SO_2), under certain conditions this gas may be equally as dangerous as H_2S . A "sniffer" type device, which determines the percent of SO_2 in air and concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the SO_2 detector should be utilized to check concentrations in the proximity of the well once every 8-hour shift. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, if they are found to have hazardous concentrations.

EMERGENCY EVACUATION PLANS

A. Personnel will assemble at the most upwind briefing area for instructions.

B. Notify the following:

Oklahoma Highway Patrol-----223-8800

Sheriff's Dept., Carter County-----223-6014

Civil Defense-----223-4453

Carno Elkins, Director-----223-0306

Ambulance Service-----223-1223

Ardmore Hospital-----223-4050

Memorial Hospital-----223-5400

Dr. Mike Brown-----223-5400

Residence-----223-8131

Dr. McArthur-----223-5180

Residence-----223-5624

Dr. Hiram Vazquez and Dr. Josefina-----226-1412

Residence-----226-2588

Dr. Robert Patzkowdky-----223-5432

Residence-----223-6022

American Red Cross-----223-6293

223-6313

Executive Secretary-----223-4217

After Hours-----223-1984

Red Cross-Civil Defense--Disaster Consultant,
Charles Dibrell-----226-0589

Residence within three-mile radius keyed to location map

<u>MAP REFERENCE</u>	<u>RESIDENTS</u>	<u>TELEPHONE</u>
1	Pete York	765-3126
2	Eugene Hunt	none
3	Frank Hatter	653-2761
4	Tom Magee	none
5	Donald Rae Pickens	653-2306
6	Letha Cohee	653-2576
7	James T. Poteat	653-2375
8	Liddie Magee	none
9	DX Service Station	653-2451
10	Jerald Meeks	653-2665
11	Merle Cox	653-2757
12	Don Walker	none
13	Stuckeys - Fred Bunton	653-2206
14	Champlin Restaurant	653-2751
	Tommy Lancefore - Man.	653-9051
15	R. C. Allen	653-2448
16	Gary Idleman	none
17	Wingo	none
18	Bill Jones	653-2591
19	Capt. Glenn Fitzgerald	653-2641
20	Billy Skidmore	653-2452
21	Ray Miller	653-2305
22	Hollie Elton	653-2213
23	Hollies Motel	653-2213
24	Hollies Place	653-9011
25	Jack Pletcher	653-2251
26	Joy Johnson	none
27	Vacant	none

MAP REFERENCERESIDENTSTELEPHONE

28	Elizabeth Colvert	653-2681
29	Bob Bryant	653-2231
30	Vacant	none
31	Luther B. Smith	653-2296
32	Homer Brewer	653-2245
33	Roscoe Smith	653-2443
34	Vacant	none
35	Gene Canada	none
36	Harold Rushing	none
37	Red Jackson	653-2484
38	Bernard Reppel	653-2475
39	A. V. Jolly	none
40	Steve Hamilton	none
41	Mrs. Q. A. Tanner	653-2406
42	Chickasaw Telephone Co.	653-2101
43	A. C. Pletcher	653-2661
44	Phillips 66 - JoAnn Norman	653-9071
45	Pete Pelton	653-2396
46	Robert Elledge	none
47	Buck Pletcher	653-2585
48	Gerald Henderson	653-2135
49	Lexie Correll	653-2416
50	Dennis Cox	none
51	Sam Brightwell	653-5361
52	Ted Coriin	653-2241
53	Frank Brown	653-2492
54	Steve Brown	none
55	Jack Brown	none
56	W. L. Brown	653-2425
57	Robert York	653-2436
58	O. D. Edetherage	none
59	Dale Genn	653-2791
60	Robert G. Rose	653-2562
61	Della McDonald	653-2544

MAP REFERENCERESIDENTSTELEPHONE

62	Earl Flint	653-2166
63	Gary Montgomery	653-6312
64	Ken Brightwell	653-2776
65	C. A. Hunter	653-2342
66	Eddie Norman	653-2485
67	Roger Lyle	653-2422
68	Jerry Morris	653-2556
69	Guy Paxton	653-2161
70	Brice Pletcher	653-2265
71	Richard Coleman	653-2391
72	Vacant - House trailer to feed animals	none
73	J. R. Hisson	653-2535
74	Jack Clowdus	653-2395
75	Lee Montgomery	none
76	Nelson	none
77	Sampley's Hydraulic Service	653-2561
78	M. C. Sampley	653-2561
79	U. S. Post Office	653-2741
80	Bess French	653-2326
81	Max Yaeger	653-2191
82	Gladys Arnold	653-2165
83	Clyde Smith	653-2646
84	Springer Grocery	653-2341
85	Mrs. Elly B. Boyer (Invalid Mother)	653-2112
86	Valli Collins	653-2510
87	Charles Phillips	653-2216
88	Hubert Walker's Bell Sta.	653-9091
89	Bill Bryant	653-2211
90	Gene Warren	none
91	Vacant	none
92	Vacant	none
93	Vacant	none

MAP REFERENCERESIDENTSTELEPHONE

94	Jimmy Evans	none
95	Mobil Station	653-2441
96	John Campbell	653-2672
97	Charles Dean	none
98	W. T. Garner	653-2478
99	Jewel Irwin	653-2236
100	W. F. Cahill	653-2527
101	Part of Elementary and Cafeteria	653-9061
102	Springer Elementary	653-9061
103	Danny Hull - Supt. of Schools	653-2702
104	Springer High School Principal	653-2471
	Superintendent	653-2656
105	Home Economics Building	653-2656
106	L. N. Donaldson	653-2283
107	Robert Frazier	653-5486
108	Dean Cox	653-5455
109	J. H. Owens	653-2442
110	Garvin Canada	none
111	Church	none
112	Trailer - occupied only on weekends	none
113	Jerry Dishman	653-2617
114	Sadie Terry	653-2612
115	Vacant	none
116	Charles Allen	653-2521
117	Emmitt Hatter	653-2433
118	Vacant	none
119	Stella Meeks	653-2454
120	Clyde Roberts	653-2431
121	Dollie Warren	653-2651
122	May Walker	none

MAP REFERENCERESIDENTSTELEPHONE

123	Oney Powell	none
124	Howard Smith	653-2221
125	Raymond Pogue	653-2541
126	W. E. Walker	none
127	Mrs. J. L. Elledge	653-2701
128	Myrtle Byrnes	653-2551
129	Nannie Pogue	none
130	Mrs. Ed Ivory	653-2601
131	M. G. Shankles	none
132	Vacant	none
133	Vacant	none
134	John R. Wilkins	none
135	Lucille Sherman	653-2524
136	Church of Christ	none
137	Vacant	none
138	Vacant	none
139	Eugene Pelt	653-2717
140	Donald Patrick	653-2415
141	Vacant	none
142	Vacant	none
143	Vacant	none
144	Viola Webb	653-2322
145	Vacant	none
146	Eldon Ratliff	653-2703
147	Calvin Jolly	653-2192
148	Springer Missionary Baptist Church	none
149	Albert Walker	none
150	Dale Blain	653-2552
151	Herschell Patton	653-2539
152	Raymond Cox	653-2553
153	Vacant trailer	none
154	James Ivory	653-2571
155	Lacy Roberts	653-2762

MAP REFERENCERESIDENTSTELEPHONE

156	Lillie Bell Roberts	653-2796
157	Vester Roberts	653-2795
158	Richard Roberts	653-2294
159	Mrs. Leonard Smith	653-2526
160	Gary Babe	653-2513
161	J. C. Wilson	653-2295
162	Troy Powell	653-2297
163	R. L. Smith	653-2781
164	Janie Brown	653-2446
165	Hazel Oliver	653-2271
166	Robert Mott	none
167	Robert Pletcher	none
168	Loran Hacker	653-2525
169	John Johnson	653-2555
170	Frank J. Wodarz	none
171	Ernest Jolly	none
172	Vacant	none
173	Alvis Langley	653-2261
174	Alta Estes	653-2156
175	L. F. Owens	653-2468
176	Vacant	none
177	Earl Griffin	653-2151
178	Lewis Lusk	653-2315
179	Beatrice Cullins	653-2461
180	Tommy Smith	653-2638
181	Pat Mills	653-2715
182	Gerald Henderson	none
183	Wayne Patton	653-5091
184	Cecil Miles	653-2411
185	Tucker Lathum	653-2563
186	Jet Lathum	653-2626
187	E. W. Smith	653-2401
188	Ronnie Pelton	653-2716
189	Mary Frazier	653-2486

MAP REFERENCERESIDENTSTELEPHONE

190	Darrel Green	none
191	Jeneva Pattan	none
192	Steve Taylor	653-2515
193	Lizzie Robinson	none
194	Lamont Mason	653-2158
195	Vacant	none
196	A. D. Sharp	653-2287
197	Joe Batista	653-2477
198	George Mugge	653-2301
199	Wesley Elmore	653-2215
200	Fred Reinke	653-2655
201	Lydie Genn	653-2247
202	Claude Thompson	none
203	notified at mother-in law's	
204	Carrol Satterwhite	653-2581
205	Lucien Hunt	653-2332
206	Warren Phillips	653-2332
207	E. C. Porter	653-2682
208	Gerald Pitts	653-6471
209	Bill Kornhans	653-2683
210	Ronnie Giddens	653-2291
211	Steve Ford	653-2293
212	Keith Smith	653-2491
213	John Pace	653-2256
214	Ollie Dollar	none
215	Leroy Wooley	653-2505
216	Mike Phipps	653-2268
217	Ronnie Kyle	653-2277
218	Leon Henderson	653-2257
219	Ray Dyers	653-5243
220	Beverly Pletcher	653-2370
221	Wesley Hobbs	653-2496
222	Bernhard K. Ruppel	653-2475
223	S. E. M. Company	653-2171

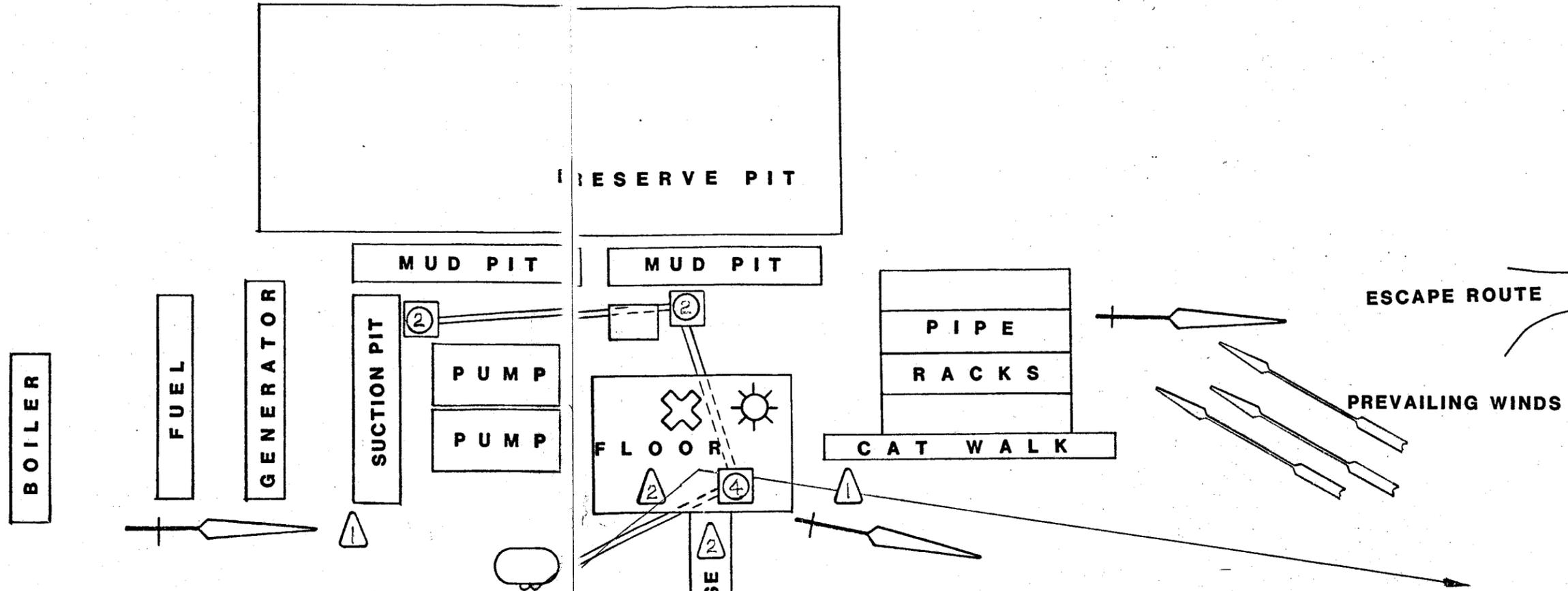
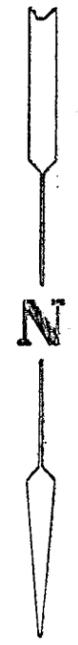
MAP REFERENCE

RESIDENTS

TELEPHONE

224	Earl Jackson	653-2234
225	Gates Oliver	653-2276
226	Maye Morris	653-2275
227	Albert Swan	none

SAMPLE



LEGEND

- 30 MIN. BACK PACKS
- AIRLINE BREATHING APPARATUS W/ MANIFOLD
- WIND SOCK
- LOW PRESSURE MANIFOLD
- 1/2" LOW PRESSURE HOSE W/ HOOK TO CASCADE
- SAFETY TRAILER W/ CASCADE AIR SYSTEM
- ALARM SIREN
- ALARM FLASHING LIGHT
- AIR MOVERS
- RESUSCITATOR
- ALTERNATE OR ADDITIONAL CASCADE AIR SUPPLY

CONDITION CODE WARNING SIGN /W FLAGS

NOTE

- CONTINUOUS H2S MONITORING HEADS LOCATED AT:
- A. RETURN AIRLINE WHILE AIR DRILLING
- B. SHAKER WHILE MUD DRILLING
- C. FLOOR
- D. SUBSTRUCTURE, BELL NIPPLE
- READOUT INSTRUMENT IN DOG HOUSE

BHP PETROLEUM (USA) INC.	
NAME PFISTER FEDERAL 42-24 LOC. SEC. 24 T 38N R 62W STATE WYO CO. NIOBRARA	Site Plan of Safety Equipment
OILIND SAFETY	



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San Juan County

Monticello, Utah 84535

(801) 587-2231

County Offices

KENNETH R. BAILEY-Commissioner
CALVIN BLACK-Commissioner
JERRY HOLLIDAY-Commissioner
GAIL D. JOHNSON-Clerk and Auditor
MARY LOU MOSHER-Recorder
BARBARA MONTELLA-Assessor
MARIAN BAYLES-Treasurer
S. RIGBY WRIGHT-Sheriff
BRUCE K. HALLIDAY-Attorney
Travel / Development Council

RECEIVED

MAY 17 1985

**DIVISION OF OIL
GAS & MINING**

May 13, 1985

Utah State Department of
Oil, Gas, and Mineral Division
4241 State Office Building
Salt Lake City, Utah

Dear Gentlemen:

The San Juan County Commission has been approached by Mr. Brian Wood, representing TXP Operating Company. This company expressed its interest in developing and drilling an oil well in Section 16, Township 36 South, Range 25 East, SLB and M., located in an area surrounding the Hovenweep National Monument in San Juan County.

The Commission has no objections in this drilling and is in favor of your office's support in granting the necessary approvals so that TXP may proceed as soon as possible.

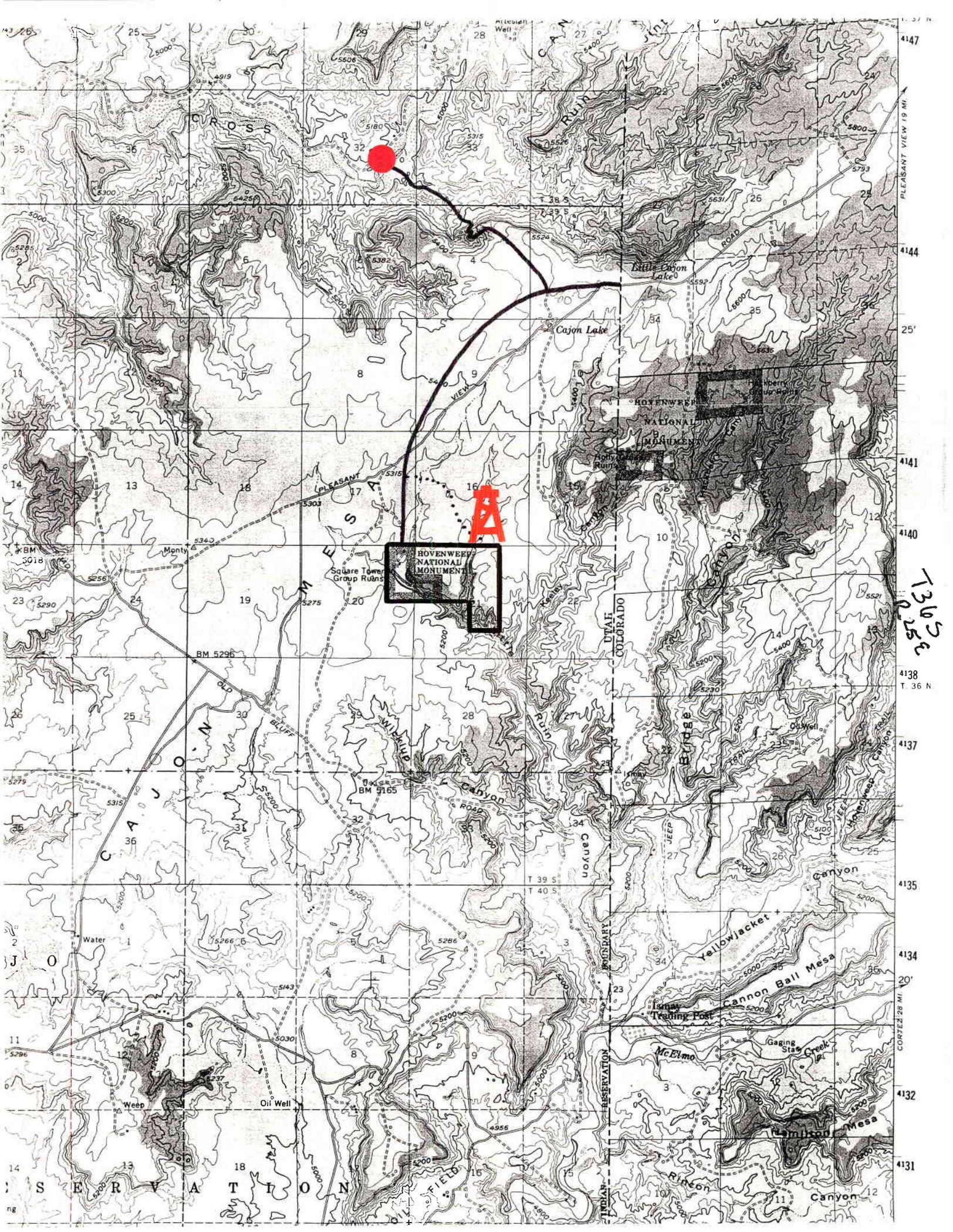
I have included a map of the proposed well with this letter. Thank you for your attention to this matter.

Very Truly,

Calvin Black, Chairman
San Juan County Commission

CB; rmb

Enclosure



HOVENEWEP
NATIONAL
MONUMENT

A

13053

Subject: TXP Operating Company's Square Tower 1-16 Well

Reply to: Brian Wood

Permits West, Inc.

P.O. Box 1105

Monticello, Ut. 84535

Oil and GAS, Mining Division
4241 State Office Bldg



RECEIVED

MAY 21 1985

DIVISION OF OIL
& MINING

MEMORANDUM

TO: John R. Baza
Division of Oil, Gas and Mining

FROM: Rod Millar *ROM*
Utah Energy Office

DATE: May 17, 1985

RE: TXP - Application for Permit to Drill

I am submitting the following comments to you on the proposed well to be drilled by TXP near Hovenweep National Monument:

- o It is regrettable that the companies involved entered into a contractual agreement to drill this well during the peak tourist season at the monument. Much of the conflict with and impacts on visitor enjoyment at the National Monument would have been avoided by scheduling the drilling later in the season. Any future drilling permits on this lease should contain a stipulation requiring consideration be given to avoid this type of scheduling conflict.
- o The APD clearly shows the type of well to be a GAS well. However, as discovered during the RDCC meeting, TXP is actually proposing to drill an oil well. While this may have been simply an error on the APD, the impact issues are quite different for an oil well. In particular, gas flaring during oil production may cause significant impacts on visitor use and enjoyment at Hovenweep N.M. State law limits the amount of gas that can be flared at producing oil wells primarily as a gas conservation measure. Because of the proximity of this well to the National Monument, any flaring of gas should be required to be the absolute minimum necessary for reasonable production. This is particularly critical during the peak tourist season at the monument (at least May through August). Increased gas flaring may be appropriate during the off-peak season if shown to be necessary for economic production.

John R. Baza
May 17, 1985
Page Two

Such impacts as gas flaring and the possible presence of a pumping unit will have long term (possibly for years) impacts on visitor use at the National Monument. Appropriate and reasonable mitigation measures should be employed if this situation develops.

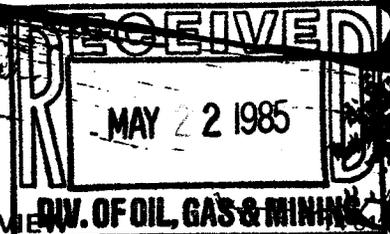
- ° Requests for expedited RDCC review of proposed actions should be considered primarily to avoid or reduce impacts when timing is crucial to accomplish those ends. Expedited review merely to accommodate a proposed action, especially when the result is increased impacts, may not be appropriate. In this particular case, there are no exogenous factors requiring an expedited review; only those created by the applicants themselves.

Ron F

SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS

HAROLD JACOBS
Chairman
WILLIAM D. HOWELL
Executive Director

P. O. Drawer AI • Price, Utah 84501 • Telephone 637-5444



AREAWIDE CLEARINGHOUSE A-95 REVIEW

NOI ___ Preapp ___ App ___ State Plan ___ State Action X Subdivision ___ (ASP # 5-510-11)

Other (indicate) _____ SAI Number UT850507-040

Applicant (Address, Phone Number):

Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite #350
Salt Lake City, Utah 84180-1203

Federal Funds:

Requested: _____

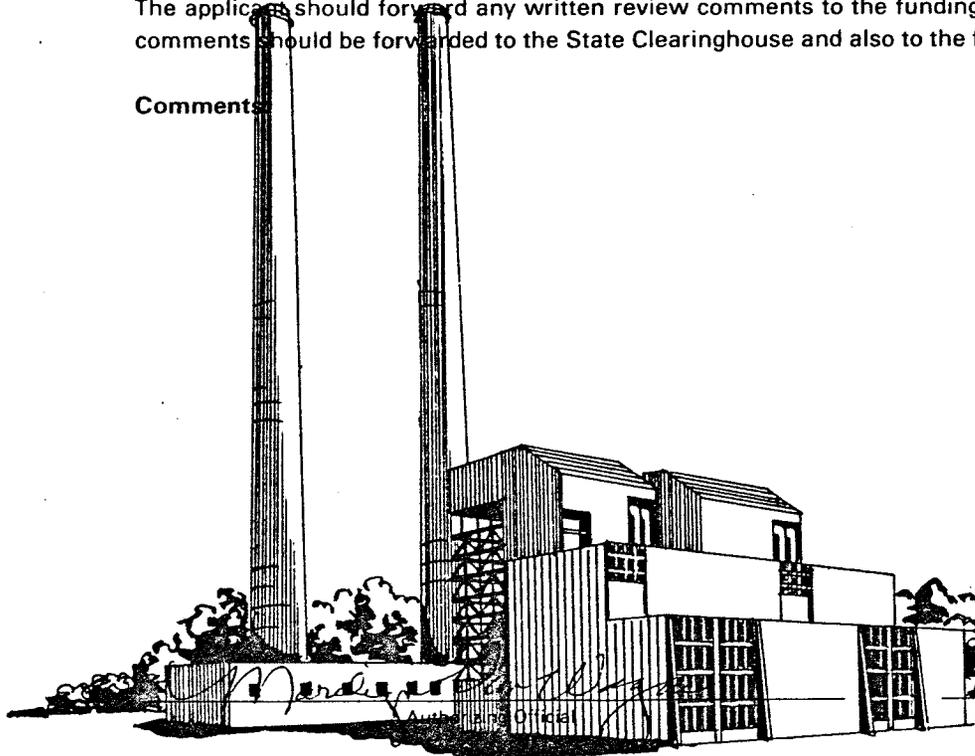
Title:

APPLICATION FOR PERMIT TO DRILL, TXP OPERATING COMPANY

- No comment
- See comments below
- No action taken because of insufficient information
- Please send your formal application to us for review. Your attendance is requested

The applicant should forward any written review comments to the funding agency. Any written response to those comments should be forwarded to the State Clearinghouse and also to the funding agency.

Comments:



5-20-85

Date

John -

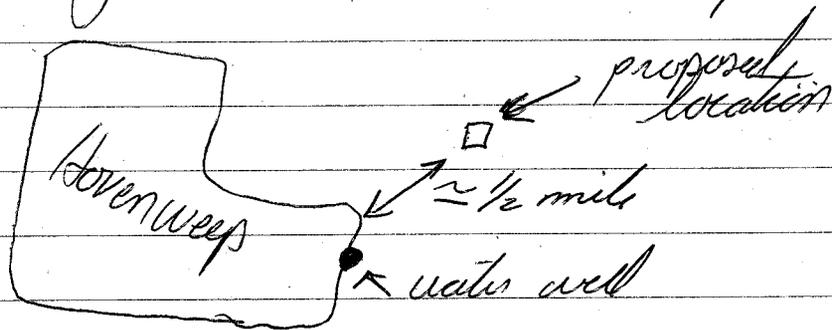
4/24/85

Spoke with Tom Hart of National Park Service at Hovenweep.

His main concerns about ~~the~~ ~~location~~ of Transco's proposed location are as follows.

①. The access road along the main boundary: The concern here is safety. When you turn off from the main road onto the access road there is a blind corner and this could cause a problem. An alternate route to the location along an existing summer trail would be acceptable. This road would be longer than the proposed road.

②. Proximity to water well for park.



The water well is a 1600 FT well in the Navajo sand.

Mtg. regarding TXPOC - Square Tower 1-16
June 17, 1985

Dianne Nielson

Mark Moench

John Baza

Alton Frazier

Pamela Grubbaugh - Littig

Dottie Brockbank

- Discussed background.
- Discussed reply to State History Comm.
- Discussed approval letter & stipulations.

RDCC Mtg.

- Outline of proposed project (location, schedule)
- Purpose of presentation to request expedited approval - 15 days.
- Comments rec'd:

Nat'l Park Service letter

Transco's response

Bill Lockhart's petition.

- Items rec'd from Transco

Amended APD form.

H₂S Contingency plan.

Surface use plan.

Archeological survey.

Don Gillespie - Nat'l. Park Service

Jim Dyckman - State History Division

Terry Martin - Nat'l. Parks & Conservation Assoc.

(Bill Lockhart) - feels strongly that a longer

period of time is needed for adequate

consideration of all impacts.

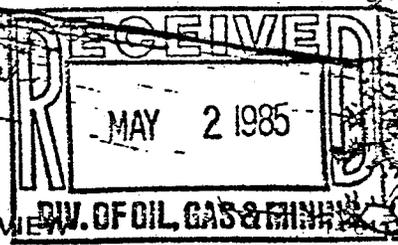
- Reviewing agencies to jointly determine the length of comment period required (15 days or as required.) Motion to remove 45-day requirement carries.
- Meeting established for May ~~29th~~ → 31th

Roof

SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS

HAROLD JACOBS
Chairman
WILLIAM D. HOWELL
Executive Director

P. O. Drawer AI • Price, Utah 84501 • Telephone 637-5444



AREAWIDE CLEARINGHOUSE A-95 REVIEW

NOI ___ Preapp ___ App ___ State Plan ___ State Action X Subdivision ___ (ASP # 5-510-11)

Other (indicate) _____ SAI Number UT850507-040

Applicant (Address, Phone Number):

Federal Funds:
Requested: _____

Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite #350
Salt Lake City, Utah 84180-1203

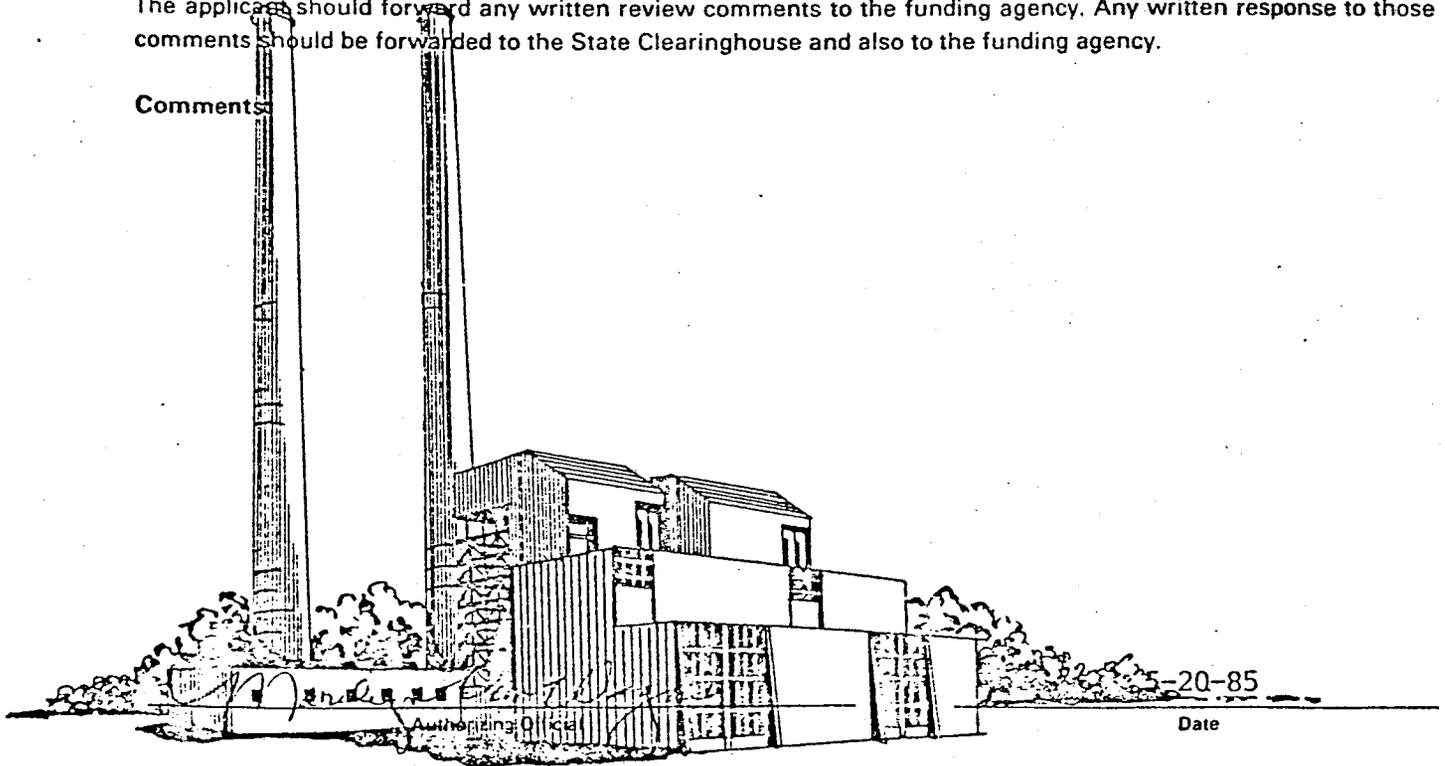
Title:

APPLICATION FOR PERMIT TO DRILL, TXP OPERATING COMPANY

- No comment
- See comments below
- No action taken because of insufficient information
- Please send your formal application to us for review. Your attendance is requested

The applicant should forward any written review comments to the funding agency. Any written response to those comments should be forwarded to the State Clearinghouse and also to the funding agency.

Comments



5-20-85
Date

Attachment #2

William J. Lockhart
P.O. Box 8672
Salt Lake City, UT 84108
Attorney for
The National Parks and Conservation Association

MAY 10 1985

DIV. OIL, GAS, MINING

BEFORE THE BOARD OF OIL, GAS AND MINING,

STATE OF UTAH

In re Application for Permit to Drill)
by TXP OPERATING COMPANY) PETITION FOR LEAVE
for Well No. TXPOC - Square Tower -16) TO INTERVENE
on State Lease ML-36203)

The National Parks and Conservation Association ("Petitioner") hereby moves the Board for permission to intervene in all proceedings for consideration of the above-entitled Application for Permit To Drill filed on behalf of TXP Operating Company under date of April 25, 1985. In support of this motion, Petitioner submits that:

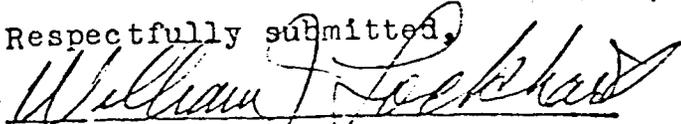
1. The National Parks and Conservation Association is a national membership organization, with an active paid membership in the State of Utah, devoted to the protection, preservation and wise use of our national parks. Members of the National Parks and Conservation Association use and enjoy Hovenweep National Monument, including areas of the Monument adjacent to the drilling and road construction proposed under the above Application. The Rocky Mountain Regional Representative of the National Parks and Conservation Association, Terri Martin, is officed

in Salt Lake City, Utah; and her business address is at P.O. Box 1563, Salt Lake City, UT 84110.

2. The National Parks and Conservation Association seeks to intervene in the above Application proceeding in order to present its concerns about the impact of the proposed drilling activity upon Hovenweep National Monument and upon the experience of its members and other persons visiting the Monument. In particular, NPCA seeks opportunity to present concerns about the Applicant's proposals for drilling and road construction in close proximity to the Monument, possible effects upon features of the Monument from drilling and road construction, and risks of hydrogen sulphide release in close proximity to Monument visitors. NPCA will request the Board's consideration of appropriate modifications of the proposed drill site and related activities in order to minimize the impact and risk from those activities.

3. It is requested that NPCA be granted a brief extension of time within which to supporting materials and argument.

Respectfully submitted,



William J. Lockhart, Attorney for
The National Parks and
Conservation Association

Proof of Service

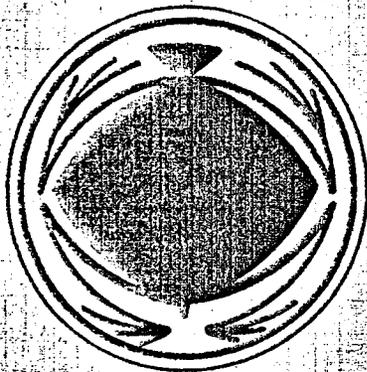
I hereby certify that I have this day served the foregoing instrument upon all parties of record in this proceeding known to the undersigned by mailing a copy thereof, properly addressed with postage prepaid, to TXP Operating Company, P.O. Box 1396, Houston, TX 77251.

Dated at Salt Lake City, UT, this 10th day of May, 1985.



William J. Lockhart

Attachment #3



May 16, 1985

ABAJO ARCHÆOLOGY

WILLIAM E. DAVIS, Director

May 12, 1985

James L. Dykman
Archaeologist
Preservation Officer Staff
Utah Division of State History
300 Rio Grande
Salt Lake City, Utah 84101-1182

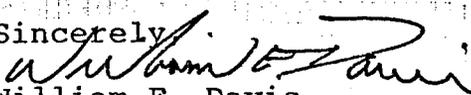
Dear James:

Please find enclosed the report entitled "Cultural Resource Inventory and Avoidance on Transco Exploration Company's Proposed Square Tower Well Locations TXP-1-16, TXP-2-16, TXP-3-16 and the Associated Access Routes Near Hovenweep National Monument, San Juan County, Utah".

As detailed in the report, a total of five archaeological sites were identified during the inventories of the three well locations and along the proposed access routes and alternative access routes. The archaeological sites were identified in the field for the surveyors to avoid and the perimeters of all the sites found on or nor the proposed well locations and along the proposed access routes were flagged.

Archaeological clearance is recommended for the proposed Transco Exploration Company TXP-1-16 Square Tower Well, Alternate Well TXP-2-16, the associated (alternate) access route and the detouring alternate route with the stipulation that the avoidance procedures detailed in the report be followed. Alternate Well TXP-3-16 and the originally proposed access route has been cancelled.

Sincerely,


William E. Davis

cc.
Lindsay, State
Goers, TXP
Rosata, TXP

Attachment #4

to: A-95 Coordinator, State Clearinghouse, 124 State Capitol, SLC, Utah 84114, 533-4971

Applicant

DIVISION OF OIL, GAS AND MINING
355 WEST NORTH TEMPLE
3 TRIAD CENTER, SUITE # 350
SALT LAKE CITY, UTAH 84180-1203

2. State Application Identifier Number

3. Approximate date project will start

JULY 1, 1985

Areawide clearinghouse(s) receiving copy of STATE ACTION: (to be sent out by applicant)

Southeastern Utah Association of Local Governments

Type of action: Lease Permit License Land Acquisition
 Land Sale Land Exchange Other: _____Title of proposed action: Application for Permit to Drill, TXP Operating Company,
Well No. TXPOC-Square Tower 1-16

Description:

TXP Operating Company proposes to drill a well to explore for gas in Sec. 16, T.39S, R.26E, San Juan County. The proposed well site is located on State land adjacent to Hovenweep National Monument. Pre-drill site inspections and archeological surveys have been performed.

TXP Operating Company representative: John Rosata (713) 439-3506

Land affected (Site location map required) (Indicate county)

Section 16, T.39S, R.26E, San Juan County

Has the city/county been contacted regarding necessary zoning & building permits? No

G. Possible significant impacts likely to occur:

Archeological clearance from Division of State History is pending. It is anticipated that surface location preparation and access road construction will create minimal disturbance for campers and tourists to Hovenweep National Monument. Drilling rig operations likewise will create minimal disturbance.

I. Name and phone number of district representative from your agency near project site, if applicable. None

J. For further information, contact:

John R. Baza, R.J. Firth
Phone: 538-5340

K. Signature and title of authorized official

John R. Baza
JOHN R. BAZA. PETROLEUM ENG
Date: 5/16/85

RDCC Minutes
May 14, 1985

Page 2

Hoven Weep National Monument - Drilling Proposal

John Baza, from the Division of Oil, Gas and Mining, discussed the proposal from Transco Exploration Company (TXP Operating Company) to drill a well on a State section adjacent to the Haven Weep National Monument. He noted that the schedule of Transco has made it necessary to speed up the comment period. He requested that a 15 day comment period be given. This is so Transco can start drilling on or before July 1, 1985. John Rosata, Jr. from Houston and Connie Goers from Denver, representatives of Transco, discussed the reasons for this request.

Terry Martin from the National Parks and Conservation Association, addressed the meeting on some of the concerns her organization has with this proposal and the fact that they feel the 15-day comment period will not allow for adequate review time to consider some of the alternative measures they would like addressed. Bill Lockhart, Esq., who is also with the National Parks and Conservation Association, spoke to some of these issues (i.e. alternative sites, noise and confusion to visitors at the monument, interrupted lookouts due to the drilling rig being so near the Monument, etc.

After Ms. Martin's presentation, Milo Barney told her that this matter is a priority item and, therefore, comments are to go to Mike Christensen in the Office of Planning and Budget for review, consolidation and forwarding. Ms. Martin again expressed concern that it would be difficult for her organization to read, review and comment adequately on this proposal within the 15-day requested comment period.

Whereupon, Barry Saunders made a motion that the Committee give the Division of Oil, Gas and Mining and any agencies who cares to participate the authority to mutually agree on an acceptable comment period. For purposes of clarification, Milo Barney restated the motion as "to have the responding reviewing agencies to work with the Division of Oil, Gas and Mining to review this project and if they can review it in shorter than 45 days to do that, if not, then the full 45 days would be required". Karl Kappe seconded the motion. After further discussion, Barry Saunders amended his motion to say that the 45-day restriction would allow those agencies that are commenting and Oil, Gas and Mining to resolve this in a shorter time if at all possible. Whereupon, a vote was taken and the motion carried unanimously.

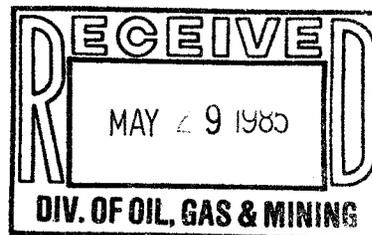
Don Gillespie then requested that the answer coming from TXP Operating Company back to the superintendent refers to another document regarding some questions. He asked that these questions be answered in quantified terms rather than in general terms. He said that this would refer directly to items such as flaring, environmental fueling, etc., that they be answered in specific terms - how much, how long, etc.

PLEASE WRITE THE STATE IDENTIFYING NUMBER ON ALL COMMENTS TO THE PLANNING OFFICE.



May 28, 1985

John Baza
Division Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203



RE: TXP's Square Tower Prospect
TXP #1-16 Square Tower Well
Township 39 South, Range 26 East
Section 16: SW/4SE/4
San Juan County, Utah

Dear Mr. Baza;

The National Parks and Conservation Association appreciates this opportunity to outline our major concerns regarding the proposal by Transco Exploration Company to drill an exploratory oil and gas well on State of Utah land approximately 580 feet north of Hovenweep National Monument's Square Tower Ruin. The close proximity of the proposed drilling operation and potential production facilities--580 feet from the northern boundary and only 1100 feet from the Monument campground--presents potential significant impacts to the historic scene and visitor enjoyment of the Monument. Furthermore, the small size of the Square Tower unit, less than a square mile, and the generally flat and open topography that surrounds the Monument, make it difficult to mitigate impacts resulting from the proximity of the proposed well. It is also important to note that while Hovenweep National Monument is composed of six separate archeological sites, Square Tower Ruin is the primary unit developed for visitor enjoyment and interpretation, and includes the Monument's only visitor center and campground.

NPCA appreciates Transco's apparent efforts to cooperate with the National Park Service in responding to a list of 9 points of concern submitted by Mese Verde National Park Superintendent Robert Heyder. It is our concern however, that several additional, fundamental and significant issues have not yet been adequately addressed. These issues are outlined below. NPCA encourages the Division of Oil, Gas and Mining to fully investigate and consider these issues in your review of Transco's drilling application.

1. Interrelationship between Transco's proposed drilling operation and Hovenweep National Monument's Master Plan.

The National Park Service is now in the process of developing a new General Management Plan for Hovenweep National Monument. The draft plan proposes the establishment of a 5,412 acre protection

National Parks and Conservation Association
1701 Eighteenth Street, N.W., Washington, D.C. 20009
Telephone (202) 265-2717

zone around Square Tower, Holly and Hackberry units, which would include National Park Service, Bureau of Land Management, State of Utah and private lands. The plan proposes several management strategies for this protection zone, including the development of cooperative management plans which require the agencies to manage their lands primarily to protect cultural resource values and visitor experience of those values, while allowing for other multiple uses as long as they are implemented in a manner compatible with cultural resource protection.

The National Park Service held several public meetings in southern Utah and southwestern Colorado in January 1985 to identify preliminary citizen concerns regarding the future of Hovenweep National Monument. The plan is currently in draft form and should be released for public review at any time.

Ideally, Transco's proposed drilling operation should be delayed until the Hovenweep General Management Plan and protection strategy has an opportunity to mature and be implemented. The planning process presents an important opportunity for the State of Utah to develop criteria for managing its state section adjacent to Hovenweep in a way which assures that mineral development will not adversely affect other important historic, scenic and recreational values of the area. Such criteria may include such concepts as: a no surface occupancy zone; recommendations to limit drilling to non-visitor season months; recommendations regarding access, flaring of gasses, and noise mitigation.

Permitting Transco's proposed drilling operation at this time forecloses the State's opportunity to carefully consider and develop criteria for the development of their lands prior to approving the first step towards that development.

NPCA encourages the Division of Oil, Gas and Mining to fully investigate the possibility of delaying action on Transco's drilling application until the Hovenweep General Management Plan has matured, and the State of Utah has had the opportunity to develop a carefully thoughtout management strategy for their adjacent lands.

2. Potential alternative locations for drilling.

Significant impacts to the historic scene and to visitor enjoyment of the archeological and intangible values of Hovenweep National Monument could result primarily from the proximity of Transco's proposed drilling operation. A drill rig within 580 feet of the Monument boundary and 1100 feet from the campground will create unavoidable visual intrusions on Hovenweep's historic scene. Similarly, noise impacts to visitors, especially at the campground, will be difficult if not impossible to mitigate to acceptable levels. Similar problems exist with the night lighting effects of flaring. Silence and star gazing are important "intangible" values to visitors at Hovenweep.

The impacts from drilling and potential production could be mitigated by increasing the distance of the proposed drilling operation

from the boundary and campground of Hovenweep National Monument. In Colorado for example, the BLM has established a quarter mile no surface occupancy zone around the Colorado Hovenweep units.

NPCA encourages the Division of Oil, Gas and Mining to fully investigate alternative locations for Transco's proposed drilling operation. We recommend that Transco be required to respond to several questions, including: Is there an alternative location where Transco could explore its potential resource at a greater distance from the Monument; could relocation together with slant drilling increase that distance?

3. Restricting drilling during the major visitor season.

Transco's proposed drilling operation would take place in July, the peak visitor season for Hovenweep National Monument. NPS records show that visitation increased dramatically from April through October, averaging 1100 to 2600 visitors a month. In contrast, visitation averages 130 to 325 visitors a month from November to March. (1983 figures)

NPCA encourages the Division of Oil, Gas and Mining to reschedule Transco's proposed drilling operation to a non-peak visitor season month, that is, sometime from November through March. While we understand that Transco may have entered into contractual agreements requiring them to drill by July 1, 1985, we encourage the Division to review the possibility of Transco's amending these agreements to allow drilling to occur when it will affect the least number of visitors.

4. Noise impacts to visitors at Hovenweep.

An important part of a visitor's experience of Hovenweep National Monument--especially for overnight campers--is the ambient quiet of the area. For many visitors, the pervasive silence enhances the historic scene, inspiring a sense of solitude and reflection.

The proposed drilling operation, as well as potential future production of oil and/or gas, will present significant noise intrusions on Hovenweep's current levels of quiet. These noise impacts provide reason to fully examine the possibility of drilling at a greater distance from the Monument or at a low visitation season. If these mitigation measures prove infeasible, noise mitigation measures such as housing engine components or padding machine parts which clang should be required.

5. Visual intrusion from flaring at night.

One of the issues raised by the NPS is the question of "flaring." Flaring gas, either during exploration or production, can create intrusive bursts of light that can interfere with visitors' sleep as well as visitor enjoyment of the night sky. The pervasive darkness, like the ambient quiet at Hovenweep, is an important part of a visitor's experience of the historic scene and ability to reflect, undisturbed, on its meaning. Furthermore, flaring of gasses could create adverse odors throughout the Monument.

Transco has identified several potential mitigation actions regarding flaring: one, the construction of a bunker during the testing period; and two, the installation of a compressor to allow for the utilization of gas during production. NPCA recommends that the Division require these, and possibly other mitigation measures, to assure that the night sky and odor impacts from flaring are minimalized. (Use of a compressor may create noise impacts and would require effective noise mitigation.)

6. Tapping of federal reserves.

Since the proposed well site is in such close proximity to the Monument boundary, there is the possibility that Transco may tap federal reserves if oil/gas is produced from the site. This issue should be resolved prior to permitting exploration.

NPCA appreciates consideration of these concerns by the Division of Oil, Gas and Mining. Please call NPCA if you have any questions.

We would appreciate the opportunity to attend the May 31 meeting between the Division of Oil, Gas and Mining and the State Historic Preservation Officer to discuss these issues. We will be calling the Division regarding the time and place of the meeting.

Sincerely,



Terri Martin
Rocky Mountain Regional Representative
National Parks & Conservation Association
Box 1563, Salt Lake City, Utah 84110
(801-532-4796)

cc: Milo Barney, Chairman, Resource Development Coordinating Committee
Lorraine Mintzmyer, Regional Director, NPS
Connie J. Goers, Transco Exploration Company
Robert Heyder, Superintendent, Mesa Verde National Park

Comments for RDCC mtg. (5/31/85)

1. Purpose of Meeting:

- To determine if adequate time has been allowed for consideration of proposed action by any state agency or interested party.
- Division is attempting to use RDCC ~~as~~ a forum to present proposed action to both the public & other interested reg. agencies.

~~Reason was that is that was~~

2. Brief recount of events:

- During April, inspector in Moab was approached about a proposed well to be drilled near Hovenweep Nat'l. Monument.
- Meetings and Presite Conference held.
- Official notice rec'd 4/29/85
- With knowledge that NPS was involved and because of sensitive nature of proposed action, Division forwarded application to RDCC, on 5/7/85. [Same time rec'd Lockhart's petition.]
- RDCC mtg. held on 5/14/85 DCGM requested expedited comment period - 15 days allowed.
- Comments rec'd:
 1. NPS letter
 2. TXP reply to NPS letter
 3. San Juan Co. Comm.

4. Rod Millar, Utah Energy Office.
5. Southeastern Utah Assoc. of Local Govts.
6. NPCA letter.

3. DOGM technical review:

- Considered issues of development of mineral resource, prevention of waste, protection of correlative rights, and protection of precious natural resources.
- Included specific addressing of:
Well siting, Underground water protection, blow-out prevention & contingency, H₂S gas hazards, location construction, reclamation plans, gas flaring, and other extraneous factors.
- Opinion that well should be approved with special stipulations to mitigate certain potential impacts ~~with~~ operation of well ~~and~~ ^{and} any of the above items.
- Only ~~question~~ ^{concern} which could not be resolved to satisfaction of all involved parties was the time table proposed for drilling. → Goes beyond scope of DOGM regulatory responsibility.

RDCC mtg. (5/31/85)

- Division of State History indicates that a law exists which requires an issuing agency to initiate action in terms of archeological clearance.
- Pursue any additional comments from Park Service (re: H₂S contingency plan and additional qualification of nine points initially voiced).

Technical Review

1. Well siting:

- Complies with rule C-3(b)
- Resource development, geologic structure, alternative locations.
- Directional drilling potential.
- Distance from Nat'l. Monument

2. ^{Underground} Surface water protection:

- Casing to be set to 2300'. Adequate amount of cement to be stipulated.
- Plugging requirements will ensure protection of ^{underground} surface water.
- Compliance with rule C-8, C-9, C-18

3. BOP equipment:

- Compliance with rule C-8, C-15
- Equipment is adequate considering both depths and established practice in the area. No abnormal pressures are anticipated.
- Mud program is sufficient for anticipated press
- Casing program is adequate.

4. H₂S Contingency:

- No H₂S gas is anticipated. Established practice in area indicates H₂S formations should not be encountered.
- Equipment & contingency will be in effect. Sample plan submitted. Upon approval of well - site specific will be received and approved.

- Well is located such that prevailing winds place well downwind from Nat'l Monument.

5. Location construction:

- Pit will be dug and lined to adequately protect against surface and underground water contamination.
- Capacity of reserve pit will be at twice of what is required during normal drilling operations.

6. Reclamation plans:

- Recontouring and reseeding of location is planned. Depending on whether well is placed on production or plugged and abandoned, all or portion of location will be reclaimed.
- Prod. facil. will be painted to blend with surrounding environment.
- Dikes to protect spillage will be constructed.

7. Gas flaring and venting:

- Gas produced in conjunction with drilling & testing operations shall be conducted a safe distance from the wellhead and flared.
- Bunkers will be constructed to prevent excessive visual impact at night.

- gas produced in conjunction with oil prod. operations - in compliance w/ Rule C-27.

8. Extraneous factors:

- Archeological review & clearance - no additional objections rec'd from Division of State History.
- Access routes - rights of way have been cleared through BLM; State ~~lease~~ agreement Lands & Forestry.
- Noise and Visual Impacts - Noise could be reduced by locating well farther from park boundary. Visual impact will not necessarily be alleviated due to areal topography.
- Scheduling of drilling to avoid maximum tourist use of park - timetable could be shifted by as much as ~~60~~ 60 to 120 days as long weather conditions did not prohibit. However, TXP's declaration that well may not be drilled could preclude development of the resource.

Drilling Application

Well siting - OK
lease - OK
Bond - OK

Water - OK
History - OK

See pt.
drilling
plan

Surface water - adequately protected by surface casing to 2300'.

BOP's - OK, 3000 psi, TD = 6100'.

H₂S - equipment and contingency will be in effect although no H₂S is expected.

Surface
Use
Plan

Pit construction and lining - plastic liner is to be used. Capacity is at least twice of what is needed.

H₂S - prevailing winds place location downwind of Nat'l. Monument.

Prod. facil. - painted to blend with surrounding environment. Dikes to protect spillage will be constructed.

Reclamation - recontouring and reseeding is planned.

RDCC Comments:

Nat'l Park Service:

1. Proposed access road. Alternate route chosen & cleared.
2. H₂S gas - Division must receive and approve site specific H₂S cont. plan.
3. Restoration & rehab. plans - check surface use plan.
4. Pit lining & spill control - check surface use plan.
5. BOP contingencies - check drilling plan.
6. Gas flaring or venting - controlled under rule C-27.
7. Protection of underground water - casing & cementing.
8. Site visits - controlled through DOGM field representative.
9. Color of production facil. - check surface use plan.

Rod Millar - Utah Energy Office

1. Stipulations on exploration of lease must be developed as part of the lease - waiting for the drilling process is too late.
2. Gas flaring, visual impact - require protective berms.
3. RDCC policy matter.

NPCA:

1. Land management policy matter.
2. Alternative locations:
 - resource devel. (geol. structure)
 - well siting
 - directional drilling possibility.
3. Timetable for drilling, drilling window.
 - similar to wildlife stipulations.
 - rainy season operations.
4. Noise
 - could be alleviated by distancing well from park boundary.
 - structural containment of production facilities.
5. Visual impact
 - gas flaring behind dirt bunkers.
6. Federal minerals
 - no special consideration beyond establishment of well siting rule.

6/3/85

DRN wants to call TXP & discuss following:

1. Timing of well - schedule for picking a site, WO approval, etc., especially associated with contractual obligations.
2. Could TXP select alternate site and begin permitting process in order to hedge their bets?
3. Is there any Force Majeur clause in any contract which would relieve TXP of their obligation?
4. Any other options?

Call Connie Goers (303) 863-3616

Connie says that:

- They had to be actually drilling by July 4th to meet their drilling deadline for partner.
- If not drilled by 7/4, will repropose well to partner. A 30 day time period must elapse to receive partner's approval or non consent. It will be 90 days to commence well from that point.
- Monetary support from Marathon & Wintershall terminates on 7/15. These parties may choose not to renew their support.
- Attorneys are reluctant to use Force Majeur clause because no case law exists.

RECEIVED

JUN 07 1985

DIVISION OF OIL
GAS & MINING

May 21, 1985



NORMAN H. BANGERTER
GOVERNOR

DC
ED

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801 / 533-5755

Chairperson
Resource Development Coordinating Committee
State Planning Office
118 State Capitol
Salt Lake City, Utah 84114

Attn: Mike Christensen

RE: Application for Permit to Drill, Well No. TXPOC-Square Tower 1-16

In Reply Refer to Case No. I063

Dear Chairperson:

The Utah Division of State History has received a State Actions form from the Division of Oil, Gas and Mining concerning TXP's proposal to drill a well in Section 16, Township 39 South, Range 26 East, San Juan County. After review of the State Actions form and the cultural resources management report by Abajo Archaeology, our Division notes that archeological clearance was recommended by Abajo based on four items:

1. That alternate well TXP-2-16 is moved one hundred feet to the southwest of its intended location in order to avoid 42Sa16843.
2. Alternate well TXP-3-16 was counseled to avoid damage to site 42Sa16936.
3. Original access route cancelled to avoid 42Sa16846.
4. The planned alternate access road to follow an old seismographic trail to avoid impacting sites 42Sa1684 and 1645.

Considering these stipulations recommended by the contractor, our office believes the Division of Oil, Gas & Mining has an adequate report to recommend clearance for cultural resources. If you have any questions or concerns, please contact me or the assistant state archeologist, 533-4563.

Sincerely,

David Madsen
State Archeologist

DM:jrc:I063/1657V

RECEIVED

JUN 07 1985

DIVISION OF OIL
GAS & MINING

June 5, 1985

Dianne Nielson
355 West North Temple
3 Triad West North Temple
Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Nielson:

Attached is the agenda for a special meeting of the Cultural Sites Review Committee. The meeting will be held at 1:00 p.m. on Friday, June 14, in the board room of the Utah State Historical Society offices, 300 Rio Grande, Salt Lake City, Utah.

The meeting is being called to review a state action involving the location of a drill site near Hovenweep National Monument. The drill site will involve the flaring of gas, the close proximity of a drill site to a national monument, drilling during heavy tourist season, and other potential aesthetic impacts to the national monument. Therefore, in accordance with UCA 63-18-37, the cultural sites review committee is being asked to meet to suggest alternatives, if any, which will preserve such historic site. The suggestions of the committee are not binding, but are recommendations which according to the lead state agency, the Division of Oil, Gas & Mining, will be considered as a part of their review if received by 5:00 p.m. on Friday, June 14.

If you are unable to attend, or have questions concerning this meeting, please contact Wilson Martin at 533-7039.

Sincerely,



Melvin T. Smith
Director and
State Historic Preservation Officer

WGM:jrc:1718V

Attachments



NORMAN H. BANGERTER
GOVERNOR

CC: RJ Hirth
JR BAZA
Mc Moeneth



STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801 / 533-5755

A G E N D A

Meeting of the Cultural Sites Review Committee
Friday, June 21, 1985

Offices of the Utah State Historical Society
300 Rio Grande
Salt Lake City, Utah

1. Call meeting to order: Chairman.
2. Review application for permit to drill Square Tower Well TXP #1-16, state lease ML-36203, Township 39 South, Range 26 East, Section 16 SW/4SE/4, near Hovenweep National Monument, San Juan County, Utah.
 - a) Review staff report of attached materials entitled "Background".
 - b) Presentations by interested parties, 1) Division of Oil, Gas & Mining, 2) National Park Service, 3) Transco (TXP Operating Company), 4) National Parks and Conservation Association, and 4) general public.
 - c) Cultural sites review committee discussion of the following options:
 - (1) Make no recommendations or comments.
 - (2) Make specific recommendations to lessen impacts.
 - (3) Make recommendations not to go forward with the drilling at this site.
 - d) Other business.

Background

Utah Code Annotated 63-18-37:

"Any agency of this state proposing projects which will destroy, materially affect, or aesthetically diminish any district, site, building or object included on or eligible for the state or national register referred to herein shall, at an early planning stage, and before construction is commenced, notify the State Historic Preservation Officer to allow the Committee an opportunity to review the recommendations regarding such construction and to suggest alternative plans which will preserve such district, site building or object." (underline added.)

The case involves no federal funding, licenses or permits, and therefore is not reviewed under Section 106 of the Historic Preservation Act.

The following documents are attached for your reference (certain key issues are marked by **):

- Attachment 1, May 2: Southeastern Utah Association of Local Governments - no comment.
- Attachment 2, May 10: Petition for leave to intervene filed by William J. Lockhart, Attorney for the National Parks and Conservation Association. Key document - concerns presented.
- Attachment 3, May 12: Abajo Archaeology letter indicating presence of archeology, but avoided. Recommended clearance. (State action, see Attachment 8, for State Archeologist's response.)
- Attachment 4, May 13: State Actions Form.
- Attachment 5, May 13: National Park Service letter to Division of Oil, Gas & Mining (DOGM). Key document:

**1) Solving northern boundary road problem.

2) Hydrogen sulfide gas warning system.

**3) Native flora restoration.

4) Prevention of spills.

5) Blowout prevention contingencies.

**6) Gas flaring during drilling only,
not during production.

7) Protection of fresh water.

8) Notification of visits.

**9) Color of facility.

Attachment 6, May 13: TXP Operating Company letter to
DOGM. Key document - answers to NPS
recommendations:

**1) Road north boundary.

2) No hydrogen sulfide (H₂S) gas with
H₂S contingency plan.

**3) Flora to be dealt with by surface
use plan.

4) Surface use plan specifies lined
and diked reserve pit.

5) Blowout provisions responded to.

**6) Flaring - could construct bunker
to obstruct glare of gas - later
store gas.

7) Protecting fresh water.

8) Permission to accompany state
inspector approved.

9) State regulation will be
followed. General environmental
protection considered.

Attachment 7, May 17: San Juan County Commission - no
objection.

Attachment 8, May 21: State Archeologist - recommend
clearance. Did not address aesthetic
impacts.

Attachment 9, May 21: Key document - Energy Office Memo to
DOGM:

**o scheduling conflict

**o gas flaring problem

o expedited review

Attachment 10, May 30: DOGM letter to RDCC Coordinator, Dated May 30, 1985. Key document - recommending approval:

** Well locating and siting - to be maintained, due to drilling problems.

Underground water - protection measures.

Blowout prevention equipment and contingency - equipment adequate.

Hydrogen sulfide gas considerations - plan received.

Location construction - protect water.

Reclamation plan - appropriate color.

** Gas flaring or venting - bunkers will be constructed.

Other factors

** a) No benefit by moving from NPS boundary, due to flat topography.

** b) Conflict in scheduling with tourist season - but accept because not in violation of any order.

Attachment 11, May 31: SHPO letter to DOGM outlining need to comply with UCA 63-18-37.

Attachment 12, June 3: Letter to State History from DOGM, June 3, "interested in comments of Cultural Sites Review Committee"

Attachment 13: Location map.

Attachment #1

OPERATOR TXP Operating Company DATE 10/11/85
WELL NAME TXPOC - Guard Tower 11-16
SEC SWSE 16 T 39S R 26E COUNTY San Juan

43-037-31159
API NUMBER

State
TYPE OF LEASE

CHECK OFF:

PLAT

BOND

NEAREST WELL

LEASE

FIELD

POTASH OR OIL SHALE

PROCESSING COMMENTS:

State History ~~OK~~
Water ~~OK~~

APPROVAL LETTER:

SPACING: A-3 _____ UNIT

C-3-a _____ CAUSE NO. & DATE

C-3-b

C-3-c

STIPULATIONS:

1. ~~Water~~
2. * See approval letter

J. Baza



TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

One United Bank Center
1700 Lincoln, Suite 2100
Denver, Colorado 80203
303-863-3600

June 11, 1985

RECEIVED

JUN 11 1985

U.S. DIVISION OF OIL
& GAS

Dr. Dianne R. Nielson, Director
Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Dr. Nielson:

You have requested that we provide a current analysis of our response of concerns raised by the National Park Service ("Park Service") and the National Parks and Conservation Association ("NPCA") regarding our Application for Permit to Drill, TXPOC Well No. Square Tower 1-16. We have met several times with representatives of Park Service, including visits to the well site and have incorporated these concerns and suggestions into our plans. The concerns voiced by NPCA mirror those expressed by Park Service representatives. For a full expression of those concerns and suggestions we refer you to:

1. Letter dated May 9, 1985 from Robert C. Heyder, Superintendent, Hovenweep National Monument to Pat deGruyder, Utah Division of Oil, Gas and Mining; and
2. Letter dated May 28, 1985 from Terri Martin, National Parks and Conservation Association to John Baza, Utah Division of Oil, Gas and Mining.

This letter responds to the comments or concerns presented in those two letters.

NATIONAL PARK SERVICE CONCERNS

1. Road access to the drill site - Pursuant to the Park Service's suggestions, the access route has been altered to avoid the north boundary of Hovenweep National Monument. Superintendent Heyder's May 9, 1985, letter indicates that such a change will alleviate the Park Service's concerns.
2. Hydrogen sulfide (H₂S) contingency plan - Pursuant to the Park Service's suggestion, we have submitted to your office a nonsite-specific but representative H₂S Contingency Plan, though we believe that the plan is not required and the occurrence of H₂S at this site is highly improbable. Following approval of our application but prior to drilling we shall file and gain your approval of a site-specific plan.

3. Reclamation - The Park Service requests that only native species be used to restore the site. We believe that the reclamation procedures outlined in the Surface Use Plan submitted on May 13, 1985 comply with that request.

4. Reserve Pit Spillage - The reserve pit will be lined and diked in a manner that complies with the regulations of the Utah Division of Oil, Gas and Mining. Pond capacity is approximately twice what is needed and in the unlikely event that capacity is exceeded, excess water will be trucked to disposal ponds approved by the State of Utah.

5. Blow-out preventions - The Park Service has been advised that we will comply with the State of Utah's regulations concerning blow-out prevention. That understanding is reflected in Superintendent Heyder's May 9, 1985, letter.

6. Flaring - We will comply with State of Utah's regulations concerning the flaring of gas. Additionally, we will construct a bunker to obstruct the glare of the gas flare. If the well is put on production, we will likely install a compressor and use the gas for the production facilities or transport it off-site.

7. Monument water supply - To insure protection, we propose to set approximately 2,300 feet of 9 5/8 inch surface casing in the proposed well. This amount of surface casing exceeds the amount required by State of Utah regulations. We are, of course, agreeable to inspections by the Division of Oil, Gas and Mining to assure compliance.

8. Site inspection - The Park Service requests that the Unit Manager of Hovenweep National Monument be given notice and be permitted to accompany state inspectors on visits to the well site. We have no objections to such a procedure provided that he execute a standard indemnification and hold harmless statement relating to any injury occurring at the drill site.

9. Color of facilities - The Park Service requests input into the color of production facilities, should the well prove productive. We will comply with State of Utah Regulations and would welcome any Park Service input.

NPCA CONCERNS

1. Relationship to the Hovenweep draft general management plan - NPCA notes that the draft Park Service planning document (not a general management plan) submitted by NPCA to the state includes alternatives which might extend land use limitations to adjacent lands. Any proposal to permit the Park Service to effectively engage in land use planning for state lands is, at this stage, very speculative. Such a proposal, if ultimately adopted by the Park Service and the state, certainly would not occur for several years and cannot be considered a reasonable alternative at this time.

Management authority of the land and lease in question presently rests with the Utah Division of State Lands and Forestry. That Division unlike the Park Service, is charged both with surface and mineral management consistent with its trust responsibilities to the State School Fund. The

Division of State Lands and Forestry has participated in the development of the numerous mitigation stipulations that will affect our drilling. Now that those stipulations have been developed and we stand ready to comply with all applicable regulations of that agency and your own, further delay does not seem lawful or appropriate in view of the state's trust responsibilities. Delay until issues related to the draft planning document of the Park Service are resolved would, as a practical matter, eliminate our opportunity to drill.

Finally, we should add that drilling and/or production will not foreclose the opportunity of the state to enact further management restrictions after the recovery of the hydrocarbons has occurred and the site is reclaimed and restored.

2. Alternative locations - NPCA suggests either an alternative location further from the Monument or relocation combined with slant drilling. Either approach creates significant problems. First, we have examined the possibility of relocating the drill site. We refer you to Exhibit 1 and associated material submitted with the Surface Use Plan. The Square Tower 1-16 Well is being drilled to test the seismic prediction of a hydrocarbon reservoir in the Upper Ismay Formation of Pennsylvania age. Oil fields of similar age and geological origin occur at Patterson Canyon Field, Little Nancy Field and Tin Cup Mesa Field. (See Exhibit 1: Upper Ismay Fields, submitted May 13, 1985). The reservoirs in these fields consist of northwest-southeast trending reef mounds constituting long, linear porosity pods. These reservoirs grade laterally into non-reservoir, non-porous inter-mound line muds and are sealed vertically by block shales and anhydrites. The rapid loss of structure or porous reservoir rocks when drilling off these linear trends is demonstrated by dry holes flanking the string of producing wells at very short distances to the northeast or southwest. The maximum tolerable offset from the axis of known production is established at 600' for Little Nancy Field and at 650' for Tin Cup Mesa Field. Proposals to move the well a quarter mile from the Hovenweep boundary would clearly increase the risk of drilling a dry hole. Such a relocation would exceed the 600' considered the absolute maximum tolerable on the basis of analogous fields. We have selected a location that we believe will promote the orderly exploration and development of the reservoir and result in the maximum ultimate recovery of hydrocarbons from the subject land. We understand that this is consistent with applicable Utah law.

Relocation also creates some practical problems. The current site is shielded somewhat by natural topography. Section 16 slopes up toward the north. If the drill site is moved further away, it will also be higher and thus, more visible, to Monument visitors.

Directional drilling creates an additional problem, as that alternative would considerably lengthen drilling time. The duration of noise and visual impacts would typically be far greater as a result of directional drilling. Directional drilling would also increase the risk of encountering special drilling difficulties that would further extend the duration of drilling. We are also concerned about the increased costs associated with directional drilling. Analysis of similar well submitted with the Surface Use Plan shows that costs almost doubled (84% higher) and drilling time increased 54%.

Dr. Dianne R. Nielson

June 11, 1985

Page Four

3. Delay drilling - NPCA proposes rescheduling the drilling for later in the year. As we have explained, and as noted in the Division's May 30 letter to the RDCC Coordinator, this simply is not feasible under current contractual agreements.

4. Noise impacts - As noted above, we have agreed to construct a bunker which will reduce noise impacts and will also comply with State of Utah regulations requiring a muffler on drill rigs in the Paradox Basin.

5. Visual impacts from flaring - Our efforts to mitigate any visual impacts are discussed at page 2 above.

6. Tapping Federal Reserves - NPCA suggests resolving this issue prior to exploration. That does not appear feasible, as without exploration, the size of the pool, or more importantly, the existence of a pool, cannot be determined. We refer you to Superintendent Heyder's letter, where he notes that the State "recognizes the potential that the proposed well may tap federal reserves" and agrees that "This question will be dealt with if the well proves to be productive and the size of the pool is determined." We agree with Mr. Heyder. We also direct your attention to the fact that we are not asking for an exception to the Division's rules concerning the location of the proposed well. Nor are we aware of any reason to believe that this location will adversely affect correlative right of the United States or any other party.

We appreciate the Division's assistance in addressing the concerns which have been expressed. We believe that the changes we have made in the drilling proposal and the additional precautions which we have agreed to take will minimize any potential adverse impact on visitor enjoyment of Hovenweep National Monument. Our primary remaining concern is the further delay in approval of our drilling proposal will seriously jeopardize our contractual agreements with other parties. We must receive action on our application by late this week or early next week if we are to avoid such consequences. We believe we clearly have satisfied all pertinent Utah laws and regulations and request your immediate action on our application. Thank you for your consideration of and attention to this matter.

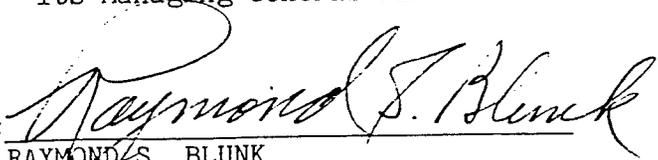
If we can provide any additional information, please contact us.

Very truly yours,

TXP OPERATING COMPANY,
a limited partnership

By: Transco Exploration Company,
its Managing General Partner

By:


RAYMOND S. BLUNK
Area Land Manager

RSB:cl

EXHIBIT 1

INCREASED DRILLING COSTS WHEN DIRECTIONAL DRILLING

The Forest Oil, 1 Annie Federal well was a directionally drilled well in Dolores County, Colorado with a surface location 1474' FSL, 620' FEL, Sec 27-T39N-R20W and bottom hole location of 953' FSL, 880' FWL of sec 26-T39N-R20W. The well was drilled to the same stratigraphic horizon, i.e. Pennsylvanian Akah Salt, as the proposed 1-16 Square Tower well. The bottom hole location was 539.14' south and 1511.93' east of the surface location for a total horizontal deviation of 1605.18' S 70° 22' 27" E from the surface location or about 1/3 of a mile. The well was deviated from a depth of 490' to the total depth of 6530' measured depth which equalled true vertical depth of 6294'. The cumulative drilling cost for this well on the final drilling report was \$618,404 and drilling time was 37 days. It is estimated that the final well cost would entail an additional 15.04% after abandoning the well above the final drilling report cost, giving an estimated total dry hole cost of \$711,412. This compares with a 19 well, average dry hole drilling cost of \$387,358 and an average drilling time of 24.1 days or almost doubling (84% higher) the drilling cost and a 54% greater drilling time when directionally drilling for a 1/3 mile horizontal deviation. Greater horizontal deviations would be more costly and comparable increases in production costs due to above average sucker rod and tubing wear would be expected.



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangert, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 13, 1985

To: D. R. Neilson
From: J. R. Baza *SRB*
RE: Application for Permit to Drill Well No. TXPOC-Square Tower
1-16, Sec. 16, T. 39S, R. 26E, San Juan County, Utah

This memo will serve to update information regarding Division staff review of the proposed drilling operation. Supplementary material has been provided by TXP Operating Company to the Division via a response letter received on June 13, 1985, and various telephone communications. Based on this information, the staff has been able to address in greater detail the specific concerns mentioned in a letter dated May 30, 1985 from John Baza to the RDCC coordinator. The following paragraphs summarize the findings of the review on those items for which additional information was provided.

Well Location and Siting

TXP's response letter states that the proposed location was selected as the most desirable based on: (1) interpretation structural geology, (2) expense and risk of directionally drilling from an alternative site, (3) increased duration of drilling operations, ie. noise and visual impacts, if well is directionally drilled, and (4) compliance with applicable rules of the Board of Oil, Gas and Mining establishing well siting and locating. Specific statements have been made providing geological, engineering, and economic data which justifies the selection of the proposed location. Staff concurs with these statements.

Underground Water Protection

TXP's response letter reiterates their position that the proposed casing and cementing program will adequately protect any known fresh water resource. Staff recommends that the APD approval, if given, should stipulate that adequate cement will be placed behind the 9-5/8" casing such that the final level of cement does not exceed 1200' in depth. This will hydraulically seal the well bore above the level of potential fresh water zones within the Navajo formation and well above the depth of the Monument's water supply well at 1437'. The approval should also stipulate that casing pressure tests and a cement bond log should be performed to evaluate the integrity of the cement job.

These tests and logs should be submitted to the Division for review.

Blowout Prevention Equipment and Contingency

No additional information was provided concerning this item of review. The operator should be reminded that the Division requires advance notice of all tests and procedures required to be witnessed by a Division representative.

Hydrogen Sulfide Gas Considerations

TXP has indicated that they will be unable to provide a site specific H₂S contingency plan at this time, but they will provide one and obtain approval of the plan after the APD is approved and prior to beginning drilling. TXP reiterates that the occurrence of H₂S gas at this site is highly improbable. Staff concurs with these statements.

Location Construction

TXP has indicated that surface use and access roads have been planned to meet the concerns of both the Division and the National Park Service. Staff recommends that trenches or dikes should additionally be required for containment of any leak, spill, runoff, or other fluid to the location during drilling and production of the well. TXP has been informed of this recommendation and they intend to submit revised location layouts showing dikes and trenches to be used for this purpose.

Reclamation Plans

No additional information was provided concerning this item of review. Staff recommends the use of an unobtrusive color for the painting of any production facilities. Standard colors used by the BLM for this purpose are Juniper Green or Desert Tan.

Gas Flaring or Venting

TXP has agreed to construct earthen bunkers to alleviate visual impact upon the Monument. It is their intention to submit additional diagrams depicting the size and shape of these bunkers. These diagrams, along with location layout maps, will be reviewed by staff prior to drilling.

Other Factors

By letter dated May 21, 1985, the Division of State History indicated that they had reviewed a cultural resources

Page 3
Memo to D. R. Neilson
June 13, 1985

management report for the subject well prepared by Abajo Archeology. Their letter recommends clearance of the site subject to stipulations included in the report. Staff concurs with these recommendations. A meeting is scheduled for June 14, in which the Cultural Sites Review Committee will review the proposed action for potential aesthetically diminishing effects. As previously mentioned, TXP has agreed to construct bunkers to mitigate excessive noise and visual impacts. In addition, TXP has stated that relocating the well will not necessarily diminish these impacts because of the extended drilling time needed for directionally drilling. Staff recommends that these points should be brought out at the meeting on June 14.

After considering the additional information provided by TXP, staff maintains the opinion that the proposed well should be given approval to drill. TXP has expressed a genuine willingness to take all necessary precautions short of not drilling the well in their proposed time frame to alleviate concerns expressed by the National Park Service, the National Parks and Conservation Association, and the state. It is staff's recommendation that the well be approved to drill under the conditions previously mentioned in this memo.

jrb
cc: R. J. Firth
0090T-112-114

One United Bank Center
1700 Lincoln, Suite 2100
Denver, Colorado 80203
303-863-3600

June 11, 1985

Dr. Dianne R. Nielson, Director
Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Dr. Nielson:

You have requested that we provide a current analysis of our response of concerns raised by the National Park Service ("Park Service") and the National Parks and Conservation Association ("NPCA") regarding our Application for Permit to Drill, TXPOC Well No. Square Tower 1-16. We have met several times with representatives of Park Service, including visits to the well site and have incorporated these concerns and suggestions into our plans. The concerns voiced by NPCA mirror those expressed by Park Service representatives. For a full expression of those concerns and suggestions we refer you to:

1. Letter dated May 9, 1985 from Robert C. Heyder, Superintendent, Hovenweep National Monument to Pat deGruyder, Utah Division of Oil, Gas and Mining; and
2. Letter dated May 28, 1985 from Terri Martin, National Parks and Conservation Association to John Baza, Utah Division of Oil, Gas and Mining.

This letter responds to the comments or concerns presented in those two letters.

NATIONAL PARK SERVICE CONCERNS

1. Road access to the drill site - Pursuant to the Park Service's suggestions, the access route has been altered to avoid the north boundary of Hovenweep National Monument. Superintendent Heyder's May 9, 1985, letter indicates that such a change will alleviate the Park Service's concerns.
2. Hydrogen sulfide (H₂S) contingency plan - Pursuant to the Park Service's suggestion, we have submitted to your office a nonsite-specific but representative H₂S Contingency Plan, though we believe that the plan is not required and the occurrence of H₂S at this site is highly improbable. Following approval of our application but prior to drilling we shall file and gain your approval of a site-specific plan.

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JUN 13 1985

DIVISION OF OIL
GAS & MINING

J. Baza

3. Reclamation - The Park Service requests that only native species be used to restore the site. We believe that the reclamation procedures outlined in the Surface Use Plan submitted on May 13, 1985 comply with that request.

4. Reserve Pit Spillage - The reserve pit will be lined and diked in a manner that complies with the regulations of the Utah Division of Oil, Gas and Mining. Pond capacity is approximately twice what is needed and in the unlikely event that capacity is exceeded, excess water will be trucked to disposal ponds approved by the State of Utah.

5. Blow-out preventions - The Park Service has been advised that we will comply with the State of Utah's regulations concerning blow-out prevention. That understanding is reflected in Superintendent Heyder's May 9, 1985, letter.

6. Flaring - We will comply with State of Utah's regulations concerning the flaring of gas. Additionally, we will construct a bunker to obstruct the glare of the gas flare. If the well is put on production, we will likely install a compressor and use the gas for the production facilities or transport it off-site.

7. Monument water supply - To insure protection, we propose to set approximately 2,300 feet of 9 5/8 inch surface casing in the proposed well. This amount of surface casing exceeds the amount required by State of Utah regulations. We are, of course, agreeable to inspections by the Division of Oil, Gas and Mining to assure compliance.

8. Site inspection - The Park Service requests that the Unit Manager of Hovenweep National Monument be given notice and be permitted to accompany state inspectors on visits to the well site. We have no objections to such a procedure provided that he execute a standard indemnification and hold harmless statement relating to any injury occurring at the drill site.

9. Color of facilities - The Park Service requests input into the color of production facilities, should the well prove productive. We will comply with State of Utah Regulations and would welcome any Park Service input.

NPCA CONCERNS

1. Relationship to the Hovenweep draft general management plan - NPCA notes that the draft Park Service planning document (not a general management plan) submitted by NPCA to the state includes alternatives which might extend land use limitations to adjacent lands. Any proposal to permit the Park Service to effectively engage in land use planning for state lands is, at this stage, very speculative. Such a proposal, if ultimately adopted by the Park Service and the state, certainly would not occur for several years and cannot be considered a reasonable alternative at this time.

Management authority of the land and lease in question presently rests with the Utah Division of State Lands and Forestry. That Division unlike the Park Service, is charged both with surface and mineral management consistent with its trust responsibilities to the State School Fund. The

Division of State Lands and Forestry has participated in the development of the numerous mitigation stipulations that will affect our drilling. Now that those stipulations have been developed and we stand ready to comply with all applicable regulations of that agency and your own, further delay does not seem lawful or appropriate in view of the state's trust responsibilities. Delay until issues related to the draft planning document of the Park Service are resolved would, as a practical matter, eliminate our opportunity to drill.

Finally, we should add that drilling and/or production will not foreclose the opportunity of the state to enact further management restrictions after the recovery of the hydrocarbons has occurred and the site is reclaimed and restored.

2. Alternative locations - NPCA suggests either an alternative location further from the Monument or relocation combined with slant drilling. Either approach creates significant problems. First, we have examined the possibility of relocating the drill site. We refer you to Exhibit 1 and associated material submitted with the Surface Use Plan. The Square Tower 1-16 Well is being drilled to test the seismic prediction of a hydrocarbon reservoir in the Upper Ismay Formation of Pennsylvania age. Oil fields of similar age and geological origin occur at Patterson Canyon Field, Little Nancy Field and Tin Cup Mesa Field. (See Exhibit 1: Upper Ismay Fields, submitted May 13, 1985). The reservoirs in these fields consist of northwest-southeast trending reef mounds constituting long, linear porosity pods. These reservoirs grade laterally into non-reservoir, non-porous inter-mound line muds and are sealed vertically by block shales and anhydrites. The rapid loss of structure or porous reservoir rocks when drilling off these linear trends is demonstrated by dry holes flanking the string of producing wells at very short distances to the northeast or southwest. The maximum tolerable offset from the axis of know production is established at 600' for Little Nancy Field and at 650' for Tin Cup Mesa Field. Proposals to move the well a quarter mile from the Hovenweep boundary would clearly increase the risk of drilling a dry hole. Such a relocation would exceed the 600' considered the absolute maximum tolerable on the basis of analogous fields. We have selected a location that we believe will promote the orderly exploration and development of the reservoir and result in the maximum ultimate recovery of hydrocarbons from the subject land. We understand that this is consistent with applicable Utah law.

Relocation also creates some practical problems. The current site is shielded somewhat by natural topography. Section 16 slopes up toward the north. If the drill site is moved further away, it will also be higher and thus, more visible, to Monument visitors.

Directional drilling creates an additional problem, as that alternative would considerably lengthen drilling time. The duration of noise and visual impacts would typically be far greater as a result of directional drilling. Directional drilling would also increase the risk of encountering special drilling difficulties that would further extend the duration of drilling. We are also concerned about the increased costs associated with directional drilling. Analysis of similar well submitted with the Surface Use Plan shows that costs almost doubled (84% higher) and drilling time increased 54%.

3. Delay drilling - NPCA proposes rescheduling the drilling for later in the year. As we have explained, and as noted in the Division's May 30 letter to the RDCC Coordinator, this simply is not feasible under current contractual agreements.

4. Noise impacts - As noted above, we have agreed to construct a bunker which will reduce noise impacts and will also comply with State of Utah regulations requiring a muffler on drill rigs in the Paradox Basin.

5. Visual impacts from flaring - Our efforts to mitigate any visual impacts are discussed at page 2 above.

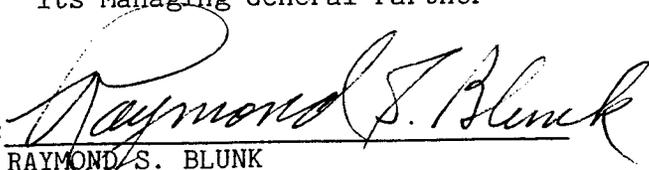
6. Tapping Federal Reserves - NPCA suggests resolving this issue prior to exploration. That does not appear feasible, as without exploration, the size of the pool, or more importantly, the existence of a pool, cannot be determined. We refer you to Superintendent Heyder's letter, where he notes that the State "recognizes the potential that the proposed well may tap federal reserves" and agrees that "This question will be dealt with if the well proves to be productive and the size of the pool is determined." We agree with Mr. Heyder. We also direct your attention to the fact that we are not asking for an exception to the Division's rules concerning the location of the proposed well. Nor are we aware of any reason to believe that this location will adversely affect correlative right of the United States or any other party.

We appreciate the Division's assistance in addressing the concerns which have been expressed. We believe that the changes we have made in the drilling proposal and the additional precautions which we have agreed to take will minimize any potential adverse impact on visitor enjoyment of Hovenweep National Monument. Our primary remaining concern is the further delay in approval of our drilling proposal will seriously jeopardize our contractual agreements with other parties. We must receive action on our application by late this week or early next week if we are to avoid such consequences. We believe we clearly have satisfied all pertinent Utah laws and regulations and request your immediate action on our application. Thank you for your consideration of and attention to this matter.

If we can provide any additional information, please contact us.

Very truly yours,

TXP OPERATING COMPANY,
a limited partnership
By: Transco Exploration Company,
its Managing General Partner

By: 
RAYMOND S. BLUNK
Area Land Manager

RSB:cl

EXHIBIT 1

INCREASED DRILLING COSTS WHEN DIRECTIONAL DRILLING

The Forest Oil, 1 Annie Federal well was a directionally drilled well in Dolores County, Colorado with a surface location 1474' FSL, 620' FEL, Sec 27-T39N-R20W and bottom hole location of 953' FSL, 880' FWL of sec 26-T39N-R20W. The well was drilled to the same stratigraphic horizon, i.e. Pennsylvanian Akah Salt, as the proposed 1-16 Square Tower well. The bottom hole location was 539.14' south and 1511.93' east of the surface location for a total horizontal deviation of 1605.18' S 70° 22' 27" E from the surface location or about 1/3 of a mile. The well was deviated from a depth of 490' to the total depth of 6530' measured depth which equalled true vertical depth of 6294'. The cumulative drilling cost for this well on the final drilling report was \$618,404 and drilling time was 37 days. It is estimated that the final well cost would entail an additional 15.04% after abandoning the well above the final drilling report cost, giving an estimated total dry hole cost of \$711,412. This compares with a 19 well, average dry hole drilling cost of \$387,358 and an average drilling time of 24.1 days or almost doubling (84% higher) the drilling cost and a 54% greater drilling time when directionally drilling for a 1/3 mile horizontal deviation. Greater horizontal deviations would be more costly and comparable increases in production costs due to above average sucker rod and tubing wear would be expected.



NORMAN H. BANGERTER
GOVERNOR



STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801 / 533-5755

June 14, 1985

Diane R. Nielson
Director, Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center Suite #350
Salt Lake City, Utah 84101

Re: Application for Permit to Drill, Well No. TXPOX - Square Tower
1-16.

Dear Ms. Nielson:

As a result of a meeting of the Historic and Cultural Sites Review Committee on June 14 at the offices of the Division of State History, and in accordance with UCA 63-18-37, the following motion was passed and is forwarded for your consideration as a recommendation of that committee:

The Historic and Cultural Sites Review Committee recommends not to go forward with the drilling at the site TX P-1-16 due to the sensitive nature of the cultural values of what Hovenweep National Monument represents. But, to consider alternatives of a less intrusive nature at a minimum of a quarter of a mile outside the Monument boundaries for the purposes of exploration and potential production of oil and gas.

Sincerely,

Peter L. Goss
Acting Chairman
Historic & Cultural Sites Review Committee



PATHFINDER SURVEYORS, INC.

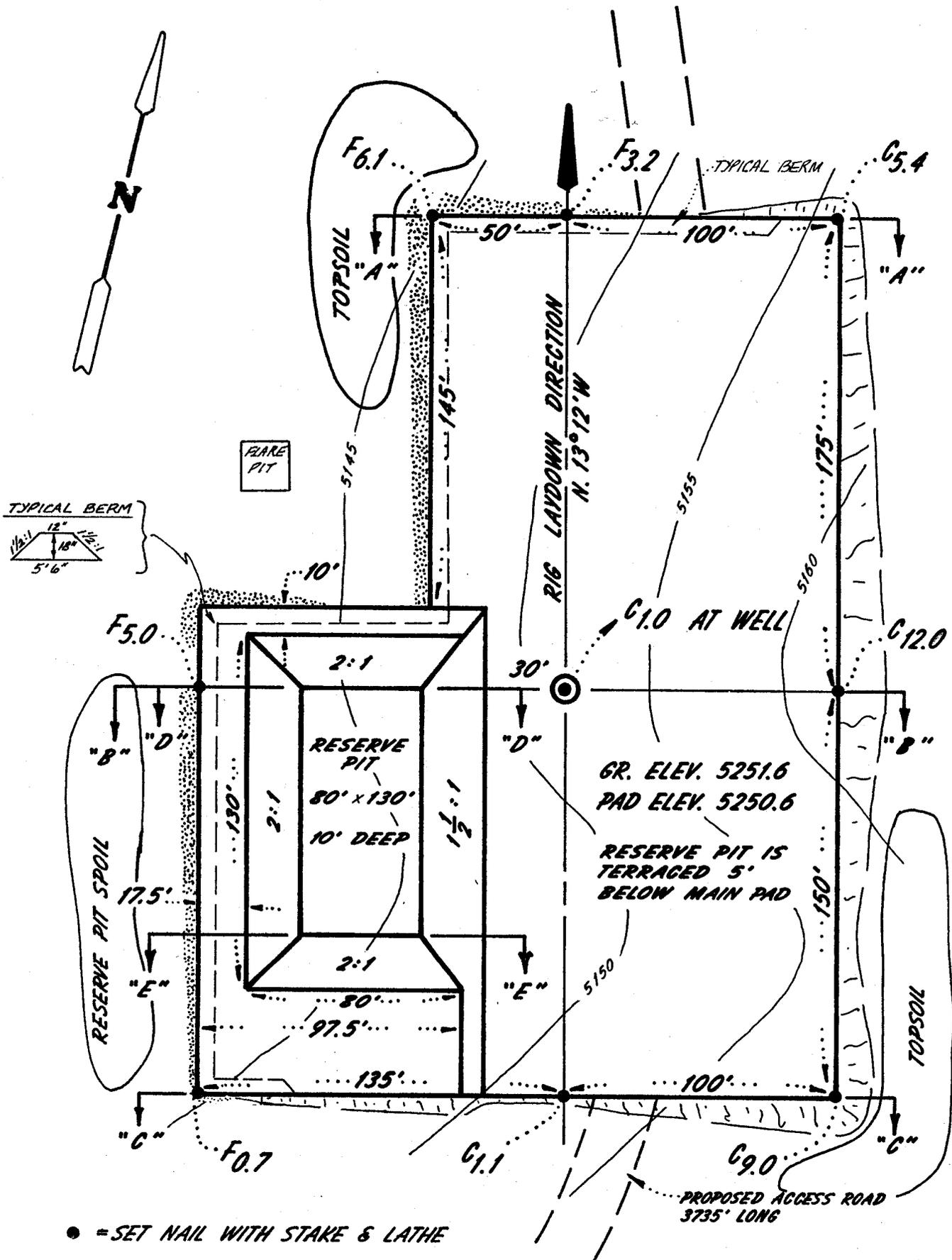
CONSULTING SURVEYORS

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DIVISION OF OIL
GAS & MINING

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



GENERAL WELLSITE TOPOGRAPHY

TXP 1-16 SQUARE TOWER
580' F.S.L., 1850' F.E.L., SEC. 16,
T.39S., R.26E., S.L.B.&M.
SAN JUAN CO., UTAH
SCALE: 1" = 50'

Mtg. w/ DRN re: Horenweep Well.
June 13, 1985

- TXP Oper. Co. has called in the law firm of Parsons - Bailey (Pat Garver) to represent them at Fri. mtg.

1 - Notification of Pat DeGruyter for all casing tests, BOP checks, etc.
Add P to concerning this.

1 - Stipulation re: pit lining

- Call TXP & ask them to provide new site diagrams showing earthen bunkers. They should provide site specific H₂S contingency plan. Supply diagrams or maps showing how fluids will be contained on location and prevented from draining to ~~to~~ dry wash. This should be provided for both drilling & prod. facilities.

- Gas flared to be conducted to a safe distance from the wellhead and flared.

- Stip. ⁽³⁾ should include notice of any flaring or venting.

Mr. Bob Hyder, Superintendent Hovenweep/
Mesa Verde
Ph. (303) 529-4469

— Had list of nine concerns, all of which were addressed @ onsite mtg. on 5/8/85. Pat, Stan Baker of State Lands, Mr. Hyder, and rep. from Transco were all in attendance.

- Alan Whalon, chief ranger @ Hovenweep
- Leslie Vaculik, Park service engineer based in Denver

Mention seismic exploration also.

Transco

John Rosata (713) 439-3506

Connie Goers (303) 863-3616

For RDCC mtg.,

- Request expedited approval.
- Point out NPCA petition.
- State history problems.

Mtg of Cultural Sites Review Committee
June 14, 1985

Wilson
Presentation by Mr. Martin, Deputy State
Historic Preservation Officer.

- Presentation of key documents & issues or concerns.

Terry Martin, NPCA

- provided summary of her letter which was omitted as an attachment.

Jim Dykman, Div. State History

- Slide presentation by Jim shows well site, view from campground, general topography, etc.

Dianne Nielson, DOGM

- Presentation of Division's position.
- Responsibility & description of Division review process.

Don Gillespie, National Park Service

- Recognize that they don't have statutory authority but would like to work w/ state agencies in spirit of cooperation.
- Can expect 2000-3000 visitors in month of July ~ 19% camp overnight. This figure decreases to only several hundred during winter months.

- discussed nine points originally raised by Park Service in terms of aesthetic impact.

Governor Scott Matheson: (rep. TXP Oper. Co.)

- we find ourselves attempting to balance the desire to develop resource vs. the desire to protect environment.
- Addressed many of the key issues regarding aesthetic impact.
- Brought up 30 day timing (carefully did not mention the other agreement).

Terry Martin, NPCA

- Ambient remoteness, quiet, isolation.
- Resp. of protecting this experience is placed on neighbors.
- Alternative location.
- May 1 - Aug 31, November receives 65% of its visitors.
- Reiteration of concerns raised by letter.

Bill Lockhart, NPCA

- Described objectives of the Committee.
- Urges them to use their powers of review to encourage DOGM to act properly.
- Wants further inquiry into - (1) alternate sites, (2) effects of production activities.

Questions & Discussion

- A committee member states that 24-hour operation will be more severe than any light from a flare. Also road use & damage will be significant.
- Does committee have to respond today? No, but DOGM has to act promptly.
- What lasting effect is there when producing the well?
- What effect on archeological resources?
- What is NPCA?
- Letter from Transco to DOGM concerns response to Natl. Park Service. Does DOGM have regulatory requirement re: reserve pit? or other issues raised?
- What is status of park master plan? Is it compatible with current action?

Committee moves to executive session.

(Press challenged closed session - chairman retained open nature of meeting.)

Motion - Not to go forward with drilling at this site. Suggests to examine alternative site or delay drilling at that alternative site. (Motion modified greatly).

- Motion expressed that quarter mile boundary limit should be applied

- Motion Carried.



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 17, 1985

TXP Operating Company
P. O. Box 1396
Houston, TX 77251

Gentlemen:

RE: Well No. TXPOC-Square Tower 1-16, SW SE Sec. 16, T. 39S,
R. 26E, 580' FSL, 1850' FEL, San Juan County, Utah

Approval to drill the above-referenced oil well is hereby granted in accordance with Rule C-3(b), General Rules and Regulations and Rules of Practice and Procedure of the Board of Oil, Gas and Mining, subject to the following stipulations:

1. Prior to commencement of drilling, the operator shall submit and receive approval from the Division of a site specific H₂S contingency plan to include a description of safety practices and equipment to be used when drilling in potential H₂S bearing formations. Prior to approval of the H₂S contingency plan, the Division will copy the plan to the National Park Service for its review.
2. Cementing of the 9-5/8" surface casing string shall be performed such that any underground supplies of drinking water are protected from contamination. Specifically, the volume of cement used in cementing this casing string shall be an amount sufficient to place cement behind pipe to a maximum depth of 1200'. A casing pressure test and cement bond log shall be run prior to drilling through the 9-5/8" casing to evaluate the integrity of the cement job. This information will be submitted to the Division upon completion of the testing and logging.
3. Gas produced during drilling and for testing purposes shall be conducted to a safe distance from the wellhead and flared behind earthen berms of such dimensions as to prevent any direct viewing of a gas flame from the Hovenweep National Monument campground at any time.
4. The operator shall contact Patrick DeGruyter, Oil and Gas Field Specialist, (801) 259-6398, prior to casing pressure tests, initial BOPE tests, drill stem tests, or other procedures which the Division may require to be witnessed.

Page 2

TXP Operating Company

Well No. TXPOC-Square Tower 1-16

June 17, 1985

5. The reserve pit shall be lined with a plastic liner as stated in the approved surface use plan to prevent the vertical or lateral migration of fluids from the pit. The drill site shall be trenched or otherwise bounded in such a way as to prevent any fluids or other materials from the operations from discharging from the site.
6. Prior to commencement of drilling, the Division shall receive evidence providing assurance of an adequate and approved supply of water for drilling and completion operations.
7. The operator will review the amount and type of seed mix with the Division and the National Park Service to insure that the Park Service concerns are addressed.
8. If the well is completed for production, the operator will submit to the Division a site layout and description of production facilities. The Division will copy this layout to the National Park Service for comments. No facilities or wellhead equipment will be installed without prior approval of the Division.
9. Surface facilities used for producing the well shall be painted an unobtrusive color which blends with the surrounding environment, as determined by the Division in consultation with the National Park Service.
10. All production facility compressors, motors, or other equipment will be housed or baffled in a manner to prevent noise from that equipment being heard by persons within the Hovenweep National Monument boundaries.
11. The production site shall be trenched or otherwise bounded in such a way as to prevent any fluids or other materials from the operation from discharging from the site.
12. The operator shall conduct all other operations as stated on the approved APD, drilling program, and surface use plan and in accordance with the General Rules and Regulations and Rules of Practice and Procedure, as amended from time to time, of the Board of Oil, Gas and Mining.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification shall be provided to the Division within 24 hours after drilling operations commence.

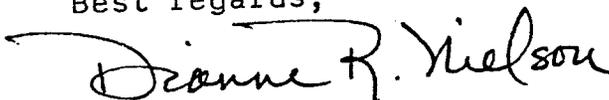
Page 3
TXP Operating Company
Well No. TXPOC-Square Tower 1-16
June 17, 1985

2. The operator shall submit to the Division a completed Form OGC-8-X, Report of Water Encountered During Drilling.
3. The operator shall promptly notify the Division should it be determined that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office)(801)538-5340, (Home) 298-7695 or R. J. Firth, Associate Director, (Home) 571-6068.
4. The operator shall notify the Division if the well is to be placed on production and associated gas is to be flared for this purpose. The operator shall comply with the requirements of Rule C-27, Associated Gas Flaring, of the General Rules and Regulations of the Board of Oil, Gas and Mining and the interpretation of the rule approved by the Board on March 22, 1984, or further rules or orders adopted by the Board.
5. This approval shall expire one year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The Division has received a copy of a letter dated May 21, 1985, from the Division of State History to the Resource Development Coordinating Committee. The letter indicates that a cultural resources management report was received from Abajo Archeology and recommends archaeological clearance with stipulations as provided in the report. The Division finds that adequate notification and archaeological clearance has been obtained from the Division of State History to permit approval of the APD.

The API number assigned to this well is 43-037-31159.

Best regards,



Dianne R. Nielson
Director

jrb
Enclosures
cc: State Lands
R. J. Firth
J. R. Baza



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

J Baza
Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 17, 1985

Mr. Peter L. Goss, Acting Chairman
Historic and Cultural Sites Review Committee
Division of State History
300 Rio Grande
Salt Lake City, Utah 84101

Dear Mr. Goss:

RE: Application by TXP Operating Company (Transco) to Drill TXPOC
Square-Tower 1-16, SW/4SE/4, Section 16, Township 39 South,
Range 26 East, San Juan County, Utah

Thank you for the opportunity to present and listen to comments before the Historic and Cultural Sites Review Committee concerning the aesthetic impacts of the above-captioned proposed well near the Hovenweep National Monument. The Division has received the recommendation of the Committee, as presented in your June 14, 1985 letter. The Committee recommended that the above-captioned well not be drilled, but that alternatives be considered which would be less intrusive and which would be located at least one-quarter mile from the Monument boundary.

After reviewing the information, the Division has decided to approve the Application for Permission to Drill (APD), contrary to the Committee's recommendation. The following comments are pertinent to this decision:

1. The well location under consideration (1-16) is 580 feet from the Monument boundary. Due to the topography and vegetation of the area, moving a location back from the boundary an additional 740 feet is not likely to significantly lessen the aesthetic impact of the operation. In fact, such a move within Section 16 would silhouette the rig prominently against the horizon or cause the rig to be visible from other public use areas.

Page 2

Mr. Peter L. Goss, Acting Chairman
June 17, 1985

2. The Division does not have the authority to alter the terms of the lease between the state of Utah, the owner of the mineral and surface rights in Section 16, and Transco. The only land involved in that lease, and hence under consideration in this case, is Section 16, and Transco can retain that oil and gas lease only through production on Section 16. Alternate locations outside that section will not meet the lease obligations.
3. The Division does have the authority and responsibility to mitigate the impacts of this well on the adjacent areas, specifically the Monument. The Division also has the responsibility to insure that the well is drilled and completed or abandoned in a technically and environmentally sound manner. The attached APD approval letter contains stipulations which, in addition to the regulations of the Division, will provide for a technically and environmentally sound program. Furthermore, based on the concerns of the Division, and the discussions with the Committee, the National Park Service, the National Parks Conservation Association, and Transco, stipulations have been developed to mitigate the aesthetic impacts of the project on Hovenweep National Monument.

I appreciate the considerations raised through the forum of the Committee meeting. If you have any questions or comments, please contact me.

Best regards,



Dianne R. Nielson
Director

mjm

Attachment

cc: M. Barney, RDCC
D. Gillespie, National Park Service
W. Lockhart, National Parks and Conservation Association
R. Miles, State Lands & Forestry
M. Smith, Division of State History
C. Goers, Transco

0311V

CC: BOARD
orig file

RECEIVED

JUN 19 1985

DIVISION OF OIL
GAS & MINING

William J. Lockhart
P.O. Box 8672
Salt Lake City, UT 84108

17 June 1985

Dianne R. Nielson
Director
Utah Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Well No. TXPOC-Square Tower 1-16
adjacent to Hovenweep National
Monument

Dear Ms. Nielson:

Terri Martin for the National Parks and Conservation Association, and the undersigned as its attorney, have reviewed your decision to approve the application for permit to drill the above oil well, including the stipulations accompanying the decision and the parallel letter to Dr. Peter L. Goss, Acting Chairman of the Cultural Sites Review Committee.

We appreciate your conscientious and direct effort to hear and address the concerns of the Review Committee, as well as our own concerns. In particular, we strongly endorse your addition of stipulation number 10, requiring that all production equipment must be operated in a manner that will prevent noise from any of the production equipment being heard by persons within the boundaries of Hovenweep National Monument. We understand that stipulation to require baffling or housing the equipment adequately to guarantee that no noise from any production equipment be audible to the human ear.

We further understand that acceptance of this permit by Transco will constitute the assumption of a legal obligation to fulfill the above and all other stipulations set forth in your letter decision of June 17, 1985, and that Transco will not be permitted to operate production facilities unless they comply fully with these stipulations.

Because of our concern about the impacts on Hovenweep and about compliance with these stipulations, we request that we be placed on the mailing list for all notices or correspondence or other communications with Transco or others concerning compliance with all applicable stipulations or conditions governing Transco's drilling or development of production facilities or terminating operations at this well site.

Finally, I must state that we were disappointed by failure

in your decision to give an adequate explanation of the failure to comply with the basic recommendation of the Historic and Cultural Sites Review Committee. There is no indication that an adequate and complete review has been made of the topography to show that there is no place within Section 16 where the drilling operations could be conducted less intrusively on the values preserved by Hovenweep; and no explanation addresses that. The Committee's recommendation was that the site should be at least 1/4 mile from the monument boundary -- but its obvious and primary concern was that the site of minimum impact should be found. Your letter to Chairman Goss offers no factual or topographical basis for concluding that a better site is not available.

For the above reason, we do not believe that your decision adequately addresses the factors which were of concern to the Historic and Cultural Sites Review Committee. While it is unlikely that we can obtain the resources necessary to bring a legal challenge to the decision at this time, we wish to emphasize that it is the responsibility of the Division, and ultimately the Board, to address adequately the concerns raised by the Committee in reviewing proposed actions which could affect National Register sites.

Sincerely,


William J. Lockhart
Attorney for the
National Parks and
Conservation Association

cc: Peter L. Goss
Melvin T. Smith
TXP Operating Company

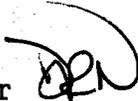


STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 24, 1985

TO: Ron Firth
FROM: Dianne R. Nielson, Director 
RE: TXPOC Square Tower 1-16 Well

Per the attached request, please send Bill Lockhart copies of non-confidential correspondence, notices, or similar correspondence regarding the drilling and completion or abandonment of this well. If the well goes on production, I will contact Lockhart to determine his further need for information.

Thank you for your assistance in this matter.

vb
Attachment
cc: M. Anderson
0266V-38

RECEIVED

JUN 19 1985

DIVISION OF OIL
GAS & MINING

William J. Lockhart
P.O. Box 8672
Salt Lake City, UT 84108

17 June 1985

Dianne R. Nielson
Director
Utah Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Well No. TXPOC-Square Tower 1-16
adjacent to Hovenweep National
Monument

Dear Ms. Nielson:

Terri Martin for the National Parks and Conservation Association, and the undersigned as its attorney, have reviewed your decision to approve the application for permit to drill the above oil well, including the stipulations accompanying the decision and the parallel letter to Dr. Peter L. Goss, Acting Chairman of the Cultural Sites Review Committee.

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Because of our concern about the impacts on Hovenweep and about compliance with these stipulations, we request that we be placed on the mailing list for all notices or correspondence or other communications with Transco or others concerning compliance with all applicable stipulations or conditions governing Transco's drilling or development of production facilities or terminating operations at this well site.

Finally, I must state that we were disappointed by failure

in your decision to give an adequate explanation of the failure to comply with the basic recommendation of the Historic and Cultural Sites Review Committee. There is no indication that an adequate and complete review has been made of the topography to show that there is no place within Section 16 where the drilling operations could be conducted less intrusively on the values preserved by Hovenweep; and no explanation addresses that. The Committee's recommendation was that the site should be at least 1/4 mile from the monument boundary -- but its obvious and primary concern was that the site of minimum impact should be found. Your letter to Chairman Goss offers no factual or topographical basis for concluding that a better site is not available.

For the above reason, we do not believe that your decision adequately addresses the factors which were of concern to the Historic and Cultural Sites Review Committee. While it is unlikely that we can obtain the resources necessary to bring a legal challenge to the decision at this time, we wish to emphasize that it is the responsibility of the Division, and ultimately the Board, to address adequately the concerns raised by the Committee in reviewing proposed actions which could affect National Register sites.

Sincerely,



William J. Lockhart
Attorney for the
National Parks and
Conservation Association

cc: Peter L. Goss
Melvin T. Smith
TXP Operating Company



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 25, 1985

TXP Operating Company
P.O. Box 1396
Houston, Texas 77251

Gentlemen:

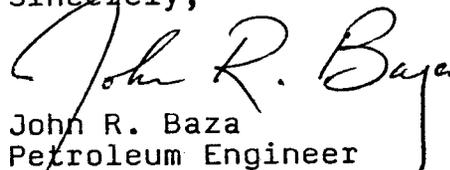
RE: Well No. TXPOC-Square Tower 1-16, Sec.16, T.39S, R.26E,
San Juan County, Utah

In order to avoid any misunderstanding concerning the recent approval to drill the above-referenced well, please find enclosed an approved copy of the APD including the submitted attachments. The enclosed information represents the APD, drilling program, and surface use plan which are referenced in stipulation 12 of the approval to drill issued on June 17, 1985.

This information is being provided simply to document the items which the Division has received, reviewed, and approved concerning the approval to drill the above-referenced well. No additional action is required from TXP Operating Company in response to this letter, other than to properly to comply with those stipulations and statements in the approval to drill.

We appreciate TXP's concern for proper compliance with rules and regulations, and we anticipate your cooperation in this matter. If you have any additional questions, please contact me at this office. Thank you very much.

Sincerely,


John R. Baza
Petroleum Engineer

sb
Enclosure
cc: Dianne R. Nielson
R.J. Firth
Well File
0155T-1



401 Studewood Street
P.O. Box 27377
Houston, Texas 77227
Phone: 713/864-4774
Telex: 77-4132
(FLEKS-HOU)

TXP OPERATING COMPANY
TXP 1-16 SQUARE TOWER WELL
SW SE Sec. 16, T. 39S, R 26 E.
SAN JUAN COUNTY, UTAH

580' North of the South Line
1850' West of the East Line

RECEIVED

JUN 26 1985

DIVISION OF OIL
GAS & MINING

H₂S SAFETY FOR DRILLING AND PRODUCTION

EQUIPMENT SALES • EQUIPMENT RENTAL • CONSULTING • SERVICE

CHARTER MEMBER—SOCIETY OF H₂S SAFETY CONTRACTORS

CONTINGENCY & EVACUATION PLAN

This Contingency Plan was written specifically for:

TXP OPERATING COMPANY

P.O. BOX 1396

HOUSTON, TEXAS

(713) 439-3285

Action Plan for Accidental Release of H2S

TXP 1-16 SQUARE TOWER WELL

SW SE Sec. 16, T39S, R26E

SAN JUAN COUNTY, UTAH

CONTINGENCY PLAN INDEX

I. INTRODUCTION

- A. Oil Company Address and Legal Description of Well Site
- B. Directions to Well Site
- C. Purpose of Plan

II. LOCATION LAYOUT

- A. Location Map
 - 1) Safety Briefing Areas
 - 2) Directions of Prevailing Winds
 - 3) Wind Sock Locations
- B. Proposed Access Routes
- C. Cuts & Fills
- D. General Wellsite Topography
- E. Survey Notes Marking Field Location

III. SAFETY EQUIPMENT

- A. Safety Equipment Provided by ENVIROSAFE, INC.
- B. Type of Equipment and Storage Locations
- C. Maximum Number of People on Location at any one time

IV. OPERATING PROCEDURES

- A. Blowout Prevention Measures During Drilling
- B. Gas Monitoring Equipment
- C. Crew Training & Protection
- D. Metallurgical Considerations
- E. Drilling Mud Program

V. OPERATING CONDITIONS

- A. Definition of Warning Flags
- B. Circulating Out Kick
- C. Coring Operations in H₂S Bearing Zones
- D. Drill Stem Testing

VI. EMERGENCY PROCEDURES

- A. Sounding Alarm
- B. Drilling Crew Actions
- C. Responsibilities of Personnel
 - 1) Company Personnel
 - 2) Contract Personnel
- D. Leak Ignition
- E. General Equipment

VII. LIST OF APPENDICES

1. Emergency & Medical Facilities
2. Law Enforcement Agencies & Fire Fighting Facilities
3. Governmental Agencies
4. Radio & Television Stations
5. Air Service & Motels/Hotels

VIII. RESIDENTS AND LANDOWNERS

- A. Residents within 2 Mile Radius and Telephone Numbers
- B. 2 Mile Radius Map with Residences shown

IX. ADDITIONAL INFORMATION

- A. Hydrogen Sulfide Essay
- B. Do You Know?
- C. Rescue Breathing
- D. The Use of Self-contained Breathing Equipment
- E. Instruction Manual for Use of Scott SKA-PAK
- F. Operating & Maintenance Instruction for Scott Air-Pak IIA

CONTINGENCY & EVACUATION PLAN

TXP OPERATING COMPANY

P.O. BOX 1396

HOUSTON, TEXAS 77251-1396

(713) 439-3285

WELL: TXP OPERATING COMPANY

LOCATION: SW SE Sec. 16, T39S, R26E

San Juan County, Utah

DIRECTIONS TO WELL SITE:

From Cortez, Colorado, take Highway 666 north to Pleasantview, Colorado. Turn west at marker stating Hanover National Monument. Continue on well maintained county road for 25 miles. At the half-way point of the west line of Section 16, which is one-half mile north of the main entrance to Hovenweep National monument, turn (east) and follow seismic road approximately three-quarters of a mile to primary location.

PURPOSE OF PLAN:

The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failures or disaster during drilling or completion operations in formations which may contain H₂S, Hydrogen Sulfide Gas.

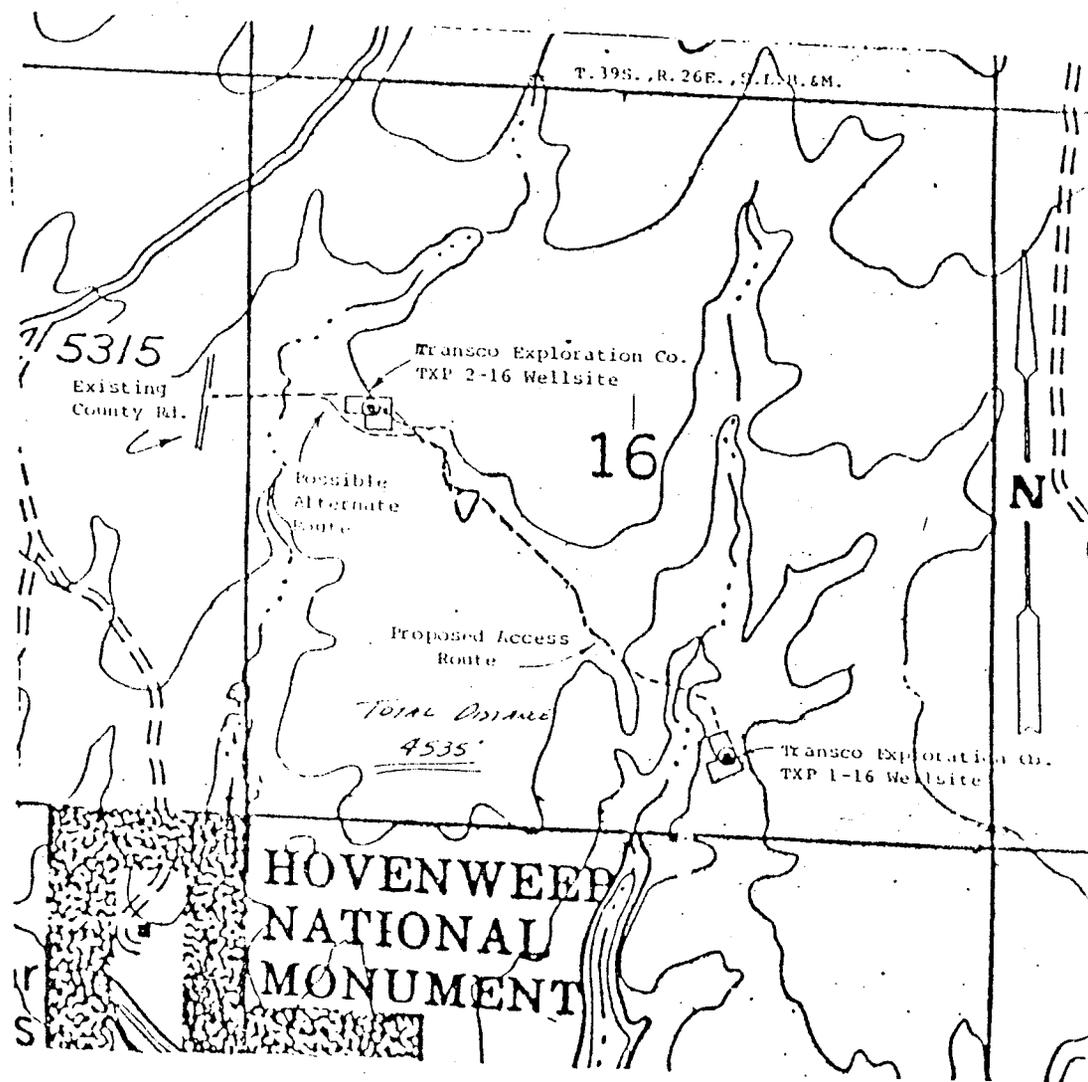
As a precautionary measure, this contingency plan has been created to assure the safety of all concerned, should a disaster occur. However, TXP Operating Co. may have specified materials and practices for the drilling or completion of this well which supercede the minimum requirements as outlined in this plan.



PATHFINDER SURVEYORS, INC.

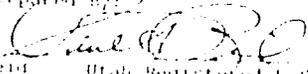
CONSULTING SURVEYORS

360 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



SCALE: 1"=1600'

PROPOSED ACCESS ROUTE
TRANSCO EXPLORATION CO.
TXP 1-16 SQUARE TOWER
580' F.S.L., 1850' F.E.L.
SECTION 16, T. 19S., R. 26E., S. 1.0. & M.

Exhibit Prepared By:

Paul A. Reid Utah Registered L.S. 5669

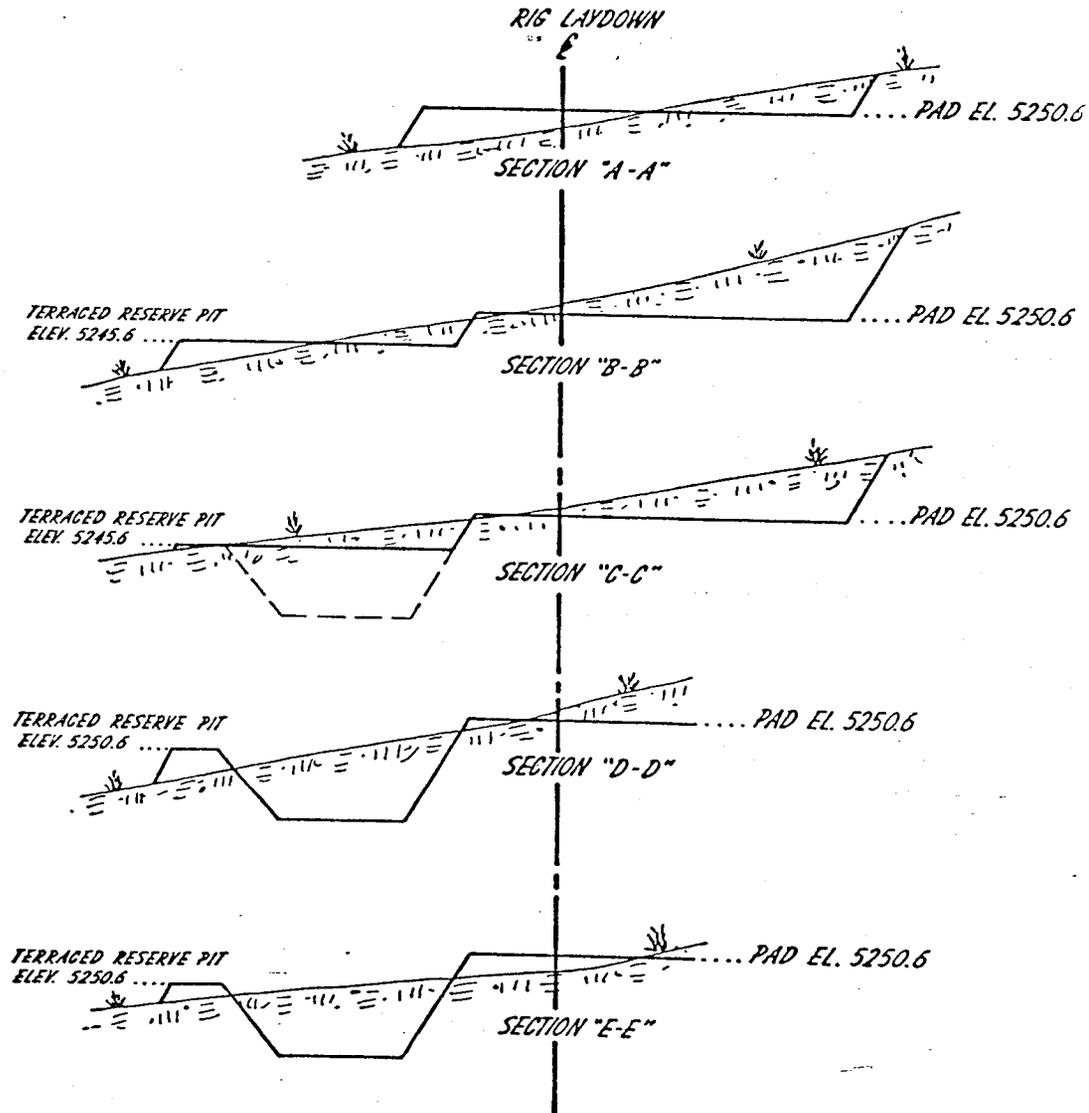




PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
 Suite 305
 Casper, Wyoming 82609
 307-266-3809



APPROXIMATE EARTHWORK VOLUMES

<u>PAD</u>	
CUT	4,860 CU. YDS.
FILL	4,775 " " AT 15%
SPOIL	85 " " SHRINKAGE
TOPSOIL	1,780 " " AT 9" DEPTH

<u>RESERVE PIT</u>	
CUT	2,695 CU. YDS.
SPOIL	2,695 " "
CAPACITY	12,960 BARRELS AT 10' DEPTH

PROPOSED PAD AND RESERVE PIT CROSS-SECTIONS

TRANSCO EXPLORATION CO.
 TXP 1-16 SQUARE TOWER

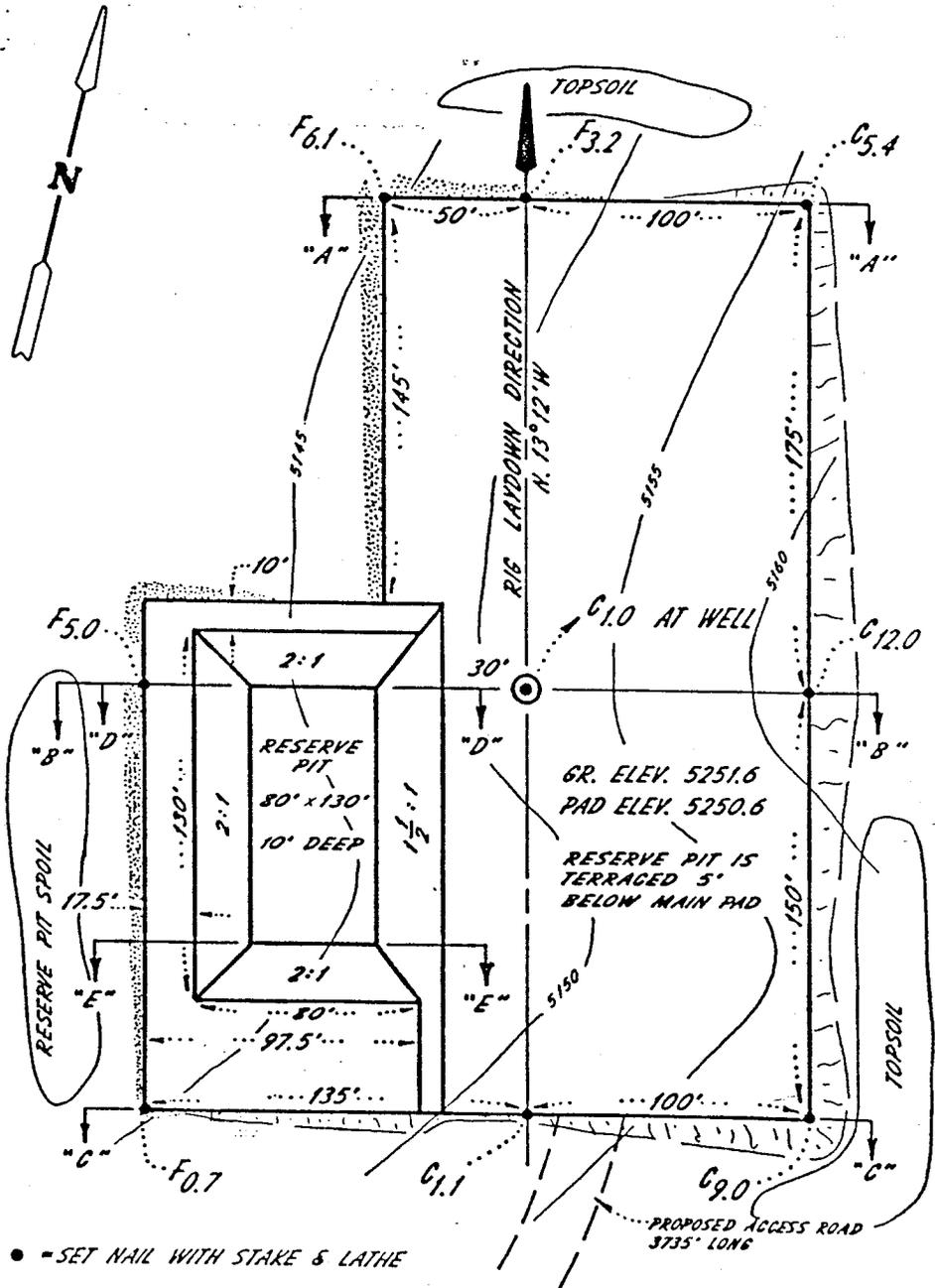
SCALE: 1" = 50' HORIZ.
 1" = 20' VERT



PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809



GENERAL WELLSITE TOPOGRAPHY

TXP 1-16 SQUARE TOWER
580' F.S.L., 1850' F.E.L., SEC. 16,
T.39S., R.26E., S.1.B.&M.
SAN JUAN CO., UTAH
SCALE: 1" = 50'

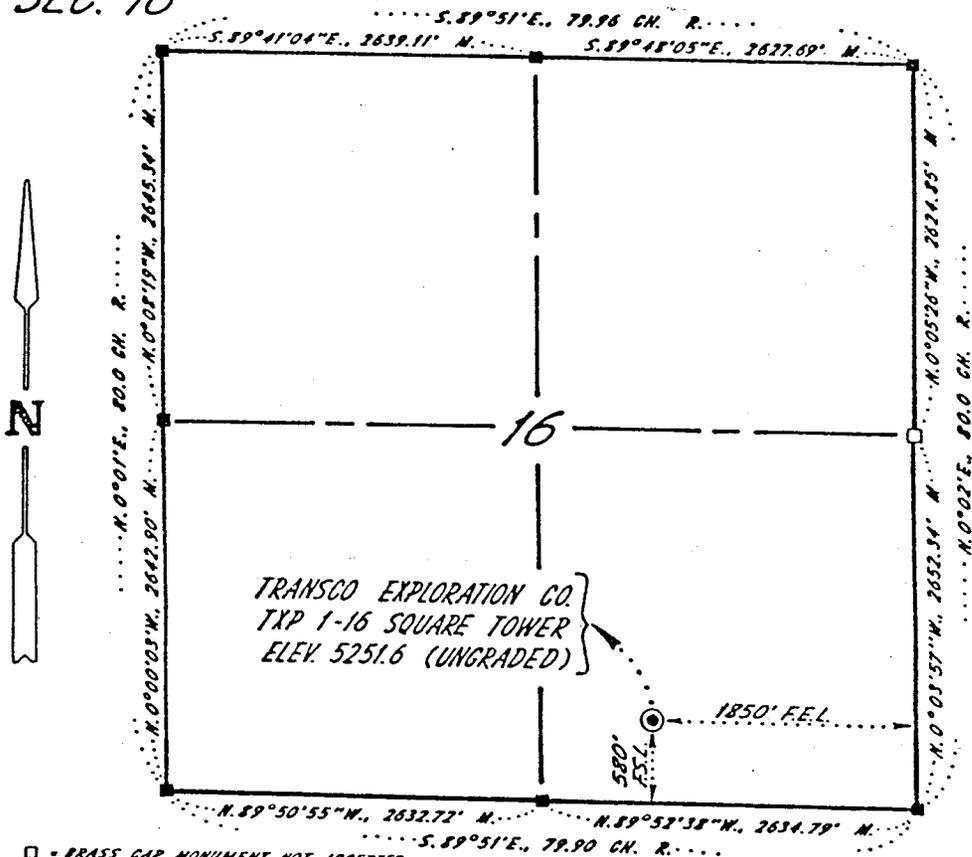


PATHFINDER SURVEYORS, INC.

CONSULTING SURVEYORS

300 Country Club Road
Suite 305
Casper, Wyoming 82609
307-266-3809

T.39S., R.26E., S.L.B. & M., SAN JUAN CO., UTAH
SEC. 16



- = BRASS CAP MONUMENT NOT ACCEPTED
- = FD. 60\"/>

R = RECORD DATA
M = MEASURED DATA THIS SURVEY

SCALE: 1" = 1000'

BASIS OF BEARINGS - SOLAR OBSERVATION IN THE NW 1/4 OF SEC. 16 - BEARINGS EXHIBITED ARE PLANIMET.

⊙ = SURVEYED WELL LOCATION

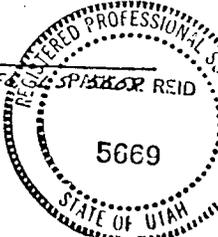
SURVEYORS CERTIFICATE

STATE OF WYOMING)
COUNTY OF NATRONA) S.S.

PLATTED FIELD NOTES OF A SURVEY
MARKING WELL LOCATION
TYP 1-16 SQUARE TOWER
SW 1/4 SE 1/4 SEC. 16, T.39S., R.26E.,
SALT LAKE BASE & MERIDIAN,
SAN JUAN CO., UTAH

I, PAUL A. REID, HEREBY STATE THAT I AM A REGISTERED LAND SURVEYOR IN THE STATE OF UTAH UNDER THE PROVISIONS OF UTAH LAW. I FURTHER STATE THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME ON APR. 9, 1985 FOR THE PURPOSE OF AN APPLICATION FOR PERMIT TO DRILL. ANY OTHER USE OF THIS PLAT WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SURVEYOR IS PROHIBITED.

Paul A. Reid
PAUL A. REID UTAH REGISTERED PROFESSIONAL SURVEYOR



JOB NO.: 029-04 85
DATE: APRIL 15, 1985

UNGRADED ELEVATIONS OF REFERENCE POINTS SET WITH 12" x 1/8" SPIKES.
NORTH 2000 FEET 5249.5
SOUTH " 5250.5
EAST " 5274.2
WEST " 5236.7
BASIS OF ELEVATIONS: U.S.C.S. 15' QUAD. "CAJON MESA", UTAH-COLORADO. BENCH:

SAFETY EQUIPMENT

A. SAFETY EQUIPMENT PROVIDED BY ENVIROSAFE, INC.

- * Safety trailer with 10-380 cu. ft. air cylinder cascade air supply system.
- * Six 380 cu. ft. air cylinder system for rig floor
- * Sufficient pressure air line hose with quick connects
- * One 4 man work-pack stand with low pressure manifolds
- * One 2 man work-pack stand with low pressure manifolds
- * Fifteen air line masks with emergency escape cylinders
- * Fifteen 30 minute self contained breathing apparatus
- * Four (6) band air manifolds with brass couplings
- * Four safety belts
- * One explosion meter
- * Two bull horns
- * Two chalk boards
- * Three wind socks, frames and adjustable poles
- * Oxygen powered resuscitator with spare oxygen cylinder
- * One set of signs
- * One 36 unit first aid kit
- * One 20 lb. fire extinguisher
- * One stretcher
- * Flare gun with shells (supplied on request)
- * Gastec pump type gas detector with full range of H2S detector tubes and SO2 tube supply.
- * One 380 cu. ft. cylinder with regulator and filler hose for Briefing Area #2
- * H2S and Briefing Area signs
- * Well Condition gate sign and flags

Provided Upon Request:
Explosion-proof bug blower

Detection Equipment:

- * 4 Channel electronic monitor with explosion-proof warning system

NOTE: ADDITIONAL EQUIPMENT WILL BE ADDED AS CONDITIONS REQUIRE.

B. TYPE OF EQUIPMENT AND STORAGE LOCATIONS

1. There will be fifteen SCOTT air line masks on location. These will be located in strategic positions. One will be in the derrick. Each air line mask will have easily accessible air line hoses.
2. There will be fifteen 30 minute self contained breathing apparatus on location. They will be positioned as follows: 2 at Company Representative's trailer, 2 at Tool Pusher's trailer, 2 at Briefing Area #1, 2 at Briefing Area #2, 2 at rig dog house stairway, 2 at mud logger's trailer and 2 at third live-in trailer on location, and 1 on rig floor.
3. Briefing Area #1 will also have the following equipment: 1 resuscitator, 1 first aid kit (36 unit), 1 stretcher and 1 20 lb. fire extinguisher.
4. A gastec pump type gas detector and tubes will be located in the dog house.

C. NOTE: There will be a maximum of 12 persons on location at any one time, unless additional respirators are provided during special operations where more than 12 persons will be on location, such as running and cementing production casing.

OPERATING PROCEDURES

A. BLOWOUT PREVENTION MEASURES DURING DRILLING

1. Blowout preventor requirements:

All BOP equipment shall meet the American Petroleum Institute's specifications as to materials acceptable for H₂S service. As a minimum requirement, all ram-type preventors will be tested to 70% of the rated working pressure of the stack. The annular-type preventors will be tested to 50% of their rated working pressures. Tests must be run at the time of installation, prior to drilling out of each casing shoe, and at least every 7 days or first trip out of the hole after seven days since the previous pressure test.

2. Drill string requirements:

All drill string components are to be of materials that meet the American Petroleum Institute's specifications for H₂S service. All drill string components will be inspected to IADC critical service specifications prior to running in well. Corrosion will be monitored by coupons to protect drill string.

B. GAS MONITORING EQUIPMENT

1. A continuous H₂S monitoring system with three H₂S detection heads will be in operation, one sampling from the shale shaker, one sampling from the bell nipple below the rotary table and a third sensor head will be located in the rig cellar. All units should be monitored in the mud logger's trailer and/or the dog house. Each unit will be set to trigger a blinking light on the rig floor should the amount of H₂S reach 10 PPM and to trigger the alarm should the amount of H₂S reach 20 PPM. Any time it is necessary to deactivate the alarm (if H₂S is continuously present), a trained operator or H₂S supervisor will monitor the H₂S detection system.
2. When approaching or completing H₂S formations, crew members may attach 8 hour H₂S electronic personal monitors to their person, if warranted.
3. Hand Held H₂S sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

OPERATING PROCEDURES (cont'd)

D. CREW TRAINING & PROTECTION

1. Blowout prevention drills:

Pit drill and trip drill training will be held with each crew until proficient in closing the well in. Drills will be held on a regular basis with the completion foreman or contract tool pusher triggering the alarm. Reaction time will be checked from the time the alarm goes off until well is simulated closed in. Closing time should be under two minutes. A copy of the Operators/Contractors blowout drill procedures will be posted on the rig floor.

2. H2S Training and drills:

A. H2S safety training will be given to all personnel at 1,000 feet above the expected H2S formation. The training sessions will cover, but will not be limited to, the following:

- a. General information on H2S and SO2 gas.
- b. Hazards of these gases.
- c. Safety equipment on location.
- d. Proper use and care of personal protective equipment.
- e. Operational procedures in dealing with H2S gas.
- f. Evacuation procedures.
- g. Chemicals to be used in mud to control H2S.
- h. First aid, reviving and H2S victim, toxicity, etc.
- i. Buddy system (working in pairs).
- j. Designated safe briefing areas (S.B.A.).
- k. Regulations.

B. H2S drills should be held on a surprise basis during drilling (or completion) and tripping operations. The drilling foreman or contract tool pusher will trigger the H2S alarm and crews will proceed to get the masks on, and secure well as per posted S.O.P. drill procedures.

OPERATING PROCEDURES (cont'd)

a. When H₂S alarm is activated:

1. Mask up.
2. Raise tool joint above rotary table and snub down pump.
3. Close-in hydril.
4. Go to Safe Briefing Area.

3. Safety Equipment:

As outlined in the Safety Equipment index, H₂S safety protection equipment will be available to/or assigned each person on location and training given in correct usage, 100% or 7 days prior to entering the first H₂S bearing formation.

D. METALLURGICAL CONSIDERATIONS

1. Steel drill pipe used in Hydrogen Sulfide environments should have a yield strength of 95,000 psi or less because of potential embrittlement problems. Drill stem joints near the top of the drill string are normally under the highest stress levels during drilling and do not have the protection of elevated downhole temperatures. These factors should be considered in design of the drill string. Precautions will be taken to minimize drill string stresses caused by conditions such as excessive dogleg severity, improper torque, whip, abrasive wear on tool joints and joint imbalance. American Petroleum Institute, Bulletin RP 78, will be used as a guideline for drill string precautions.
2. Corrosion inhibitors may be applied to the drill pipe or to the mud system as an additional safeguard.
3. Blowout preventors should meet or exceed the recommendations for Hydrogen Sulfide service as set forth in the latest edition of API RP 53.

OPERATING PROCEDURES (cont'd)

E. MUD PROGRAM AND TREATING

1. It is of utmost importance that the mud be closely monitored for detection of H₂S and reliability of the H₂S treating chemicals.
2. Identification and analysis of sulfides in the mud and mud filtrate will be carried out regularly.
3. The water base mud system will be pre-treated with Zinc Carbonate and Ironite Sponge or similar chemicals for H₂S control prior to drilling into the H₂S bearing formation. Continue maintaining residual concentration of 2 to 3 PPM by monitoring. Sufficient chemical will be on location to increase residual concentration, if needed to control larger influxes of H₂S. Mud on will be maintained at 10 or above at 1,000 feet prior to the same.

Sufficient quantities of Failsafe 17, Corrosion Inhibitor, will be on location to treat the drill string during Drill Stem Test operations. Additionally, Aqua Ammonia will be on hand to treat the drill string for crew protection, should H₂S be encountered while tripping string following drill stem testing.

OPERATING CONDITIONS

A Well Condition sign and flag will be posted on all access roads into the location.

A. DEFINITION OF WARNING FLAGS

1. Condition:

GREEN -- NORMAL OPERATIONS

2. Condition

YELLOW - - POTENTIAL DANGER, CAUTION

a. Cause for condition:

- (1) Circulating up drilling breaks.
- (2) Trip gas after trip.
- (3) Circulating out gas on choke.
- (4) Poisonous gas present, but below threshold concentrations.
- (5) Coring.
- (6) Drill stem testing.

b. Safety action:

- (1) Check safety equipment and keep it with you.
- (2) Be alert for a change in condition.
- (3) Follow instructions.

3. Condition

RED -- EXTREME DANGER

a. Cause for condition:

- (1) Uncontrolled flow from well with lethal concentrations of H₂S.

b. Safety action:

- (1) Mask up. All personnel will have protective breathing equipment with them. All personnel will stay in Safe Briefing Area unless instructed to do otherwise.
- (2) The decision to ignite the well is the responsibility of the operators on-site representative and should be made only as a last resort, when it is clear that:

OPERATING CONDITIONS (cont'd)

- a. Human life is endangered.
- b. There is no hope of controlling the well under prevailing conditions.

(3) Order evacuation of local people within the danger zone. Request help from local authorities, State Police, Sheriff's Department and Service Representative.

B. CIRCULATING OUT KICK

If it is suspected that H₂S is present with the gas, whenever a kick is taken, the driller's method or the wait & weight method of eliminating gas and raising the mud weight will be followed.

1. Wait & Weight Method (as outlined in TXP Operating Company's Control Manual).
 - a. Increase density of mud in bits to "kill" weight mud.
 - b. Open choke and bring pump to initial circulating pressure (I.C.P.) by holding casing pressure at original value only until pump is up to predetermined speed (S.P.M.).
 - c. When initial circulating pressure is obtained on drill pipe, zero pump stroke counter and record time.
 - d. Reduce drill pipe pressure from initial circulating pressure (I.C.P.) to final circulating pressure (F.C.P.) by using pump strokes and/or time according to graph.
 - e. When "kill" weight mud is at the bit, hold final circulating pressure (F.C.P.) until kill weight mud is to surface.

If a kick has occurred, the standard blowout procedure will be followed and the wait and weight method will be used to kill the well. When the well has been put on the choke and circulation has been established, the following safety procedure must be established.

1. Determine when gas is anticipated to reach surface.
2. All non-essential personnel must be moved to Safe Briefing Area.
3. All remaining personnel will check out and keep with them their protective breathing apparatus.
4. Mud men will see that the proper amount of H₂S scavenging chemical is in the mud and record times checked.

OPERATING CONDITIONS (cont'd)

5. Make sure ignition flare is burning and valves are open to designated flare stacks or pits.
6. Should anything develop where additional personnel are required, the operator's on-site representative will immediately proceed to a Safe Briefing Area for necessary apparatus to assist.

C. CORING OPERATIONS IN H₂S BEARING ZONES

1. Personal protective breathing apparatus should be worn from 10 to 20 stands in advance of retrieving the core barrel. Cores to be transported should be sealed and marked for the presence of H₂S.
 - a. Yellow caution flag will be flown at the well condition sign.
 - b. The No Smoking rule will be enforced.

D. DRILL STEM TESTING

1. Drill Stem Testing of Hydrogen Sulfide zones will be permitted in daylight hours only.
2. All non-essential personnel will be moved to a "Safe Briefing Area".
3. Put on air mask before formation fluids are expected at the surface and continue "MASK ON" until flares are lighted and work areas test no more than 10 PPM Hydrogen Sulfide and the area has been declared safe.
4. If warranted, the use of Ammonia Hydroxide, (25 Degree Beaume' Aqua Ammonia) for neutralizing the toxicity of Hydrogen Sulfide from drill string.
 - a. During drill stem tests, adequate Filming Amine for H₂S corrosion and Aqua Ammonia for neutralizing H₂S, will be on location.
5. The DST subsurface equipment will be suitable for H₂S service as recommended by the American Petroleum Institute.
6. The No Smoking rule will be enforced.
7. DST fluids will be circulated through a separator to permit flaring of gas. A continuous pilot light will be used.
8. A yellow or red flag will be flown at entrance to location depending on present gas conditions.

EMERGENCY PROCEDURES

A. SOUNDING ALARM

The fact is to be instilled in the minds of all rig personnel that the sounding alarm means only one thing: H2S IS PRESENT. Everyone is to proceed to his assigned station and the contingency plan is put into effect.

B. DRILLING CREW ACTIONS

1. All personnel will don their protective breathing apparatus. The driller will take necessary precautions as indicated in OPERATING PROCEDURES.
2. The Buddy System will be implemented. All personnel will act upon directions from the operator's on-site representative.
3. If there are non-essential personnel on location, they will move off location.
4. Entrance to the location will be patrolled, and the proper well condition flag will be displayed at the entrance to the location.

C. RESPONSIBILITIES OF PERSONNEL

In order to assure the proper execution of this plan, it is essential that one person be responsible for and in complete charge of implementing these procedures. The responsibility will be as follows:

1. The operator's on-site representative or his assistant.
2. Contract tool pusher. Should he become disabled,
3. EnviroSAFE, Inc.'s representative.

In the event of an accidental release of a potentially hazardous volume of H₂S the following steps will be taken:

1. Contact by the quickest means of communications:

The main offices of Oil Company & Contractor as listed on the following page.

2. An assigned crew member will blockage the entrance to the location. No unauthorized personnel will be allowed entry into the location.
3. The operator's on-site representatives will remain on location and attempt to regain control of the well.

TXP OPERATING COMPANY
AND
DRILLING CONTRACTOR PERSONNEL

TXP OPERATING COMPANY (713) 439-3285

P.O. Box 1396
Houston, Texas 77251-1396

Company Personnel to be Notified In Case of an Emergency:

David M. Adams
Drilling Superintendent Office: (713) 439-3285
Home : (713) 351-9417

Larry W. Mecom
Senior Safety Advisor Office: (713) 439-3595
Home : (713) 499-7333

John Burba
Drilling Manager Office: (713) 439-3266
Home : (713) 591-6698

Foreman, (To be Determined)
Wellsite Supervision -----

Foreman, (To Be Determined)
Wellsite Supervision -----

Drilling Contractor

Bayless Drilling Company Office: (505) 327-7214
P.O. Box 2669
Farmington, New Mexico 87401-2669

Price M. Bayless,
Manager Office: (505) 327-7214
Home : (505) 326-8154

Safety Contractor

Area Office:
Envirosafe, Inc. Office: (307) 527-7025
P.O. Box 2137
Cody, Wyoming 82414-2137

Chester Gilliam
Manager Cody Office Office: (307) 527-7025
Home : (307) 587-4850

EMERGENCY PROCEDURES (cont'd)

4. The Drilling Company's rig superintendent will begin evacuation of those persons in immediate danger. He will begin by telephoning residents in the danger zone.

In the event of no contact by telephoning, the tool pusher will proceed at once to each dwelling for a person-to-person contact. In the event the tool pusher cannot leave the location, he will assign a responsible crew member to proceed in the evacuation of local residents. Upon arrival, the Sheriff's Department and Envirosafe, Inc personnel will aid in further evacuation.

D. LEAK IGNITION

Leak Ignition procedure: (used to ignite a leak in the event it becomes necessary to protect the public).

1. Two men, the operator's on-site representative and the contractor's rig operator or an Envirosafe, Inc. representative, wearing self-contained pressure demand air masks must determine the perimeter of the flammable area. This should be done with one man using an H2S detector and the other one using a flammable gas detector. The flammable perimeter should be established at 30% to 40% of the lower flammable limits.
2. After the flammable perimeter has been established and all employees and citizens have been removed from the area, the ignition team should move to the up-wind area of the leak perimeter and fire a flare into the area. If the leak isn't ignited on the first attempt, move in 20 to 30 feet and fire again. Continue moving in and firing until the leak is ignited or the flammable gas detector indicates the ignition team is moving into hazardous area (75-80% of lower flammable limits.) If trouble is incurred in igniting the leak by firing toward the leak, try firing 40 degrees to 50 degrees to each side of the area where you have been firing. If still no ignition is accomplished, ignite the copper line burner and push it into the leak area. This should accomplish ignition. If ignition is not possible due to the makeup of the gas, the toxic leak perimeter must be established and maintained to insure evacuation is completed and continued until the emergency is secure.

EMERGENCY PROCEDURES (cont'd)

3. The following equipment and man-power will be required to support the ignition team:
 - a. One 25 mm type flare gun or one sawed-off 12-gauge shotgun, or one 12 gauge flare pistol.
 - b. Four pressure demand air packs.
 - c. Two 250' lengths of 3/8" nylon rope tied to the ignition teams waists.
 - d. Two men in a clear area equipped with air packs, who are capable of rescuing the ignition team.
 - e. Portable butane bottle with 100' of copper line attached to a burner.

E. GENERAL EQUIPMENT

1. Two areas of location will be designated as BRIEFING AREAS. The one that is upwind from the wellbore will be designated as the "SAFE BRIEFING AREA".
2. In the case of an emergency, personnel will assemble in the upwind "SAFE BRIEFING AREA" as per prior instructions from the operator's representative.
3. The H2S "SAFETY" trailer provided by EnviroSAFE, Inc. will contain 12-350 cu. ft. cylinders, a resuscitator, one 30 minute air pack, and will have a wind sock or screamer to indicate wind direction.
4. Two other wind socks will be installed so as to be visible from all parts of the location.
5. A condition warning sign will be displayed at the location entrances of current operating conditions.
6. A list of emergency telephone numbers will be kept on rig floor, contract tool pusher's trailer, the Oil Company's trailer and in "SAFETY" trailer.
7. Two barricades will be available to block the entrance to location should an emergency occur.

EMERGENCY PROCEDURES (cont'd)

8. An undulating high and low pitch siren will be installed in the derrick "A" leg.
9. An explosion proof bug blower (fan) will be installed under the rig floor to disperse possible accumulations of H₂S. This blower will be provided by Envirosafe, Inc. and delivered to the rig. However, due to the many various types of electrical connections in use, it will be the responsibility of the operator to provide the proper electrical hookup to the rig power source.

LIST OF APPENDICES

APPENDIX I EMERGENCY & MEDICAL
FACILITIES

APPENDIX II LAW ENFORCEMENT AGENCIES
& FIRE FIGHTING FACILITIES

APPENDIX III GOVERNMENTAL AGENCIES

APPENDIX IV RADIO & T.V. STATIONS

APPENDIX V AIR SERVICE & MOTELS/HOTELS

APPENDIX I

EMERGENCY & MEDICAL FACILITIES

Ambulance Service:

Moab, Utah (801) 259-7488
Cortez, Colorado (801) 565-6666

Hospital Service

San Juan County Hospital 2-ZENITH 110
Monticello, Utah
Allen Memorial Hospital (801) 259-7191
Moab, Utah
Southwest Memorial Hospital (303) 565-6666
Cortez, Colorado

Doctors in the Area

D. Marquardt, M.D. (801) 259-8916
J. Munsey, M.D. (801) 259-8187

Veterinary in Area

Donald Hoffman, D.V.M. (801) 259-5216
Moab, Utah

Directions To Allen Memorial Hospital:

From rig location go to La Sal, Utah - take Highway 46 west 9 miles, turn right on Highway 191, go 22 miles to Moab, Utah. Turn left on Kane Creek Road, go .7 of a mile to 55 West Street. Turn right and go .7 of a mile, turn left on 400 North. Hospital on left one and a half blocks.

Directions To Southwest Memorial Hospital:

From rig location go to Highway 666, turn right. Go approximately 22 miles, take Broadway Street Exit. Go 11 blocks. Turn left on Milnes Road. Hospital is 4 blocks down on the left.

APPENDIX II

LAW ENFORCEMENT AGENCIES
AND
FIRE FIGHTING FACILITIES

Utah State Highway Patrol (801) 587-2662

Sherriff's Departments:

Moab, Utah (801) 259-8115
Monticello, Utah (801) 587-2237

Fire Departments:

Blanning, Utah (801) 578-2313
La Sal, Utah (801) 688-2246
Monticello, Utah (801) 587-2500

APPENDIX III

GOVERNMENTAL AGENCIES

Bureau of Land Management Monticello, Utah	(801) 587-2201
Road, Utah	(801) 259-6111
Utah Division of Oil, Gas, and Mining Salt Lake City, Utah	(801) <u>538-5340</u>
Environmental Protection Agency Salt Lake City, Utah	(801) 530-7518
State Department of Health Salt Lake City, Utah	(801) 533-6101
Water Pollution Control Salt Lake City, Utah	(801) 533-6146

APPENDIX IV

RADIO AND TELEVISION STATIONS

KUTA Radio Station - Blanning, Utah (801) 678-2251

Additional information will be supplied.

APPENDIX V

AIR SERVICE & MOTELS/HOTELS

Air Services:

LIFE FLIGHT
Moab, Utah (801) 259-7403

Motels/Hotels:

Triangle "H" Motel
Monticello, Utan (801) 587-2274

Prospector Motor Lodge
Blanning, Utan (801) 678-3231

RESIDENTS WITHIN 2 MILE RADIUS

At 2500 feet due south of the location is a (31) site campground and (2) residents.

Three Park Rangers live at Hovenweep National Monument and 4200 feet south west is a Ranger Station with people inside (6) hours a day.

Ranger Station During Office Hours: (303) 529-4461

Ranger Station After Office Hours: (303) 529-4469

VI. 2-MILE RESIDENT MAP WITH RESIDENCES SHOWN

This section will be completed upon receiving additional information.

HYDROGEN SULFIDE

A deadly enemy of those people employed in the petroleum industry, this gas can paralyze or kill quickly. At least part of the answer lies in education in the hazards, symptoms, use of personal protective equipment.

Hydrogen Sulfide Hazards

The principal hazard to personnel is asphyxiation or poisoning by inhalation. Hydrogen Sulfide is a colorless, flammable gas having an offensive odor and a sweetish taste. It is highly toxic and doubly hazardous because it is heavier than air (specific gravity = 1.19). Its offensive odor, like that of a rotten egg, has been used as an indicator by many old timers in the oil fields, but is not a reliable warning of the presence of gas in a dangerous concentration because people differ greatly in their ability to detect smells. Where high concentrations are encountered, the olfactory nerves are rapidly paralyzed, deluding the sense of smell as a warning indicator. A concentration of a few hundredths of one percent higher than that causing irritation, can cause asphyxia and death - in other words, there is a very narrow margin between consciousness and unconsciousness, and between unconsciousness and death.

Where high concentrations cause respiratory paralysis, spontaneous breathing does not return unless artificial respiration is applied. Although breathing is paralyzed, the heart may continue beating for ten minutes after the attack.

Physiological Symptoms

Acute: Results in almost instantaneous asphyxia, with seeming respiratory paralysis. Acute poisoning, or strangulation, may occur after even a few seconds inhalation of high concentrations and results in panting respiration, pallor, cramps, paralysis and almost immediate loss of consciousness with loss of speech, and no other warning than a cry. Death may follow with extreme rapidity from respiratory and cardiac paralysis. One breath of a sufficiently high concentration may have this result.

Subacute: Results in irritation, principally of the eyes, persistent cough, tightening or burning in the chest and skin irritation followed by depression of the central nervous system. The eye irritation ranges in severity from mild conjunctivitis to swelling and bulging of the conjunctiva, photophobia (abnormal intolerance of light) and temporary blindness.

Treatment

1. Victim should be removed to fresh air immediately by rescuers wearing respiratory protective equipment. Protect yourself while rescuing.
2. If the victim is not breathing, begin immediately to apply artificial respiration. If a resuscitator is available, let another employee get it and prepare for use.
3. Treat for shock, keep victim warm and comfortable.
4. Call a doctor. In all cases, victims of poisoning should be attended by a physician.

Characteristics of H₂S

1. Extremely toxic.
2. Heavier than air. Specific gravity = 1.19.
3. Colorless, has odor of rotten eggs.
4. Burns with a blue flame and produces Sulphur Dioxide (SO₂) gas, which is very irritating to eyes and lungs. The SO₂ is also toxic and can cause serious injury.
5. H₂S Forms explosive mixture, with air between 4.3% and 46% by volume.
6. H₂S is almost as toxic as hydrogen cyanide.
7. Between 5 and 6 times as toxic as carbon monoxide.
8. Produces irritation to eyes, throat and respiratory tract.
9. Threshold Limit Value (TLV) maximum of eight hours exposure without protective respiratory equipment - 20 PPM.

Safe Practices

If you are faced with an H₂S problem in your operations, the following safe practices are recommended:

1. Be absolutely sure all concerned are familiar with the hazards concerning H₂S and how to avoid it.
2. All employees should know how to operate and maintain a resuscitator and respiration equipment.
3. Be able to give and demonstrate artificial respiration.
4. Post areas where there is poisonous gas with suitable warning signs.

Safe Practices (cont'd)

5. Be sure all new employees are thoroughly schooled before they are sent to the field -- tomorrow may be too late.
6. Teach men to avoid gas whenever possible - work on the windward side, have fresh air mask available.
7. Never let bad judgment guide you - wear respiratory equipment when gauging tanks, etc. Never try to hold your breath in order to enter a contaminated atmosphere.
8. In areas of high concentration, a two-man operation is recommended.
9. Never enter a tank, cellar or other enclosed place where gas can accumulate without proper respiratory protective equipment and a safety belt secured to a life line held by another person outside.
10. Always check out danger areas first with H₂S detectors before allowing anyone to enter. **DO NOT TRY TO DETERMINE THE PRESENCE OF GAS BY ITS ODOR.**
11. Wear proper respiratory equipment for the job at hand. Never take a chance with equipment with which you are unfamiliar. If in doubt, consult your supervisor.
12. Carry out practice drills every month with emergency and maintenance breathing equipment. Telling or showing a group how to operate equipment is not enough - make them show you.
13. Maximum care should be taken to prevent the escape of fumes into the air of working places by leaks, etc.
14. Communications such as radios and telephones should be provided for those people employed where H₂S may be present.

DO YOU KNOW

THERE IS NO TIME TO WASTE

WHEN BREATHING STOPS!

RESCUE BREATHING MUST

BE STARTED FAST!!

After Breathing is Stopped for:

The Chances for Life are:

1 Minute	98 out of 100
2 Minutes	92 out of 100
3 Minutes	72 out of 100
4 Minutes	50 out of 100
5 Minutes	25 out of 100*
6 Minutes	11 out of 100*
7 Minutes	8 out of 100*
8 Minutes	5 out of 100*
9 Minutes	2 out of 100*
10 Minutes	1 out of 100*
11 Minutes	1 out of 1,000*
12 Minutes	1 out of 10,000*

* Authorities State:

Irreparable brain damage starts at about the fifth minute.

LEARN HOW TO USE

LIFE SAVING EQUIPMENT

RESCUE — FIRST AID

H₂S

1. PUT ON YOUR BREATHING APPARATUS BEFORE ATTEMPTING A RESCUE. YOU TOO CAN BECOME A VICTIM.
2. Remove victim immediately to fresh air zone.
3. Maintain victim at rest and administer oxygen if available.
4. If patient is not breathing, commence artificial respiration immediately. (See page 13.)
5. Summon doctor or get victim to a doctor.
6. Keep patient warm.
7. When breathing is restored, give patient stimulants such as tea or coffee, but **do not** leave unattended.
8. If eyes are affected, wash them thoroughly with clear water (for slight eye irritation), cold compresses will help.
9. Patients should be kept under medical observation until the doctor declares them fit to return to work. Once a victim is removed to fresh air and normal respiration restored before heart action ceases, rapid recovery may be expected.

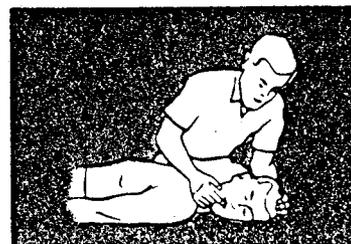
In cases of slight or minor exposures where the worker has not been totally unconscious and wants to return to work after a short rest period, it is recommended that duty be postponed until the following day. Reflexes may not have returned to normal and the person could be subject to injury from other work hazards.

It is vitally important that everyone working around or near hydrogen sulfide gas **HAS** a good working knowledge of artificial respiration. Practices should be held regularly.

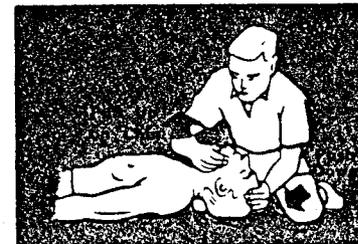


ARTIFICIAL RESPIRATION

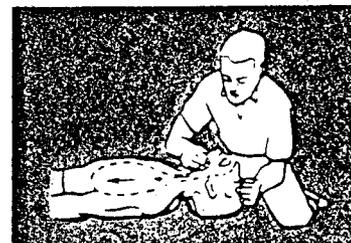
Mouth-To-Mouth Resuscitation Method



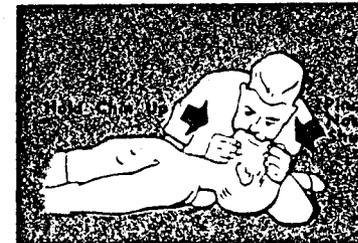
1 Place victim on his back — loosen clothing around neck and waist. Turn victim's head to the side — wipe out the mouth quickly using your fingers to get rid of any foreign matter.



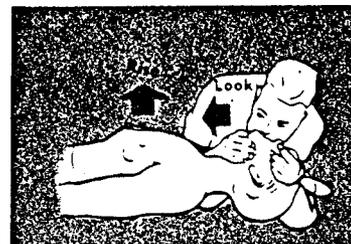
2 Insert thumb in the mouth — grasp lower jaw and lift it forcibly upwards and forwards.



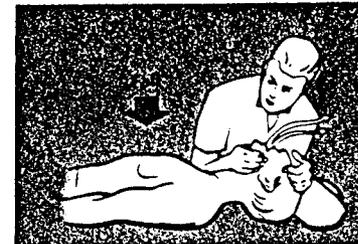
3 Hold the lower jaw up and with the other hand close the victim's nostrils.



4 Take a deep breath — place your mouth firmly over the victim's mouth and breathe out.



5 While breathing into victim — watch chest rise to indicate air passage is clear.



6 Remove your mouth from the victim's to allow breath to be exhaled. Count three and repeat.

NOTE: Every moment you begin to give artificial respiration, you are taking a risk. Artificial respiration should be continued until the patient recovers or until help arrives.

THE USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.
2. Respirators shall be inspected frequently at random to insure that they are properly used, cleaned and maintained.
3. Anyone who may use the respirators shall be trained in how to insure proper face piece to get a face seal. They shall wear respirators in normal air and then wear it in a test atmosphere. (Note: Such items as facial hair, beard or sideburns and eyeglass temple pieces will not allow a proper seal). Anyone that may be reasonably expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses.
4. Maintenance and care of respirators:
 - A. A program for maintenance and care of respirators shall include the following:
 - (1) Inspection for defects, including leak checks.
 - (2) Cleaning and disinfecting.
 - (3) Repair.
 - (4) Storage
 - B. Inspection: Self-contained breathing apparatus for emergency use shall be inspected monthly for the following and a permanent record kept of these inspections:
 - (1) Fully charged cylinders.
 - (2) Regulator and warning device operation.
 - (3) Condition of face piece and connections.
 - (4) Elastometer or rubber parts shall be stretched or massaged to keep them pliable and prevent deterioration.
 - C. Routinely used respirators shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.

THE USE OF SELF-CONTAINED BREATHING EQUIPMENT (cont'd)

5. Person assigned task that requires using self-contained breathing equipment shall be certified physically fit for breathing equipment usage by the local company physician at least annually.
6. Respirators should be worn when:
 - A. Any employee works near the top or on top of any tank unless test reveals less than 20 PPM of H₂S.
 - B. When breaking out any line where H₂S can reasonably be expected.
 - C. When sampling air in areas to determine if toxic concentrations of H₂S exist.
 - D. When working in areas where over 20 PPM H₂S has been detected.
 - E. At any time there is a doubt as to the H₂S level in the area to be entered.

**INSTRUCTION MANUAL
FOR USE OF SCOTT**

**SKA-PAK[®] EMERGENCY
ESCAPE UNIT**

P/N 900055 SERIES

SECTION I

DESCRIPTION AND APPLICATION

WARNING: IMPROPER USE OF THIS APPARATUS IN A HAZARDOUS ATMOSPHERE MAY RESULT IN INJURY OR DEATH. PERSONNEL SHOULD RECEIVE ADEQUATE TRAINING PRIOR TO USE.

The Scott Ska-Pak provides instant emergency respiratory protection for anyone suddenly exposed to an atmosphere immediately dangerous to life or health. This lightweight, compact unit is available in two basic configurations; a 5-minute self-contained air supply for escape only, and a combination 5-minute self-contained air supply for escape and Type C supplied-air respirator used for entry into areas immediately dangerous to life or health. The combination self-contained and supplied-air unit is available in demand and positive pressure models. All demand models can be supplied with either a half facepiece or the Scottoramic[®] full facepiece, while the positive pressure models are available with the Scottoramic full facepiece only.

The Scottoramic facepiece model is designed for use where

full face protection is necessary or desirable. The half facepiece is for use where integral eye protection is not required.

OPERATION

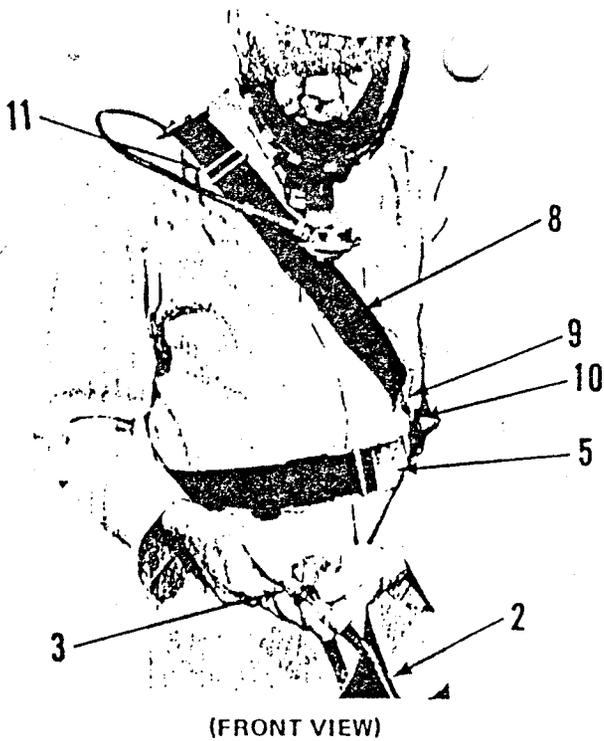
Ska-Pak cylinder air, with a 5-minute rated duration, is for emergency egress only. With the unit connected to, and operating from an external air supply, it is permissible to enter areas immediately dangerous to life or health. The hoseline system is designed to operate with an inlet supply of 60 to 125 psig, with hoseline lengths between 10 feet and 250 feet.

Some Ska-Pak models are available with a life-sustaining "Breakaway" hose coupling which releases with a 100 lb. pull. This enables the user to move rapidly toward the nearest exit in the event of an imminent explosion, fire or other emergency where seconds can mean the difference between life and death.

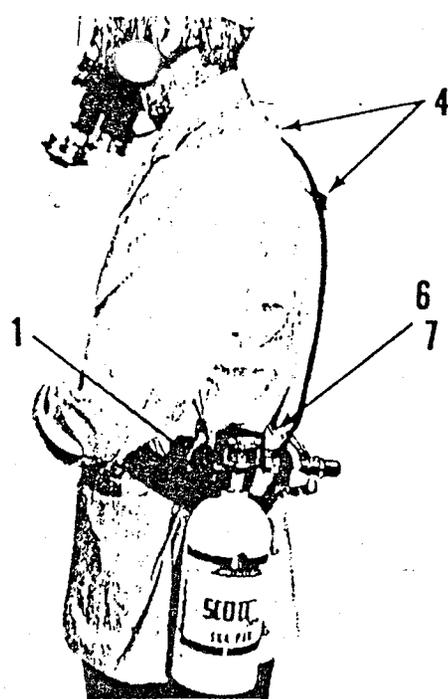
APPROVALS: TC-13F-66 for 900055-01, -03 and -04
TC-13F-67 for 900055-09, -10, -17 and -18
TC-13F-68 for 900055-13 and -14

Approved units meet the requirements of 30 CFR Part 11.

Go for safety, first... go SCOTT



(FRONT VIEW)



(REAR VIEW)

FIGURE 1
P/N 900055-13 Ska-Pak

TABLE I

	PART NUMBER ¹	REGULATOR ASSY TYPE	FACEPIECE TYPE	DISCONNECT TYPE	BREAKAWAY HOSE	SUPPLY HOSE ³	NIOSH/MESA APPROVAL NO. ⁴
EGRESS ONLY UNITS	900055-01 ²	Demand	Half	None	None	None	TC-13F-66
	900055-02	Demand	Duo-Seal®	None	None	None	
	900055-03	Demand	Half	None	None	None	TC-13F-66
	900055-04 ²	Demand	Scottoramic	None	None	None	TC-13F-66
ENTRY/EGRESS UNITS	900055-05	Demand	Duo-Seal	Hansen	None	30010-	
	900055-06	Demand	Duo-Seal	Schrader	None	30020-	
	900055-07	Demand	Duo-Seal	Hansen	Yes	30010-	
	900055-08	Demand	Duo-Seal	Schrader	Yes	30020-	
	900055-09	Demand	Scottoramic	Hansen	None	30010-	TC-13F-67
	900055-10	Demand	Scottoramic	Schrader	None	30020-	TC-13F-67
	900055-11	Demand	Scottoramic	Hansen	Yes	30010-	
	900055-12	Demand	Scottoramic	Schrader	Yes	30020-	
	900055-13	Pressure-Demand	Scottoramic	Hansen	None	30010-	TC-13F-68
	900055-14	Pressure-Demand	Scottoramic	Schrader	None	30020-	TC-13F-68
	900055-15	Pressure-Demand	Scottoramic	Hansen	Yes	30010-	
	900055-16	Pressure-Demand	Scottoramic	Schrader	Yes	30020-	
	900055-17	Demand	Half	Hansen	None	30010-	TC-13F-67
	900055-18	Demand	Half	Schrader	None	30020-	TC-13F-67
	900055-19	Demand	Half	Hansen	Yes	30010-	
	900055-20	Demand	Half	Schrader	Yes	30020-	

NOTES:

- ¹ All Ska-Pak units include 7 cu. ft. aluminum cylinder.
- ² These units supplied with single strap harness; all others are supplied with waist and shoulder harness, P/N 802200-01.
- ³ Hose lengths are supplied as required. NIOSH/MESA approved lengths per dash configuration are 10 ft. minimum, 250 ft. maximum.
- ⁴ Approved units meet the requirements of 30 CFR Part 11.

SECTION II

OPERATING INSTRUCTIONS

NOTE

The following instructions include the harness assembly and the supply hose (see Table I and figure 1).

1. Don the harness assembly (refer to Section III) or the single strap harness.
2. Check that the cylinder valve knob (1, figure 1) is adjusted fully clockwise to its closed position. Push valve handle inward and turn clockwise.
3. Connect supply hose (2) to the respirable air supply, and mate hose assembly (3) to supply hose (2) as follows:
 - a. Hansen fitting mating (see figure 5).
 - (1) Line up slight recess (drill point) in socket body "A" with the semi-circular cutout in spring loaded socket "B".
 - (2) Slide spring loaded socket "B" back on supply hose; insert coupling "C" into socket body "A", and release socket "B".
 - (3) Rotate socket "B"; locking coupling "C" in place.

NOTE

To uncouple, rotate socket "B" until socket body "A" and socket "B" are lined up (refer to step 1); slide socket "B" back and remove coupling "C". Release socket "B".

- b. Schrader fitting mating (see figure 6).
 - (1) Insert coupling "C" into socket body "A".

NOTE

To uncouple, rotate socket "B", remove coupling "C" and release socket "B".

4. Bring mask and hose assembly over shoulder (see figure 1) and secure hose assembly in place with webbing loops (4).
5. Don appropriate mask (refer to Section III).
6. Turn the cylinder valve knob (1) counterclockwise to its open position if external air supply fails or when disconnecting from the supply.

SECTION III

DONNING PROCEDURE WHEN USING 802200-01 HARNESS ASSEMBLY

1. Don the harness assembly as follows:
 - a. Unbuckle waist belt (5, figure 1).
 - b. Snap clip (6) of shoulder strap (8) into "D" ring (7).
 - c. Snap clip (9) of shoulder strap (8) into "D" ring (10).
 - d. Unsnap webbing loops (4).
 - e. Place shoulder strap (8) over right shoulder.
 - f. Adjust and secure waist belt (5). Pass tongue of waist belt through the loop on belt.
 - g. Adjust shoulder strap (8) as required at slide (11) to allow waist belt (5) to be at waist level.

2. Don Scottoramic facepiece (figure 2) as follows:
 - a. Adjust the straps of the facepiece harness full out.
 - b. Don facepiece chin first, then pull down and center the harness on back of head.
 - c. Adjust the bottom straps first, then the middle pair of straps. In most cases, the top head strap will be tight on the full out position.
3. Don Scott half facepiece (figure 3) as follows:
 - a. Adjust the bottom straps of the facepiece full out.
 - b. Don the facepiece, place the upper strap above the ears to the top of the head and attach the hooks to the eyes on the low strap.
 - c. Adjust the straps as required for proper seal.
4. Don the pressure-demand units (figure 4) using one of the following procedures:
 - a. If the unit is connected to a respirable air supply prior to donning the facepiece, a constant flow of air will be present in the facepiece. As the Scottoramic facepiece is donned as noted in step 2 above, the air flow will subside. It will cease once the facepiece is fitted to the face. A slight positive pressure (+1.5 inches of water pressure max.) inside the facepiece will prevent any external contaminated environment from entering the system.
 - b. An alternate method may also be used. If desirable, the facepiece may be donned prior to connecting to the air supply. No air will flow to the unit until the air supply connection is completed. If this method of donning is used, the user must hold his breath until the connection is completed.

NOTE

Due to an unlimited supply of air in a hoseline system, the Pressure-Demand Ska-Pak is not fitted with an additional "ON-OFF" provision other than the Quick Disconnect.

SECTION IV

MAINTENANCE

NOTE

The following procedures should be performed following each use.

1. Carefully inspect the unit for defects, such as rips or tears in the mask or hoses, loose or damaged fittings and damaged head harness, which might render the unit inoperable.
2. Prior to cleaning and disinfecting the mask, remove the regulator and exhalation valve as follows:
 - a. On all units, unthread the regulator at the knurled fitting.
 - b. On pressure-demand units, remove the clamp securing the exhalation valve to the mask. Carefully remove the exhalation valve.

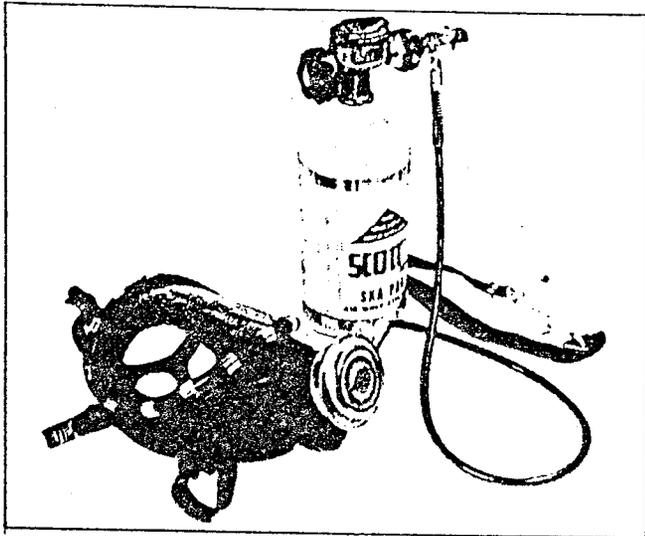


FIGURE 2 — 900055-04 Ska-Pak
With 5 Strap Head Harness

3. No maintenance is required on either demand or pressure-demand regulators other than making sure the exhalation check valve is kept clear of loose dirt.
4. Clean and disinfect the mask assembly, with the regulator removed, as follows:
 - a. Wash facepiece in cleaner-disinfectant or detergent solution. Cleaner-disinfectant solutions are available that clean effectively and also contain an antibacterial agent. Alternatively, rubber parts may be washed in a liquid detergent solution, then immersed in either: 1) a hypochlorite solution (50 ppm of chlorine) for 2 minutes, 2) a 70% ethyl, methyl or isopropyl alcohol solution; or 3) a quaternary ammonium solution (200 ppm of quaternary ammonium compounds in water of less than 500 ppm total hardness). To prevent dermatitis and damage to parts, immersion times shall be adhered to, and disinfectants shall be thoroughly rinsed from disinfected parts.

Strong cleaning and disinfecting agents can damage parts. Vigorous mechanical agitation shall not be used, and the temperature recommended by the manufacturer shall be used. Solvents other than water should be used with caution.

- b. Rinse completely in clean, warm water and air-dry in a clean area.
- c. Wipe off dirt accumulations from the remainder of the respirator.

NOTE

Care should be exercised to avoid any undue scratching of the facepiece lens.

SECTION V

PACKING AND STORING

1. Make sure all equipment is completely dry before packing and storing.
2. Reassemble unit and arrange in storage rack or container in ready position.
3. Turn cylinder valve knob (1, figure 1) full clockwise.
4. Store the Ska-Pak in a cool, dry place.

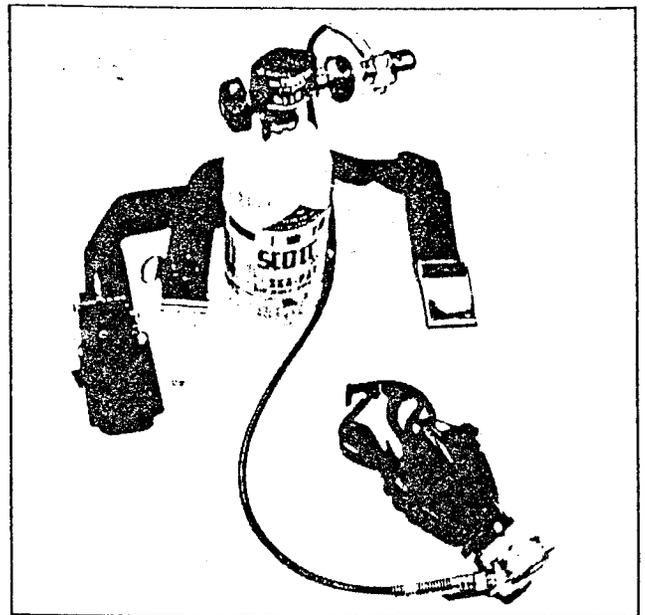


FIGURE 3 — 900055-02 Ska-Pak
With Duo-Seal Oral-Nasal Facepiece

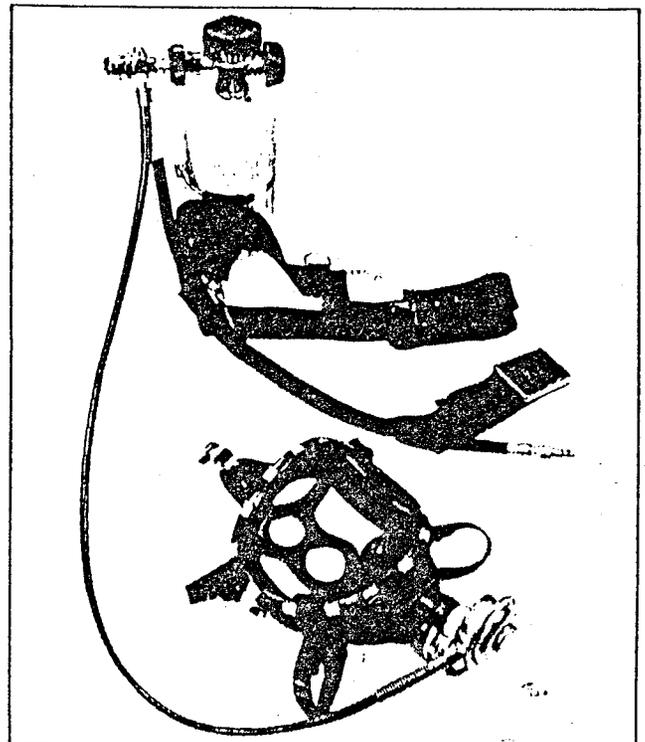


FIGURE 4 — 900055-13 Pressure-Demand
Ska-Pak With 5 Strap Head Harness

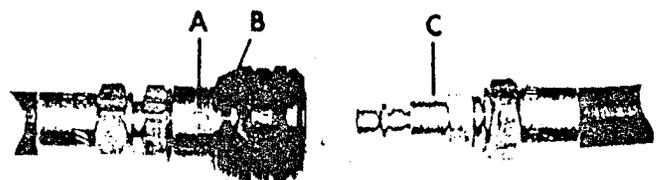


FIGURE 5 — Hansen Fitting

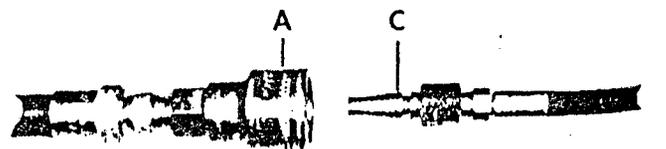


FIGURE 6 — Schrader Fitting

SCOTTORAMIC® FACEPIECE

DONNING PROCEDURE AND MAINTENANCE 801450 & 801500 SERIES

DONNING PROCEDURE:



1. Adjust the head straps to a full outward position.
2. Hold the head harness out of the way with one hand or fold back over the lens.
3. Place the facepiece on the face with chin properly located in the chin pocket.
4. Pull the head harness over the head and tighten the neck straps by pulling on the two appropriate tabs. PHOTO 1.
5. Stroke the head harness down to the back using one or both hands. PHOTO 2.
6. Tighten the two temple straps. PHOTO 3.
7. Retighten neck straps if required.
8. In most cases, the top head strap will be tight on the "Full out" position.
9. Check the seal by closing off the inhalation tube with your hand and slowly inhale. No leakage should be detected and the facepiece should be drawn onto the face. PHOTO 4.



NOTE:

In training sessions, each user of the Scottoram facepiece should determine the general geometry and tightness of the head harness to provide the best seal, greatest comfort and maximum security for each particular facial characteristic.

MAINTENANCE

The lens in this facepiece is molded of polycarbonate plastic to provide a high degree of impact resistance, optical qualities and dimensional stability.

To replace the lens, remove the 15 clips with a coin or thin pry tool. Align center marks on new lens with facepiece center parting lines. Force lens to bottom of groove in rubber and install clips to retain lens frame.

CLEANING

Wash in warm soap or detergent solution. Rinse completely in clean warm water and air dry or dry with a soft clean cloth.

Disinfect in 70% ethyl, methyl, or isopropyl alcohol, a quaternary ammonium solution or a hypochlorite solution (50 PPM of chlorine minimum).

NOTE:

All plastic lenses require care in handling and cleaning. They can be damaged by abrasive or harsh cleaners and softened by some solvents. While most household cleaners, disinfectants and plastic cleaners are satisfactory, it is necessary to first test them on the edge of a lens. Avoid abrasive cleaners, acetone, paint and lacquer thinners, benzene, dry cleaning fluids, strong phenol and cresol solutions. Do not polish with paper towels as most paper contains abrasives. Do not autoclave.

SCOTT® HEALTH/SAFETY PRODUCTS
LANCASTER
NEW YORK 14086



SAFETY PRECAUTIONS FOR AIR-PAK® CYLINDERS

Air-Pak cylinders should be recharged as soon as practical after use. Cylinders should not be stored partially charged, for two reasons:

1. If used without recharge, the duration of the apparatus is reduced.
2. The safety relief device is only designed to protect a fully charged cylinder from the effects of a fire.

For maximum safety the cylinders should be stored empty or full.

Prior to recharging, compressed gas cylinders must be examined externally for evidence of high heat exposure, corrosion, or other evidence of significant damage.

WARNING

CYLINDERS WHICH SHOW EVIDENCE OF EXPOSURE TO HIGH HEAT OR FLAME; e.g., PAINT TURNED TO A BROWN OR BLACK COLOR, DECALS CHARRED OR MISSING, GAUGE LENS MELTED, ELASTOMERIC BUMPER DISTORTED; OR PHYSICAL DAMAGE TO THE CYLINDER SHALL BE REMOVED FROM SERVICE AND RETESTED PRIOR TO RECHARGING.

Additional information of value when performing external and internal inspections of cylinders may be found in CGA Pamphlet C-6, "Standards for Visual Inspection of Compressed Gas Cylinders", available from the Compressed Gas Association, Inc., 500 Fifth Avenue, New York, New York 10036.

If there is any doubt about the suitability of the cylinder for recharge, it shall be returned to a certified hydrostatic test facility for expert examination and retesting.

Scott supplies several types of breathing air cylinders for Air-Pak use. The user must determine specifically which cylinder is to be recharged. All current production Scott Air-Pak cylinders can be categorized into one of the following:

1. Steel type 3AA cylinders that bear a plus (+) sign after the latest retest date may be recharged to a pressure 10% greater than the stamped service pressure, i.e., a cylinder stamped

3AA 2015 with a plus (+) sign after the latest test date may be recharged to 2216 psi. Always check to be sure the hydrostatic retest date is within a five-year period and that the cylinder is properly labeled to indicate air service.

2. Aluminum cylinders bearing Department of Transportation exemption DOT-E6498-2216 may be recharged to 2216 psi. Always check to be sure the hydrostatic retest date is within a five-year period and that the cylinder is properly labeled to indicate air service.

3. Composite cylinders bearing Department of Transportation exemption DOT-E7235-2216 may be recharged to 2216 psi. Always check to be sure the hydrostatic retest date is within a three year period and that the cylinder is properly labeled to indicate air service.

4. Composite cylinders bearing Department of Transportation exemption DOT-E7235-4500 may be recharged to 4500 psi. Always check to be sure the hydrostatic retest date is within a three year period and that the cylinder is properly labeled to indicate air service.

5. Composite (fully wrapped) cylinders bearing Department of Transportation exemption DOT-E8059 4500 may be recharged to 4500 psi. Always check to be sure the hydrostatic retest date is within a three year period and that the cylinder is properly labeled to indicate air service.

Place the cylinder in a suitable container. The container should be constructed to prevent personal injury in the event of problems or component failure while recharging.

Appropriately connect the cylinder to the filling recharge system and refill at a rate less than 1500 psi per minute. Terminate the filling when the pressure reaches service pressure, and allow the cylinder to cool to room temperature. If necessary, top-off the cylinder such that service pressure is attained with the cylinder at a temperature of 70°F. Close the valves on the cylinder and the recharge system and remove the cylinder. Apply a soap solution to determine if there is any leakage between the cylinder and the valve. If there is no leakage, the cylinder is now ready for reuse.

CAUTION

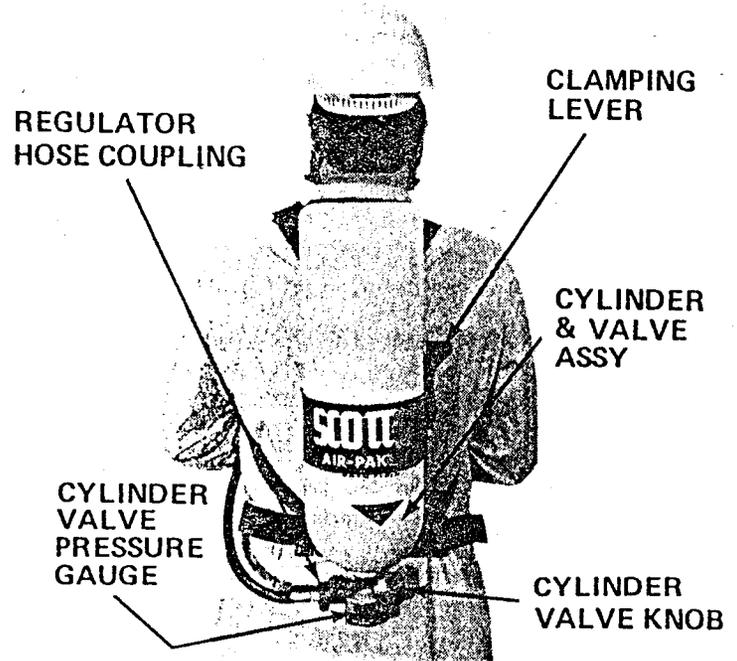
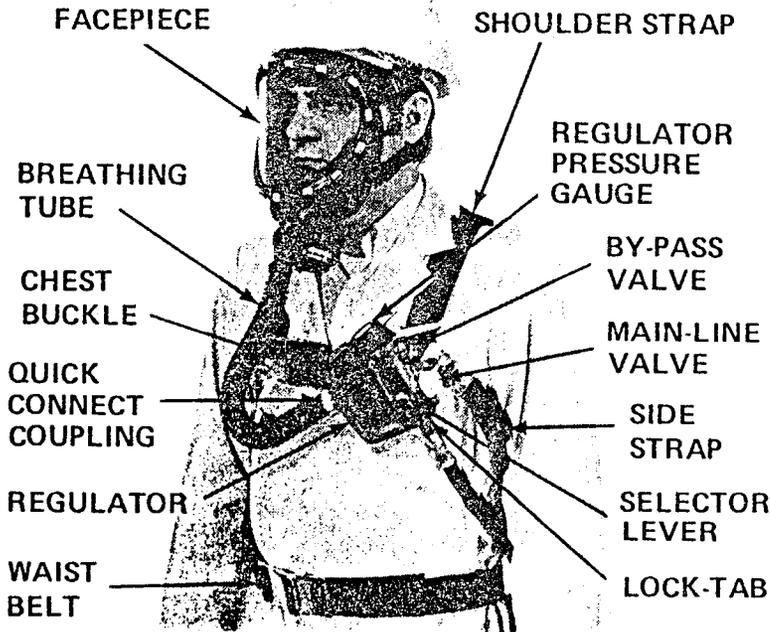
USE CLEAN DRY AIR IN ACCORDANCE WITH CGA SPECIFICATION G-7.1, TYPE 1, GRADE D OR BETTER.

SCOTT[®] ATO

HEALTH/SAFETY PRODUCTS

SCOTT PRESUR-PAK[®] IIa PRESSURE-DEMAND 900014 SERIES (30 minute duration)

OPERATING AND MAINTENANCE INSTRUCTIONS



WARNING

IMPROPER USE OF THIS APPARATUS IN A HAZARDOUS ATMOSPHERE MAY RESULT IN INJURY OR DEATH. PERSONNEL SHOULD RECEIVE ADEQUATE TRAINING PRIOR TO USE.

The Scott Presur-Pak IIa, positive pressure, self-contained breathing apparatus (SCBA) is designed to provide maximum respiratory protection in objectionable or toxic atmospheres, regardless of concentration(*), or oxygen deficiency, with a NIOSH/MSHA rated duration of 30 minutes when properly DONNED, USED, AND MAINTAINED BY TRAINED PERSONNEL. The regulator is equipped with an audible Pak-Alarm[®] which will warn the user of diminishing air supply. The Pak-Alarm will activate when approximately 20-25% of the air supply remains. YOU MUST EGRESS IMMEDIATELY TO THE NEAREST SAFE, RESPIRABLE AREA WHEN THE PAK-ALARM RINGS. The apparatus is certified by NIOSH/MSHA for use in temperatures to -25°F with the installation of a Scott Nosecup Assembly, P/N 801432-00, in the facepiece. The nosecup assembly is required for use in temperatures at or below freezing or whenever lens fogging may occur.

*WARNING

IN ADDITION TO THIS APPARATUS, ADDITIONAL PROTECTIVE CLOTHING AND/OR SPECIAL EQUIPMENT SHALL BE PROVIDED, AS REQUIRED, FOR COMPLETE PROTECTION TO THE USER AND APPARATUS. (CERTAIN GASES POISON THROUGH THE UNBROKEN SKIN, SUCH AS HYDROGEN CYANIDE, OR ARE EXTREMELY IRRITATING TO THE SKIN, SUCH AS AMMONIA.) EVERY APPLICATION SHALL BE THOROUGHLY EVALUATED BY QUALIFIED PERSONNEL, PRIOR TO ENTRY OR USE OF THE APPARATUS.

SERVICE LIFE (Duration of air)

This apparatus is certified by NIOSH/MSHA to provide a "30 minute" duration of air, based on actual machine testing simulating men performing a variety of moderate-to-heavy work tasks.

The user should not expect to obtain exactly 30 minutes duration from this apparatus during each use. The work being performed may be more or less strenuous than the work-rates used in the NIOSH/MSHA tests. The duration may be shorter, possibly as short as 15 minutes, where the individual's work is more strenuous than the NIOSH/MSHA tests.

The duration of the apparatus will depend on such factors as:

1. the degree of physical activity of the user;
2. the physical condition of the user;
3. the degree of training or experience which the user has had with this or similar equipment;
4. the degree to which the user's breathing is affected by excitement, fear, or other emotional factors;
5. whether or not the cylinder is fully charged at the start of the work period;
6. the possible presence, in the compressed air, of carbon dioxide concentrations greater than .04% normally found in atmospheric air;
7. the condition of the apparatus;
8. the atmospheric pressure; Example: when used in a pressurized tunnel or caisson at 2 atmospheres (15 psi gauge) the rated duration will be one-half as long (15 minutes) as when used at 1 atmosphere; and at 3 atmospheres will be one-third as long (10 minutes).

REGULAR OPERATIONAL INSPECTION

The following procedure shall be used for incoming and daily inspection of the apparatus. An apparatus not routinely used, but not for emergency use, shall be inspected at least monthly. All apparatus shall be inspected after each use.

1. Visually inspect the complete apparatus for worn or aging rubber parts and damaged components.
2. Check the latest cylinder hydrostatic test date to ensure it is current (within 5 years).
3. Visually inspect cylinder for large dents or gouges in metal. Cylinders which show exposure to high heat or flame, such as paint turned brown or black, decals charred or missing, gauge lens melted or elastomeric bumper distorted, shall be removed from service.
4. Check cylinder pressure gauge for "FULL" indication. If cylinder pressure is less than "FULL", replace with a fully charged cylinder.
5. Check to ensure regulator hose coupling is hand tightened to the cylinder valve outlet.

NOTE

Wrenches shall not be used, as damage to the coupling gasket may result.

6. Close regulator BY-PASS valve (red knob) by turning clockwise.
7. Close regulator MAIN-LINE valve (yellow knob) by depressing lock-tab and turning valve knob clockwise.
8. Check to ensure regulator cover is tight and not lifted. If cover is loose or lifted, remove regulator from service, tag and have repaired by authorized personnel.
9. Unthread breathing hose from regulator.
 - a. Verify diaphragm integrity as follows:
 - i. Place mouth over regulator outlet probe and gently inhale on regulator outlet. This negative pressure shall be maintained with no leakage (flow) through the regulator.
 - ii. Gently blow into regulator outlet. This positive pressure shall be maintained with no leakage (flow) through the regulator.

WARNING

IF LEAKAGE IS PRESENT, RECHECK BY-PASS AND MAIN-LINE VALVES TO BE SURE THEY ARE FULLY CLOSED AND RETEST PER STEPS 10a AND 10b. IF LEAKAGE IS STILL PRESENT, REMOVE APPARATUS FROM SERVICE, TAG, AND HAVE REPAIRED BY AUTHORIZED PERSONNEL.

10. Open regulator MAIN-LINE valve (yellow knob), by turning full counterclockwise. A clicking sound shall be audible, indicating the lock-tab is functioning.
11. Open cylinder valve knob a minimum of 1-1/2 turns. The Pak-Alarm shall ring momentarily. The regulator gauge shall indicate "FULL". Check for leakage at cylinder valve, regulator and all connections.
12. Properly don facepiece and place palm over end of quick connect coupling. Inhale slightly. A negative pressure (suction) shall be created, pulling the facepiece toward the face. Hold for 5-10 seconds. If leakage is noted, remove facepiece from service and return for repair by authorized personnel.
13. Place breathing tube quick connect coupling close to palm of hand and exhale. If any air flows from breathing tube, remove facepiece from service and return for repair by authorized personnel.
14. Connect breathing tube coupling to regulator outlet securely. Inhale. Air should be delivered with very slight effort. Place selector lever in "ON" position. A slight increase in

facepiece pressure shall be noted (positive pressure). Inhale several times. Place control lever in "OFF" position. Disconnect breathing tube and remove facepiece.

17. Push in and rotate the cylinder valve knob clockwise to close valve.
18. Release residual air pressure by slowly placing selector lever in "ON" position. Pak-Alarm shall ring momentarily. After pressure is released (no flow), place lever in "OFF" position.

WARNING

IF THE PAK-ALARM DOES NOT RING, REMOVE APPARATUS FROM SERVICE, TAG, AND RETURN FOR REPAIR BY AUTHORIZED PERSONNEL.

CAUTION

IF ANY DISCREPANCIES ARE FOUND USING THESE PROCEDURES, THE APPARATUS SHALL BE REMOVED FROM SERVICE, TAGGED, AND REPAIRED BY AUTHORIZED PERSONNEL.

MAKE SURE BY-PASS IS FULLY CLOSED AND MAIN-LINE IS FULLY OPENED.

DONNING AND NORMAL OPERATION

WARNING

ALL PERSONNEL USING THIS APPARATUS SHALL BE THOROUGHLY TRAINED BY QUALIFIED PERSONNEL IN DONNING, OPERATION AND EMERGENCY OPERATION.

1. Open carrying case and check cylinder gauge for "FULL" indication. Replace cylinder assembly if required.
2. Remove facepiece and breathing tube assembly; place next to case, exercising care not to scratch lens.
3. Check to ensure all strap assemblies, side and waist, are fully extended and waist belt buckle assembly is not connected.
4. Stand at cylinder end of carrying case (right end), lean forward, grasp both edges of the backplate just above waist belt area, and lift from case.
5. Swing the apparatus straight up and over the head, keeping elbows close to body. Rest apparatus on your back while still slightly bent over. The shoulder straps will slide along arms and fall into place on shoulders. (Make sure elbows are through shoulder and side strap loops). Connect the chest buckle; then while straightening up, pull down on the side straps to adjust harness to fit body (see figures 1 thru 3).



Figure 1



Figure 2

6. Connect and adjust waist belt assembly (see figure 4).
7. Place selector lever in "OFF" position.
8. Check to ensure BY-PASS valve is fully closed (full clockwise) and MAIN-LINE valve is fully open (full counterclockwise).



Figure 3



Figure 4

WARNING

OBSTRUCTION OF THE REGULATOR OUTLET WITH THE BY-PASS TURNED ON AND FLOWING MAY CAUSE REGULATOR OR DIAPHRAGM DAMAGE.

9. Open the cylinder valve knob a minimum of 1-1/2 turns. Pak-Alarm shall ring momentarily. Check regulator gauge for "FULL" indication, and don Scottoramic® facepiece as follows (see figures 5 thru 8).



Figure 5



Figure 6



Figure 7



Figure 8

WARNING

RESPIRATORS SHOULD NOT BE WORN WHEN CONDITIONS, SUCH AS A GROWTH OF BEARD, SIDE-BURNS, A SKULL CAP THAT PROJECTS UNDER THE FACEPIECE, OR TEMPLE PIECES ON GLASSES, PREVENT A GOOD FACE SEAL.

- a. Adjust all headstraps to a full outward position.
- b. Hold the head harness out of the way with one hand or back over the lens.
- c. Place the facepiece on the face with chin properly located in the chin pocket.
- d. Pull the head harness over the head and tighten neck straps and temple straps by pulling on the appropriate tabs.
- e. STROKE the head harness down toward the neck, using one or both hands.
- f. Retighten neck straps and then temple straps.
- g. In most cases, the top head strap will be tight in the full out position. Tighten only if necessary.
- h. Close off breathing tube quick connect coupling with your hand and slowly inhale. No leakage shall be noted and the facepiece shall be drawn toward the face.

NOTE

Refer to Scott Instruction Sheet, P/N 89027-00, supplied with each Scottoramic facepiece, for donning and maintenance procedures.

10. Connect breathing tube connection to the regulator outlet coupling. Tighten securely.
11. Place selector lever in the "ON" position. THERE SHALL BE NO AUDIBLE FLOW OF AIR FROM THE REGULATOR OR FLOW OF AIR THROUGH THE FACEPIECE. ANY FLOW INDICATES LEAKAGE--DO NOT PROCEED INTO CONTAMINATED AREA. CHECK FACEPIECE SEAL. IF LEAKAGE IS STILL PRESENT, REMOVE APPARATUS AND HAVE CHECKED AND REPAIRED BY AUTHORIZED PERSONNEL. THE "OFF" POSITION OF THE SELECTOR LEVER SHALL ONLY BE USED FOR DONNING AND DOFFING OF THE APPARATUS.
12. Check the regulator pressure gauge, during use, for remaining air supply to allow sufficient time for egress from the contaminated area.

WARNING

IMMEDIATELY EGRESS FROM THE CONTAMINATED AREA WHEN THE PAK-ALARM STARTS TO RING. IT WARNS THE USER WHEN APPROXIMATELY 20-25% OF THE AIR SUPPLY REMAINS IN THE CYLINDER. IN HIGH NOISE AREAS OR WHERE MORE THAN ONE APPARATUS IS BEING USED, TOUCH THE REGULATOR WITH YOUR HAND TO FEEL THE VIBRATION OF THE PAK-ALARM.

13. After egress and when in a SAFE, RESPIRABLE AREA, place selector lever in "OFF" position, uncouple the breathing tube quick connect coupling from the regulator outlet, remove facepiece, push in and rotate cylinder valve knob clockwise to close valve.
14. Bleed residual system pressure from the system by slowly placing selector lever in "ON" position. After pressure is released (no flow), place lever in "OFF" position.

EMERGENCY OPERATION

Should the regulator become damaged or inoperative during use, proceed as follows:

1. Open BY-PASS (red-knob) counterclockwise. Adjust the flow of air to sufficiently supply the breathing requirements of the user.

WARNING

EXCESSIVE BY-PASS FLOW WILL SUBSTANTIALLY REDUCE THE SERVICE LIFE (DURATION) OF THE APPARATUS.

2. Depress the lock-tab under the MAIN-LINE valve (yellow knob) and turn fully closed (clockwise).
3. IMMEDIATELY egress from the area to a SAFE, RESPIRABLE AREA.

WARNING

DO NOT OBSTRUCT THE OUTLET OF THE REGULATOR WHILE IN THE BY-PASS MODE. THE BY-PASS MODE SHALL BE USED FOR EMERGENCY OPERATION ONLY. DO NOT USE FOR OTHER PURPOSES.

4. Tag and remove apparatus for repair by authorized personnel.

CYLINDER REPLACEMENT PROCEDURE

1. Place regulator selector lever in the "OFF" position, disconnect facepiece from regulator.
2. Push in and rotate the cylinder valve knob fully clockwise to close the valve.
3. Bleed residual system pressure by slowly placing selector lever in "ON" position. After pressure is released (no flow), place lever in "OFF" position.
4. Rotate regulator hose coupling counterclockwise, removing it from the cylinder valve outlet.

CAUTION

ATTEMPTING TO UNCOUPLE REGULATOR HOSE COUPLING WHILE PRESSURIZED MAY RESULT IN DAMAGE TO, OR LOSS OF, COUPLING GASKET.

5. Pull the cylinder clamping lever down while holding cylinder to release the cylinder and valve assembly from the backplate.
6. Lift the cylinder and valve assembly out of the backplate and replace with a fully charged cylinder and valve assembly. Start at the top of the backplate and lower cylinder assembly until properly positioned.
7. Raise and push up cylinder clamping lever to secure the cylinder and valve assembly in the backplate.
8. Reconnect regulator hand disconnect to the cylinder valve.

NOTE

Wrenches shall not be used, as damage to coupling gasket may result.

9. Open cylinder valve knob a minimum of 1-1/2 turns by rotating counterclockwise. No constant leakage shall be noted. If leakage occurs, and cannot be stopped, the unit shall be removed from service, tagged, and repaired by authorized personnel.
10. The unit is now ready for use and may be returned to service.

STAND-BY CLEANING AND STORAGE

NOTE: The following procedure, in addition to the REGULAR OPERATIONAL INSPECTION, shall be used after each use and for preparing the apparatus for storage/stand-by.

1. Inspect the apparatus for worn or aging rubber parts or damaged components.
2. If in good condition, carefully wash facepiece assembly with warm soap and water or mild detergent solution. A soft brush may be used to scrub the rubber components, DO NOT use on the lens.
3. Rinse the facepiece assembly including the exhalation valve thoroughly. Flush water through the breathing tube, letting it flow out through opening onto lens.
4. Disinfect the facepiece by submersion, using one of the following solutions:

WARNING

DO NOT MIX THE SOLUTIONS, ONLY USE ONE.

- a. 70% solution of ethyl, methyl or isopropyl alcohol
- OR
- b. Hypochlorite solution, two tablespoons chlorine bleach per gallon of water
- OR
- c. Aqueous solution of Iodine, one teaspoon of tincture of Iodine per gallon of water

NOTE

Maximum cleaner and disinfectant temperature should not exceed 120°F.

5. Rinse facepiece thoroughly and allow to completely air-dry.
6. Damp sponge dirt accumulation from the rest of the apparatus.
7. Follow REGULAR OPERATIONAL INSPECTION PROCEDURE.
8. Replace the apparatus in the carrying case, making sure all components are thoroughly dry, the cylinder is fully charged, the cylinder valve is fully closed, the BY-PASS valve is fully closed, the MAIN-LINE valve is fully open and the control lever is in the "OFF" position.

NOTE

If repair information is required, contact an Authorized Scott Distributor or Service Center.

RECEIVED

JUN 19 1985

DIVISION OF OIL
GAS & MINING

William J. Lockhart
P.O. Box 8672
Salt Lake City, UT 84108

17 June 1985

Dianne R. Nielson
Director
Utah Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Well No. TXPOC-Square Tower 1-16
adjacent to Hovenweep National
Monument

Dear Ms. Nielson:

Terri Martin for the National Parks and Conservation Association, and the undersigned as its attorney, have reviewed your decision to approve the application for permit to drill the above oil well, including the stipulations accompanying the decision and the parallel letter to Dr. Peter L. Goss, Acting Chairman of the Cultural Sites Review Committee.

We appreciate your conscientious and direct effort to hear and address the concerns of the Review Committee, as well as our own concerns. In particular, we strongly endorse your addition of stipulation number 10, requiring that all production equipment must be operated in a manner that will prevent noise from any of the production equipment being heard by persons within the boundaries of Hovenweep National Monument. We understand that stipulation to require baffling or housing the equipment adequately to guarantee that no noise from any production equipment be audible to the human ear.

We further understand that acceptance of this permit by Transco will constitute the assumption of a legal obligation to fulfill the above and all other stipulations set forth in your letter decision of June 17, 1985, and that Transco will not be permitted to operate production facilities unless they comply fully with these stipulations.

Because of our concern about the impacts on Hovenweep and about compliance with these stipulations, we request that we be placed on the mailing list for all notices or correspondence or other communications with Transco or others concerning compliance with all applicable stipulations or conditions governing Transco's drilling or development of production facilities or terminating operations at this well site.

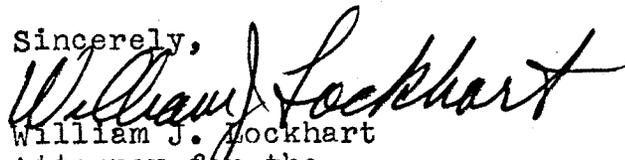
Finally, I must state that we were disappointed by failure

Dianne R. Nielson -- Page 2

in your decision to give an adequate explanation of the failure to comply with the basic recommendation of the Historic and Cultural Sites Review Committee. There is no indication that an adequate and complete review has been made of the topography to show that there is no place within Section 16 where the drilling operations could be conducted less intrusively on the values preserved by Hovenweep; and no explanation addresses that. The Committee's recommendation was that the site should be at least 1/4 mile from the monument boundary -- but its obvious and primary concern was that the site of minimum impact should be found. Your letter to Chairman Goss offers no factual or topographical basis for concluding that a better site is not available.

For the above reason, we do not believe that your decision adequately addresses the factors which were of concern to the Historic and Cultural Sites Review Committee. While it is unlikely that we can obtain the resources necessary to bring a legal challenge to the decision at this time, we wish to emphasize that it is the responsibility of the Division, and ultimately the Board, to address adequately the concerns raised by the Committee in reviewing proposed actions which could affect National Register sites.

Sincerely,


William J. Lockhart
Attorney for the
National Parks and
Conservation Association

cc: Peter L. Goss
Melvin T. Smith
TXP Operating Company

file S
RECEIVED

JUL 02 1985

June 28, 1985

DIVISION OF OIL
GAS & MINING

By: Transco Exploration Co. TXP Operating Company
P.O. Box 1396
Houston, TX 77251

TEMPORARY

Dear Applicant:

RE: TEMPORARY APPLICATION
NUMBER 09-1427 (T60965)

Enclosed is a copy of approved Temporary Application Number 09-1427 (T60965). This is your authority to construct your works and to divert the water for the uses described.

While this approved application does give you our permission to divert and use water, it does not grant easements through public or private lands in order to gain access to the source nor to convey the water to the place of use, nor does this approval eliminate the need for such other permits as may be required by this Division or any other agency in implementing your diversion.

This application will expire September 1, 1985, and it is expected that no diversion or use of the water will be done after that date unless another proposal has been made and approved.

Your contact with this office, should you need it is with the Area Engineer, Mark Page. The telephone number is (801)637-1303.

Yours truly,

Robert L. Morgan, P.E.
State Engineer

RLM:slm

Encl.: Copy of approved Temporary Application

TEMPORARY

FILING FOR WATER IN THE STATE OF UTAH

Rec. by J. Ric #18337
Fee Rec. 7/5
Platted _____
Microfilmed _____
Roll No. _____

APPLICATION TO APPROPRIATE WATER

CORRECTED COPY
6/21/85 DGB

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

WATER USER CLAIM NO. 09 - 1427

APPLICATION NO. T60965

1. PRIORITY OF RIGHT: May 1, 1985

FILING DATE: May 1, 1985

2. OWNER INFORMATION

Name: TXP Operating Company (By: Transco Exploration Co.)
Address: P.O. Box 1396, Houston, TX 77251
The land is not owned by the applicant(s), see explanatory.

3. QUANTITY OF WATER: 7.0 acre feet (Ac. Ft.)

4. SOURCE: Mc Elmo Creek DRAINAGE: San Juan River

POINT(S) OF DIVERSION:

COUNTY: San Juan

(1) N. 1150 feet, W. 300 feet, from the E $\frac{1}{4}$ Corner of Section 10,
Township 40 S, Range 16 E, SLB&M

COMMON DESCRIPTION: 4 miles S.E. of Hovenweep

5. NATURE AND PERIOD OF USE

Oil Exploration From June 1 to September 1.

6. PURPOSE AND EXTENT OF USE

Oil Exploratio: Exploratory drilling

7. PLACE OF USE

The water is used in all or parts of each of the following legal subdivisions.

TOWN RANGE SEC	North East Quarter				North West Quarter				South West Quarter				South East Quarter				
	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	
39 S 26 E 16																	X

All locations in Salt Lake Base and Meridian

EXPLANATORY

The water source is located on property owned by the BLM.
TXPOC #1-16 Square Tower Well.

RECEIVED

JUL 02 1985

DIVISION OF OIL
GAS & MINING

TEMPORARY

FEEES FOR APPLICATIONS TO APPROPRIATE WATER IN UTAH

Flow rate — c.f.s.	Cost	
0.0 to 0.1	\$ 15.00	
over 0.1 to 0.5	30.00	
over 0.5 to 1.0	45.00	
over 1.0 to 15.0	45.00	plus \$7.50 for each cfs above the first cubic
over 15.0	150.00	foot per second.

Storage — acre-feet		
0 to 20	22.50	
over 20 to 500	45.00	
over 500 to 7500	45.00	plus \$7.50 for each 500 a.f. above the first
over 7500	150.00	500 acre feet.

(This section is not to be filled in by applicant)

STATE ENGINEER'S ENDORSEMENTS

1. May 1, 1985 Application received by mail over counter in State Engineer's office by sp
2. Priority of Application brought down to, on account of
3. 6-25-85 Application fee, \$15.00, received by J.F. Rec. No. 18337
4. Application microfilmed by Roll No.
5. Indexed by Platted by
6. 6-18-85 Application examined by sp
7. Application returned, or corrected by office
8. Corrected Application resubmitted by mail over counter to State Engineer's office.
9. Application approved for advertisement by
10. Notice to water users prepared by
11. Publication began; was completed
Notice published in
12. Proof slips checked by
13. Application protested by
14. Publisher paid by M.E.V. No.
15. Hearing held by
16. Field examination by
17. 6-18-85 Application designated for approval rejection sp
18. 6/28/85 Application copied or photostated by slm proofread by
19. 6/28/85 Application approved rejected sp
20. Conditions:
This Application is approved, subject to prior rights, as follows:
 - a. Actual construction work shall be diligently prosecuted to completion.
 - b. Proof of Appropriation shall be submitted to the State Engineer's office by NPR
 - c. TEMPORARY APPROVAL -- EXPIRES September 1, 1985.
21. Time for making Proof of Appropriation extended to

Robert L. Morgan
Robert L. Morgan, P.E., State Engineer
22. Proof of Appropriation submitted.
23. Certificate of Appropriation, No., issued

WATER RIGHTS DATA BASE
ENTERED - DATE 6/19/85 BY MLK
VERIFIED - DATE 6/19/85 BY MLK

TEMPORARY

Application No. T.60965

09-1427

DIVISION OF OIL, GAS AND MINING

SPODDING INFORMATION

API #43-037-31159

NAME OF COMPANY: TXP OPERATING COMPANY

WELL NAME: TXPOC Square Tower 1-16

SECTION SW SE 16 TOWNSHIP 39S RANGE 26E COUNTY San Juan

DRILLING CONTRACTOR Bayless

RIG # 1

SPODDED: DATE 6-30-85

TIME 6:00 AM

HOW Rotary

DRILLING WILL COMMENCE _____

REPORTED BY _____

TELEPHONE # _____

DATE 7-8-85 SIGNED JRB

TXPOC - Notice of coring

7/12/85
1550 hrs.

Square Tower 1-16
Sec. 16, T39S, R26E
San Juan Co., Ut.

→ Coring @ 5800'. Will core
about 60'. May DST over the
weekend.

Calvin Comeaux
(801) 259-2025

N9730



NEWS RELEASE
June 17, 1985

**OIL WELL DRILLING APPROVED NEAR
HOVENWEEP NATIONAL MONUMENT**

The Division of Oil, Gas and Mining today approved an application from TPX Operating Company (Transco) to drill an oil well on state owned land the company has under lease near Hovenweep National Monument in San Juan County. This proposal has been carefully reviewed by the division for compliance with environmental rules and other technical requirements under oil and gas laws of Utah.

There have been three on-site inspections and an archeological review completed prior to the action taken today. A number of organizations have reviewed the application, as is the normal procedure. The National Park Service, Utah Division of State History and other state agencies considered the sensitive nature of the drill site to the monument and the impacts the drilling would have on visitors at Hovenweep. The visitor impacts will occur primarily at the campground rather than at the ruins.

The aesthetic impacts are the latest issues of concern because the drilling would be conducted 24 hours a day and the sounds and lights would be apparent at the campground. The general geography of the area does not allow selection of a drill site which is within the geologic structure most likely to produce oil and yet not cause disturbances to tourists.

Drilling is expected to last about 30 days, and if completed to a production well, there would be some additional work time to finish production facilities.

H 23

Committee will weigh effects of oil drilling

An emergency meeting of the Utah Historical and Cultural Sites Review Committee probably will be held to consider the effects an oil-drilling operation will have on Hovenweep National Monument, near the Utah-Colo-rado border in San Juan County.

Melvin T. Smith, Utah Division of State History and state historical preservation officer, said the committee should examine the effects before the Utah Board of Oil, Gas and Mining acts on the well-drilling proposal submitted by TXP Operating Co., Denver.

Smith said he will try to convene a sites committee meeting quickly but recognized the committee is the process of being reorganized and it might be difficult to get a quorum.

Dianne R. Nielson, Oil, Gas and Mining Division director, said her board might be willing to wait but isn't bound by any recommendation that may come from the historical review committee. She said the board is bound to follow state law and act promptly on drilling applications.

TXP has an oil and gas lease from the Utah Division of State Lands and applied to the board for permission to start drilling. However, the division sent the application to the Resource Development Coordinating Council for comments even though other oil and gas exploration abounds in the area.

The concern was that the well will be drilled 580 feet from the national monument boundary and longer distances from a campground and ancient Indian structures inside the monument.

In a Friday meeting in the State Capitol to determine what action will be taken next, Smith said state law provides that any state agency proposing projects that might affect anything on the National Historic Register must be studied by the Historical and Cultural Sites Review Committee.

Since Hovenweep is a national monument and is on the national register, he feels it comes under the state law.

Terri Martin, Rocky Mountain regional representative of the National Parks and Conservation Association, said her organization isn't trying to prevent TXP from drilling a well in the area.

Oil rigs may create chugging distraction at Hovenweep

By Joseph Bauman
Deseret News environmental specialist

The 3,000 visitors expected at Hovenweep National Monument's Square Tower Ruin in southeastern Utah this July may be surprised to find themselves touring the splendid Indian ruins to the noisy accompaniment of an oil well being drilled.

Hovenweep is made up of several scattered properties, with the visitor center at Square Tower.

A proposal by Transco Exploration Co. to drill an exploratory oil well only 500 feet from the national monument's boundary and 1,100 feet from the camping area was given a speedup Tuesday in a meeting of the state's Resource Development Coordinating Committee.

Ordinarily, the RDCC allows 45 days for comments by state agencies and interested members of the public on proposals for state lands projects, such as the Transco development. But at the request of the Utah Division of Oil, Gas and Mining, the RDCC shortened the comment period to 15 days, provided problems can be solved among state agencies and others.

The proposal was brought to the RDCC on an expedited schedule. It was not on the RDCC agenda, but Transco is interested in starting its project by July 1, and still needs about 30 days of surface work after it gets the go-ahead.

William J. Lockhart, a University of Utah law professor and former U.S. attorney for Utah, appeared at the meeting, representing the National Parks and Conservation Association.

He told the Deseret News that the fact that Transco is "suddenly anxious to proceed" means the public will not have a chance to inform itself properly about the project, debate it, or influence the outcome before Transco gets permission to proceed.

Some complicated issues of archaeological impacts, sound disturbing visitors and possible flaring gas from the oil well may not be worked out in 15 days, Lockhart said.

Terri Martin, representing the NPCA, said that if the well begins producing gas, compressors would clang continuously, and, if it produces oil, other equipment would thud continuously.

The well also could be drilled a half mile farther away, but Don Gillespie, National Park Service regional director for Utah, said a more distant site might put the drilling equipment higher on the terrain. The site 500 feet from the monument's boundary is in a shallow dip in the terrain, Ms. Martin said.

Committee member Rod Millar of the Utah Energy Office asked why there is a sudden push to start the project, when state leases are for 10 years. The drilling would begin during the peak visiting season at the ruins, he said.

Connie Goers of the company's Denver office said Transco began studying the possibilities in the area six to eight months ago and did some seismic surveying. After that, proposals were made to neighboring lease holders for a joint project. Ordinarily, if such projects are not begun within 60 days, the other lease holders don't cooperate, she said.

"Normally, when you request support from the other companies, it's with the understanding that your well will be started within 60 days," she said.

The matter is complicated by the fact that oil could extend beneath holdings of several entities, including the federal government.

So far, NPS contacts with Transco have shown the company is willing to cooperate, Gillespie said, but the project began with someone using outdated maps that did not show an expansion of Hovenweep that took place 25 years ago.

Some of the seismic lines would have trespassed on the national monument if the error had not been caught. Also, Gillespie said he has not seen a plan of operations for the project.

Ms. Martin said the park service is working on a master plan for Hovenweep for separate sites in Utah and Colorado. A zone of critical environmental concern has been created by Colorado, taking in state and federal land on its side of the line. Special safeguards would be imposed to save the archaeological and visitor enjoyment aspects.

The Bureau of Land Management, which administrates federal land in the region other than the Park Service property, has joined the effort in Colorado by forbidding drilling projects from having rigs within a quarter mile of the monument.

Public excluded in managing Utah's natural resources

DESERET NEWS, FRIDAY, MAY 17, 1985 A 1-1

Joseph M. Bauman

Deseret News
environmental specialist



Who owns the scenery?

Whose air is it, anyway?

Semi-autocratic state committees and boards make decisions every week about state land and wildlife — issues in which the public has a deep interest. Often, few outsiders other than industry officials know about these decisions.

William J. Lockhart, representing the National Parks and Conservation Association, challenged a crucial decision by the Utah Air Conservation Committee during the group's meeting Tuesday. He attacked the adoption on April 12 of a weak State Implementation Plan on protecting visibility.

Should Lockhart sue, he might have a strong case. The April 12 meeting was illegal. No agenda was sent out. Contrary to state law, an agenda was not even mailed to the media.

For the first time, this week's meeting agenda had a statement that members of the public would be allowed to speak.

To correct misunderstandings about the right to speak, member Jan Miller moved that such a note be printed on all future agendas — which presumably would be mailed. But her motion failed to find a second.

Nina Dougherty of the Sierra Club, given a chance to speak at the Tuesday meeting, said she feels these regulatory sessions are dominated by lawyers.

Mrs. Miller said Thursday, "I think it is important that people know that they can speak to an issue."

Almost all of the committee's work goes on during office hours. The few environmentalists or interested citizens who attend generally have to take time off from work.

When sessions are scheduled for the afternoons, the room is full of pinstriped suits — businessmen representing their companies' interests. "When we hold public meetings in the evenings, we get quite a different crowd of people," she said.

But regular meetings are rarely scheduled after 3 p.m.

On Tuesday, Utah's Resource Development Coordinating Committee — clearing house for state agencies on environmental matters — ramrodded through a shortened comment period for an oil well project. The exploratory well may be drilled on state land only 500 feet from the border of Hovenweep National Monument's Square Tower Ruin, San Juan County.

Square Tower is the visitor station for the monument, where scattered sections protect Anasazi remains in southeastern Utah and adjacent parts of Colorado. The project will start around July, the busiest month for visitors in this remote national monument. About 3,000 will see the exploratory drill rig.

The proposal by Transco Exploration Co. to drill an exploratory well next to the monument means campers may be treated to the glare of flaring gas. The campground is only 1,100 feet from the preferred drilling site.

Visitors will see the drilling rig from anywhere at Square Tower. They will hear it grinding through the underground formations. If oil is discovered, they will have the thumping of pumps. If gas is found, the compressors will clang.

The monument's desert experience will be degraded by the state's letting a petroleum company drill next to this important site.

The monument's superintendent, Robert C. Heyder, based at Mesa Verde National Park, said the biggest problem during drilling is "this is a 30-day period and they work 24 hours a day . . . I imagine we won't have a lot of people staying overnight."

The RDCC decided state agencies would have 15 days to comment, instead of the usual 45 days, unless state agencies decide some questions can't be worked out that quickly.

The speedup was because Tansco wants to start drilling as soon as possible.

Hovenweep was not on the RDCC agenda

Deseret News readers are members of the Utah public, citizens of the Beehive State. To whom do they imagine they should complain, if they don't want Utah's land used to degrade the experience of visitors to this national monument?

To the Board of Oil, Gas and Mining?

To the RDCC?

And when do these entities meet? Where do they gather?

Could you get there in time, if it's not on an agenda or the agenda isn't issued?

The fact that you don't know where to voice your feelings, Mr. or Ms. Reader, proves that nobody has bothered to take you into account.

In managing public resources, Utah's government shortchanges the public.

7/18/85

1045 hrs.

Calvin Comeaux

239-2025

TXP Oper. Co. -PA

TXP - Square Tower 1-16

Sec. 16, T39S, R26E, San Juan

TD = 6106

9 3/8" @ 2025 - cont. to surf.

Monahan Trail @ 4750'

Paradox @ 5221

Sitten @ 5600

U. Ismay @ 5800

Lower Ismay 5921

Upper D.C. 5966

Lower D.C. 6038

Akahi 6078

① 150 SX TD - 5750' E. tag

② 1975' - 2075' ~~E. tag~~
- BP @ 1900'

③ 10 SX @ 13' - 40'

④ Regulation PxA marker

Plan to do work this afternoon ~
24 hrs.

ATTN: COMPUTER ROOM



RECEIVED

DRESSER ATLAS DIVISION, DRESSER INDUSTRIES, INC. 1532 METROBANK BUILDING DENVER, COLORADO 80202 303/293-0613

JUL 22 1985

DIVISION OF OIL, GAS & MINING
DATE:

TO:

State of Utah
Division of Oil, Gas, Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

7-19-85

SUBJECT

DCC#: 3168

RE: ACS16

TO WHOM IT MAY CONCERN:

ENCLOSED IS WELL LOG DATA. PLEASE ACKNOWLEDGE RECEIPT OF THE MATERIAL DESCRIBED BELOW BY SIGNING AND RETURNING THIS LETTER. YOUR COOPERATION WILL BE MOST APPRECIATED. THANK YOU.

WELL

DATA

COMPANY: <u>Transco Expl. Co</u>	_____	600' TAPE REEL
WELL: <u>TX POC No. 1-16 Square Tower</u>	_____	COMPUTER LISTE
FIELD: <u>Wildcat</u>	_____	SEPIA PRINT (S)
COUNTY, STATE: <u>San Juan, Utah</u>	_____	VERSATEC PLOT(S)

TRANSMITTED BY:

MAIL

AIRFRIEGHT (#): _____	_____	LOG PRINT (S)
COUNTER TO COUNTER (#): _____	_____	FILM (S)
FEDERAL EXPRESS (#): _____	_____	BOOK (S)
EXPRESS MAIL (#) : _____	_____	
HAND DELIVERY (BY): _____	_____	

*** RECEIVED BY: Lula McKinlay
*** DATE RECEIVED: 7/22/85

SINCERELY,

J. Peter Potter



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

John Baza

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

July 26, 1985

Mr. John Rosata, Jr.
TXP Operating Company
P.O. Box 1396
Houston, Texas 77251

Dear *John* Mr. Rosata:

RE: TXPOC - Square Tower Well No. 1-16, Sec. 16, T. 39S, R. 26E,
San Juan County, Utah

The Division of Oil, Gas and Mining has recently received notice of the plugging and abandonment of the above-captioned well and reclamation of the drill site.

I want to take this opportunity to thank you and your staff for your efforts in coordinating with various state and federal agencies and other interest groups during the pre-drilling and drilling operations. TXP Operating Company's willingness to promptly and effectively address these concerns, coupled with its professional conduct of drilling and plugging/reclamation operations, speaks well of TXPOC's performance as a conscientious, responsible operator.

It has been a pleasure working with you and your staff, and we look forward to continued coordination with TXPOC.

Best regards,

Dianne

Dianne R. Nielson
Director

jbl

cc: P. Garver, Parsons, Behle & Latimer
R. J. Firth, Division of Oil, Gas and Mining

OIL, GAS, AND HYDROCARBON LEASE APPLICATIONS - APPROVED
----SIMULTANEOUS FILING (cont.)

Min. Lease Appl. No. 44353 T39S, R23E, SLB&M. San Juan
Peter W. Hummel Sec. 2: All 637.12 acres
Post Office Box 10350
Reno, NM 89510

HIGH BID: \$12,750.00

OTHER BIDS:

✓ TX POE - Square Tower # 1-16
SW 1/4 SBL 4

McCormick, SonJa V. \$3,185.60
Lasrich, Lane and W.G. 2,707.76
Andover Partners 2,622.18
Pioneer Oil & Gas 809.15
Bayless, Robert L. 720.94

Min. Lease Appl. No. 44354 T39S, R26E, SLB&M. San Juan
Lane Lasrich (50%), and Sec. 16: All 640.00 acres
W.G. Lasrich (50%)
2597 East Bridger Boulevard
Sandy, UT 84093

HIGH BID: \$6,496.00

OTHER BIDS:

Hummel, Peter W. \$6,400.00
Yates Petroleum Corporation 5,049.60
McCormick, SonJa V. 3,200.00
Pioneer Oil & Gas 812.80

Min. Lease Appl. No. 44355 T40S, R21E, SLB&M. San Juan
Andover Partners Sec. 16: All 640.00 acres
1675 Broadway, Suite 1600
Denver, CO 80202-4616

HIGH BID: \$1,350.40

OTHER BIDS:

Hummel, Peter W. \$800.00
Bayless, Robert L. 723.20

Min. Lease Appl. No. 44356 T40S, R21E, SLB&M. San Juan
SonJa V. McCormick Sec. 27: NW 1/4 SE 1/4 40.00 acres
1481 South Preston Street
Salt Lake City, UT 84108

HIGH BID: \$1,600.00

OTHER BID:

Hummel, Peter W. \$60.00



TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

2800 Post Oak Boulevard
P. O. Box 1396
Houston, Texas 77251
713-439-2000

July 23, 1985

RECEIVED

JUL 29 1985

DIVISION OF OIL
GAS & MINING

State of Utah
Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: John Baza

RE: TXPOC Square Tower #1-16
Section 16, T39S, R6E
San Juan County, Utah

Gentlemen:

TXP Operating Company hereby requests that all data on the subject well be held confidential for the maximum time period allowed by your agency. It is our understanding that this is for nine (9) months.

Please advise me if, this meets with your approval. You may contact me at (713) 439-3502.

Sincerely,

TXP OPERATING COMPANY

By: Transco Exploration Company
its Managing General Partner

for *Carson D. Singletary*
John Rosata, Jr. - Supervisor
Regulatory and Environmental Affairs

JRJ/CS/lb

XC: Hugh Bezner
Richard Harrison
Dave McCraine
Bruce Wiley
John Burba
David Adams
Lawrence Mifflin
Elroy Ardoin

TERRA SERVICES, INC.
1645 COURT PLACE, SUITE 218 • DENVER, COLORADO 80202
303/534-2871

RECEIVED

July 29, 1985

AUG 02 1985

DIVISION OF OIL
GAS & MINING

C O N F I D E N T I A L

State of Utah
Division of Oil, Gas, & Mining
355 W. North Temple
Salt Lake City, Utah 84180-1203

Dear Sirs:

Enclosed is your final copy of the Well Log covering:

Transco Exploration Company
TXPOC #1-16 Square Tower
Sec. 16, T39S, R26E
San Juan County, Utah

Should you have any questions pertaining to this Well Log
or if we can be of assistance in any other matter, please
do not hesitate to contact us.

Sincerely,


Steve Szekula
President

SS:mh

ATTN: COMPUTER ROOM



DRESSER ATLAS DIVISION, DRESSER INDUSTRIES, INC. 1532 METROBANK BUILDING DENVER, COLORADO 303/293-0613 80202

RECEIVED

TO: AUG 02 1985
State of Utah
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

DATE: 7-29-85
SUBJECT
DCC#: 3168
RE: Strata dip

TO WHOM IT MAY CONCERN:

ENCLOSED IS WELL LOG DATA. PLEASE ACKNOWLEDGE RECEIPT OF THE MATERIAL DESCRIBED BELOW BY SIGNING AND RETURNING THIS LETTER. YOUR COOPERATION WILL BE MOST APPRECIATED. THANK YOU.

Table with columns WELL and DATA. Rows include: COMPANY: Transco Exploration Co., WELL: TXPOC #1-16 Square Tower, FIELD: Wildcat, COUNTY, STATE: San Juan, Utah. DATA items include: 600' TAPE REEL, COMPUTER LISTER, SEPIA PRINT (S), VERSATEC PLOT(S), DATA SHEET (S), LOG PRINT (S), FILM (S), BOOK (S).

TRANSMITTED BY:

MAIL

AIRFRIEGHT (#):
COUNTER TO COUNTER (#):
FEDERAL EXPRESS (#):
EXPRESS MAIL (#):
HAND DELIVERY (BY):

*** RECEIVED BY: Julie Lewis
*** DATE RECEIVED: 8-2-85

SINCERELY,
[Signature]



STATE OF UTAH
NATURAL RESOURCES

1636 West North Temple - Suite 316 - Salt Lake City, UT 84116-3156 - 801-533-5336

*John B
Dianne*

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director

RECEIVED

AUG 02 1985

DIVISION OF OIL
GAS & MINING

NEWS RELEASE
August 1, 1985

OIL WELL NEAR HOVENWEEP NONPRODUCING

The Division of Oil, Gas and Mining today said it has been notified that the oil well drilled near Hovenweep National Monument in San Juan County, Utah, will be plugged and abandoned. The site will be reclaimed by TXP Operating Company (Transco) in accordance with the approved reclamation plan.

Restoration and recontouring of the site and the access road will be initiated as soon as possible. Reseeding will begin after October 1, 1985, when the climate is suitable for vegetation growth.

#####

For further information call:

PUBLIC AFFAIRS OFFICE
538-5429
Dotti Brockbank

Mesa Verde officials fear new oil rig will discourage campers

HOVENWEEP NATIONAL MONUMENT, Colo. (AP) — The towering spire of an oil rig is in place close to the boundary of the Hovenweep National Monument in southwest Colorado, and park officials fear a drop in campers because of the industrial intrusion.

"You can see the drilling rig from the visitors center and the campground," said Bob Heyder, superintendent of the Hovenweep monument and the Mesa Verde National Park.

"The rig is about 500 feet from the monument boundary, and about 2,000 feet from the campground," he said. "It's also pretty noisy, and I'm sure it will keep campers away."

The drilling rig is located on one of two small sections of land owned by the state of Utah.

Heyder said most of the land surrounding the monument is owned by the U.S. Bureau of Land Management, which requires a one-quarter mile buffer zone between drilling and mining and national parks. But Utah does not have those requirements, he said.

The park in the isolated desert country straddling the Colorado-Utah state line near Four Corners contains hundreds of Anasazi Indian ruins.

The region has several gas, oil, and carbon dioxide fields in production, but Heyder said the Transco Co. rig is the first to be drilled so close to the monument headquarters.

Heyder said Transco, a Denver company, and the state of Utah agreed to stipulations recommended by the park service concerning roads, contingency plans, and site restoration.

If the rig hits oil and production is established, Heyder said, "that's a whole different ball game. I'm not sure what we'd do then."

orig - file
cc: Dianne
John Bazo

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

RECEIVED

AUG 08 1985

DIVISION OF OIL
GAS & MINING

CONFIDENTIAL

CORE ANALYSIS REPORT

FOR

TXP OPERATING COMPANY

TXPOC 1-16 SQUARE TOWER
WILDCAT
SAN JUAN, UTAH

CONFIDENTIAL

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

TXP OPERATING COMPANY
 TXPOC 1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN, UTAH

DALLAS, TEXAS
 DATE : 15-JUL-1985
 FORMATION : PARADOX
 DRLG. FLUID: WBM
 LOCATION : SW, SE SEC. 16-T39S-R26E

FILE NO : 3803-003392
 ANALYSTS : DS, EV
 ELEVATION: 5252 GL

CONVENTIONAL ANALYSIS-BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	AIR (MD) 90 DEG	POR. He	GRAIN DEN	DESCRIPTION
ISMAY ZONE CORE # 1 5826-5886						
	5826.0-28.0					LM SL/SHY -- NO ANALYSIS
1	5828.0-29.0	0.01		2.9	2.76	LM GRY VFXLN SL/DOL SLT
2	5829.0-30.0	0.01		2.0	2.74	LM GRY VFXLN SL/DOL SLT
3	5830.0-31.0	0.01		2.8	2.70	LM GRY VFXLN
	5831.0-35.0					ANHYDRITE --- NO ANALYSIS
4	5835.0-36.0	0.02		2.3	2.72	LM GRY VFXLN
5	5836.0-37.0	0.03		2.1	2.73	LM GRY VFXLN
6	5837.0-38.0	<0.01		1.7	2.71	LM GRY VFXLN
7	5838.0-39.0	<0.01		1.0	2.73	LM GRY VFXLN
8	5839.0-40.0	<0.01		0.4	2.74	LM LTBRN VFXLN SL/DOL
9	5840.0-41.0	0.01		0.8	2.74	LM LTBRN VFXLN SL/DOL
10	5841.0-42.0	0.10		7.5	2.74	LM LTBRN VFXLN SL/DOL
11	5842.0-43.0	0.03		2.9	2.76	LM LTBRN VFXLN SL/DOL
12	5843.0-44.0	0.02		3.3	2.73	LM GRY VFXLN
13	5844.0-45.0	0.01		3.2	2.78	LM GRY VFXLN ANHY
	5845.0-51.0					ANHYDRITE -- NO ANALYSIS
	5851.0-66.0					SALT -- NO ANALYSIS
	5866.0-83.0					ANHYDRITE -- NO ANALYSIS
	5883.0-86.0					CORE LOSS

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

PERMEABILITY VS POROSITY

COMPANY: TXP OPERATING COMPANY
 FIELD : WILDCAT

WELL : TXPOC 1-16 SQUARE TOWER
 COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
 POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
5828.0 - 5845.0	1 (+)	0.000	100.0	0.0	25.0	2.5	0.02	0.00	0.01

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

10

PERMEABILITY: MILLIDARCIES

1

0.1

0.01

0.0

2.0

4.0

6.0

8.0

10.0

12.0

POROSITY: PERCENT

PERMEABILITY VS. POROSITY

TXP OPERATING COMPANY

TXPOC 1-16 SQUARE TOWER

WILDCAT

SAN JUAN, UTAH

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: TXF OPERATING COMPANY
FIELD : WILDCAT

WELL : TXPOC 1-16 SQUARE TOWER
COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.000 TO 100.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 5828.0 - 5845.0 INTERVAL LENGTH : 17.0
FEET ANALYZED IN ZONE : 13.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY AVERAGE	PERMEABILITY AVERAGES		
	ARITHMETIC	HARMONIC	GEOMETRIC
----- 2.5	----- 0.02	----- 0.00	----- 0.01

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: TXP OPERATING COMPANY
 FIELD : WILDCAT

WELL : TXPOC 1-16 SQUARE TOWER
 COUNTY, STATE: SAN JUAN, UTAH

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.0 - 2.0	4.0	1.0	0.006	0.006	30.8	30.8
2.0 - 4.0	8.0	2.7	0.016	0.018	61.5	92.3
6.0 - 8.0	1.0	7.5	0.100	0.100	7.7	100.0

TOTAL NUMBER OF FEET = 13.0

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

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PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	3.0	0.005	0.005	1.0	23.1	23.1
0.010 - 0.020	5.0	0.010	0.010	2.3	38.5	61.5
0.020 - 0.039	4.0	0.024	0.025	2.7	30.8	92.3
0.078 - 0.156	1.0	0.100	0.100	7.5	7.7	100.0

TOTAL NUMBER OF FEET = 13.0

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 COUNTY, STATE: SAN JUAN, UTAH

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	13.0	100.0	2.5	2.6
2.0	4.0	11.9	9.0	88.1	3.2	
4.0	12.0	77.2	1.0	22.8	7.5	
6.0	12.0	77.2	1.0	22.8	7.5	
8.0	13.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 32.9

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: TXP OPERATING COMPANY
 FIELD : WILDCAT

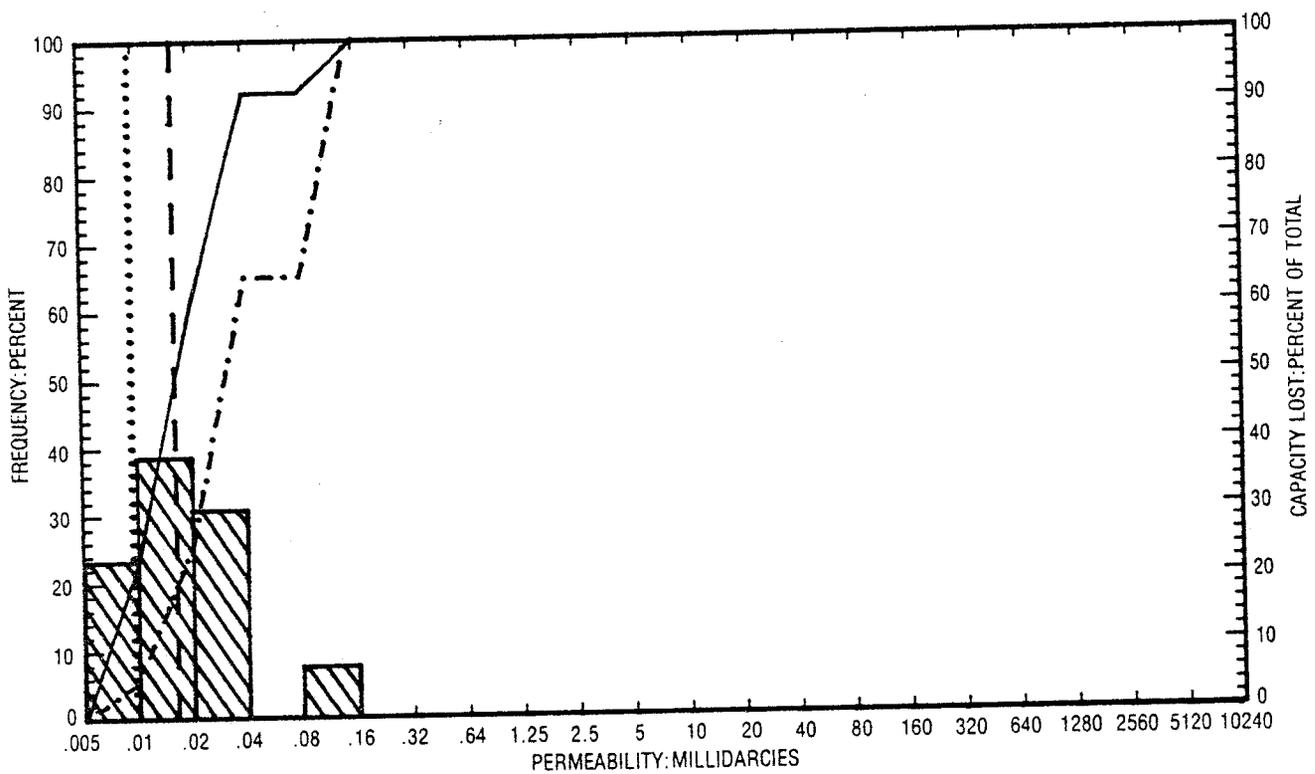
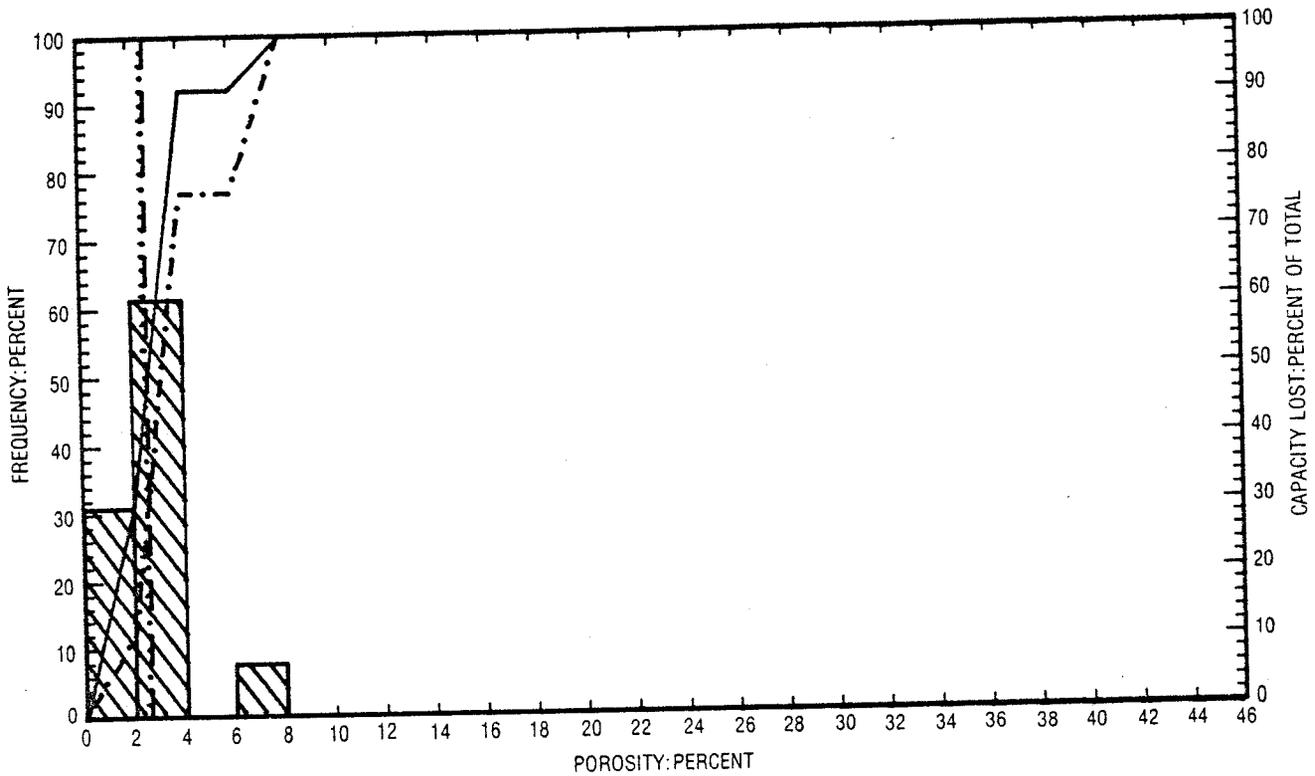
WELL : TXPOC 1-16 SQUARE TOWER
 COUNTY, STATE: SAN JUAN, UTAH

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	13.0	100.0	0.01	0.02
0.010	3.0	5.8	10.0	94.2	0.02	0.02
0.020	8.0	25.6	5.0	74.4	0.03	
0.039	12.0	65.1	1.0	34.9	0.10	
0.078	12.0	65.1	1.0	34.9	0.10	
0.	13.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET (ARITHMETIC) = 0.25

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PERMEABILITY AND POROSITY HISTOGRAMS

TXP OPERATING COMPANY
 TXPOC 1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN, UTAH

- LEGEND**
- ARITHMETIC MEAN POROSITY
 - GEOMETRIC MEAN PERMEABILITY
 - MEDIAN VALUE
 - _____ CUMULATIVE FREQUENCY
 - CUMULATIVE CAPACITY LOST

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

CONFIDENTIAL

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.	State Lease ML-36203
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	N/A
7. UNIT AGREEMENT NAME	N/A
8. FARM OR LEASE NAME	TXPOC-Square Tower
9. WELL NO.	1-16
10. FIELD AND POOL, OR WILDCAT	Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	Section 16, T39S, R26E
12. COUNTY OR PARISH	San Juan
13. STATE	Utah

1. OIL WELL GAS WELL OTHER Plugged & Abandoned

2. NAME OF OPERATOR TXP Operating Company Attention: John Rosata, Jr.

3. ADDRESS OF OPERATOR P.O. Box 1396, Houston, Texas 77251

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface

580' FSL & 1850' FEL of Section 16 (SW $\frac{1}{4}$, SE $\frac{1}{4}$)

14. PERMIT NO. 43-037-31159

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5251.6' (ground elevation)

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Restoration of Location</u> <input checked="" type="checkbox"/>	

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

17. 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.)*

This will confirm the approval to restore the location given by John Baza of 07-19-85. This was done in accordance with the Surface Use Plan, as proposed and was completed on July 26, 1985. The road and well location will be seeded as specified in the Plan.

18. I hereby certify that the foregoing is true and correct
SIGNED John W. Rosata TITLE Drilling Superintendent DATE 08-12-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

CONFIDENTIAL

SUNDRY NOTICES AND REPORTS ON WELLS <small>(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)</small>		5. LEASE DESIGNATION AND SERIAL NO. State Lease ML-36203
1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Plugged & abandoned		6. IF INDIAN, ALLOTTED OR TRIBE NAME N/A
2. NAME OF OPERATOR TXP Operating Company Attention: John Rosata, Jr.		7. UNIT AGREEMENT NAME N/A
3. ADDRESS OF OPERATOR P.O. Box 1396, Houston, Texas 77251		8. FARM OR LEASE NAME TXPOC-Square Tower
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 580' FSL & 1850' FEL of Section 16 (SW ¹ / ₄ , SE ¹ / ₄)		9. WELL NO. 1-16
14. PERMIT NO. 43-037-31159		10. FIELD AND POOL, OR WILDCAT Wildcat
15. ELEVATIONS (Show whether DF, ST, GR, etc.) 5251.6' (ground elevation)		11. SEC., T., R., M., OR BLE. AND SURVEY OR AREA Section 16, T39S, R26E
		12. COUNTY OR PARISH 13. STATE San Juan Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input checked="" type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) _____	
(Other) _____			

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

17. 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.) *

Approval was given by John Baza on 07-18-85 to plug & abandon. The P & A was complete on 07-19-85. The well was drilled to a total depth of 6106' and plugged as follows:

1. Mixed and spotted 150 sxs. Class H Cement at 15.6 ppg. from 6106' to 5750'. Tagged cement at 5750' w/10,000#.
2. Mixed and spotted 40 sxs. Class H cement at 15.6 ppg. from 1975' to 2075'.
3. Set EZSV at 1900' and tested to 1000#. OK.
4. Mixed and spotted 10 sxs. Class H cement at 15.6 ppg from 13' - 40'.
5. Cut casing below ground level.
6. Welded steel plate on casing stub.

**APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING**

DATE: 8/23/85
BY: John R. Dye

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

SIGNED John R. Dye TITLE Drilling Superintendent DATE 08-12-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

AUG 14 1985

DIVISION OF OIL
GAS & MINING

TXP OPERATING COMPANY
TRANSCO EXPLORATION COMPANY
TXPOC NO. 1-16 SQUARE TOWER
SW SE SECTION 16, T39S-R26E
SAN JUAN COUNTY, UTAH

WELLSITE GEOLOGIST: Jim Holst
INTERMOUNTAIN WELLSITE GEOLOGISTS
P. O. Box 4007
Casper, Wyoming 82604
(307) 266-2009

TABLE OF CONTENTS

	Page
Well Data.	1
Well Chronology.	4
Daily Drilling Summary	6
Bit Record	7
Deviation Record	7
Formation Tops	8
E-Log Comparisons.	9
E-Log Calculations	10
Drill Stem Test Data	11
Lithology.	12
Show Analysis.	32
Final Analysis	34

WELL DATA

OPERATOR: TXP Operating Company
One United Bank Center
1700 Lincoln, Suite 2100
Denver, CO 80203
Bruce Wiley, Geologist
(303) 863-3600

OTHER INTERESTED PARTIES: Transco Exploration Company
P. O. Box 1396
2800 Post Oak Blvd
Houston, TX 77251

Marathon Oil Company
800 Werner Court
P. O. box 2659
Casper, Wyoming 82602

Wintershall Oil and Gas Corp.
5675 DTC Blvd, Suite 200
Englewood, CO 80111
Ric Kopp
(303) 694-0988

Santa Fe Energy Company
1616 Glenarm Street, Suite 2600
Denver, CO 80202
Mike Dilli
(303) 825-5101

Damson Oil Corp.
1660 Lincoln Street, Suite 2410
Denver, CO 80264
Zeke Ziebarth
(303) 861-2582

Damson Oil Corp.
396 W. Greens Rd
Houston, TX 77067
Cliff Dye

Hartwell Corp.
5675 South Tamarac Pkwy
Suite 200
Englewood, CO 80111
Ron Hartwell
(303) 798-3582

WELL NAME: TXPOC No. 1-16 Square Tower

LOCATION: SW SE Section 16
Township 39 North, Range 26 East
1850' FEL; 580' FSL
San Juan County, Utah

FIELD: Wildcat

ELEVATIONS: Ground Level - 5252'
Kelly Bushing - 5266'

GEOLOGIST: Jim Holst
INTERMOUNTAIN WELLSITE GEOLOGISTS
P. O. Box 4007
Casper, Wyoming 82604
(307) 266-2009

SPUD DATE: June 29, 1985 6:00 am

CEASED DRILLING: July 17, 1985 1:23 am

MUDLOGGING: Terra Services, Inc.
163 South Van Gordon Street
Lakewood, Colorado 80228
(303) 988-5111
Two Man Logging Unit - TM161
Loggers: Eric Fagrelus
Ted Gergardy

COMPANY MAN: Jim McCain
Wayne Boudreaux
Kelvin Comeaux
Transco Exploration Company
P. O. Box 1396
2800 Post Oak Rd.
Houston, TX 77251

CONTRACTOR: Rig No. 1
Bayless Drilling Company
P. O. box 2669
Farmington, NM 87401
(505) 327-7214

TOOLPUSHER: Alvin Vavra

DRILLERS: Phillip Amersck
Robert Woods
Gene Gustin
David Phillips

RIG EQUIPMENT: Type Drawworks: IDECO H-1000
Derrick: IDECO KM 112' - 358,000
Pump #1: OMEGA D-750, 8" stroke 6 1/2" liner
Pump #2: OMEGA D-750, 8" stroke 6 1/2" liner
Drill Pipe: 4 1/2" 16.6 grade E X-Hole
Drill Collars: 6 1/4" OD X 2 1/4" ID 15 joints
7 OD X 2 1/4" ID 6 joints

DRILLING FLUIDS: Magcobar
P. O. box 1183
Big Piney, Wyoming 83113
Engineer - Sam Willis
(307) 276-3028

SURFACE CASING: Driller - 13 3/8" set at 100'
9 5/8" set at 2025'
E-Logger - 9 5/8" set at 2028'

TOTAL DEPTH: Driller - 6106' (SLM-6107')
E-Logger - 6107'

BOTTOM HOLE TEMPERATURE: DST - No tests
E-Log - 128°F

SAMPLES: Two sets of samples collected, 30' samples from surface to 4500', 10' samples 4500' to Total Depth. One set sent to American Stratigraphic Company in Denver; one sent to Transco Exploration Company in Denver. Show samples also sent to Transco in Denver.

CORES: Core No. 1: 5814'-5874' (SLM 5826'-5886')
Upper Ismay Zone
60' cut - recovered 57'
Christensen Diamond
P. O. Box 1260
Farmington, NM
(505) 325-1942
Core Hand - Don Sanders

CORE ANALYSIS: Core Lab
817 West Main Street
Farmington, NM 87401
(505) 325-3132

DRILL STEM TESTS: No tests in Ismay or Desert Creek

ELECTRICAL LOGS: Dresser-Atlas
P. O. Box 658
Farmington, NM 87499
(505) 325-5068
P. O. Box 188
Cody, Wyoming 82414
(307) 527-7128
Engineer: John Getty

ELECTRICAL LOGS RUN: Dual Lateral Log, MSFL, GR, SP
Base surface casing - T.D.
Compensated Densilog-Compensated Neutron-Caliper-Gamma Ray
Base surface casing - T.D.
(GR/CNL through casing)
VDL FRAC (Fracture Identifying Log)
5500' - T.D.
BHC Acoustilog - GR-CAL
Base surface casing - T.D.
Four Arm High Resolution Diplog
5500' - T.D.
PROLOG
5800' - T.D.

WELL CHRONOLOGY

- June 28, 1985 Set 100' of conductor pipe.
- June 29, 1985 Rig up, spud well at 6:00 am. Drilling from 100' to 976'. Drilling 12 1/4" surface hole with bit 1A Smith F-3. Mudlogging unit on location and logging from 100'.
- June 30, 1985 Drilled from 976' to 2025'. Circulate to run surface casing.
- July 1, 1985 Circulate and drop survey. Trip out of hole to run 47 joints 9 5/8" 36 lb K-55 casing set at 2025'. Cement with 2% CaCl₂ plus 1/4 lb sack flocele and follow with 200 sacks HLC Class B Cement plus 2% CaCl₂ with 1/4 lb sack flocele. Top with 30 sacks class B with 2% CaCl₂. Wait on cement.
- July 2, 1985 Wait on cement. Nipple up and check BOP and choke manifolds. Tested to 2100 psi. Rig up Dresser Atlas and run cement bond log. Cut drilling line. Trip into hole with bit no. 1 (STC) F-2. Drilling 8 3/4" hole. Tagged cement at 1938'. Drilled out from under surface casing. Geologist on location. Drilled from 2025' to 2050'. Drilling ahead.
- July 3, 1985 Drilled from 2050' to 3270'. Drilling ahead.
- July 4, 1985 Drilled from 3270' to 3777'. Circulate and condition mud. Mud up to 10.2 mud weight to hold back salt water flow coming from sands at 3604-3619'. Short trip, drilled from 3777' to 3870'. Drilling ahead.
- July 5, 1985 Drilled from 3870' to 4304'. Drilling ahead.
- July 6, 1985 Drilled from 4304' to 4493'. Circulate and drop survey. Trip out of hole for new bit no. 2 (STC) F-3. Change out hydril.
- July 7, 1985 Finish changing hydril and pressure test to 1500 psi. Tested ok. Trip into hole SLM 4493.51', no correction made. Ream to bottom. Drilled from 4493' to 4722'. Drilling ahead.
- July 8, 1985 Drilled from 4722' to 4970'. Drilling ahead.
- July 9, 1985 Drilled from 4970' to 5186'. Drilling ahead.
- July 10, 1985 Drilled from 5186' to 5414'. Trip for bit no. 3 (STC) F-3. Drop survey.
- July 11, 1985 Finish tripping for bit no. 3. Drilled from 5414' to 5591'. Drilling ahead.

July 12, 1985 Drilled from 5591' to 5814'. Circulate and condition mud for core no. 1. Trip out of hole. Drop survey.

July 13, 1985 Trip out of hole. Pick up core barrel. Trip into hole, cut core - Core No. 1, Upper Ismay zone. Cored from 5814' to 5874', SLM depth correction made downhole to 5886'. Trip out of hole with core.

July 14, 1985 Lay down core. Wait on rig repair. Trip into hole, circulate. Trip out of hole to casing.

July 15, 1985 Wait on rig repair, trip into hole, tagged bottom, pull up above salt, circulate with bit no. 5 (STC) F-3 (RR #3).

July 16, 1985 Trip back to bottom and drilled from 5886' to 6091'. Drilling ahead.

July 17, 1985 Drilled from 6091' to 6106'. Circulate to run E-Logs. Trip out of hole - run E-Logs.

July 18, 1985 Finish running electrical logs, wait on orders. Well plugged and location abandoned.

DAILY DRILLING SUMMARY

1985 Date	Depth	DSS	WT	VISC	pH	API Water Loss	FC/32	PPM Chlor	PPM CA	% SOL	RPM	WOB	PP
6/29											100	30	2000
-----FRESH WATER - SPUD MUD-----													
6/30	976	1	8.4	29		Water					100	45	2000
7/1	2025	2	8.4	29		Water					80	40	1500
7/2	2025	3				Water					80	40	1500
7/3	3025	4	8.4	29		Water					80	40	1500
7/4	3810	5	10.2	33	9.8	23.8	3	23000	1600	11	80	40	1500
7/5	4190	6	10.2	35	10.2	38.4	3	18800	420	12	80	40	1800
7/6	4493	7	10.3	36	10	33.2	3	13500	460	12	80	40	1800
7/7	4678	8	10.3	38	10.6	11.6	2	11500	160	11.5	80	40	1800
7/8	4947	9	10.4	37	9.5	12	2	8000	160	12.5	80	40	1800
7/9	5107	10	10.2	38	9.4	14.5	2	10500	400	11	75	45	1750/1800
7/10	5367	11	10.6	35	11.4	12.0	2	12000	NIL	12.5	75	45	1800
7/11	5510	12	10.5	36	10.9	10.8	2	11000	NIL	12	70	45	1900
7/12	5814	13	10.5	39	11.0	9.6	2	12000	NIL	12	70	45	1900
7/13	5814	14	10.5	39	11.0	9.6	2	12000	NIL	12	60	8/20	1000
7/14	5886	15	10.7	41	12	10.0	2	18000	240	13	70	45	1800
7/15	5888	16	10.7	44	11.5	9.2	2	20000	400	13	70	45	1800
7/16	5892	17	10.8	41	11.5	9.2	2	20000	400	14	70	45	2000
7/17	6106	18	11.0	49	11.0	9.2	2	38000	NIL	14	70	45	2000
7/18	6106	19											
-----FINISH RUNNING E-LOGS-----													
7/19	6106	20											
-----WELL PLUGGED AND LOCATION ABANDONED-----													

BIT RECORD

Bit No.	Size	Make	Type	Depth Out	Feet Cut	Hours	Ave. Ft/Hr
1A	12 1/4	Smith	F3	2025'	1925'	19	101
1	8 3/4	Smith	F2	4495'	2470'	74 1/4	33.3
2	8 3/4	Smith	F-3	5414'	920'	88 1/4	10.4
3	8 3/4	Smith	F-3	5814'	399'	39 1/2	10.1
4	8 3/4	Chris.	◇ MC-20 Core	5874'	60'	9	6.7
5 RR 3	8 3/4	Smith	F-3	6104'	<u>230'</u>	<u>22 1/4</u>	<u>10.3</u>
TOTAL (AVERAGE)					6006	252.25	23.8

DEVIATION RECORD

Date	Depth	Degrees Deviation
6-29-85	453'	1/2°
6-30-85	1000'	1/2°
6-30-85	1499'	1/2°
7-1-85	2025'	1/4°
7-3-85	2458'	1/4°
7-3-85	2957'	1/2°
7-4-85	3454'	3/4°
7-5-85	3954'	1/2°
7-6-85	4423'	1 1/4°
7-6-85	4490'	1°
7-8-85	4910'	1°
7-10-85	5414'	1°
7-12-85	5814'	1°
7-17-85	6107'	1/2°

FORMATION TOPS

<u>Formation</u>	<u>Sample Top</u>	<u>E-Log Top</u>	<u>Subsea</u>
Cretaceous Burro Canyon	5' ?	-----	
Jurassic Morrison	68' ?	16'	+5250
Jurassic Summerville	1040'	1038'	+4288
Jurassic Entrada	1068'	1070'	+4196
Jurassic Carmel	1211'	1211'	+4055
Jurassic Navajo	1237'	1234'	+4032
Jurassic Kayenta	1483'	1483'	+3783
Triassic Wingate	1531'	1568'	+3698
Triassic Chinle	1951'	1982'	+3284
Triassic Shinarump	2700'	2716'	+2550
Triassic Moenkopi	2790'	2798'	+2468
Permian Cutler	2924'	2995'	+2271
Pennsylvanian Honaker Trail	4724'	4750'	+ 516
Pennsylvanian Paradox	5220'	5221'	+ 45
Pennsylvanian Sitton or "A"	5580'	5660'	- 334
Pennsylvanian Upper Ismay	5800'	5800'	- 534
Pennsylvanian Hovenweep Sh	5904'	5917'	- 651
Pennsylvanian Lower Ismay	5910'	5926'	- 660
Pennsylvanian Gothic Shale	5964'	5961'	- 695
Pennsylvanian Upper Desert Cr	5969'	5966'	- 700
Pennsylvanian Lwr Desert Cr	6020'	6037'	- 771
Pennsylvanian Chinmey Rock Sh	6059'	6059'	- 793
Pennsylvanian Akah Zone	6077'	6078'	- 812
Pennsylvanian Salt	6105'	6106'	- 840
Total Depth	6106'	6107'	- 841

E-LOG COMPARISONS

	TXPOC #1-16 Sq. Tower SW SE 16 39S-26E KB-5266'	Carter #2 Aztec Federal CSW SW 9 39S-26E KB-5356'	Mobil #1 Fed GG CSW NW 15 39S-26E KB-5348'	Triton #1 Hoven Weep SW SE 18 39S-26E KB-5329'	Skelly #1 North Ismay C SW NW 28 39S-26E KB-5259'
<u>Formation/Zone</u>	<u>Subsea</u>	<u>Subsea</u>	<u>Subsea</u>	<u>Subsea</u>	<u>Subsea</u>
Cret. Burro Canyon		+5294?	+5296?	+5614?	+5221?
Jur. Morrison	+5250	+5240?	+5233?	+5129?	+5171?
Jur. Summerville	+4228	+4265	+4276	+4196	+4165
Jur. Entrada	+4196	+4233	+4242	+4161	+4132
Jur. Carmel	+4055	+4091	+4103	+4012	+3995
Jur. Navajo	+4032	+4067	+4082	+3990	+3966
Jur. Kayenta	+3783	+3806	+3840	+3717	+3709
Tri. Wingate	+3698	+3748	+3774	+3647	+3665
Tri. Chinle	+3284	+3309	+3344	+3221	+3215
Tri. Shinarump	+2550	+2556	+2597	+2486	+2465
Tri. Moenkopi	+2468	+2479	+2507	+2384	+2352
Per. Cutler	+2271	+2330	+2353	+2256	+2233
Penn. Honaker Trail	+ 516	+ 549	+ 593	+ 459	+ 399
Penn. Paradox	+ 45	+ 56	+ 108	- 4	- 40
Penn. Sitton or "A"	- 334	- 321	- 289	- 381	- 411
Penn. Upper Ismay	- 534	- 521	- 502	- 577	- 609
Penn. Hovenweep Shale	- 651	- 621	- 596	- 687	- 724
Penn. Lower Ismay	- 660	- 628	- 602	- 690	- 728
Penn. Gothic Shale	- 695	- 666	- 642	- 736	- 773
Penn. Upper Desert Creek	- 700	- 671	- 650	- 748	- 785
Penn. Lower Desert Creek	- 771	- 737?	- 716	- 811	- 854
Penn. Chimney Rock Sh	- 793	- 760	- 735	- 833	- 875
Penn. Akah	- 812	- 778	- 751	- 850	- 887?
Penn. Salt	- 840	- 808	- 782	- 880	Not logged

E-LOG CALCULATIONS

Depth	ϕ_N	ϕ_D	ϕ_S	Ave. ϕ	$F(1/\phi^2)$	Rt	RWA (Rt/F)	Rw	Ro (FRw)	% Sw
UPPER ISMAY										
5893	.15	.03	.09	.09	123.5	20	.16	.0426	5.26	51
5894	.15	.05	.10	.10	100	17	.17	.0426	4.26	50
5896	.13	.04	.09	.087	133	25	.19	.0426	5.67	48
5898	.08	.035	.07	.062	263	100	.38	.0426	11.2	33
UPPER DESERT CREEK										
5974	.10	.055	.11	.088	128	17	.13	.022	2.82	41
5976	.14	.06	.115	.105	90.7	15	.17	.022	1.99	37
5978	.165	.05	.11	.108	85.7	12	.14	.022	1.89	40
5980	.165	.045	.12	.11	82.6	16	.19	.022	1.82	34

COMMENTS: The calculated values always assumed a constant bulk fluid density of 1.0 gm/cc. A resistivity value (Rw) of 0.0426 was used for the Ismay Zone and a value of 0.022 was used for the Desert Creek. A limestone matrix was used on compensated neutron and a limestone grain density of 2.71 was used on the compensated densilog.

Both of these zones were shaly and no shale correction was made in determining these water saturation values. When shale corrections are made, Sw values will be higher due to lower porosity values.

DRILL STEM TEST DATA

There were no drill stem tests conducted on the TXPOC #1-16 Square Tower in San Juan County, Utah, either in the Ismay or Desert Creek zones.

LITHOLOGY

Chinle (E-Log 1982' +3284)

- 2025 - 2070 60% Shale - red, orange red, brick red, blocky, soft to scattered slightly moderately firm, calcareous, very silty.
- 40% Siltstone - red, soft, argillaceous, calcareous, slightly sandy in part.
- 2070 - 2200 40% Shale - brick red, orange red, blocky, predominantly soft, calcareous, silty, scattered bentonitic clay.
- 30% Sandstone - pink, red, light gray to clear, very fine grained, poorly sorted, argillaceous to silty, calcareous.
- 30% Siltstone - red, soft, calcareous, argillaceous, slightly sandy.
- 2200 - 2260 50% Shale - red, brick red, orange red, soft, calcareous, silty to very silty, scattered slightly sandy in part.
- 50% Siltstone - red, light red, pink, soft, calcareous, argillaceous to slightly sandy.
- 2260 - 2320 90% Sandstone - clear, light gray, light pink, white, very fine grained to fine grained, subrounded to subangular, moderately sorted, calcareous, argillaceous, no stain, no cut.
- 10% Shale - red, orange red, blocky, calcareous.
- 2320 - 2350 80% Shale - orange red, blocky, silty, calcareous, slightly limy in part.
- 20% Siltstone - red, pink, blocky, soft, calcareous, argillaceous.
- 2350 - 2390 70% Shale - orange red, blocky, calcareous, silty, slightly sandy.
- 20% Siltstone - red, blocky, soft, argillaceous to slightly sandy.
- 10% Limestone - pink, reddish gray, dense, argillaceous.
- 2390 - 2440 70% Shale - orange, red, blocky to splintery, soft, calcareous to limy, scattered silty.
- 30% Siltstone - red pink, blocky, calcareous, soft, very slightly sandy in part.

- 2440 - 2650 90% Shale - red, orange, blocky to splintery, calcareous, slightly silty, scattered sandy inclusions.
- 10% Siltstone - pink, red, blocky, calcareous, soft, argillaceous.
- 2650 - 2700 70% Shale - brown, dark brown, reddish brown, reddish orange, blocky, soft, calcareous, very slightly silty.
- 30% Siltstone - orange red, pink, blocky, soft, calcareous, scattered slightly sandy in part.
- Shinarump (E-Log 2716' +2550)
- 2700 - 2730 80% Shale - brown, blocky, soft to moderately firm, calcareous, silty.
- 20% Siltstone - pink, brownish red, blocky, soft to moderately firm, calcareous, argillaceous, scattered slightly sandy in part.
- 2730 - 2790 60% Sandstone - clear, white, light gray, greenish gray, light green, very fine grained to fine grained, subangular, scattered subrounded, calcareous, argillaceous to very argillaceous, no stain, no cut.
- 40% Shale - gray, greenish gray, blocky, silty to slightly sandy in part, calcareous, soft.
- Moenkopi (E-Log 2798' +2468)
- 2790 - 2850 50% Shale - greenish gray, blocky, calcareous, very silty to slightly sandy.
- 40% Siltstone - gray, light gray, light greenish gray, blocky, soft, argillaceous, sandy in part.
- 10% Sandstone - white, clear, light gray, light greenish gray, very fine grained, subangular, very argillaceous, slightly silty in part.
- 2850 - 2890 90% Sandstone - clear, white, light gray, medium to coarse quartz grains, angular to subangular, unconsolidated, fractured grains, moderately sorted, cherty, no stain or cut.
- 10% Shale - red, greenish gray, blocky to splintery, soft, calcareous, silty in part.
- 2890 - 2990 80% Sandstone - white, clear, light gray, fine to medium grained, subrounded, scattered subangular, moderate to poorly sorted, slightly calcareous, unconsolidated in part, fractured quartz, no stain, no fluorescence, or cut.

20% Shale - greenish gray, light gray, red, light brownish gray, blocky to splintery, soft, silty, slightly sandy in part, calcareous.

Cutler (E-log 2995' +2271)

- 2990 - 3110 70% Shale - red orange, red, brownish red, greenish gray, blocky to splintery, soft, calcareous, scattered silty in part.
- 20% Siltstone - predominantly red orange, red, blocky, soft, calcareous.
- 10% Sandstone - white, clear, very fine grained to fine grained, subangular to subrounded, predominantly unconsolidated quartz grains.
- 3110 - 3180 90% Sandstone - red, light red, pink to clear, very fine grained to fine grained, subangular, poor to moderately sorted, partially clay filled, calcareous, unconsolidated, no stain, or cut.
- 10% Shale - red, orange, calcareous, soft, silty.
- 3180 - 3370 60% Shale - gray, red, lavender, dark lavender, brownish red, blocky to splintery, calcareous, soft.
- 30% Sandstone - light red, clear pink, very fine grained to fine grained, subangular to subrounded, unconsolidated quartz grains.
- 10% Siltstone - red, blocky, soft, slightly sandy in part, calcareous.
- 3370 - 3400 70% Sandstone - light red, pink, clear, very fine grained to fine grained, predominantly unconsolidated quartz grains, red stain, subangular to subrounded, poor to moderately sorted, no stain, no cut.
- 30% Shale - red, orange red, gray, light gray, greenish gray, blocky to splintery, soft, calcareous.
- 3400 - 3450 70% Shale - light greenish gray, red orange, blocky to splintery, bentonitic, soft, slightly calcareous, slightly silty in part.
- 30% Siltstone - red, blocky, calcareous, slightly sandy in part.
- 3450 - 3480 40% Sandstone - light red, pink, clear, light gray, fine grained, scattered very fine grained, subrounded to subangular, poor to moderately sorted, no stain.
- 40% Shale - brick red, orange red, greenish gray, blocky to splintery, calcareous, soft, micaceous.
- 20% Siltstone - orange red, blocky, soft, calcareous, sandy in part.

- 3480 - 3540 70% Shale - brick red, orange red, greenish gray, blocky, soft, bentonitic in part, silty in part.
30% Siltstone - orange red, blocky, slightly sandy in part, calcareous, soft.
- 3540 - 3580 80% Sandstone - light red, pink, clear, brownish red, fine grained to very fine grained, subrounded, moderately sorted, red stain, no fluorescence, no cut.
20% Shale - red, brick red, orange, blocky, soft, calcareous, silty in part.
- 3580 - 3600 80% Shale - brick red, orange, blocky, bentonitic in part, soft, calcareous in part, slightly silty in part.
20% Sandstone - white, clear, light red, pink, very fine grained to fine grained, subrounded to subangular, poor to moderately sorted, calcareous, red stain.
- 3600 - 3620 80% Sandstone - clear, light red, pink, fine grained, scattered medium grained, unconsolidated quartz grains, subangular to subrounded, poor to moderately sorted, red stain, no cut.
20% Shale - red, dark brownish red, blocky, micaceous in part, soft.
- 3620 - 3680 60% Shale - orange red, light gray, blocky to splintery, soft, calcareous, slightly silty in part.
20% Siltstone - red, brick red, blocky, slightly sandy in part, calcareous.
20% Sandstone - clear, white, light gray, light red, very fine grained, scattered medium grained, unconsolidated quartz grains, subrounded to subangular, no stain, no cut.
- 3680 - 3700 50% Shale - red, brownish red, greenish gray, blocky, silty in part, calcareous, moderately firm, bentonitic.
40% Siltstone - dark, reddish brown, blocky, calcareous.
10% Sandstone - clear, white, very fine grained.
- 3700 - 3720 50% Siltstone - orange red, dark reddish brown, blocky, moderately firm, slightly micaceous in part.
50% Shale - dark reddish brown, blocky, moderately firm to firm, calcareous, silty in part.

- 3720 - 3820 70% Shale - red orange, brick red, dark brownish red, blocky, silty in part, moderately firm, scattered firm, calcareous.
- 30% Siltstone - reddish brown, blocky, slightly calcareous, micaceous in part.
- 3820 - 3840 60% Sandstone - clear, light gray, white, light red, pink, light brown, fine to medium grained, subangular, moderately sorted, calcareous, no stain, no cut.
- 40% Shale - orange, red, reddish brown, blocky, silty, bentonitic in part, sandy in part.
- 3840 - 3920 70% Shale - reddish brown, orange, blocky, silty in part.
- 20% Siltstone -reddish brown, blocky, slightly calcareous, micaceous in part.
- 10% Sandstone - white, clear, fine to medium grained, unconsolidated quartz grains, moderately sorted, calcareous, no stain, no cut.
- 3920 - 3960 60% Shale - red, orange, dark brownish red, blocky, silty in part, micaceous in part.
- 40% Sandstone - white, light gray, clear, frosted in part, fine to medium grained, unconsolidated quartz grains, angular to subangular, moderate to poorly sorted.
- 3960 - 4040 60% Shale - orange red, brownish red, blocky, soft to moderately firm, calcareous, silty.
- 20% Siltstone - red, orange, blocky, slightly sandy.
- 20% Sandstone - white, clear, light gray, very fine grained, clay filled, tight, moderately sorted.
- 4040 - 4060 60% Sandstone - clear, white, light gray, light greenish gray, fine grained to scattered medium grained, subangular, tight, calcareous, moderate to poorly sorted.
- 40% Shale - red orange, dark brownish red, blocky, silty in part, slightly calcareous.
- 4060 - 4100 70% Shale - red, brick red, orange, dark brownish red, blocky, soft to scattered moderately firm, calcareous in part, silty in part, micaceous.
- 30% Siltstone - red, dark reddish brown, blocky, micaceous, argillaceous.

- 4100 - 4120 60% Sandstone - light gray, white, light greenish gray, very fine grained, moderately sorted, subangular, tight, clay filled, calcareous, scattered micaceous.
- 40% Shale - red, orange, blocky, slightly calcareous, silty, scattered slightly sandy.
- 4120 - 4260 80% Shale - brick red, orange red, blocky to splintery, soft, calcareous, scattered slightly silty in part, scattered micaceous.
- 20% Siltstone - orange, blocky, slightly calcareous, scattered slightly sandy in part.
- 4260 - 4280 60% Sandstone - light gray, light red, pink, white to clear, very fine grained, subangular, moderate to well sorted, calcareous, clay filled, tight, calcareous, no stain, no cut.
- 40% Shale - brick red, blocky to splintery, soft to moderately firm, slightly calcareous, silty in part.
- 4280 - 4370 70% Shale - brick red, orange, dark red, blocky to splintery, slightly calcareous, silty in part, scattered limy in part.
- 10% Siltstone - reddish orange, blocky, calcareous, slightly sandy in part.
- 10% Limestone - brown, light brown, pink, cryptocrystalline, dense, hard.
- 10% Sandstone - light gray, white, very fine grained, clay filled, tight, calcareous.
- 4370 - 4430 50% Sandstone - light gray, clear, white, light greenish gray, very fine grained to scattered medium grained, clay filled, tight, subangular, moderately sorted, scattered poorly sorted, calcareous.
- 50% Shale - red, brick red, orange, dark brownish red, blocky to splintery, slightly calcareous, soft to moderately firm, scattered silty, scattered micaceous.
- 4430 - 4520 70% Shale - orange red, brick red, dark reddish brown, blocky to scattered splintery, slightly calcareous, scattered silty, scattered brown limestone.
- 20% Siltstone - dark red, blocky, moderately firm, slightly calcareous.
- 10% Sandstone - light gray, white, clear, very fine grained, clay filled, tight.

- 4520 - 4550 50% Sandstone - pink, light red, clear, very fine grained to medium grained, poorly sorted, clay filled, tight, calcareous, soft, angular to subangular, no fluorescence or cut.
- 40% Shale - dark brownish red, dark red, red, blocky, soft to scattered moderately firm, slightly calcareous, scattered silty in part.
- 10% Siltstone - red, orange, blocky, slightly calcareous to calcareous, slightly sandy.
- 4550 - 4570 60% Shale - dark red, dark reddish brown, blocky, slightly micaceous, slightly silty, slightly calcareous to limy in part.
- 20% Sandstone - pink, light red, light gray, clear, poorly sorted, calcareous, very fine grained to medium grained, clay filled, tight.
- 20% Siltstone - red orange, blocky, soft, calcareous, micaceous.
- 4570 - 4590 70% Siltstone - dark red, dark brownish red, blocky, very micaceous, slightly calcareous to calcareous, soft.
- 30% Shale - red, dark red, dark brownish red, blocky, slightly calcareous, silty in part, micaceous, scattered brown to pink limestone.
- 4590 - 4610 80% Shale - dark brownish red, dark red, blocky, soft, slightly calcareous, scattered grayish brown to pink, dense limestone.
- 20% Sandstone - light gray, clear, light green, pink, very fine grained, clay filled, tight, micaceous.
- 4610 - 4620 80% Shale - medium gray, dark red, dark reddish brown, blocky, moderately firm, scattered firm, calcareous, scattered light pink to brown, dense limestone.
- 10% Siltstone - red, blocky, calcareous, slightly sandy, micaceous.
- 10% Sandstone - greenish gray, clear, scattered pink, very fine grained to fine grained, clay filled, tight, scattered micaceous.
- 4620 - 4660 90% Shale - medium gray, dark red, dark brown, dark reddish brown, splintery to blocky, soft to moderately firm, slightly calcareous, scattered pink to brown, dense, limestone.
- 10% Sandstone - light green, greenish gray, light gray, clear, very fine grained, tight, angular to subangular.

- 4660 - 4700 60% Shale - dark brown, dark red, gray, dark brownish red, blocky to splintery, micaceous, soft to moderately firm, slightly calcareous to slightly limy in part.
- 10% Siltstone - orange red, blocky, soft, calcareous, very slightly sandy, micaceous.
- 20% Sandstone - light gray, light green, light greenish gray, clear, very fine grained to fine grained, calcareous, subangular, clay filled, tight, micaceous.
- 10% Limestone - light brown to brown grayish brown, dense, cryptocrystalline, dense.
- 4700 - 4720 50% Sandstone - light gray, gray, clear, white, light brown, very fine grained, subangular, very tight, clay filled, calcareous, micaceous, no porosity, no stain, no cut.
- 30% Shale - dark brown, dark red, dark reddish brown, blocky, soft to moderately firm, slightly calcareous to calcareous, scattered limy.
- 20% Limestone - pink, light brown to medium brown, grayish brown, dense, cryptocrystalline, no porosity, slightly argillaceous.
- 4720 - 4740 70% Limestone - light gray, light brownish gray, light brown, dense, cryptocrystalline, no porosity, no stain, no fluorescence, no cut, slightly argillaceous, scattered sandy in part.
- 30% Shale - dark brownish gray, blocky, moderately firm to firm, calcareous to limy in part.
- Honaker Trail (E-Log 4750' +516)
- 4740 - 4770 80% Limestone - light brown, cream, light grayish brown, dense, cryptocrystalline, slightly argillaceous, slightly sandy in part, scattered oolitic, scattered pelletoidal, no porosity, no stain, no fluorescence, no cut.
- 20% Shale - dark brown, gray, dark grayish brown, blocky, moderately firm, calcareous.
- 4770 - 4800 70% Shale - gray, dark gray, brownish gray, blocky, calcareous to limy, moderately firm.
- 20% Limestone - cream, light brown, light grayish brown, dense, cryptocrystalline, slightly argillaceous, scattered slightly sandy in part.
- 10% Sandstone - gray, clear, light gray, very fine grained, subangular, clay filled, tight, no porosity.

- 4800 - 4830 50% Shale - gray, dark gray, dark red, dark reddish brown, blocky to splintery, slightly calcareous to limy, moderately firm.
- 40% Limestone - cream, light gray to dark gray, dense, argillaceous to very argillaceous, firm, cryptocrystalline, slightly sandy in part.
- 10% Sandstone - white, light gray, very fine grained, clay filled, very tight.
- 4830 - 4860 70% Limestone - white, cream, light gray to light brown, dense, firm, cryptocrystalline, scattered slightly sandy in part, scattered pelletoidal, scattered oolites.
- 30% Shale - medium gray, scattered dark gray, greenish gray, blocky to splintery, slightly calcareous to limy in part, moderately firm.
- 4860 - 4900 80% Shale - red, dark red, brown, dark brownish red, gray, scattered dark gray, blocky to splintery, soft to moderately firm, slightly calcareous to limy, slightly silty, micaceous in part.
- 20% Limestone - pink, medium brown, grayish brown, dense, argillaceous, moderately firm to firm, cryptocrystalline.
- 4900 - 4920 70% Sandstone - light to medium brownish gray, very fine grained, moderate to well sorted, calcareous, clay filled, tight, micaceous in part, silty, subrounded.
- 20% Shale - brown, dark brown, dark reddish brown, blocky, calcareous, scattered limy, silty to slightly sandy in part.
- 10% Limestone - light to medium brown, grayish brown, dense, argillaceous, cryptocrystalline, firm, no visible porosity, no stain.
- 4920 - 4940 50% Shale - medium to scattered dark gray, greenish gray, blocky to splintery, moderately firm, scattered non-calcareous to scattered limy in part.
- 50% Limestone - cream, light brown to dark brown, light to dark brownish gray, dense, firm to hard, cryptocrystalline.
- 4940 - 4960 40% Sandstone - light to medium gray, greenish gray, clear, very fine grained, subrounded to subangular, clay filled, tight, calcareous.
- 40% Shale - gray, greenish gray, red, dark red, scattered dark gray, splintery to blocky, moderately

firm to soft, slightly calcareous to limy in part, scattered micaceous.

20% Limestone - cream light gray, light brownish gray, cryptocrystalline, dense, argillaceous in part.

4960 - 4980 80% Limestone - light brown, cream, dense, slightly argillaceous, cryptocrystalline, no porosity, scattered traces of fossils.

20% Shale - gray, scattered dark gray, dark brownish gray, splintery to blocky, slightly calcareous to limy in part.

4980 - 5070 70% Shale - dark brown, medium to dark gray, dark red, splintery to blocky, moderately firm, slightly calcareous, scattered limy, traces of scattered pyrite.

20% Limestone - light to medium brown, medium grayish brown, argillaceous, cryptocrystalline, dense, moderately firm to scattered hard, traces scattered light brown, chert.

10% Sandstone - light gray, clear, white, light brown, very fine grained, clay filled, tight.

5070 - 5090 80% Limestone - white, cream, light brown, light gray, dense, slightly argillaceous, cryptocrystalline, scattered oolitic fossils, no visible porosity, firm, no stain, fluorescence, or cut.

20% Shale - dark brown, dark red, scattered medium to dark gray, splintery to blocky, soft to moderately firm, slightly calcareous to limy in part.

5090 - 5110 90% Shale - dark brown, dark reddish brown, dark greenish gray, blocky to splintery, moderately firm to soft, slightly calcareous to limy in part.

10% Limestone - light to medium brown, dense, cryptocrystalline.

5110 - 5140 60% Sandstone - light to medium brownish gray, brown, very fine grained, very calcareous to limy, very micaceous, clay filled, very tight.

30% Shale - dark brown, medium to dark brownish gray, blocky, moderately firm, slightly calcareous to limy in part.

10% Limestone - light brown, light to medium brownish gray, dense, cryptocrystalline, no porosity, sandy.

- 5140 - 5170 50% Limestone - medium gray, dark brownish gray, dense, firm, slightly sandy in part, cryptocrystalline, no porosity, no stain, no cut.
- 40% Sandstone - light to medium gray, clear, very fine grained, calcareous to limy, subangular to subrounded, moderately sorted, very tight.
- 10% Shale - dark red, dark brownish red, medium to dark gray, blocky to splintery, moderately firm to soft, slightly calcareous to limy.
- 5170 - 5190 70% Limestone - light gray, light brown, light brownish gray, no porosity, cryptocrystalline, dense, moderately firm, slightly sandy, scattered fossils.
- 30% Shale - medium to dark gray, dark brownish gray, blocky to splintery, moderately firm, calcareous, slightly limy.
- 5190 - 5220 60% Shale - gray, scattered dark gray, dark greenish gray, dark brownish gray, dark brown, blocky to splintery, calcareous to limy.
- 40% Limestone - light to medium brownish gray, argillaceous, dense, cryptocrystalline, slightly sandy in part, no visible porosity, no stain, no cut.
- Paradox (E-Log 5221' +45)
- 5220 - 5240 90% Limestone - cream, light brown, light grayish brown, dense, cryptocrystalline, no visible porosity, no stain, fluorescence, or cut, scattered slightly sandy in part, traces scattered fossils.
- 10% Shale - dark, greenish gray, medium to scattered dark gray, blocky to splintery, slightly calcareous to scattered limy in part.
- 5240 - 5270 50% Shale - dark greenish gray, medium brownish gray, medium to dark brown, splintery to blocky, slightly calcareous, scattered limy in part, moderately firm, slightly micaceous.
- 50% Limestone - light to medium brownish gray, light gray, cream, light brown, cryptocrystalline, dense, slightly argillaceous, slightly sandy in part, no visible porosity.
- 5270 - 5280 90% Limestone - cream, light gray, light brown, light brownish gray, dense, cryptocrystalline, argillaceous in part, scattered slightly sandy, no porosity.

- 5280 - 5310 60% Shale - medium to dark gray, dark brownish gray, dark brown, blocky to splintery, firm, scattered carbonaceous.
- 40% Limestone - light to dark brown, light to dark grayish brown, dense, hard, argillaceous, cryptocrystalline, no visible porosity.
- 5310 - 5340 60% Limestone - light gray, light brown, light brownish gray, cryptocrystalline, slightly sandy in part, no visible porosity, traces of scattered fossils, traces brown chert, no visible porosity, no stain, no cut.
- 40% Shale - dark greenish gray, dark brown, blocky, soft to moderately firm, slightly calcareous.
- 5340 - 5360 40% Sandstone - light gray, clear, fine grained to medium grained, subangular, poorly sorted, calcareous, clay filled tight, no visible porosity, micaceous, slightly unconsolidated.
- 30% Shale - greenish gray, medium to dark gray, blocky to splintery, noncalcareous to calcareous, moderately firm to soft.
- 30% Limestone - light gray, cream, light brown, brownish gray, cryptocrystalline, no visible porosity, sandy in part.
- 5360 - 5390 50% Shale - medium to dark gray, greenish gray, blocky to splintery, non calcareous to scattered calcareous, moderately firm.
- 50% Limestone - light to medium brownish gray, cryptocrystalline, dense, slightly argillaceous, no visible porosity, traces of scattered fossils.
- 5390 - 5430 70% Shale - medium to dark gray, blocky, firm, calcareous to limy, traces black very carbonaceous.
- 30% Limestone - light to medium grayish brown, dense, slightly argillaceous, firm, cryptocrystalline, no visible porosity, no stain, or cut.
- 5430 - 5460 50% Limestone - light brown, grayish brown, dense, argillaceous in part, cryptocrystalline, scattered light to medium brown, chert.
- 50% Shale - dark greenish gray, medium to dark gray, blocky to scattered platy, soft to moderately firm, slightly calcareous, scattered carbonaceous in part.
- 5460 - 5490 70% Shale - dark brown, medium grayish brown, blocky to splintery, very calcareous to limy, moderately firm.

- 30% Limestone - medium brown, medium grayish brown, dense, very argillaceous to shaly, cryptocrystalline, scattered light brown chert.
- 5490 - 5500 80% Limestone - cream, light to medium brown, light grayish brown, dense, argillaceous in part, cryptocrystalline, scattered light to medium brown chert.
- 20% Shale - medium to dark gray, dark brownish gray, blocky, calcareous, slightly limy, moderately firm.
- 5500 - 5530 50% Limestone - cream, light brown, light grayish brown, dense, argillaceous, scattered dark gray, shaly, cryptocrystalline, moderately firm, no porosity.
- 50% Shale - medium to dark brownish gray to medium gray and black, blocky to scattered platy, soft to moderately firm, slightly calcareous to scattered limy, carbonaceous in part, traces of scattered pyrite.
- 5530 - 5550 80% Limestone - cream, light gray, light brownish gray, dense, no visible porosity, very slightly argillaceous, traces scattered fossils, no stain, fluorescence, or cut.
- 20% Shale - dark brown, medium to dark gray, blocky to splintery, soft, slightly calcareous, scattered limy.
- 5550 - 5560 70% Shale - gray scattered black, grayish black, blocky to splintery, limy, moderately firm.
- 30% Limestone - light to medium brown, dense, slightly argillaceous, cryptocrystalline, no visible porosity, no stain, no cut.
- 5560 - 5570 80% Limestone - light brown, light gray, light to medium grayish brown, cryptocrystalline, clean to slightly argillaceous, no visible porosity, no stain, fluorescence, or cut.
- 20% Shale - dark brown, medium to dark gray, blocky to splintery, scattered limy in part.
- 5570 - 5580 80% Shale - medium to dark brownish gray, blocky, moderately firm, calcareous to slightly limy.
- 20% Limestone - medium to dark brown, grayish brown, dense, cryptocrystalline, no visible porosity.
- Sitton "A" (E-Log 5600' -334)
- 5580 - 5590 50% Limestone - light to medium brown, cryptocrystalline, moderately firm, predominantly clean, no visible porosity.

- 50% Shale - gray, splintery to blocky, moderately firm, calcareous to slightly limy in part.
- 5590 - 5620 80% Shale - medium gray to black, splintery to blocky, soft to moderately firm, carbonaceous in part, slightly calcareous to scattered limy.
- 20% Limestone - medium brown, cryptocrystalline, slightly argillaceous, no porosity.
- 5620 - 5630 60% Shale - gray to black, splintery to blocky, soft to moderately firm, slightly carbonaceous in part, slightly calcareous to limy.
- 40% Limestone - brown, grayish brown, cryptocrystalline, slightly argillaceous, no visible porosity.
- 5630 - 5640 70% Shale - medium to dark gray, scattered black dark brownish gray, blocky, firm, limy.
- 30% Limestone - medium to dark brown, argillaceous, cryptocrystalline, no porosity.
- 5640 - 5680 70% Limestone - light to medium brown, dark brown, grayish brown, cryptocrystalline to microsugrosic, slightly argillaceous, no visible porosity, no stain, cut, or fluorescence.
- 30% Shale - medium to dark gray, scattered black, splintery to scattered platy, slightly calcareous to scattered limy, carbonaceous in part, traces of scattered fossils.
- 5680 - 5700 80% Shale - black, dark gray, splintery to platy, soft, carbonaceous in part, slightly calcareous.
- 20% Limestone - medium to dark brown, medium to dark grayish brown, argillaceous, cryptocrystalline to microsugrosic, no visible porosity, no stain, no cut.
- 5700 - 5720 70% Limestone - light to medium brown, scattered dark brown, light to medium gray, argillaceous in part, cryptocrystalline, dense, no visible porosity, no stain, no cut.
- 30% Shale - medium to dark gray, scattered black, splintery to platy in part, soft, scattered moderately firm, slightly calcareous, slightly carbonaceous in part.
- 5720 - 5750 60% Shale - medium gray, medium greenish gray scattered black, firm, scattered moderately firm, slightly calcareous to limy, blocky to splintery.

- 40% Limestone - medium to dark brown, dense, argillaceous in part, cryptocrystalline, no porosity, scattered light brown chert, no stain, no cut.
- 5750 - 5780 70% Shale - medium to dark gray black, splintery scattered platy, slightly calcareous, scattered limy, carbonaceous in part, traces of pyrite.
- 30% Limestone - medium to dark brown, dark grayish brown, cryptocrystalline, argillaceous in part, dense, no visible porosity, slightly anhydrite.
- 5780 - 5800 50% Shale - medium to dark gray, scattered black, splintery to platy, soft, slightly calcareous, carbonaceous in part.
- 50% Limestone - medium to dark brown, medium to dark grayish brown, cryptocrystalline, argillaceous, traces scattered white anhydrite inclusions, dense.
- Upper Ismay (E-Log 5800' -534)
- 5800 - 5810 10% Anhydrite - white, soft.
- 60% Limestone - light to medium brownish gray, light to medium gray, dense, scattered white, anhydrite inclusions, argillaceous, cryptocrystalline, traces scattered fossils.
- 30% Shale - black, dark gray, blocky to platy, soft, non to slightly calcareous, carbonaceous.
- 5810 - 5820 50% Limestone - brown, medium grayish brown, moderately firm, cryptocrystalline, very poor inter-crystalline porosity, traces scattered black stain, traces scattered yellowish gold fluorescence, traces scattered yellow slightly bleeding cut, traces of scattered white anhydritic inclusions.
- 50% Shale - dark gray, black, splintery to platy in part, non calcareous to slightly calcareous, soft, carbonaceous in part.
- 5820 - 5830 20% Anhydrite.
- 40% Shale - dark gray, black, platy, carbonaceous.
- 40% Dolomite - medium gray, microcrystalline, shaly, hard, dense, no visible porosity.
- 5830 - 5840 50% Anhydrite - white to gray, dense, crystalline, hard.
- 50% Dolomite - dark gray, microcrystalline, hard, dense, anhydritic, no visible porosity, no stain, no cut.

- 5840 - 5850 60% Anhydrite - gray, dense, hard.
 40% Dolomite - gray, massive, dense, hard, argill-
 aceous, no visible porosity, no stain, no fluorescence,
 no cut.
- 5850 - 5860 100% Salt - clear to white, scattered gray,
 crystalline, massive, anhydritic stringers.
- 5860 - 5870 70% Salt - white to gray.
 20% Anhydrite - gray, microcrystalline, dense, hard.
 10% Shale - gray, dark gray, platy, fissile,
 carbonaceous in part.
- 5870 - 5880 100% Anhydrite - gray, dense, hard, crystalline.
- 5880 - 5900 80% Shale - dark gray, black, dark brown, platy to
 splintery, slightly calcareous, carbonaceous in part,
 soft.
 20% Limestone - medium to dark gray, cryptocrystalline,
 dense, argillaceous, anhydritic.
- 5900 - 5920 60% Dolomite - light gray, sucrosic to granular,
 anhydritic filled, slightly calcareous, no visible
 porosity, no stain or cut, scattered dark brownish
 gray, dense, argillaceous, limestone with interbedded
 anhydrite.
 40% Shale - gray, dark gray to black, splintery to
 blocky, soft to moderately firm, slightly calcareous,
 anhydritic.
- Hovenweep (E-Log 5917' -651)
- 5920 - 5930 50% Shale - black, dark gray, splintery,
 scattered platy, carbonaceous, soft, slightly
 calcareous.
 50% Dolomite - medium to dark gray, dense, anhydritic,
 argillaceous in part, slightly calcareous, crypto-
 crystalline, slightly sucrosic, no visible porosity,
 no stain or cut.
- Lower Ismay (E-Log 5926' -660)
- 5930 - 5940 100% Anhydrite and Salt.
- 5940 - 5950 40% Anhydrite - white, soft.
 40% Shale - dark gray, black, splintery to platy,
 slightly calcareous, carbonaceous.
 20% Dolomite - medium to dark brownish gray, dense,
 slightly anhydritic, slightly calcareous, argillaceous
 in part, cryptocrystalline, hard, no porosity, no
 stain, fluorescence or cut.

- 5950 - 5960 70% Dolomite - brown, medium grayish brown, crypto-crystalline to microcrystalline, argillaceous, slightly silty, no visible to very poor inter-crystalline porosity, very faint light yellow fluorescence, very poor light yellow standing cut, tight, scattered slightly anhydritic.
- 30% Shale - gray to dark gray, black, scattered dark brownish black, splintery to blocky, soft, slightly calcareous.
- Gothic (E-Log 5961' -695)
- 5960 - 5970 50% Shale - dark gray, black, dark brownish black, platy, soft to moderately firm, slightly calcareous, carbonaceous in part.
- 50% Dolomite - gray, cryptocrystalline to micro-crystalline, dense, hard, no visible porosity, argillaceous, slightly calcareous, anhydritic in part.
- Upper Desert Creek (E-Log 5966' -700)
- 5970 - 5980 70% Dolomite - gray, medium, brownish gray, micro-crystalline to micro-sucrosic, argillaceous to silty in part, anhydritic in part, tight to very poor intercrystalline porosity, no stain, no to very poor faint light gold fluorescence, no cut.
- 20% Shale - medium to dark gray, splintery to blocky, scattered platy, calcareous, soft.
- 10% Anhydrite - white, cream, soft.
- 5980 - 6000 30% Anhydrite - cream, soft.
- 40% Dolomite - gray, microcrystalline, argillaceous, slightly silty, slightly calcareous, no visible porosity, no stain, fluorescence, or cut.
- 30% Shale - gray, dark gray, black, dark brownish black, platy in part, blocky in part, slightly calcareous, soft, carbonaceous in part.
- 6000 - 6010 60% Dolomite - medium to dark brownish gray, crypto-crystalline to microcrystalline, argillaceous to very argillaceous, slightly limy in part, no visible porosity, no stain, fluorescence, or cut.
- 30% Shale - dark gray to black, splintery, scattered platy, calcareous, soft.
- 10% Anhydrite - white, soft.

6010 - 6030 50% Anhydrite - crystalline to massive.

50% Dolomite - gray, medium brownish gray, micro-crystalline to micro-sucrosic, dense, no visible porosity, argillaceous, slightly silty, anhydritic, no stain, no fluorescence, no cut.

Lower Desert Creek (E-Log 6037' -771)

6030 - 6060 80% Limestone - brown, light brown, grayish brown, cryptocrystalline to microcrystalline, argillaceous, soft to moderately firm, anhydritic in part, no visible to very tight porosity, scattered black dead oil stain, no fluorescence, no cut.

10% Anhydrite - soft, creamy, white.

10% Shale - dark gray, dark brown, blocky to splintery, calcareous.

Chimney Rock Shale (E-Log 6059' -793)

6060 - 6080 90% Shale - black, dark gray, splintery to platy, soft, slightly calcareous, earthy, carbonaceous.

10% Dolomite - gray, brown, cryptocrystalline, argillaceous, anhydritic, no visible porosity.

Akah (E-Log 6078' -812)

6080 - 6107 50% Dolomite - medium gray, light to medium brownish gray, cryptocrystalline to microcrystalline, argillaceous, anhydritic, no visible porosity, no stain, no fluorescence, no cut.

50% Shale - gray to dark gray, scattered black, splintery, soft to moderately firm, slightly calcareous, carbonaceous in part, anhydritic.

CORE NO. 1: UPPER ISMAY ZONE

60' cut; 57' recovered

Depth	Core Ft/no.	Min/ft	Description
5826-27	1	9	Shale - dark grayish black, platy, carbonaceous.
5827-28	2	12	Anhydrite - gray, dark gray, massive, hard.
5828-29	3	19	Dolomite - medium gray, microcrystalline, slightly shaly,
5829-30	4	14	hard, dense, no porosity, stain, or cut.
5830-31	5	11	
5831-32	6	16	Anhydrite - white to increasing gray, dark gray, dense,
5832-33	7	11	very hard, crystalline.
5833-34	8	10	
5834-35	9	14	Anhydrite.
5835-36	10	12	Dolomite - dark gray, microcrystalline to crystalline,
5836-37	11	9	very slightly calcareous, dense, hard with thinly
5837-38	12	9	laminated anhydrite, argillaceous to very argillaceous,
5838-39	13	10	increasing through interval, no stain, no fluorescence,
5839-40	14	8	no cut, no visible porosity.
5840-41	15	9	
5841-42	16	9	
5842-43	17	9	
5843-44	18	10	
5844-45	19	11	Dolomite.
5845-46	20	12	Anhydrite - gray, dense, hard.
5846-47	21	16	Anhydrite.
5847-48	22	11	Anhydrite.
5848-49	23	11	Anhydrite.
5849-50	24	12	Anhydrite.
5850-51	25	12	Salt - clear, white to light gray, crystalline and
5851-52	29	2	massive, soft to hard, with anhydrite stringers through
5852-53	27	2	out (3-5 minutes).
5853-54	28	2	
5854-55	29	2	
5855-56	30	2	Salt.
5856-57	31	2	Salt - anhydritic.
5857-58	32	2	Salt.
5858-59	33	3	Salt.
5859-60	34	3	Salt - very anhydritic.
5860-61	35	2	Salt - anhydritic.
5861-62	36	2	Salt - anhydritic.
5862-63	37	3	Salt - anhydritic.
5863-64	38	3	Salt - anhydritic.
5864-65	39	3	Salt - anhydritic.

Depth	Core Ft/no.	Min/Ft	Description
5865-66	40	3	Salt - anhydritic.
5866-67	41	3	Anhydritic - gray, crystalline, dense.
5867-68	42	3	Shale - gray, dark gray, platy, fissile, carbonaceous.
5868-69	43	10	Anhydrite - gray, microcrystalline to crystalline, dense,
5869-70	44	14	hard.
5870-71	45	11	Anhydrite.
5871-72	46	12	Anhydrite.
5872-73	47	16	Anhydrite.
5873-74	48	12	Anhydrite.
5874-75	49	11	Anhydrite.
5875-76	50	10	Anhydrite.
5876-77	51	7	Dolomite - gray, dark gray, dense, hard, cryptocrystalline
5877-78	52	7	to microcrystalline, very anhydritic, no porosity, no
5878-79	53	8	show.
5879-80	54	9	
5880-81	55	12	Anhydrite - gray, dense, hard.
5881-82	56	13	Anhydrite.
5882-83	57	9	Anhydrite.
5883-84	58	9	(Missing)
5884-85	59	9	(Missing)
5885-86	60	11	(Missing)

SHOW ANALYSIS

Honaker Trail (E-Log 4750' - 5221')

The light to medium brownish gray scattered greenish gray to clear, very fine grained, moderate to well sorted, clay filled tight, slightly micaceous sandstones of the Honaker Trail exhibited very poor porosity. They broke down poorly, three to four minutes per foot from six minutes per foot. Only slight increases in background gas was observed.

The brown to light gray cream colored limestones of the Honaker Trail are fossiliferous (oolitic and pelletoidal) slightly sandy with no visible porosity. Only slightly increased drilling rate was observed while drilling these limestones. No increases in gas background was observed.

Paradox (E-Log 5221' - 5600')

The light gray to light brown, light brownish gray limestones of the Paradox were slightly sandy with no visible porosity. They were scattered fossiliferous and slightly argillaceous. The sandy limestones did drill faster, drilling three to four minutes per foot from six to eight minutes per foot. Gas peak readings through this zone were 20 to 25 total units of gas from a background of 5 total units, indicating the very tight characteristics of these limestones at this location. Electrical logs confirm this tightness.

Sitton "A" (E-Log 5600' - 5800')

The light to medium brown, scattered dark brown limestones of the Sitton exhibited very poor shows. The limestones were argillaceous and tight and did not exhibit any gas increases. The black to dark gray shales did give up some gas; the maximum peak of shale gas was 29 units total gas.

Upper Ismay Zone (E-log 5800' - 5917')

The medium gray to scattered dark gray, anhydritic slightly argillaceous to argillaceous dolomites of this zone exhibited poor shows. No gas shows were observed while coring and drilling this interval. One tight interval from 5893' to 5898' had an average of 8% porosity from E-Logs. This value was not shale corrected and is probably much lower. Very little porosity and very tight permeability combine to make this interval very questionable.

Lower Ismay Zone (E-Log 5926' - 5961')

The brown to medium grayish brown, tight, argillaceous dolomites exhibited very poor intercrystalline to no visible porosity from an interval at 5956' to 5958'. Very faint light yellow fluorescence with a very poor light yellow standing or residue cut. A 20 unit total gas peak up from a background of 5 units total gas was observed. From the E-Logs this interval looks very shaly and too tight for any commercial production of oil and gas.

Upper Desert Creek (E-Log 5966' - 6037')

The dolomites of this interval were gray to medium brownish gray with very poor intercrystalline to tight porosity. The interval was argillaceous and the e-logs confirmed this. Porosity averaged 10% through the interval from 5974' to 5980'. Shaliness through this interval will reduce this porosity value to 5% or 6%. A 32 unit total gas peak up from a background of 5 units total gas was observed. Even though an average water saturation value of 38% was determined, shaliness and anhydrite infilling makes this interval non-productive.

Lower Desert Creek (E-Log 6037' - 6059')

The limestones of this interval are brown to light brown, argillaceous to very argillaceous and anhydritic in part. Very poor to no porosity and no permeability with no indication of hydrocarbons was present at this location.

FINAL ANALYSIS

The Transco Exploration Company TXPOC No. 1-16 Square Tower was drilled to a total depth of 6107' (E-Log). This wildcat well was drilled to explore a seismic high observed in the Upper Ismay Zone of the Paradox Formation. The well was drilled with no major problems in geology. A salt water flow from Cutler sands at 3600' to 3700' forced engineering to increase mud weight and high chlorides changed the logging program. The two man crew of mudloggers from Terra Services performed their jobs satisfactorily and efficiently.

Final examination of all the potential pay zones in the Paradox Formation penetrated at this location indicate a dry hole. Very low porosity and no permeability with very limited amounts of hydrocarbons combine to make this dry hole.

A seismic high was present in the Upper Ismay at this location, but this seismic high was created by the presence of a significant amount of salt. We cored 17' of salt in the Upper Ismay and drilled another 10' in the Lower Ismay. It is apparent that at this location a localized evaporitic environment existed during the Pennsylvanian and deposited the anhydrite, halite, anhydrite sequence.

It was advised and decided to plug this well and abandon the location.



TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

2800 Post Oak Boulevard
P. O. Box 1396
Houston, Texas 77251
713-439-2000

August 12, 1985

RECEIVED

AUG 16 1985

**DIVISION OF OIL
& GAS & MINING**

State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: John Baza

RE: TXPOC-Square Tower #1-16
Section 16, T39S, R26E
San Juan County, Utah

Gentlemen:

Attached are two subsequent Sundry Notices on the above referenced well. One is for plugging and abandonment. The other is for restoration of the location.

If you require additional information, please contact me.

Sincerely,

TXP OPERATING COMPANY

By: Transco Exploration Company
its Managing General Partner

John Rosata, Jr. - Supervisor
Regulatory and Environmental Affairs

JRJ/CS/1b
Attachment



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

August 29, 1986

TXP Operating Company
P. O. Box 1396
Houston, Texas 77251

Gentlemen:

Re: Well No. TXPOC-Square Tower 1-16 - Sec. 16, T. 39S, R. 26E
San Juan County, Utah - API #43-037-31159

Review of the records for the referenced well indicate that the Well Completion or Recompletion Report and Log has not been received in this office. We acknowledge receipt of the Sundry Notices and Reports on Wells, Subsequent Report of Abandonment dated August 12, 1985, which reports the completion of plugging and abandonment operations.

Please complete and return the enclosed Well Completion or Recompletion Report and Log, Form DOGM-3, to the address listed below at your earliest convenience, but not later than September 15, 1986.

Utah Division of Oil, Gas, and Mining
Attention: Suspense File - Norm Stout
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Sincerely,

R. L. Firth
Associate Director, Oil & Gas

ts
cc: Dianne R. Nielson
Well File
Suspense File

0448S/26



Dresser Atlas Division
Dresser Industries, Inc.

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CUSTOMER TRANSCO EXPLORATION COMPANY Field WILDCAT

Well Name TXPOC #1-16 SQUARE TOWER County SAN JUAN State UTAH

Type of Logs Distributed DLL, CDL/CN, BHC-A/L, FRAC, PROLOG Date 7-26-85

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2	WINTERSHALL OIL & GAS CORP.	RIC KOPP	5675 DTC BLVD., STE. 200	ENGLEWOOD, COLO. 80111
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TXP Operating Company

A Limited Partnership

Transco Exploration Company, Managing General Partner

2800 Post Oak Boulevard
P. O. Box 1396
Houston, Texas 77251
713-439-2000

RECEIVED
NOV 10 1986

DIVISION OF
OIL, GAS & MINING

November 6, 1986

State of Utah
Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: R. J. Firth

RE: TXPOC - Square Tower 1-16
Section 16, T39S, R26E
San Juan County, Utah
API #43-037-31159

Gentlemen:

Referencing your request of August 29, 1986 and our discussion of October 24, 1986, attached is the required Well Completion or Recompletion Report and Log, Form DOGM-3 for the subject well.

If you require additional information, please contact me at (713) 439-3502.

Sincerely,

TXP OPERATING COMPANY - a limited partnership
By: Transco Exploration Company
its Managing General Partner

John Rosata, Jr. - Supervisor
Regulatory and Environmental Affairs

JRJ/CS/cc

Attachments

15

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

111308

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other P & A

5. LEASE DESIGNATION AND SERIAL NO.
State Lease ML-36203

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RESVR. Other _____

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

2. NAME OF OPERATOR
TXP Operating Company Attn: John Rosata, Jr.

7. UNIT AGREEMENT NAME
N/A

3. ADDRESS OF OPERATOR
P. O. Box 1396 Houston, Texas 77251

8. FARM OR LEASE NAME
TXPOC - Square Tower

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 580' FSL & 1850' FEL of Sec. 16 (SW $\frac{1}{4}$, SE $\frac{1}{4}$)

9. WELL NO.
1-16

At top prod. interval reported below
At total depth Vertical Well

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC. T., R., M., OR BLOCK AND SURVEY OR AREA
Section 16
T39S, R26E

14. PERMIT NO. 43-037-31159 DATE ISSUED 06/17/85

12. COUNTY OR PARISH San Juan 13. STATE Utah

15. DATE SPUDDED 06/29/85 16. DATE T.D. REACHED 07/17/85 17. DATE COMPL. (Ready to prod.) 07/19/85 P&A 18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 5251.6' GR; 5266 KB 19. ELEV. CASINGHEAD -

20. TOTAL DEPTH, MD & TVD 6107' 21. PLUG, BACK T.D., MD & TVD 13' BGL 22. IF MULTIPLE COMPL., HOW MANY* - 23. INTERVALS DRILLED BY - 24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* No Applicable 25. WAS DIRECTIONAL SURVEY MADE NO

26. TYPE ELECTRIC AND OTHER LOGS RUN CDL/DN/GR; DLL/MLL/GR; BHC/AL/CAL/FRAC; HRD 27. WAS WELL CORED Yes

RECEIVED NOV 10 1986

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
14"	Culvert	100'	Preset	NA	-
9-5/8"	36#	2025'	12-1/2"	760 sxs class B	-

29. LINER RECORD 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number) 32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5750' - 6106'	150 sxs. Class H
1975' - 2075'	40 sxs. Class H
13' - 40'	Set EZSV at 1900' 10 sxs. Class H

33.* PRODUCTION
DATE FIRST PRODUCTION _____ PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) _____ WELL STATUS (Producing or shut-in) Plugged & Abandoned

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

35. LIST OF ATTACHMENTS (Dresser submittal enclosed)
Open hole logs, core analysis, mudlog, and wellsite geologist report sent directly

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [Signature] TITLE Drilling Superintendent DATE 11-07-86

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. **Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND BEUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
No Drill Stem Tests.			
Core #1: 5814' - 5874'	5874'	5826'	(depth corrected to 5826'-5886'), Pennsylvanian
Upper Ismay. Cut 60', recovered 56': 1 shale, 1 anhydrite, 3 dolomite, 4 anhydrite, 10' dolomite, 6' anhydrite, 15' salt, 1 anhydrite, 1 shale, 14' anhydrite, 4' no recovery.			
Cutter	3600	3700	Salt water flow. (mud up to 10.2#/gal)

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Summerville	1038	
Entrada	1071	
Carmel	1211	
Narajo	1234	
Kayenta	1483	
Wingate	1535	
Chinle	1983	
Shinarump	2735	
MoenKopi	2840	
Cutler	2978	
Hanoker Trail	4748	
Paradox	5220	
Sitton or "A zone"	5597	
Boundary Butte Sh	5785	
Upper Ismay	5800	
Hovenweep Sh	5918	
Lower Ismay	5922	
Gothic Sh	5961	
Upper Desert Crk	5966	
Lower Desert Crk	6038	
Dolo.		

Chimney Rock Sh 6060

Akah Carbonate 6077

Akah Salt 6106

DATE OF LISTING: 7/26/85
TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				GRADE	***BOREHOLE***		
		ANG	AZ	BEARING	DA		DAZ	BEARING	
5808.4	0.00	1.7	304	N 56 W	50	1.6	67	N 67 E	
5808.4	0.00	3.1	258	S 78 W	50	1.6	67	N 67 E	
5808.5	0.00	4.7	282	N 78 W	50	1.6	67	N 67 E	
5808.6	0.00	8.1	254	S 74 W	100	1.6	67	N 67 E	
5808.7	0.00	8.6	243	S 63 W	50	1.6	67	N 67 E	
5808.8	0.00	7.1	220	S 40 W	100	1.6	67	N 67 E	
5809.1	0.00	10.5	195	S 15 W	50	1.6	67	N 67 E	
5809.2	0.00	9.0	198	S 18 W	50	1.6	67	N 67 E	
5809.5	0.00	4.8	94	S 86 E	50	1.6	66	N 66 E	
5809.7	0.00	4.8	93	S 87 E	50	1.6	67	N 67 E	
5809.7	0.00	8.0	79	N 79 E	50	1.6	67	N 67 E	
5810.1	0.00	6.8	176	S 4 E	50	1.6	67	N 67 E	
5810.5	0.00	7.5	8	N 8 E	50	1.6	66	N 66 E	
5810.6	0.00	7.6	8	N 8 E	50	1.6	66	N 66 E	
5813.2	0.00	7.3	230	S 50 W	50	1.6	66	N 66 E	
5813.3	0.00	3.7	227	S 47 W	50	1.6	66	N 66 E	
5813.8	0.00	7.3	229	S 49 W	50	1.6	66	N 66 E	
5814.0	0.00	7.3	229	S 49 W	50	1.6	67	N 67 E	
5814.1	0.00	7.3	229	S 49 W	50	1.6	67	N 67 E	
5814.2	0.00	8.7	235	S 55 W	50	1.6	66	N 66 E	
5814.3	0.00	8.7	235	S 55 W	50	1.6	66	N 66 E	
5814.5	0.00	10.9	230	S 50 W	50	1.6	66	N 66 E	
5818.9	0.00	1.7	74	N 74 E	50	1.6	66	N 66 E	
5819.0	0.00	1.7	74	N 74 E	50	1.6	66	N 66 E	
5819.2	0.00	3.6	45	N 45 E	50	1.6	65	N 65 E	
5819.2	0.00	3.6	45	N 45 E	50	1.6	65	N 65 E	
5819.4	0.00	2.3	28	N 28 E	100	1.6	65	N 65 E	
5820.4	0.00	2.4	24	N 24 E	50	1.5	65	N 65 E	
5821.4	0.00	9.8	252	S 72 W	50	1.5	64	N 64 E	
5821.6	0.00	6.6	257	S 77 W	50	1.5	64	N 64 E	
5821.7	0.00	7.1	269	S 89 W	50	1.5	64	N 64 E	
5823.3	0.00	8.2	228	S 48 W	50	1.5	64	N 64 E	
5823.5	0.00	8.1	228	S 48 W	50	1.5	64	N 64 E	
5823.6	0.00	6.3	239	S 59 W	80	1.5	64	N 64 E	
5823.7	0.00	6.3	239	S 59 W	50	1.5	64	N 64 E	
5823.8	0.00	6.3	239	S 59 W	50	1.5	64	N 64 E	
5823.8	0.00	8.6	261	S 81 W	50	1.5	64	N 64 E	
5824.0	0.00	8.0	276	N 84 W	50	1.5	64	N 64 E	
5824.1	0.00	2.3	288	N 72 W	50	1.5	64	N 64 E	
5824.3	0.00	7.2	265	S 85 W	50	1.5	65	N 65 E	

DATE OF LISTING: 7/26/85
 TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

DEPTH	WL	**FORMATION DIP**				GRADE	***BOREHOLE***		
		ANG	AZ	BEARING	DA		DAZ	BEARING	
5824.6	0.00	6.6	252	S 72 W	80	1.5	64	N 64 E	
5824.8	0.00	3.6	267	S 87 W	100	1.5	65	N 65 E	
5824.8	0.00	3.6	267	S 87 W	50	1.5	65	N 65 E	
5825.1	0.00	2.4	221	S 41 W	100	1.5	65	N 65 E	
5825.5	0.00	7.0	209	S 29 W	50	1.5	64	N 64 E	
5826.3	0.00	1.9	329	N 31 W	50	1.5	65	N 65 E	
5826.4	0.00	3.6	326	N 34 W	50	1.5	64	N 64 E	
5826.9	0.00	6.9	310	N 50 W	50	1.5	65	N 65 E	
5827.1	0.00	10.0	323	N 37 W	50	1.5	65	N 65 E	
5827.2	0.00	7.6	348	N 12 W	50	1.5	64	N 64 E	
5827.4	0.00	4.5	334	N 26 W	100	1.5	64	N 64 E	
5827.5	0.00	7.4	297	N 63 W	50	1.5	64	N 64 E	
5827.5	0.00	5.4	306	N 54 W	50	1.5	64	N 64 E	
5828.2	0.00	2.5	284	N 76 W	50	1.5	64	N 64 E	
5828.3	0.00	2.5	284	N 76 W	50	1.5	64	N 64 E	
5828.8	0.00	7.4	295	N 65 W	100	1.4	65	N 65 E	
5828.9	0.00	2.1	325	N 35 W	50	1.4	64	N 64 E	
5829.1	0.00	3.9	297	N 63 W	50	1.4	64	N 64 E	
5829.1	0.00	2.4	284	N 76 W	50	1.4	64	N 64 E	
5829.3	0.00	3.9	297	N 63 W	50	1.4	64	N 64 E	
5830.3	0.00	2.1	322	N 38 W	100	1.4	64	N 64 E	
5830.3	0.00	3.9	295	N 65 W	50	1.4	64	N 64 E	
5830.5	0.00	1.4	291	N 69 W	80	1.5	64	N 64 E	
5830.6	0.00	3.9	294	N 66 W	50	1.5	64	N 64 E	
5833.8	0.00	3.6	256	S 76 W	50	1.4	65	N 65 E	
5858.4	0.00	3.0	224	S 44 W	50	1.2	67	N 67 E	
5858.4	0.00	3.2	204	S 24 W	50	1.2	66	N 66 E	
5859.0	0.00	2.5	355	N 5 W	50	1.3	70	N 70 E	
5860.9	0.00	3.1	58	N 58 E	50	1.3	70	N 70 E	
5862.8	0.00	2.6	185	S 5 W	50	1.4	68	N 68 E	
5863.2	0.00	5.0	132	S 48 E	50	1.4	69	N 69 E	
5868.0	0.00	8.5	335	N 25 W	50	1.3	68	N 68 E	
5877.1	0.00	7.2	173	S 7 E	50	1.3	74	N 74 E	
5877.4	0.00	1.4	195	S 15 W	90	1.3	76	N 76 E	
5879.5	0.00	10.0	248	S 68 W	50	1.3	76	N 76 E	
5880.2	0.00	9.7	252	S 72 W	70	1.3	75	N 75 E	
5880.3	0.00	9.3	300	N 60 W	90	1.3	75	N 75 E	
5880.6	0.00	5.0	303	N 57 W	50	1.3	77	N 77 E	
5881.1	0.00	8.3	261	S 81 W	50	1.3	76	N 76 E	
5882.6	0.00	7.9	129	S 51 E	50	1.3	76	N 76 E	

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TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

FORMATION DIP

BOREHOLE

DEPTH WL ANG AZ BEARING GRADE DA DAZ BEARING

5883.6	0.00	2.2	320	N 40 W	50	1.3	76	N 76 E
5883.8	0.00	3.6	316	N 44 W	90	1.3	76	N 76 E
5883.9	0.00	2.2	321	N 39 W	90	1.3	76	N 76 E
5884.0	0.00	5.1	314	N 46 W	50	1.3	76	N 76 E
5884.3	0.00	8.0	313	N 47 W	50	1.3	77	N 77 E
5884.5	0.00	9.5	312	N 48 W	100	1.3	77	N 77 E
5884.6	0.00	12.4	304	N 56 W	50	1.3	77	N 77 E
5884.7	0.00	5.2	140	S 40 E	50	1.3	76	N 76 E
5885.3	0.00	3.0	349	N 11 W	50	1.3	77	N 77 E
5886.2	0.00	10.1	292	N 68 W	50	1.3	77	N 77 E
5889.8	0.00	9.7	274	N 86 W	50	1.3	77	N 77 E
5891.4	0.00	5.9	287	N 73 W	50	1.3	78	N 78 E
5891.6	0.00	7.7	312	N 48 W	50	1.3	79	N 79 E
5892.2	0.00	7.1	48	N 48 E	60	1.3	78	N 78 E
5892.8	0.00	2.8	277	N 83 W	50	1.3	79	N 79 E
5893.4	0.00	4.4	281	N 79 W	60	1.3	79	N 79 E
5893.5	0.00	5.4	309	N 51 W	60	1.3	80	N 80 E
5894.3	0.00	6.0	298	N 62 W	50	1.3	79	N 79 E
5894.5	0.00	7.6	296	N 64 W	50	1.3	79	N 79 E
5895.3	0.00	3.8	332	N 28 W	90	1.3	80	N 80 E
5895.8	0.00	6.0	332	N 28 W	50	1.3	79	N 79 E
5896.2	0.00	4.3	169	S 11 E	50	1.3	81	N 81 E
5902.3	0.00	4.9	36	N 36 E	50	1.3	81	N 81 E
5902.5	0.00	1.3	31	N 31 E	50	1.3	81	N 81 E
5902.5	0.00	3.5	47	N 47 E	50	1.3	81	N 81 E
5902.8	0.00	0.6	147	S 33 E	50	1.3	80	N 80 E
5904.4	0.00	12.5	283	N 77 W	50	1.3	83	N 83 E
5904.7	0.00	11.0	284	N 76 W	50	1.3	82	N 82 E
5904.9	0.00	3.1	301	N 59 W	50	1.3	81	N 81 E
5905.1	0.00	2.9	323	N 37 W	70	1.3	81	N 81 E
5905.5	0.00	10.8	181	S 1 W	100	1.3	82	N 82 E
5905.6	0.00	10.0	185	S 5 W	50	1.3	82	N 82 E
5907.2	0.00	7.6	309	N 51 W	50	1.3	83	N 83 E
5907.5	0.00	9.8	91	S 89 E	50	1.3	82	N 82 E
5908.7	0.00	3.6	31	N 31 E	50	1.3	82	N 82 E
5908.8	0.00	1.5	10	N 10 E	50	1.3	82	N 82 E
5909.0	0.00	3.1	4	N 4 E	50	1.4	83	N 83 E
5909.4	0.00	3.1	3	N 3 E	50	1.3	83	N 83 E
5910.4	0.00	3.7	110	S 70 E	50	1.4	82	N 82 E
5910.5	0.00	5.0	85	N 85 E	50	1.4	82	N 82 E

DATE OF LISTING: 7/26/85
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TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***			
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING	
5911.7	0.00	6.6	67	N 67 E	50	1.4	83	N 83 E	
5911.8	0.00	4.6	37	N 37 E	50	1.4	83	N 83 E	
5912.8	0.00	3.4	288	N 72 W	50	1.4	83	N 83 E	
5913.0	0.00	10.9	350	N 10 W	50	1.4	82	N 82 E	
5913.2	0.00	9.6	358	N 2 W	50	1.4	84	N 84 E	
5914.5	0.00	6.2	242	S 62 W	50	1.4	84	N 84 E	
5914.8	0.00	3.7	11	N 11 E	50	1.4	83	N 83 E	
5916.3	0.00	5.7	158	S 22 E	50	1.4	83	N 83 E	
5916.6	0.00	7.8	180	S 0 E	50	1.4	84	N 84 E	
5916.8	0.00	7.5	238	S 58 W	50	1.4	84	N 84 E	
5917.1	0.00	4.4	251	S 71 W	50	1.4	83	N 83 E	
5917.3	0.00	3.1	225	S 45 W	50	1.4	84	N 84 E	
5918.5	0.00	9.5	333	N 27 W	50	1.5	84	N 84 E	
5919.0	0.00	3.8	309	N 51 W	50	1.5	83	N 83 E	
5920.9	0.00	8.6	228	S 48 W	50	1.5	83	N 83 E	
5923.1	0.00	4.3	57	N 57 E	50	1.5	83	N 83 E	
5923.4	0.00	2.8	218	S 38 W	50	1.5	83	N 83 E	
5923.5	0.00	4.1	222	S 42 W	70	1.5	84	N 84 E	
5923.8	0.00	4.3	191	S 11 W	60	1.5	84	N 84 E	
5923.9	0.00	2.3	174	S 6 E	50	1.6	84	N 84 E	
5924.1	0.00	6.3	171	S 9 E	70	1.6	84	N 84 E	
5924.8	0.00	1.9	138	S 42 E	50	1.6	82	N 82 E	
5936.5	0.00	4.3	265	S 85 W	50	1.5	84	N 84 E	
5943.3	0.00	7.6	271	N 89 W	50	1.5	84	N 84 E	
5943.9	0.00	7.0	51	N 51 E	50	1.5	83	N 83 E	
5945.0	0.00	8.6	257	S 77 W	50	1.5	83	N 83 E	
5945.4	0.00	7.5	226	S 46 W	50	1.7	82	N 82 E	
5947.3	0.00	7.6	281	N 79 W	50	1.6	83	N 83 E	
5948.4	0.00	6.6	149	S 31 E	50	1.6	84	N 84 E	
5949.5	0.00	0.8	145	S 35 E	50	1.6	82	N 82 E	
5951.4	0.00	4.8	43	N 43 E	50	1.7	83	N 83 E	
5952.1	0.00	8.4	11	N 11 E	50	1.7	83	N 83 E	
5952.9	0.00	1.9	72	N 72 E	50	1.7	83	N 83 E	
5953.1	0.00	2.0	24	N 24 E	50	1.7	83	N 83 E	
5953.4	0.00	1.5	204	S 24 W	50	1.7	83	N 83 E	
5955.9	0.00	9.3	222	S 42 W	50	1.7	83	N 83 E	
5956.0	0.00	9.3	222	S 42 W	50	1.7	84	N 84 E	
5956.9	0.00	1.5	152	S 28 E	100	1.7	82	N 82 E	
5957.0	0.00	4.0	152	S 28 E	50	1.7	84	N 84 E	
5957.3	0.00	6.6	287	N 73 W	50	1.7	83	N 83 E	

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TRANSCO EXPLORATION DIP3168
TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***		
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING
5957.3	0.00	10.7	267	S 87 W	50	1.7	83	N 83 E
5959.1	0.00	0.7	94	S 86 E	50	1.7	83	N 83 E
5960.9	0.00	3.8	21	N 21 E	50	1.7	82	N 82 E
5961.3	0.00	2.4	9	N 9 E	100	1.7	83	N 83 E
5961.6	0.00	2.4	9	N 9 E	50	1.7	83	N 83 E
5962.5	0.00	8.5	40	N 40 E	50	1.7	82	N 82 E
5963.3	0.00	11.8	226	S 46 W	90	1.7	83	N 83 E
5963.9	0.00	9.3	223	S 43 W	50	1.7	82	N 82 E
5964.3	0.00	4.5	231	S 51 W	50	1.7	84	N 84 E
5964.4	0.00	3.0	240	S 60 W	50	1.7	84	N 84 E
5964.6	0.00	6.3	250	S 70 W	90	1.7	83	N 83 E
5965.4	0.00	2.7	206	S 26 W	50	1.7	83	N 83 E
5965.5	0.00	6.0	210	S 30 W	50	1.7	82	N 82 E
5966.1	0.00	7.9	172	S 8 E	100	1.7	83	N 83 E
5966.2	0.00	7.9	172	S 8 E	50	1.7	83	N 83 E
5966.3	0.00	4.5	160	S 20 E	50	1.7	83	N 83 E
5966.5	0.00	4.3	208	S 28 W	50	1.7	83	N 83 E
5966.7	0.00	4.3	208	S 28 W	50	1.7	83	N 83 E
5967.0	0.00	4.3	208	S 28 W	50	1.7	82	N 82 E
5967.0	0.00	4.3	208	S 28 W	50	1.7	82	N 82 E
5967.1	0.00	7.7	198	S 18 W	50	1.7	82	N 82 E
5967.3	0.00	6.9	152	S 28 E	60	1.7	82	N 82 E
5967.4	0.00	2.2	180	S 0 E	60	1.7	83	N 83 E
5967.5	0.00	7.7	197	S 17 W	50	1.7	83	N 83 E
5967.7	0.00	12.5	297	N 63 W	60	1.7	83	N 83 E
5968.1	0.00	9.4	295	N 65 W	100	1.7	83	N 83 E
5968.2	0.00	7.8	294	N 66 W	50	1.7	83	N 83 E
5968.4	0.00	7.8	294	N 66 W	50	1.7	83	N 83 E
5968.7	0.00	5.9	207	S 27 W	70	1.7	82	N 82 E
5968.8	0.00	13.8	216	S 36 W	50	1.7	82	N 82 E
5969.0	0.00	6.8	179	S 1 E	50	1.7	82	N 82 E
5969.3	0.00	7.8	293	N 67 W	90	1.7	82	N 82 E
5969.5	0.00	8.2	281	N 79 W	90	1.7	83	N 83 E
5970.4	0.00	1.7	261	S 81 W	70	1.7	82	N 82 E
5970.9	0.00	2.6	203	S 23 W	50	1.7	83	N 83 E
5971.0	0.00	6.1	190	S 10 W	80	1.7	82	N 82 E
5971.0	0.00	4.6	184	S 4 W	50	1.7	82	N 82 E
5971.2	0.00	3.2	172	S 8 E	50	1.7	82	N 82 E
5971.3	0.00	3.2	172	S 8 E	50	1.7	82	N 82 E
5971.6	0.00	4.5	183	S 3 W	50	1.7	81	N 81 E

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 WILDCAT
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 07-17-85

DEPTH	WL	**FORMATION DIP**				GRADE	***BOREHOLE***		
		ANG	AZ	BEARING	DA		DAZ	BEARING	
5971.7	0.00	2.6	202	S 22 W	50	1.7	81	N 81 E	
5971.8	0.00	2.6	202	S 22 W	100	1.7	81	N 81 E	
5971.9	0.00	2.6	201	S 21 W	100	1.7	81	N 81 E	
5972.3	0.00	7.3	245	S 65 W	50	1.7	82	N 82 E	
5972.4	0.00	3.1	278	N 82 W	50	1.7	82	N 82 E	
5972.5	0.00	7.7	270	N 90 W	70	1.7	82	N 82 E	
5973.1	0.00	1.6	320	N 40 W	50	1.7	82	N 82 E	
5973.3	0.00	1.6	320	N 40 W	50	1.7	82	N 82 E	
5973.6	0.00	8.1	311	N 49 W	50	1.7	82	N 82 E	
5973.6	0.00	6.2	286	N 74 W	60	1.7	82	N 82 E	
5974.0	0.00	8.6	321	N 39 W	50	1.7	82	N 82 E	
5974.4	0.00	6.6	314	N 46 W	50	1.7	82	N 82 E	
5975.7	0.00	11.7	286	N 74 W	90	1.7	81	N 81 E	
5975.9	0.00	7.7	299	N 61 W	50	1.7	81	N 81 E	
5976.1	0.00	4.6	302	N 58 W	90	1.7	81	N 81 E	
5976.5	0.00	7.3	260	S 80 W	50	1.7	81	N 81 E	
5976.6	0.00	9.1	272	N 88 W	60	1.7	81	N 81 E	
5976.9	0.00	12.3	289	N 71 W	70	1.7	81	N 81 E	
5977.1	0.00	10.5	250	S 70 W	90	1.7	81	N 81 E	
5977.1	0.00	9.5	257	S 77 W	50	1.7	81	N 81 E	
5977.8	0.00	7.7	298	N 62 W	50	1.7	81	N 81 E	
5977.9	0.00	9.3	288	N 72 W	50	1.7	81	N 81 E	
5983.7	0.00	5.5	7	N 7 E	50	1.7	79	N 79 E	
5983.8	0.00	5.5	7	N 7 E	50	1.7	79	N 79 E	
5984.9	0.00	6.4	121	S 59 E	50	1.7	79	N 79 E	
5987.0	0.00	8.7	201	S 21 W	50	1.7	79	N 79 E	
5987.1	0.00	8.7	201	S 21 W	50	1.7	79	N 79 E	
5989.9	0.00	4.9	64	N 64 E	50	1.7	79	N 79 E	
5990.8	0.00	10.0	14	N 14 E	50	1.7	79	N 79 E	
5994.0	0.00	8.0	119	S 61 E	50	1.7	78	N 78 E	
6002.0	0.00	7.4	17	N 17 E	50	1.7	79	N 79 E	
6002.4	0.00	2.4	192	S 12 W	50	1.7	79	N 79 E	
6002.4	0.00	2.4	192	S 12 W	50	1.7	79	N 79 E	
6002.5	0.00	3.0	159	S 21 E	50	1.7	79	N 79 E	
6002.8	0.00	4.4	171	S 9 E	90	1.7	79	N 79 E	
6003.0	0.00	2.0	128	S 52 E	50	1.7	78	N 78 E	
6003.3	0.00	3.5	118	S 62 E	70	1.7	78	N 78 E	
6003.4	0.00	3.5	117	S 63 E	50	1.7	78	N 78 E	
6005.6	0.00	3.0	342	N 18 W	70	1.7	79	N 79 E	
6005.9	0.00	4.2	322	N 38 W	50	1.7	79	N 79 E	

DATE OF LISTING: 7/26/85
 TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

DEPTH	WL	**FORMATION DIP**			GRADE	***BOREHOLE***		
		ANG	AZ	BEARING		DA	DAZ	BEARING
6006.0	0.00	4.2	322	N 38 W	50	1.7	79	N 79 E
6007.3	0.00	7.9	259	S 79 W	90	1.7	80	N 80 E
6007.3	0.00	6.9	263	S 83 W	50	1.7	80	N 80 E
6007.5	0.00	5.0	294	N 66 W	50	1.7	78	N 78 E
6007.6	0.00	1.8	314	N 46 W	50	1.7	78	N 78 E
6007.8	0.00	1.8	314	N 46 W	50	1.7	78	N 78 E
6008.2	0.00	2.0	72	N 72 E	100	1.7	79	N 79 E
6008.4	0.00	2.8	225	S 45 W	50	1.7	79	N 79 E
6008.7	0.00	0.7	183	S 3 W	100	1.7	79	N 79 E
6009.2	0.00	1.0	16	N 16 E	50	1.7	79	N 79 E
6009.3	0.00	4.3	63	N 63 E	50	1.7	79	N 79 E
6009.6	0.00	1.0	16	N 16 E	50	1.7	79	N 79 E
6009.8	0.00	3.6	25	N 25 E	70	1.7	78	N 78 E
6009.9	0.00	4.6	32	N 32 E	50	1.7	78	N 78 E
6011.4	0.00	7.4	175	S 5 E	50	1.7	78	N 78 E
6011.8	0.00	4.3	164	S 16 E	50	1.7	78	N 78 E
6011.9	0.00	0.6	178	S 2 E	50	1.7	78	N 78 E
6012.0	0.00	5.1	105	S 75 E	50	1.7	78	N 78 E
6012.1	0.00	5.1	105	S 75 E	50	1.7	78	N 78 E
6013.0	0.00	3.9	243	S 63 W	50	1.7	78	N 78 E
6013.1	0.00	5.0	227	S 47 W	50	1.7	78	N 78 E
6013.2	0.00	10.0	216	S 36 W	50	1.7	78	N 78 E
6013.4	0.00	10.9	223	S 43 W	90	1.7	77	N 77 E
6014.8	0.00	9.0	249	S 69 W	50	1.7	78	N 78 E
6015.0	0.00	3.3	265	S 85 W	50	1.7	77	N 77 E
6015.1	0.00	9.9	270	N 90 W	50	1.7	77	N 77 E
6015.4	0.00	9.9	279	N 81 W	50	1.7	76	N 76 E
6015.5	0.00	9.9	278	N 82 W	50	1.7	78	N 78 E
6015.6	0.00	10.8	295	N 65 W	50	1.7	78	N 78 E
6015.8	0.00	4.9	222	S 42 W	60	1.7	78	N 78 E
6016.3	0.00	8.6	238	S 58 W	90	1.7	77	N 77 E
6016.4	0.00	9.9	266	S 86 W	50	1.7	77	N 77 E
6016.6	0.00	6.7	278	N 82 W	90	1.7	77	N 77 E
6016.8	0.00	4.5	309	N 51 W	50	1.7	77	N 77 E
6017.4	0.00	6.8	277	N 83 W	50	1.7	76	N 76 E
6017.5	0.00	8.8	285	N 75 W	70	1.7	76	N 76 E
6017.6	0.00	2.6	278	N 82 W	60	1.7	76	N 76 E
6018.0	0.00	11.1	187	S 7 W	70	1.7	76	N 76 E
6018.1	0.00	12.1	190	S 10 W	80	1.7	76	N 76 E
6018.7	0.00	3.5	325	N 35 W	50	1.7	77	N 77 E

DATE OF LISTING: 7/26/85
TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***			
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING	
6018.7	0.00	5.0	334	N 26 W	50	1.7	77	N 77 E	
6018.9	0.00	3.6	287	N 73 W	50	1.7	77	N 77 E	
6019.1	0.00	3.6	286	N 74 W	50	1.7	77	N 77 E	
6019.3	0.00	3.3	259	S 79 W	50	1.7	76	N 76 E	
6019.5	0.00	7.1	216	S 36 W	50	1.7	76	N 76 E	
6019.6	0.00	8.4	224	S 44 W	50	1.7	76	N 76 E	
6019.7	0.00	6.1	227	S 47 W	50	1.7	76	N 76 E	
6019.9	0.00	7.5	234	S 54 W	50	1.7	76	N 76 E	
6020.0	0.00	6.1	227	S 47 W	50	1.7	75	N 75 E	
6020.0	0.00	7.5	234	S 54 W	100	1.7	75	N 75 E	
6020.6	0.00	4.9	260	S 80 W	50	1.7	76	N 76 E	
6020.7	0.00	3.7	286	N 74 W	50	1.7	77	N 77 E	
6020.8	0.00	3.7	286	N 74 W	50	1.7	77	N 77 E	
6021.3	0.00	5.8	316	N 44 W	50	1.7	76	N 76 E	
6021.3	0.00	8.3	321	N 39 W	60	1.7	76	N 76 E	
6021.4	0.00	8.7	329	N 31 W	50	1.7	77	N 77 E	
6021.5	0.00	8.7	329	N 31 W	50	1.7	77	N 77 E	
6021.6	0.00	9.4	319	N 41 W	70	1.7	77	N 77 E	
6021.8	0.00	6.0	227	S 47 W	50	1.7	77	N 77 E	
6021.9	0.00	8.3	224	S 44 W	50	1.7	77	N 77 E	
6022.0	0.00	9.3	216	S 36 W	50	1.7	77	N 77 E	
6022.1	0.00	6.0	227	S 47 W	70	1.7	77	N 77 E	
6022.7	0.00	8.4	232	S 52 W	70	1.7	77	N 77 E	
6022.8	0.00	11.3	241	S 61 W	90	1.7	77	N 77 E	
6023.9	0.00	7.4	235	S 55 W	50	1.7	77	N 77 E	
6024.0	0.00	8.2	225	S 45 W	50	1.7	77	N 77 E	
6024.1	0.00	3.8	199	S 19 W	50	1.7	77	N 77 E	
6024.1	0.00	3.8	199	S 19 W	50	1.7	76	N 76 E	
6024.2	0.00	6.0	206	S 26 W	50	1.7	76	N 76 E	
6024.4	0.00	10.9	199	S 19 W	60	1.7	76	N 76 E	
6026.2	0.00	7.5	200	S 20 W	50	1.7	76	N 76 E	
6026.4	0.00	11.1	236	S 56 W	90	1.7	76	N 76 E	
6027.3	0.00	6.8	247	S 67 W	50	1.7	76	N 76 E	
6027.4	0.00	7.4	235	S 55 W	70	1.7	76	N 76 E	
6027.7	0.00	8.3	173	S 7 E	50	1.7	76	N 76 E	
6027.8	0.00	8.9	152	S 28 E	50	1.7	76	N 76 E	
6030.7	0.00	10.4	188	S 8 W	50	1.6	76	N 76 E	
6035.5	0.00	2.4	300	N 60 W	50	1.6	75	N 75 E	
6036.2	0.00	9.4	205	S 25 W	50	1.6	75	N 75 E	
6036.3	0.00	9.4	205	S 25 W	50	1.6	75	N 75 E	

DATE OF LISTING: 7/26/85
TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***		
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING
6036.4	0.00	9.4	205	S 25 W	50	1.6	75	N 75 E
6037.5	0.00	1.0	209	S 29 W	80	1.7	74	N 74 E
6037.5	0.00	6.0	215	S 35 W	50	1.7	74	N 74 E
6037.6	0.00	6.0	215	S 35 W	50	1.7	74	N 74 E
6037.8	0.00	2.2	205	S 25 W	50	1.7	73	N 73 E
6038.8	0.00	5.0	173	S 7 E	50	1.7	73	N 73 E
6038.9	0.00	6.6	168	S 12 E	100	1.6	73	N 73 E
6039.1	0.00	5.0	172	S 8 E	50	1.6	74	N 74 E
6039.4	0.00	5.8	211	S 31 W	100	1.6	73	N 73 E
6039.5	0.00	3.5	218	S 38 W	50	1.6	73	N 73 E
6039.9	0.00	3.4	179	S 1 E	50	1.6	73	N 73 E
6040.1	0.00	3.0	148	S 32 E	50	1.6	73	N 73 E
6040.5	0.00	6.5	163	S 17 E	50	1.6	72	N 72 E
6040.7	0.00	7.9	148	S 32 E	50	1.6	73	N 73 E
6040.9	0.00	6.3	147	S 33 E	50	1.6	72	N 72 E
6041.4	0.00	8.1	202	S 22 W	50	1.7	71	N 71 E
6041.4	0.00	8.1	202	S 22 W	50	1.7	72	N 72 E
6041.8	0.00	6.9	254	S 74 W	50	1.6	72	N 72 E
6042.0	0.00	4.9	241	S 61 W	50	1.6	72	N 72 E
6042.1	0.00	3.5	215	S 35 W	50	1.6	72	N 72 E
6042.3	0.00	6.7	224	S 44 W	50	1.6	71	N 71 E
6042.5	0.00	7.4	231	S 51 W	80	1.6	72	N 72 E
6042.8	0.00	5.4	258	S 78 W	90	1.6	71	N 71 E
6043.5	0.00	3.4	212	S 32 W	50	1.6	71	N 71 E
6043.6	0.00	6.6	222	S 42 W	50	1.6	71	N 71 E
6044.1	0.00	8.2	235	S 55 W	100	1.6	71	N 71 E
6044.2	0.00	5.0	217	S 37 W	50	1.6	70	N 70 E
6044.5	0.00	5.0	217	S 37 W	50	1.6	70	N 70 E
6044.7	0.00	3.4	210	S 30 W	50	1.6	71	N 71 E
6044.8	0.00	3.4	210	S 30 W	50	1.6	71	N 71 E
6044.8	0.00	4.9	236	S 56 W	50	1.6	71	N 71 E
6044.9	0.00	3.2	239	S 59 W	100	1.6	70	N 70 E
6045.3	0.00	6.6	219	S 39 W	50	1.6	70	N 70 E
6045.4	0.00	6.6	218	S 38 W	50	1.6	70	N 70 E
6045.5	0.00	1.8	192	S 12 W	50	1.6	71	N 71 E
6045.6	0.00	6.5	185	S 5 W	100	1.6	71	N 71 E
6045.7	0.00	11.2	209	S 29 W	90	1.6	70	N 70 E
6045.8	0.00	8.6	209	S 29 W	80	1.6	70	N 70 E
6046.4	0.00	4.9	234	S 54 W	50	1.6	71	N 71 E
6046.5	0.00	3.2	238	S 58 W	50	1.6	71	N 71 E

DATE OF LISTING: 7/26/85
 TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

DEPTH	WL	**FORMATION DIP**			GRADE	****BOREHOLE****		
		ANG	AZ	BEARING		DA	DAZ	BEARING
6046.7	0.00	3.2	238	S 58 W	100	1.6	70	N 70 E
6046.8	0.00	6.6	217	S 37 W	50	1.6	70	N 70 E
6047.1	0.00	9.9	229	S 49 W	90	1.6	70	N 70 E
6047.3	0.00	5.3	170	S 10 E	60	1.6	71	N 71 E
6047.5	0.00	7.8	189	S 9 W	50	1.6	70	N 70 E
6047.6	0.00	11.1	205	S 25 W	70	1.6	70	N 70 E
6048.0	0.00	10.7	213	S 33 W	60	1.6	69	N 69 E
6048.1	0.00	7.6	180	S 0 E	60	1.6	69	N 69 E
6048.4	0.00	2.9	183	S 3 W	70	1.6	70	N 70 E
6048.6	0.00	3.2	204	S 24 W	90	1.6	70	N 70 E
6048.8	0.00	4.8	210	S 30 W	50	1.6	69	N 69 E
6049.1	0.00	6.5	227	S 47 W	50	1.6	69	N 69 E
6049.2	0.00	5.1	274	N 86 W	50	1.6	68	N 68 E
6049.2	0.00	5.9	297	N 63 W	50	1.6	68	N 68 E
6049.5	0.00	8.1	288	N 72 W	50	1.6	70	N 70 E
6049.9	0.00	6.6	281	N 79 W	90	1.6	69	N 69 E
6050.1	0.00	7.5	261	S 81 W	70	1.6	69	N 69 E
6050.3	0.00	11.4	249	S 69 W	70	1.6	70	N 70 E
6050.6	0.00	3.2	203	S 23 W	50	1.6	70	N 70 E
6050.6	0.00	3.2	202	S 22 W	50	1.6	69	N 69 E
6050.7	0.00	4.8	208	S 28 W	100	1.6	69	N 69 E
6051.2	0.00	9.8	180	S 0 E	50	1.6	70	N 70 E
6051.2	0.00	10.5	193	S 13 W	50	1.6	70	N 70 E
6051.3	0.00	9.9	202	S 22 W	50	1.6	70	N 70 E
6051.5	0.00	8.4	233	S 53 W	60	1.6	68	N 68 E
6051.6	0.00	3.1	231	S 51 W	70	1.6	68	N 68 E
6051.8	0.00	3.1	231	S 51 W	50	1.6	68	N 68 E
6052.0	0.00	5.3	244	S 64 W	50	1.6	70	N 70 E
6052.2	0.00	6.4	222	S 42 W	50	1.6	69	N 69 E
6052.3	0.00	6.3	207	S 27 W	50	1.6	69	N 69 E
6052.6	0.00	6.4	222	S 42 W	100	1.6	69	N 69 E
6052.8	0.00	6.4	222	S 42 W	50	1.6	68	N 68 E
6053.1	0.00	8.3	196	S 16 W	60	1.6	68	N 68 E
6053.3	0.00	1.5	182	S 2 W	50	1.6	69	N 69 E
6053.3	0.00	1.5	182	S 2 W	50	1.6	69	N 69 E
6054.4	0.00	2.7	308	N 52 W	50	1.6	68	N 68 E
6054.7	0.00	6.3	203	S 23 W	50	1.6	69	N 69 E
6055.1	0.00	4.7	221	S 41 W	50	1.6	68	N 68 E
6055.2	0.00	3.1	227	S 47 W	50	1.6	67	N 67 E
6055.3	0.00	4.7	220	S 40 W	50	1.6	67	N 67 E

DATE OF LISTING: 7/26/85
TIME OF LISTING: 8: 7:39

TRANSCO EXPLORATION DIP3168
TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***			
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING	
6055.4	0.00	2.9	194	S 14 W	50	1.6	68	N 68 E	
6058.7	0.00	7.4	8	N 8 E	50	1.6	67	N 67 E	
6058.8	0.00	2.6	350	N 10 W	50	1.6	67	N 67 E	
6059.0	0.00	2.6	348	N 12 W	50	1.6	66	N 66 E	
6059.1	0.00	6.0	327	N 33 W	50	1.6	66	N 66 E	
6059.6	0.00	3.1	265	S 85 W	80	1.6	65	N 65 E	
6059.7	0.00	4.7	271	N 89 W	50	1.6	65	N 65 E	
6059.9	0.00	3.1	264	S 84 W	50	1.6	64	N 64 E	
6061.7	0.00	8.2	65	N 65 E	50	1.5	65	N 65 E	
6061.9	0.00	7.5	76	N 76 E	50	1.5	64	N 64 E	
6062.2	0.00	2.1	116	S 64 E	50	1.6	65	N 65 E	
6062.5	0.00	2.1	115	S 65 E	50	1.6	64	N 64 E	
6064.1	0.00	2.7	211	S 31 W	80	1.5	64	N 64 E	
6064.3	0.00	8.9	205	S 25 W	90	1.5	64	N 64 E	
6064.4	0.00	2.7	209	S 29 W	50	1.5	63	N 63 E	
6064.6	0.00	2.7	209	S 29 W	50	1.5	64	N 64 E	
6065.0	0.00	2.3	170	S 10 E	50	1.5	63	N 63 E	
6065.1	0.00	4.2	196	S 16 W	50	1.5	63	N 63 E	
6065.3	0.00	4.2	196	S 16 W	50	1.5	63	N 63 E	
6065.6	0.00	8.5	224	S 44 W	50	1.5	62	N 62 E	
6065.9	0.00	7.9	344	N 16 W	50	1.5	63	N 63 E	
6066.9	0.00	9.2	320	N 40 W	50	1.5	63	N 63 E	
6068.0	0.00	13.1	255	S 75 W	50	1.5	62	N 62 E	
6068.2	0.00	2.4	267	S 87 W	80	1.5	62	N 62 E	
6068.5	0.00	8.5	199	S 19 W	50	1.5	62	N 62 E	
6068.6	0.00	4.0	186	S 6 W	50	1.5	62	N 62 E	
6068.6	0.00	3.9	185	S 5 W	50	1.5	62	N 62 E	
6068.8	0.00	5.5	179	S 1 E	50	1.5	62	N 62 E	
6068.9	0.00	3.9	184	S 4 W	50	1.4	62	N 62 E	
6069.1	0.00	9.8	192	S 12 W	50	1.4	62	N 62 E	
6069.2	0.00	2.5	226	S 46 W	100	1.4	61	N 61 E	
6069.7	0.00	8.5	158	S 22 E	50	1.4	62	N 62 E	
6069.8	0.00	2.4	197	S 17 W	100	1.4	62	N 62 E	
6070.8	0.00	3.8	179	S 1 E	50	1.4	61	N 61 E	
6070.9	0.00	7.4	218	S 38 W	50	1.4	61	N 61 E	
6072.0	0.00	3.6	64	N 64 E	50	1.4	61	N 61 E	
6072.4	0.00	10.2	71	N 71 E	60	1.4	62	N 62 E	
6072.7	0.00	9.5	302	N 58 W	50	1.4	61	N 61 E	
6073.5	0.00	1.8	337	N 23 W	90	1.4	62	N 62 E	
6075.3	0.00	8.9	63	N 63 E	70	1.4	62	N 62 E	

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TRANSCO EXPLORATION DIP3168
 TXPOC #1-16 SQUARE TOWER
 WILDCAT
 SAN JUAN UTAH
 07-17-85

DEPTH	WL	**FORMATION DIP**				GRADE	***BOREHOLE***		
		ANG	AZ	BEARING	DA		DAZ	BEARING	
6075.5	0.00	9.2	73	N 73 E	50	1.4	61	N 61 E	
6076.2	0.00	5.8	200	S 20 W	50	1.4	61	N 61 E	
6076.4	0.00	4.5	188	S 8 W	50	1.5	62	N 62 E	
6076.6	0.00	2.1	188	S 8 W	50	1.5	62	N 62 E	
6076.8	0.00	2.1	188	S 8 W	50	1.5	62	N 62 E	
6077.0	0.00	2.1	187	S 7 W	50	1.5	62	N 62 E	
6077.2	0.00	0.4	9	N 9 E	50	1.4	63	N 63 E	
6077.4	0.00	0.4	9	N 9 E	50	1.4	63	N 63 E	
6077.6	0.00	0.4	8	N 8 E	100	1.4	62	N 62 E	
6078.8	0.00	10.6	191	S 11 W	50	1.4	60	N 60 E	
6080.1	0.00	3.2	234	S 54 W	50	1.5	61	N 61 E	
6081.7	0.00	3.1	232	S 52 W	50	1.4	60	N 60 E	
6081.8	0.00	7.3	200	S 20 W	50	1.4	60	N 60 E	
6081.9	0.00	7.3	200	S 20 W	50	1.4	60	N 60 E	
6082.5	0.00	3.3	202	S 22 W	50	1.4	61	N 61 E	
6082.6	0.00	8.7	156	S 24 E	50	1.4	61	N 61 E	
6082.8	0.00	11.9	150	S 30 E	50	1.4	61	N 61 E	
6083.3	0.00	9.9	142	S 38 E	50	1.4	60	N 60 E	
6083.5	0.00	7.1	158	S 22 E	100	1.4	61	N 61 E	
6083.6	0.00	6.7	178	S 2 E	50	1.4	61	N 61 E	
6083.7	0.00	6.7	178	S 2 E	100	1.4	61	N 61 E	
6083.8	0.00	4.3	178	S 2 E	50	1.4	61	N 61 E	
6084.0	0.00	8.9	135	S 45 E	60	1.4	60	N 60 E	
6084.1	0.00	3.0	123	S 57 E	50	1.4	61	N 61 E	
6084.8	0.00	9.9	118	S 62 E	60	1.4	59	N 59 E	
6085.5	0.00	3.2	153	S 27 E	80	1.4	60	N 60 E	
6085.6	0.00	7.0	154	S 26 E	50	1.4	60	N 60 E	
6086.0	0.00	7.4	144	S 36 E	60	1.4	59	N 59 E	
6086.8	0.00	5.5	131	S 49 E	70	1.4	58	N 58 E	
6087.3	0.00	5.3	172	S 8 E	60	1.4	60	N 60 E	
6087.6	0.00	4.1	171	S 9 E	90	1.4	59	N 59 E	
6088.3	0.00	1.7	172	S 8 E	50	1.4	59	N 59 E	
6089.3	0.00	4.6	329	N 31 W	50	1.3	60	N 60 E	
6090.9	0.00	8.0	200	S 20 W	50	1.4	60	N 60 E	
6090.9	0.00	4.7	194	S 14 W	50	1.4	60	N 60 E	
6091.5	0.00	6.5	94	S 86 E	50	1.3	60	N 60 E	
6092.7	0.00	2.5	43	N 43 E	50	1.3	60	N 60 E	
6092.8	0.00	2.5	43	N 43 E	50	1.3	60	N 60 E	
6092.9	0.00	3.5	70	N 70 E	50	1.3	60	N 60 E	
6093.0	0.00	5.9	69	N 69 E	50	1.3	60	N 60 E	

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TXPOC #1-16 SQUARE TOWER
WILDCAT
SAN JUAN UTAH
07-17-85

DEPTH	WL	**FORMATION DIP**				***BOREHOLE***		
		ANG	AZ	BEARING	GRADE	DA	DAZ	BEARING
6093.3	0.00	2.7	98	S 82 E	50	1.3	59	N 59 E
6093.4	0.00	7.5	149	S 31 E	50	1.3	59	N 59 E
6093.8	0.00	4.9	82	N 82 E	100	1.3	60	N 60 E
6094.3	0.00	2.6	94	S 86 E	50	1.3	60	N 60 E
6094.4	0.00	2.6	93	S 87 E	50	1.3	60	N 60 E
6094.5	0.00	2.6	93	S 87 E	100	1.3	60	N 60 E
6094.7	0.00	2.6	92	S 88 E	50	1.3	61	N 61 E
6094.9	0.00	2.6	91	S 89 E	50	1.3	61	N 61 E
6094.9	0.00	4.9	78	N 78 E	80	1.3	61	N 61 E
6095.2	0.00	1.1	65	N 65 E	50	1.3	61	N 61 E
6095.3	0.00	2.6	36	N 36 E	50	1.3	61	N 61 E
6095.5	0.00	5.9	26	N 26 E	50	1.3	62	N 62 E
6095.6	0.00	5.9	27	N 27 E	50	1.3	62	N 62 E
6095.8	0.00	8.0	37	N 37 E	70	1.3	62	N 62 E
6096.0	0.00	4.9	50	N 50 E	50	1.4	62	N 62 E
6096.1	0.00	6.5	42	N 42 E	50	1.4	62	N 62 E
6096.4	0.00	5.0	51	N 51 E	50	1.4	61	N 61 E
6096.8	0.00	3.7	157	S 23 E	50	1.4	61	N 61 E
6097.2	0.00	1.3	161	S 19 E	50	1.4	63	N 63 E
6100.7	0.00	1.1	147	S 33 E	50	1.3	62	N 62 E
6101.0	0.00	1.1	147	S 33 E	50	1.3	61	N 61 E