



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

ORDER SWD-259

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

THE APPLICATION OF TEXACO, INC.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Texaco Inc. made application to the New Mexico Oil Conservation Division on April 25, 1983, for permission to complete for salt water disposal its Navajo Tribe AR-8 well located in Unit C of Section 27, Township 36 North, Range 18 West, NMPM, San Juan County, New Mexico.

The Division Director finds:

- (1) That application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;
- (2) That satisfactory information has been provided that all offset operators and surface owners have been duly notified; and
- (3) That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met.
- (4) That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, Texaco Inc. is hereby authorized to complete its Navajo Tribe AR-8 well, located in Unit C of Section 27, Township 36 North, Range 18 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Barker Creek formation at approximately 6209 feet to approximately 6236 feet through 2 3/8 inch plastic lined tubing set in a packer located at approximately 6109 feet.

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection

interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 1242 psi.

That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Barker Creek formation. That such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

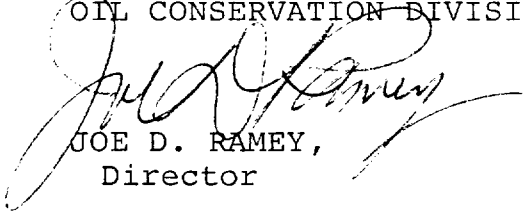
That the operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

That the operator shall immediately notify the supervisor of the Division's Aztec district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER, That jurisdiction of this cause is hereby retained by the Division for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Division may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operations in accordance with Rule 706 and 1120 of the Division Rules and Regulations.

Approved at Santa Fe, New Mexico, on this 1st day of June, 1983.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY,
Director

TEXACO

P. O. Box EE
Cortez, Colorado 81321

April 18, 1983

NMOCC
P. O. Box 2088
State Land Office
Santa Fe, New Mexico 87501

Attention: Mr. Gilbert Quintana

Dear Mr. Quintana:

Please refer to the attached Form C-108 concerning Texaco, Inc.'s notice of intention to convert our oil well Navajo Tribe AR-8 (Lease No. 14-20-0603-8103) to salt water disposal.

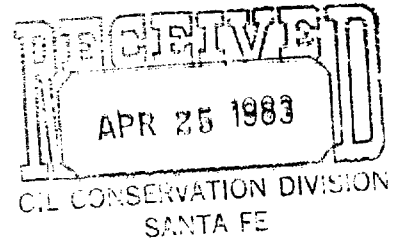
Approximately 800 BWPD is produced from the Barker Creek member of the Pennsylvanian Paradox formation from seven (7) producing wells. The produced water is currently disposed of back into the Barker Creek. Texaco, Inc. has lost the lease in which the current SWD well, Navajo Tribe AL-3, is located. In order to maintain production at the Tocito Dome Field, it is necessary that another SWD location be established.

Attached please find a recent produced water analysis, which indicates a chlorides count of 74,000 ppm, TDS of 125,680 ppm, and a pH value of 6.08. The original reservoir values were a chlorides count of 49,000 ppm, TDS of 81,400 ppm, and a pH value of 6.5. Also attached please find a fresh water analysis from an offset artesian well operated by the Navajo Tribe (Well No. 12T-590). The well was drilled to 796' and is cased with 6-5/8" O.D. pipe. The well is producing from approximately 716'. Information on deeper fresh water zones in the area is not available to Texaco.

The subject well is to have internally coated (Tubekote TK-75) tubing and a retrievable, internally coated injection packer. The tubing-casing annulus is to be treated with 0.5 gallon per annular barrel of Coretron R22-64 (by Champion Chemicals), a corrosion inhibiting chemical. Surface injection pressures will be limited to 1240 psi.

A radioactive injection survey will be conducted to insure that the disposed water is being confined to the proposed injection interval. Casing pressures will be monitored to insure against tubing, packer, and/or casing leaks. In the event that excessive annular pressure is discovered, prompt corrective action will be taken.

Please refer to the attached plat and note that four nearby producing oil wells are currently shut-in. Texaco, Inc. is currently evaluating the economics of returning all shut-in wells at the Tocito Dome Field to active producing status. Abandonment recommendations will be submitted on those shut-in wells with undesirable economics.



TEXACO

Please note the following downhole information on the subject well:

NAVAJO TRIBE AR-8 NE $\frac{1}{4}$ -NW $\frac{1}{4}$ -Sec. 27-T36N-R18W

TD = 6730' KB PBDT = 6275' KB

16" O.D., plain end casing set at 80' KB, cemented with 100 sx Class B cement with 2% CaCl. Cement top unknown.

10-3/4" O.D., 40.5# casing set at 1595' KB. Hole size 12 $\frac{1}{2}$ ". Cemented with 600 sx lite cement and 100 sx Class B cement w 2% CaCl. Pumped 100 sx regular cement s/3% CaCl down annulus. Cement top unknown.

7" - 20#, 23#, and 26# K-55 Lt. & C. casing, set at 6370' KB. Cemented in 2 stages as follows:


1st stage - 300 sx Class B cmt. with 7# salt, 6 $\frac{1}{4}$ # gilsonite, 1# mud kill, and 3/4% CFR-2 per sack. Top unknown.

2nd state - 600 sx lite cement and 50 sx Class B neat cement through stage tool at 4281" KB. Top unknown.

Also please find attached copies of certified mail receipts proving copies of this package were sent to surface owners and offset operators.

If further information is required, please advise.

Sincerely,



A. R. Marx
Field Supt.

cc: File
Amoco Production Co.
Navajo Tribe

Form 13-108
Revised 1-1-65
APR 25 1983

NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR TEXACO, Inc.		ADDRESS P. O. Box EE Cortez, CO 81321	
LEASE NAME Navajo Tribe AR	WELL NO. 8	FIELD Tocito Dome	COUNTY San Juan
LOCATION UNIT LETTER <u>C</u> ; WELL IS LOCATED <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>1980</u> FEET FROM THE <u>West</u> LINE, SECTION <u>27</u> TOWNSHIP <u>26N</u> RANGE <u>18W</u> NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	16"	80'	100	Unknown	
INTERMEDIATE	10-3/4"	1959'	800	Unknown	
LONG STRING	7"	6370'	950	Unknown	
TUBING			NAME, MODEL AND DEPTH OF TUBING PACKER		

NAME OF PROPOSED INJECTION FORMATION Barker Creek		TOP OF FORMATION 6172' KB	BOTTOM OF FORMATION 6292' KB
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLE? Perforations	PROPOSED INTERVAL(S) OF INJECTION 6209-36 KB
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil & gas production	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH None			

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None			
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 800	MINIMUM 450	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Pressure	APPROX. PRESSURE (PSI) 1000 psi
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -		WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes	

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)
The Navajo Tribe, P. O. Box 146, Window Rock, Arizona 86515

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL
Amoco Production Co.
501 Airport Drive
Farmington, N. M. 87401
ATTENTION: Dale Shoemaker

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER Yes	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	THE NEW MEXICO STATE ENGINEER Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA Yes	ELECTRICAL LOG On File, State of N.M.	DIAGRAMMATIC SKETCH OF WELL Yes

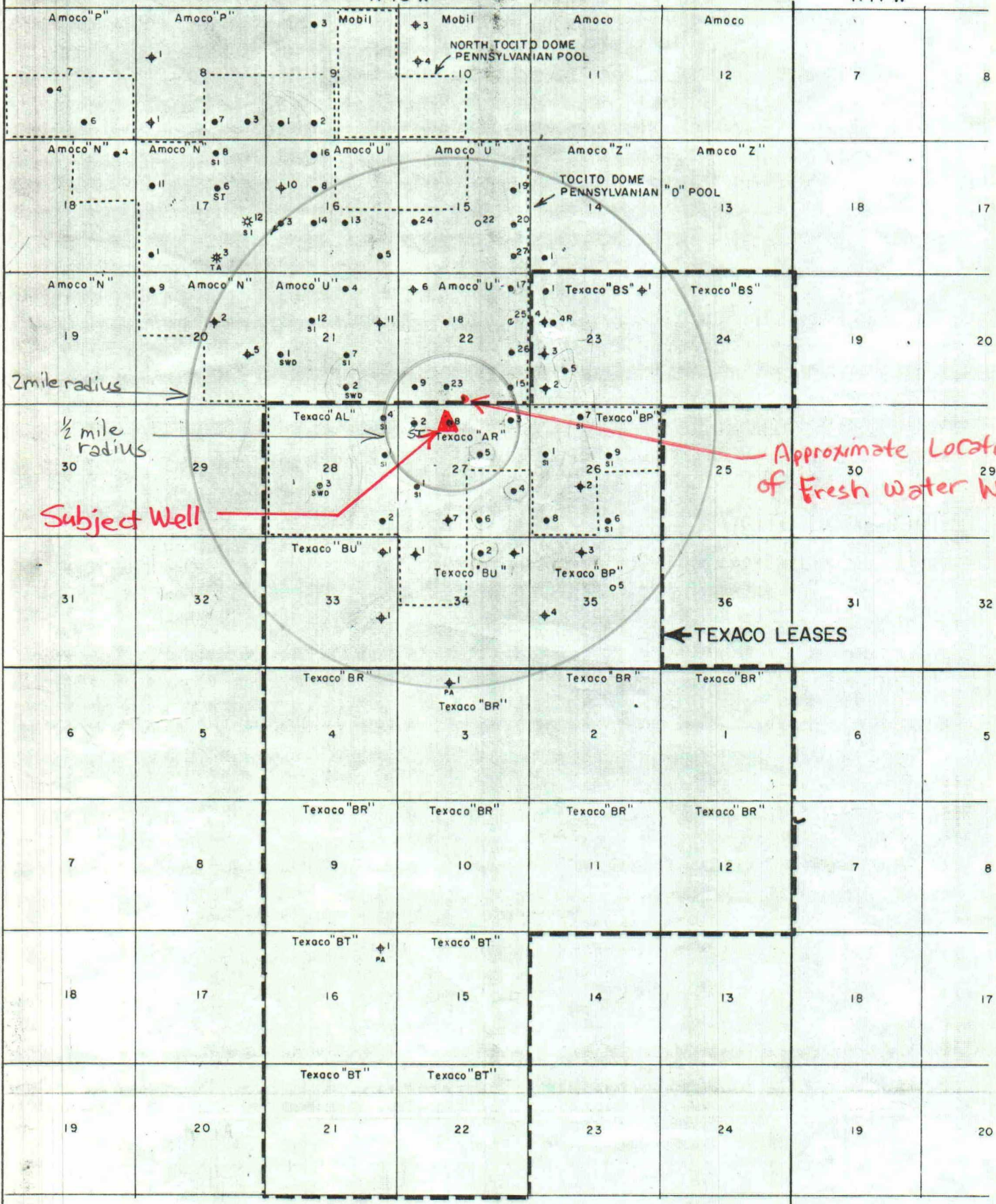
I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Alvin R. Marx Field Superintendent 4/18/83
(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

R 18 W

R 17 W



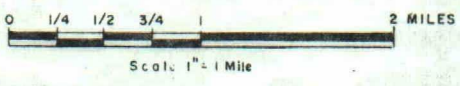
2 mile radius

1/2 mile radius

Subject Well

Approximate Location of Fresh Water Well

← TEXACO LEASES



TOCITO DOME FIELD
 SAN JUAN CO., NEW MEXICO
 T.2.027 1-18-82

LOCATION Tecito Dome - Well # AR-8

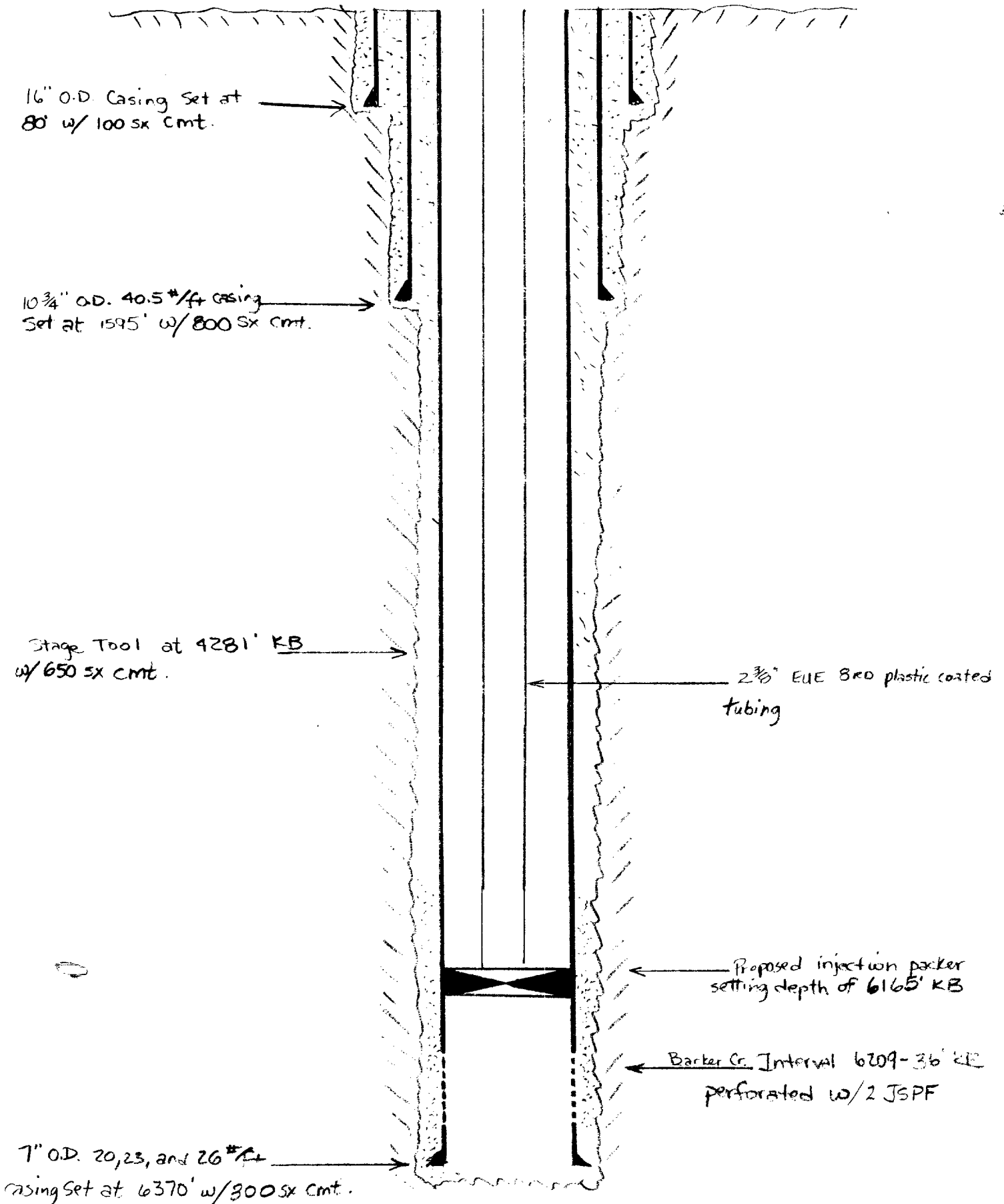
EST. No. _____

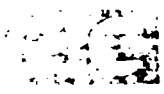
BY _____

SUBJECT Well bore schematic (Proposed)

C'K'D _____

APP'D _____





WESTERN ENGINEERING CORPORATION



1 of 2 pages

WATER TEST FOR INORGANIC CONTAMINATES

PROJECT: Texaco, Inc. I.D. Number: 2420

REPORT TO: Texaco, Inc. PROJECT NO.: _____

REQUESTED BY: David Blandford SAMPLED BY: _____

LOCATION OF SAMPLE: Tocito Field - Treater Water Dump

DATE SAMPLED: 3/23/83 TESTED BY: Nicole Oglethorpe

DATE RECEIVED: 3/24/83

LAB NO.	DATE TESTED	SPECIMEN	CONTAMINATE	CONCENTRATE PPM	
7137	3/24/83	Water	pH	6.08	
			Specific Conductance	450000	micromhos 130°F
				230000	micromhos 68°F
			Carbonates	0	
			Bicarbonates	46	mg/l
			Chlorides	74000	mg/l
			Sulfates	993	mg/l
			Nitrates	3.4	mg/l
			Sodium	28000	mg/l
			Potassium	160	mg/l
			Calcium	25200	mg/l as Co ₃ Ca
			Magnesium	8400	mg/l as Co ₃ Ca
			Total Dis-solved Solids	125680	mg/l 7074 mg/l MgCO ₃

COMMENTS: _____

Bill To: COPIES TO:
Texaco, Inc.
P. O. Box EE
Cortez, Co. 81321
Attn: David Blandford

TESTED BY: Nicole Oglethorpe

REVIEWED BY: _____

WESTERN ENGINEERING CORPORATION



2 of 2 pages

WATER TEST FOR INORGANIC CONTAMINATES

PROJECT: Texaco, Inc. I.D. Number: 2420

REPORT TO: Texaco, Inc PROJECT NO.: _____

REQUESTED BY: David Blanford SAMPLED BY: _____

LOCATION OF SAMPLE: Tocito Field - Treater Water Dump

DATE SAMPLED: 3/23/83 TESTED BY: Nicole Oglethorpe

DATE RECEIVED: 3/24/83

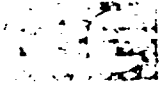
LAB NO.	DATE TESTED	SPECIMEN	CONTAMINATE	CONCENTRATE PPM
7137	3/24/83	Water	Total Suspended Solids	506 mg/l
			Iron	37.5 mg/l
			Baryum	0.01 mg/l
			Strontium	221 mg/l

COMMENTS: _____

COPIES TO:

TESTED BY: *Nicole Oglethorpe*

REVIEWED BY: _____



WESTERN ENGINEERING CORPORATION



1 of 2 pages

WATER TEST FOR INORGANIC CONTAMINATES

PROJECT: Texaco, Inc. I.D. Number: 2421

REPORT TO: Texaco, Inc. PROJECT NO.: _____

REQUESTED BY: David Blandford SAMPLED BY: _____

LOCATION OF SAMPLE: Tocito Field - Resident

DATE SAMPLED: 3/23/83 TESTED BY: Nicole Oglethorpe

DATE RECEIVED: 3/24/83

LAB NO.	DATE TESTED	SPECIMEN	CONTAMINATE	CONCENTRATE PPM
7138	3/24/83	Water	pH	9.03
			Specific Conductance	600 micromhos 68°F
			Carbonates	48 mg/l
			Bicarbonates	152 mg/l
			Chlorides	13.5 mg/l
			Sulfates	68 mg/l
			Nitrates	0.8 mg/l
			Sodium	112 mg/l
			Potassium	0.8 mg/l
			Calcium	< 1 mg/l
			Magnesium	< 1 mg/l
			Total Dis-solved Solids	457 mg/l

COMMENTS: _____

COPIES TO:

Bill To: Texaco Inc.
P. O. Box EE
Cortez, Colorado 81321
Attn: David Blandford

TESTED BY: *Nicole Oglethorpe*

REVIEWED BY: _____

WESTERN ENGINEERING CORPORATION



2 of 2 pages

WATER TEST FOR INORGANIC CONTAMINATES

PROJECT: Texaco, Inc. I.D. Number: 2421

REPORT TO: Texaco, Inc. PROJECT NO.: _____

REQUESTED BY: David Blandford SAMPLED BY: _____

LOCATION OF SAMPLE: Tocito Field - Resident

DATE SAMPLED: 3/23/83 TESTED BY: Nicole Oglethorpe

DATE RECEIVED: 3/24/83

LAB NO.	DATE TESTED	SPECIMEN	CONTAMINATE	CONCENTRATE PPM
7138	3/24/83	Water	Total Suspended Solids	4 mg/l
			Iron	< 0.5 mg/l
			Baryum	< 0.01 mg/l
			Strontium	< 0.01 mg/l

COMMENTS: _____

COPIES TO:

TESTED BY: *Nicole Oglethorpe*

REVIEWED BY: _____

P 289 447 786

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO
The Navajo Tribe
 STREET AND NO.
P. O. Box 146
 P.O. STATE AND ZIP CODE
Window Rock, AZ. 86515

POSTAGE \$ *2.75*

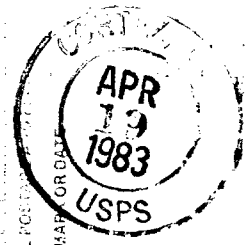
CERTIFIED FEE
 SPECIAL DELIVERY
 RESTRICTED DELIVERY

ORIGINAL SERVICES
 RETURN RECEIPT SERVICE

CONSULT POSTMASTER FOR FEES

POSTMARK OR DATE
 APR 19 1983

USPS



P 289 447 787

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO
Amoco Prod. Co.
 STREET AND NO.
501 Airport Drive
 P.O. STATE AND ZIP CODE
Farmington, N. Mex. 87401

POSTAGE \$ *2.75*

CERTIFIED FEE
 SPECIAL DELIVERY
 RESTRICTED DELIVERY

ORIGINAL SERVICES
 RETURN RECEIPT SERVICE

CONSULT POSTMASTER FOR FEES

POSTMARK OR DATE
 APR 19 1983

USPS

