

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

**APPLICATION OF TEXLAND PETROLEUM–
HOBBS L.L.C. FOR APPROVAL OF A
WATERFLOOD UNIT AGREEMENT,
AUTHORIZATION TO INJECT INTO THE
MURPHY #1 WELL FOR PURPOSES OF
WATERFLOOD INJECTION, AND TO
QUALIFY FOR THE RECOVERED OIL TAX
RATE, LEA COUNTY, NEW MEXICO.**

CASE NO. _____

APPLICATION

Texland Petroleum–Hobbs L.L.C. (“Texland”) (OGRID No. 113315) through its undersigned attorneys, hereby files this application with the Oil Conservation Division for an order approving its proposed waterflood Unit Agreement for purposes of implementing its Knowles Garrett waterflood project (the “Project”) within the Drinkard formation. Texland also seeks authority to convert its **Murphy #1 Well** to injection within the Drinkard formation, Garrett; Drinkard Pool, to support the Project and to convert future wells within the Unit Area to injection administratively. In addition, Texland seeks approval to qualify as an enhanced oil recovery project for the recovered oil tax rate pursuant to the New Mexico Enhanced Oil Recovery Act, NMSA 1978, Sections 7-29A-1 through 7-29A-5, and Division regulations 19.15.6 NMAC. In support, Texland states as follows:

1. The proposed Unit Area / Project area, depicted in the plat attached as **Exhibit A**, consists of the Drinkard formation, Garrett; Drinkard Pool (Pool Code 27130), underlying approximately 240.00 acres, more or less, of the following State Trust lands situated in Lea County, New Mexico:

TOWNSHIP 16 SOUTH, RANGE 38 EAST, N.M.P.M.

Section 30: SE/4 NW/4, S/2 NE/4
Section 29: SE/4 NW/4, E/2 NW/4

2. Texland is the designated operator under the Unit Agreement. The Unit Agreement has been approved by a sufficient percentage of the interest owners within the proposed Unit Area to provide effective control of unit operations.
3. The vertical limits of the Unitized Formation to be included within the proposed Unit Area shall mean that stratigraphic interval constituting a continuous interval beginning one hundred feet above the top of the Drinkard formation and continuing to one hundred feet below the base of the Drinkard formation, more particularly described as correlative to the interval between 8,145 feet and 8,748 feet beneath the surface of the ground as shown on the Gamma Ray Compensated Neutron-Density Log in Yates Petroleum's Lazarus ARV No. 1 well, located 2,100 feet from the North line and 990 feet from the East line of Section 30, Township 16 South, Range 38 East, N.M.P.M., Lea County, New Mexico.
4. Texland has met with the State Land Office and has received preliminary approval of the waterflood Unit Agreement.
5. The Unit Area is located entirely within the Garrett; Drinkard Pool (Pool Code 27130).
6. Texland seeks authority to convert its **Murphy #1 Well** (API 30-025-37372) to injection for purposes of conducting a waterflood operation to support a waterflood project and to convert future wells within the Unit Area / Project area to injection administratively without the necessity of further hearings pursuant to 19.15.26.8.F.5 NMAC. A copy of Texland's Form C-108 is attached hereto as **Exhibit B.**

7. The Murphy #1 Well is located 1,705 feet from the north line and 2,220 feet from the east line of Section 30, Township 16 South, Range 38 East, Lea County, New Mexico. The injection of produced water will occur in the Drinkard formation, Garrett; Drinkard Pool, within the unitized interval at a depth of approximately 8,212 feet to 8,451 feet deep. The maximum proposed daily injection rate will be 750 barrels per day with an average daily injection rate of 300 barrels per day. The average surface injection pressure will be 1,500 psig, and the maximum surface injection pressure will be 1,642 psig.
8. Notice of this application has been provided to the owners of the surface of the lands on which the proposed injection well is to be located and to each affected party within one-half mile of the proposed injection, as required by Division rules.
9. Applicant further requests that the Project be qualified for the recovered oil tax rate pursuant to the New Mexico Enhanced Oil Recovery Act, NMSA 1978, Sections 7-29A-1 through 7-29A-5, and Division regulations 19.15.6 NMAC. Applicant will present production data including graphs, charts and other supporting data showing the production history and production forecasts from the Unit Area / Project area at hearing.
10. Project data includes the following:
 - a. Number of initial producing wells: 3
 - b. Number of initial injection wells: 1
 - c. Number of injection wells at full development: 2
 - d. Capital cost of initial additional facilities: \$83,000
 - e. Estimated total injection project cost: \$474,000
 - f. Estimated value of incremental production: \$2,116,662

- g. Estimated injection commencement date: March 2020
- h. Type of injected fluid: Produced water
- i. Anticipated injection volumes: 300 BWPDP/well (average)
750 BWPDP/well (maximum)
650 Million Barrels (total)

11. The Unit Area / Project area has been so depleted that it is prudent to apply waterflood techniques to maximize the ultimate recovery of oil.

12. The Unit Agreement, and the unitized operation and management of the Unit Area, are in the best interests of conservation, the prevention of waste, and the protection of correlative rights.

WHEREFORE, Texland requests that this Application be set for hearing before an Examiner of the Oil Conservation Division on March 5, 2020, and that after notice and hearing as required by law, the Division enter its order granting this Application.

Respectfully submitted,

HOLLAND & HART LLP

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ATTORNEYS FOR TEXLAND PETROLEUM—HOBBS L.L.C.

VERIFICATION

STATE OF TEXAS)
) ss
COUNTY OF TARRANT)

I, Clayton Scott, hereby verify and attest that I am an engineer employed by Texland Petroleum—Hobbs, L.L.C. and am authorized to make this verification on its behalf. I have read the foregoing application and know the contents thereof and that the same is true and correct to the best of my knowledge, information, and belief.


Clayton Scott

SUBSCRIBED AND SWORN TO before me this 3rd day of FEBRUARY,
2020, by Clayton Scott.




Notary Public

My commission expires:

11/4/23

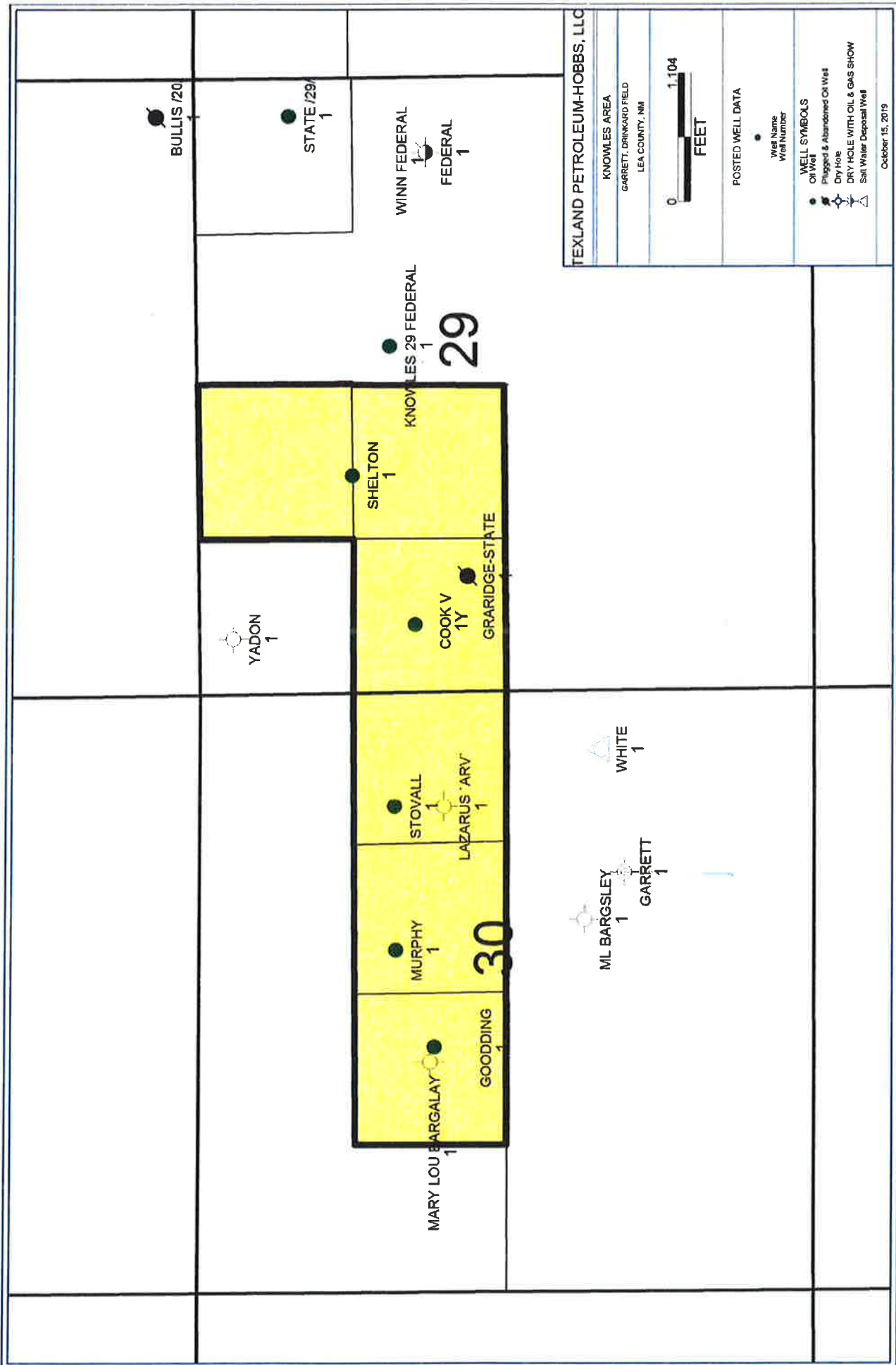


EXHIBIT A

APPLICATION FOR AUTHORIZATION TO INJECT

MURPHY #
Form C-108

Texland Petroleum-Hobbs, LLC

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A. Form C-108

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ Yes ☒ No
- II. OPERATOR: TEXLAND PETROLEUM-HOBBS, LLC
ADDRESS: 777 MAIN STREET SUITE 3200, FORT WORTH, TX 76102
CONTACT PARTY: VICKIE SMITH PHONE: 575-433-8395
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ Yes ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: _____ TITLE: _____
SIGNATURE: _____ DATE: _____
E-MAIL ADDRESS: _____
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: TEXLAND PETROLEUM-HOBBS, LLCWELL NAME & NUMBER: Murphy #1WELL LOCATION: 1705' FNL & 2220' FEL G 30 16S 38E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGEWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 17-1/2" Casing Size: 13-3/8" 48# H-40
Cemented with: 440 sx. or ft³
Top of Cement: SURFACE Method Determined: CirculationIntermediate CasingHole Size: 12-1/4" Casing Size: 8-5/8 24/32# J55/N80
Cemented with: 1280 sx. or ft³
Top of Cement: SURFACE Method Determined: CirculationProduction CasingHole Size: 7-7/8" Casing Size: 5-1/2" 17# N80
Cemented with: 890 sx. or ft³
Top of Cement: 2,750' Method Determined: Calculation
Total Depth: 8,746'Injection Interval8,212' feet to 8,362' (PERFORATED)

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2-3/8" 4.7# J-55 Lining Material: TK-70 IPC

Type of Packer: ARROWSET IX (EPC/IPC)

Packer Setting Depth: +/-8112'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? _____ Yes X No _____
 If no, for what purpose was the well originally drilled? Oil Producer
2. Name of the Injection Formation: DRINKARD
3. Name of Field or Pool (if applicable): GARRETT, DRINKARD
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____ No _____
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

B. Section III

i. Murphy #1 Wellbore Schematics

Figure 1: Murphy #1 Current Wellbore Schematic

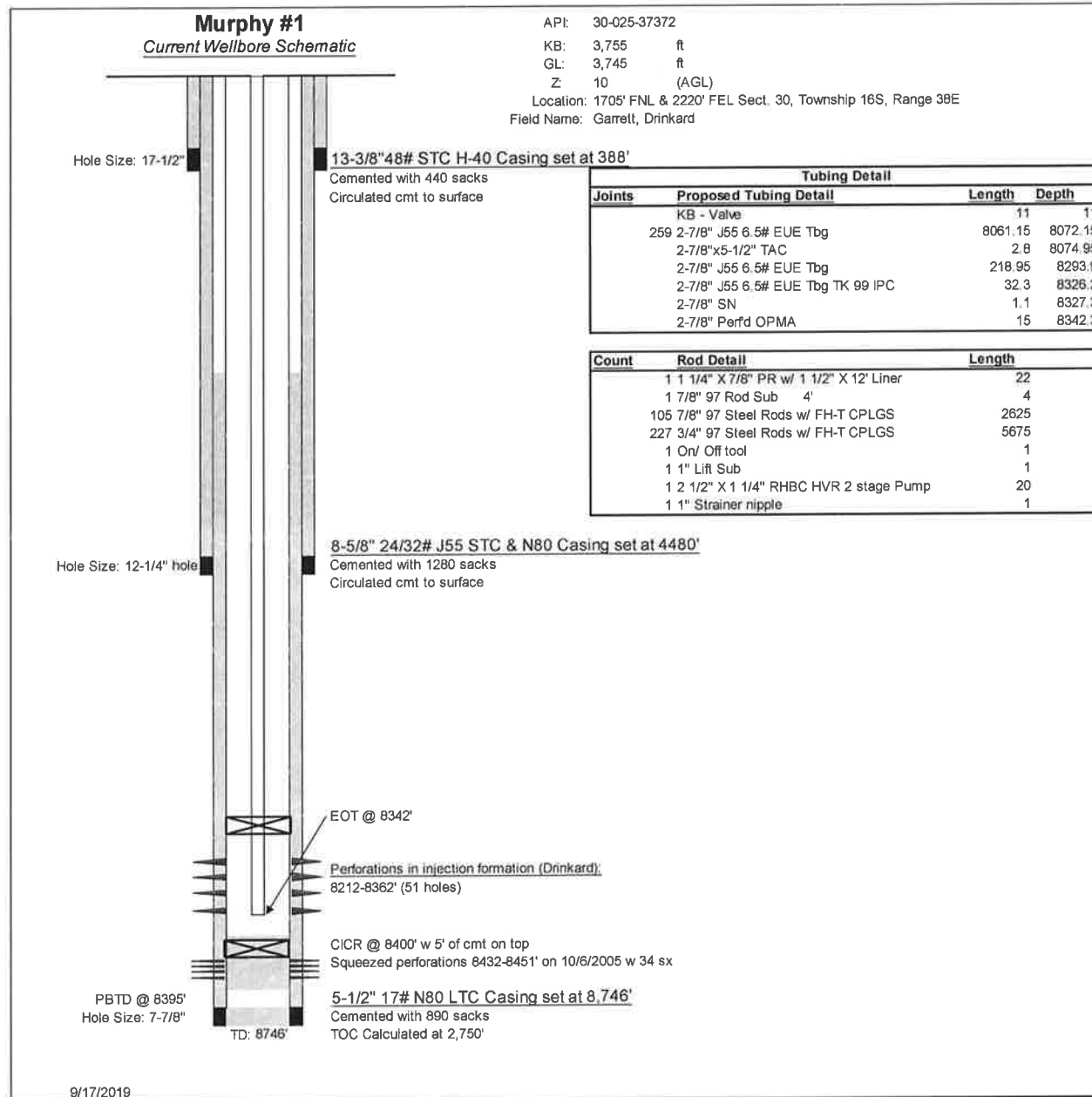
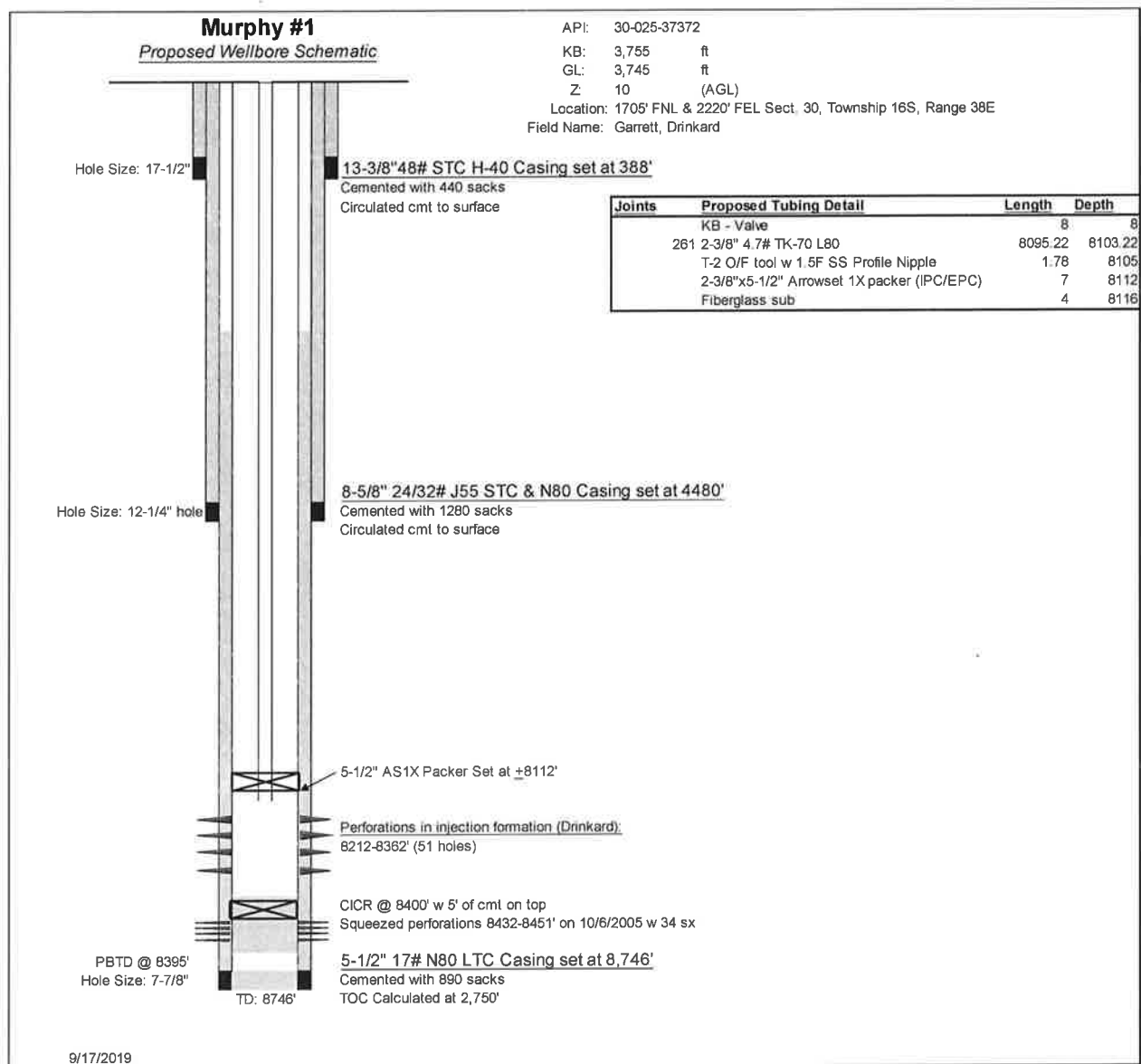


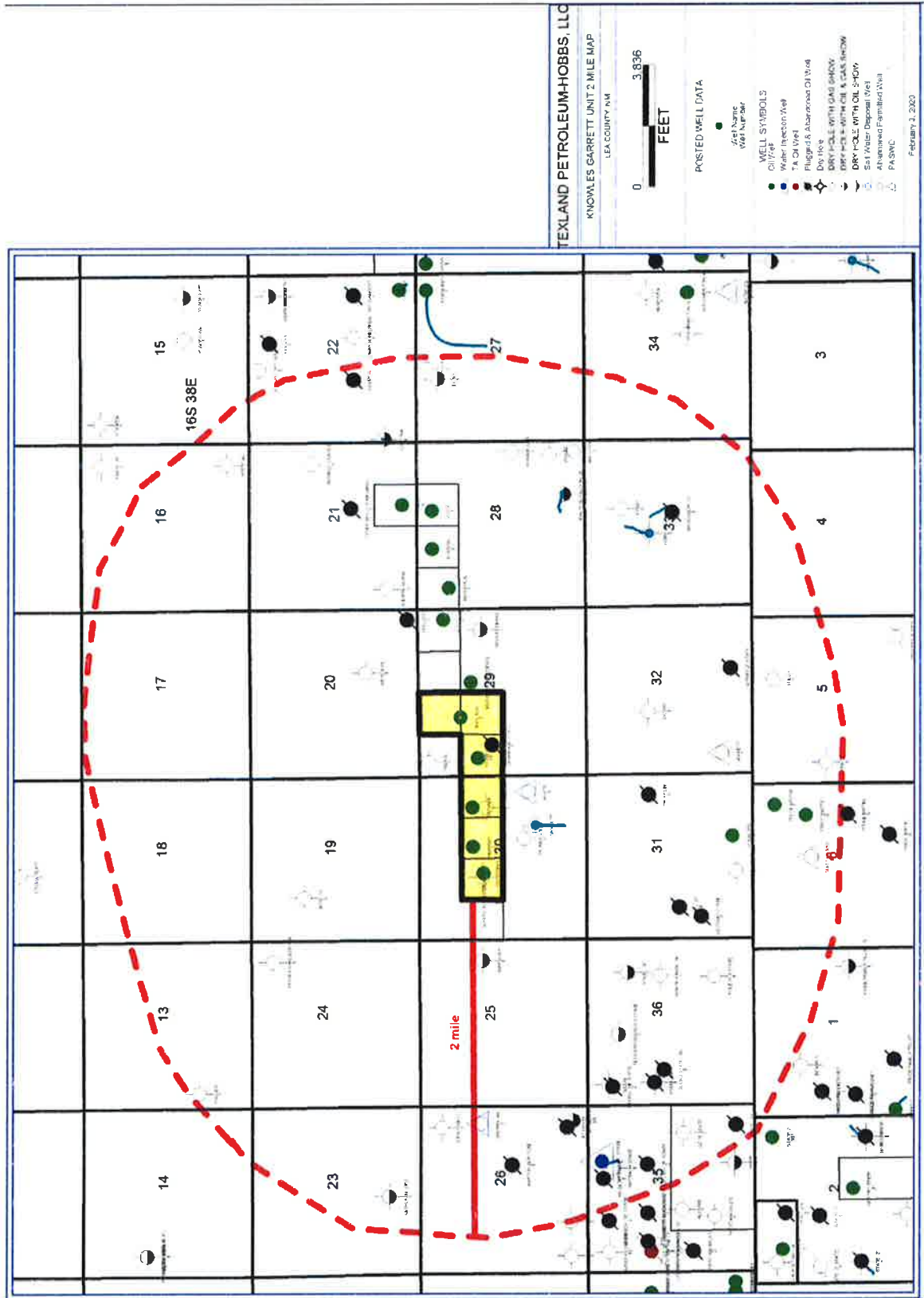
Figure 2 Murphy #1 Proposed wellbore schematic



C. Section V

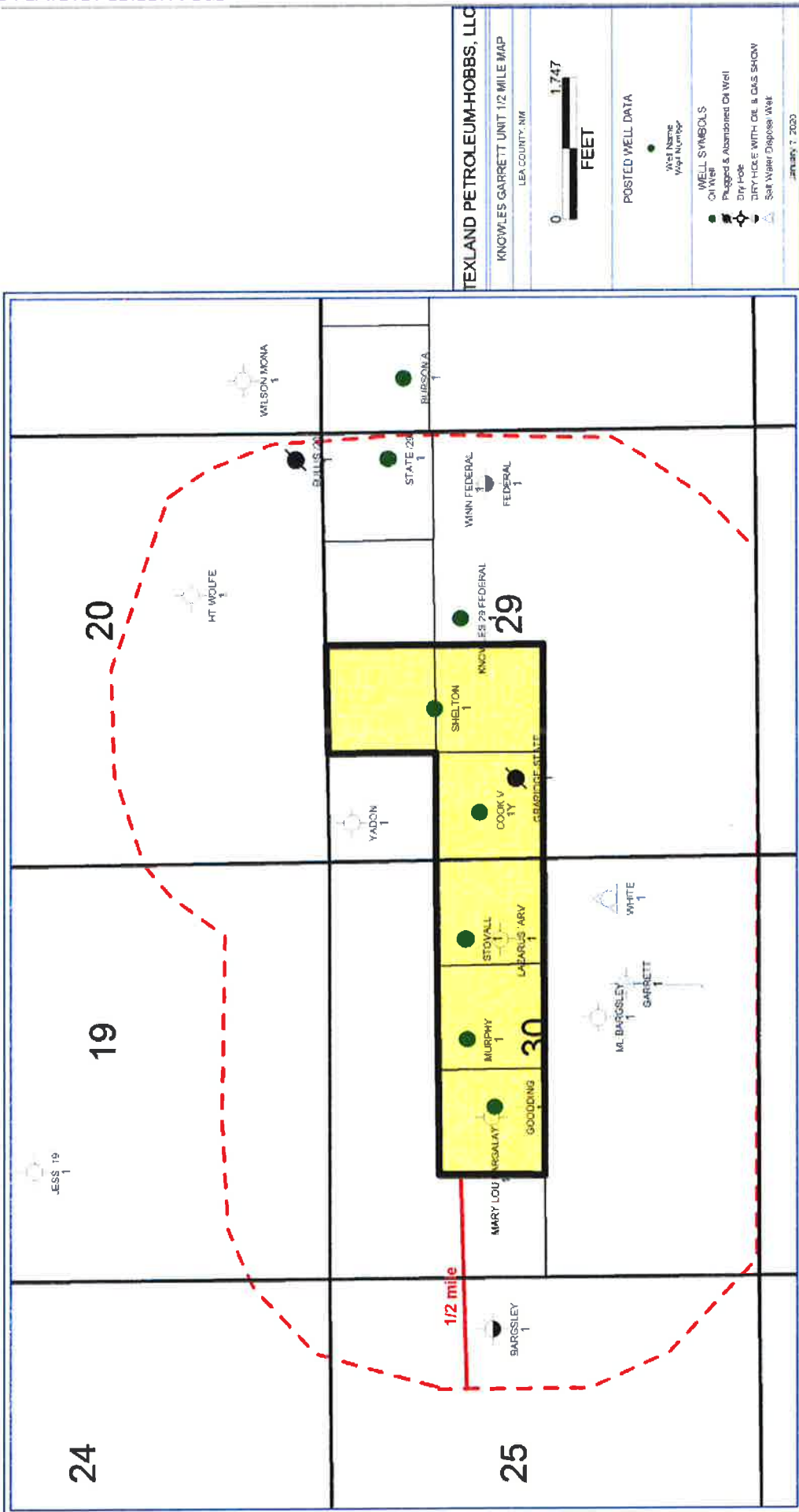
i. Knowles Garrett Unit 2 mile Unit Boundary Map

Figure 3: Knowles Garrett Unit 2 Mile Unit Boundary Map



ii. Knowles Garrett Unit 1/2 Mile Unit Boundary Map

Figure 4: Knowles Garrett Unit 1/2 Mile Unit Boundary Map



D. Section VI.

Tabulation of Data in Area of Review

API #	Well Name	Operator	TD	Well Status	Well Type	Construction	Spud Date	Section	Township	Range	Record of Completion
30-025-38614	KNOWLES 29 FEDERAL #001	Texland Petroleum- Hobbs, LLC	8,400	Active	Oil	Vertical	11/30/2007	29	16S	38E	Drinkard
30-025-38435	SHELTON #001	Texland Petroleum- Hobbs, LLC	8,419	Active	Oil	Vertical	6/21/2007	29	16S	38E	Drinkard
30-025-37584	STOVALL #001	Texland Petroleum- Hobbs, LLC	8,495	Active	Oil	Vertical	3/1/2006	30	16S	38E	Drinkard
30-025-36958	GOODDING #001	Texland Petroleum- Hobbs, LLC	8,635	Active	Oil	Vertical	12/13/2004	30	16S	38E	Drinkard
30-025-41497	GARRETT #001	Primero Operating Inc	13,169	P&A	Oil	Directional	1/3/2004	30	16S	38E	Dry Hole
30-025-20383	M.L. BARGELEY #1	Gulf Oil Corporation	13,306	P&A	Oil	Vertical	7/24/1963	30	16S	38E	Dry Hole
30-025-24885	YADON #1	Michaelson producing Co.	8,650	P&A/WSW	Oil	Vertical	11/4/1974	29	16S	38E	Dry Hole
30-025-07284	AUSTIN COOK #1	Gulf Oil Corporation	9,100	P&A	Oil	Vertical	4/9/1960	29	16S	38E	San Andres
30-025-37746	WHITE #001	Texland Petroleum- Hobbs, LLC	8,662	Active	SWD	Vertical	3/20/2006	30	16S	38E	Drinkard/San Andres
30-025-07068	Mary Lou Bargsley #1	Gulf Oil Corporation	5,800	P&A	Oil	Vertical	8/13/1960	30	16S	38E	Dry Hole
30-025-34159	Lazarus ARV #1	EOG Y Resources, INC.	8,800	P&A	Oil	Vertical	10/17/1997	30	16S	38E	Dry Hole
30-025-23908	Bargsley #1	Green & Michaelson Producing Co.	8,700	P&A	Oil	Vertical	10/22/1971	25	16S	37E	Dry Hole
30-025-25303	Bullis 20 #1	RL Burns Corp		P&A	Oil	Vertical	8/1/1976	20	16S	38E	Drinkard
30-025-23954	Winn Federal 1	Manzano Oil Corporation	12,133	P&A	Oil	Vertical	11/22/1971	29	16S	38E	Drinkard
30-025-25214	State 29 #001	Texland Petroleum- Hobbs, LLC	8,365	Active	Oil	Vertical	1/14/1976	29	16S	38E	Drinkard
30-025-20469	H.T. Wolfe #1	Sam Boren & Major & Global Oils	8,728	P&A	Oil	Vertical	6/30/1963	20	16S	38E	Dry Hole

i. P&A Wellbore Schematics within Area of Review

Figure 5: Garrett #1 Wellbore Schematic

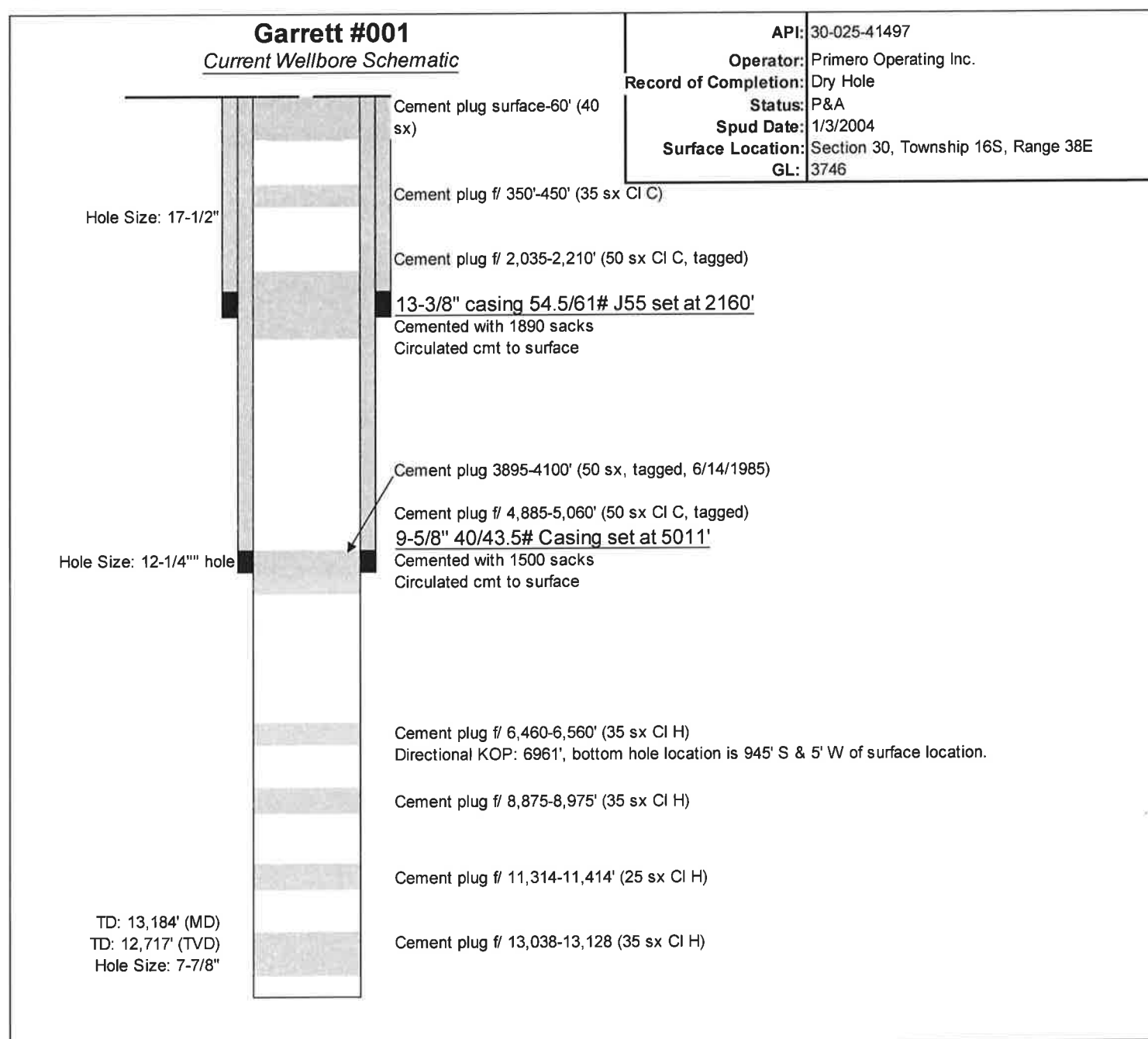


Figure 6: ML Bargeley #1 Wellbore Schematic

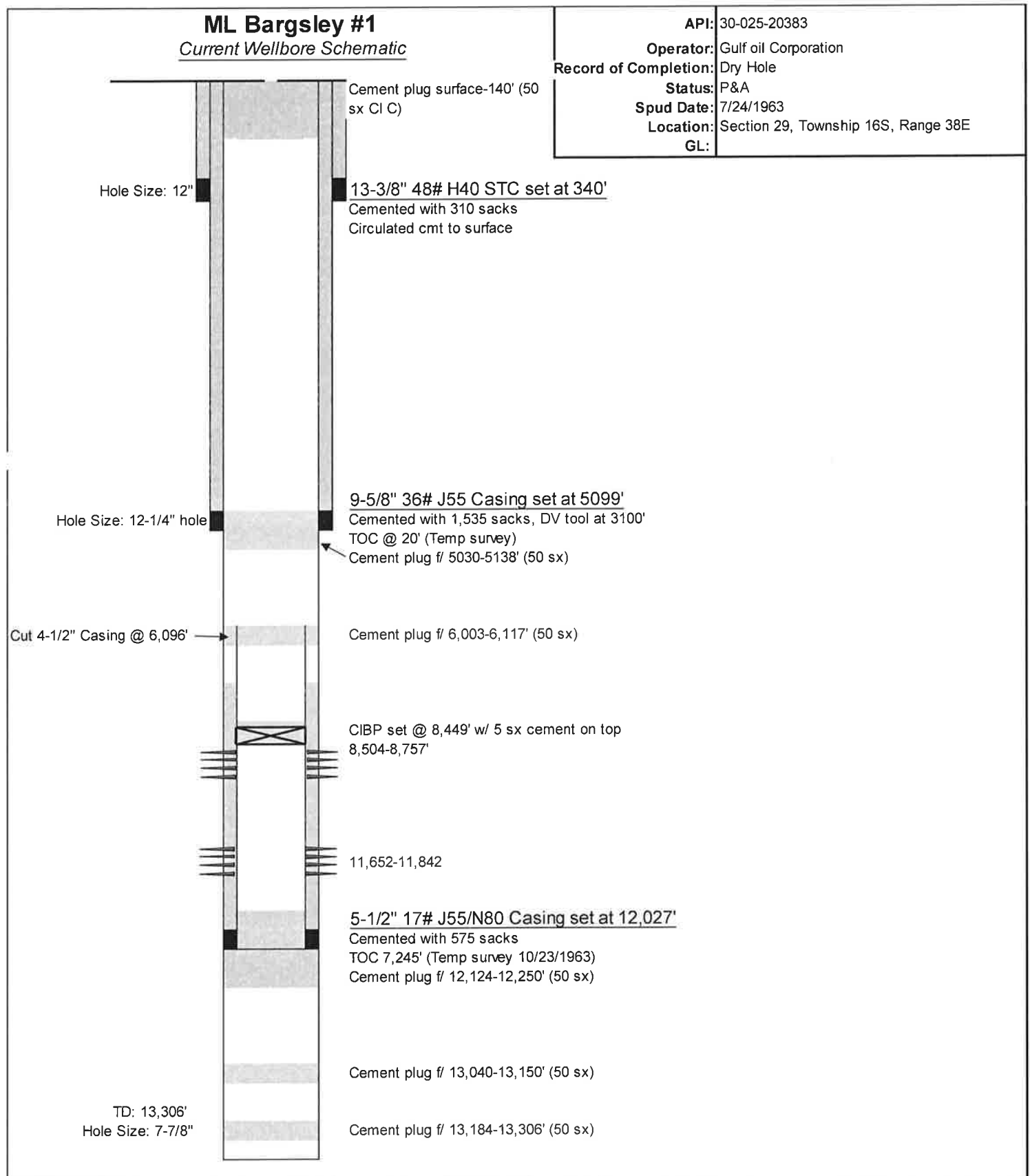


Figure 7: Yadon #1 Wellbore Schematic

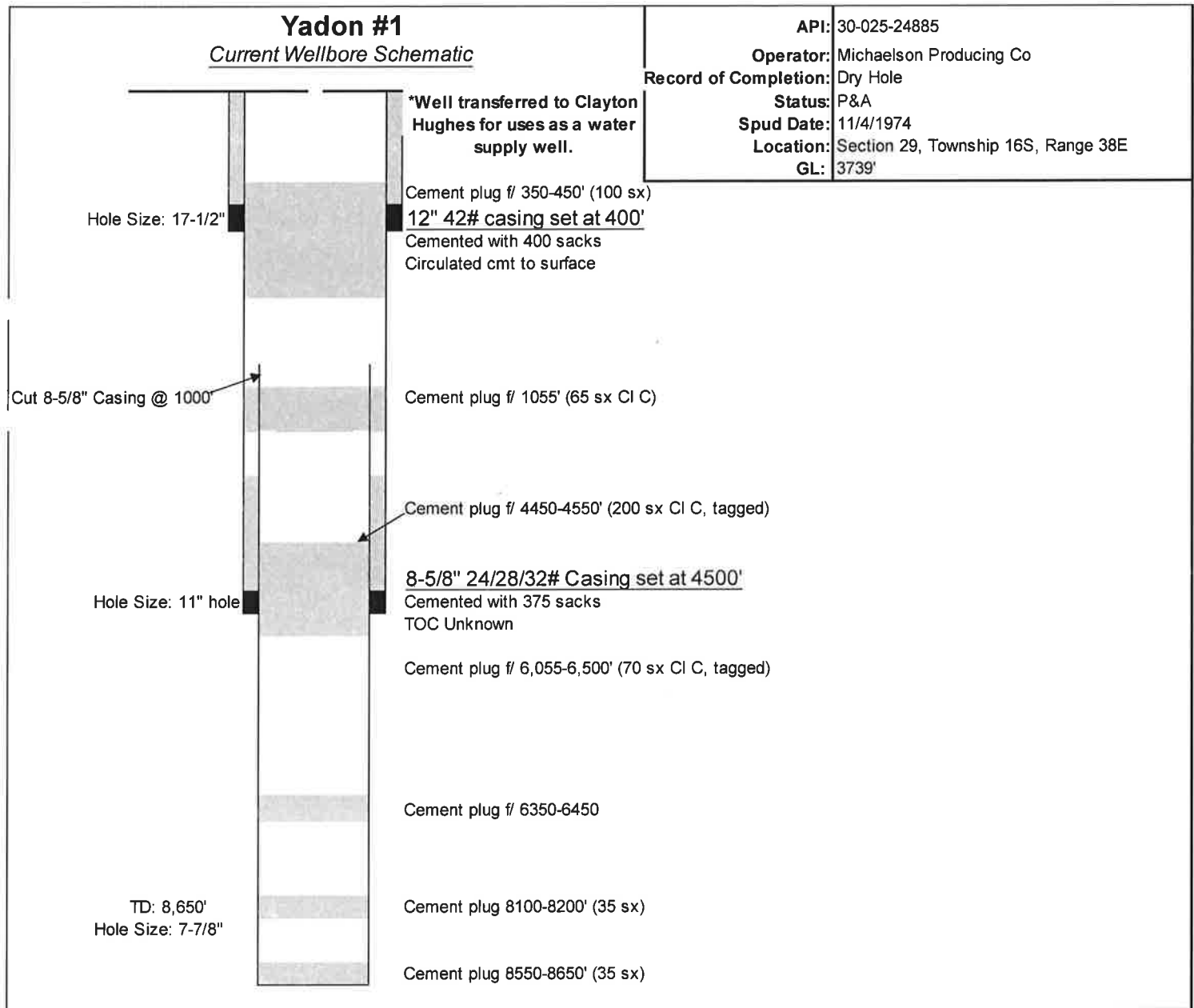


Figure 8: Austin Cook #1 Wellbore Schematic

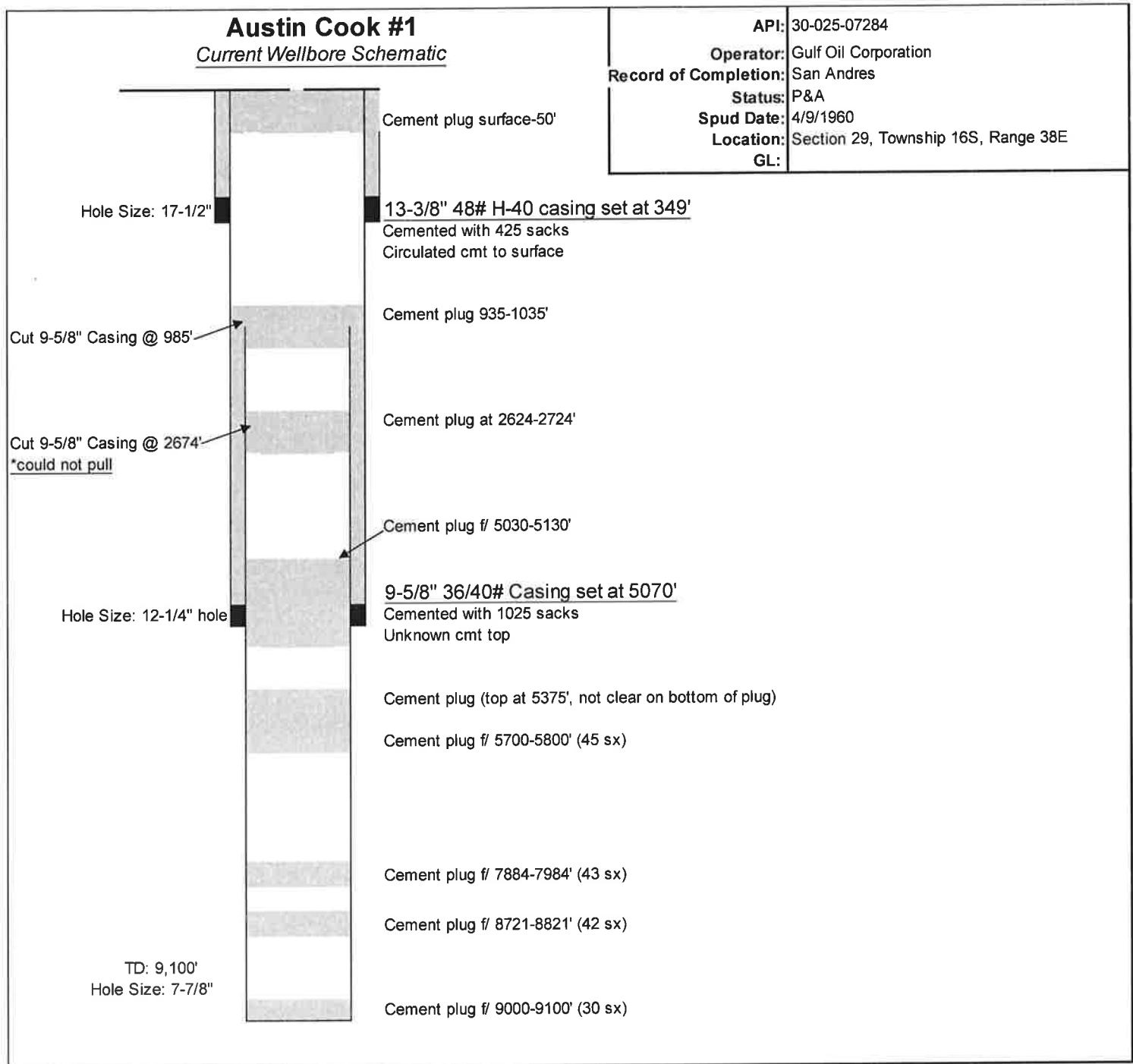
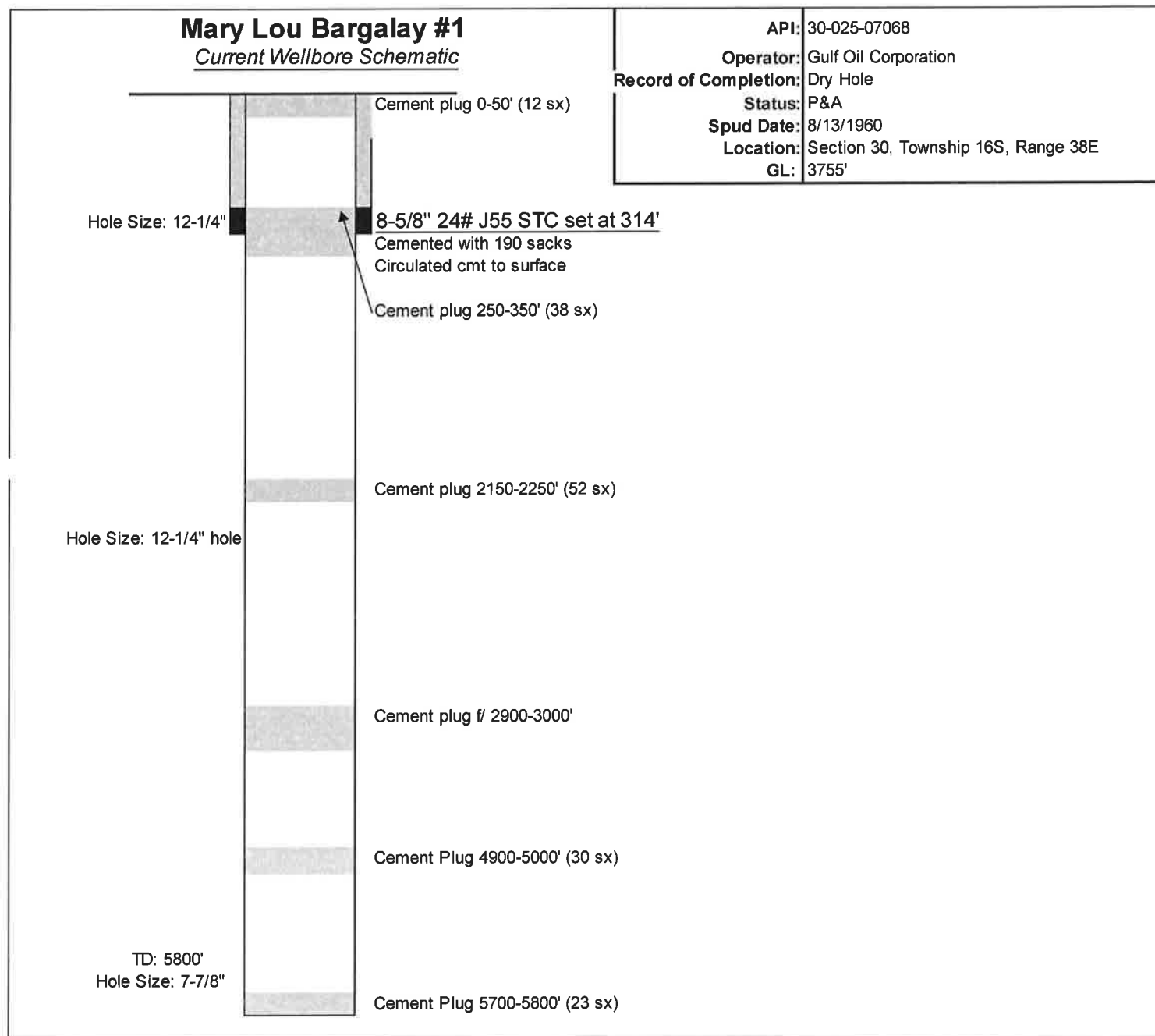


Figure 9: Mary Lou Bargeley #1 Wellbore Schematic



Lazarus ARV #1

Current Wellbore Schematic

The diagram is a vertical schematic of the wellbore. It shows a 16-inch conductor set at 40 feet. Below this, the hole size is 14-3/4 inches. At 480 feet, an 11-3/4 inch 42# H-40 is set, cemented with 400 sacks, and circulated to the surface. A cement plug is placed at 410 feet (30 sacks of CI C). Another cement plug is at 2250 feet (30 sacks of CI C). A cement plug from 4325 to 4550 feet is placed (60 sacks of CI C). At 4500 feet, an 8-5/8 inch 32# Mav 80/32# J55 is set, cemented with 1562 sacks, and circulated to the surface. A cement plug is at 6500 feet (30 sacks of CI C). The total depth (TD) is 8800 feet, with a hole size of 7-7/8 inches. A final cement plug is placed from 8520 to 8670 feet (65 sacks of CI H).

API:	30-025-34159
Operator:	EOG Resources
Record of Completion:	Dry Hole
Status:	P&A
Spud Date:	10/17/1997
Location:	Section 30, Township 16S, Range 38E
GL:	3742

Figure 11: Bargsley #1 Wellbore Schematic

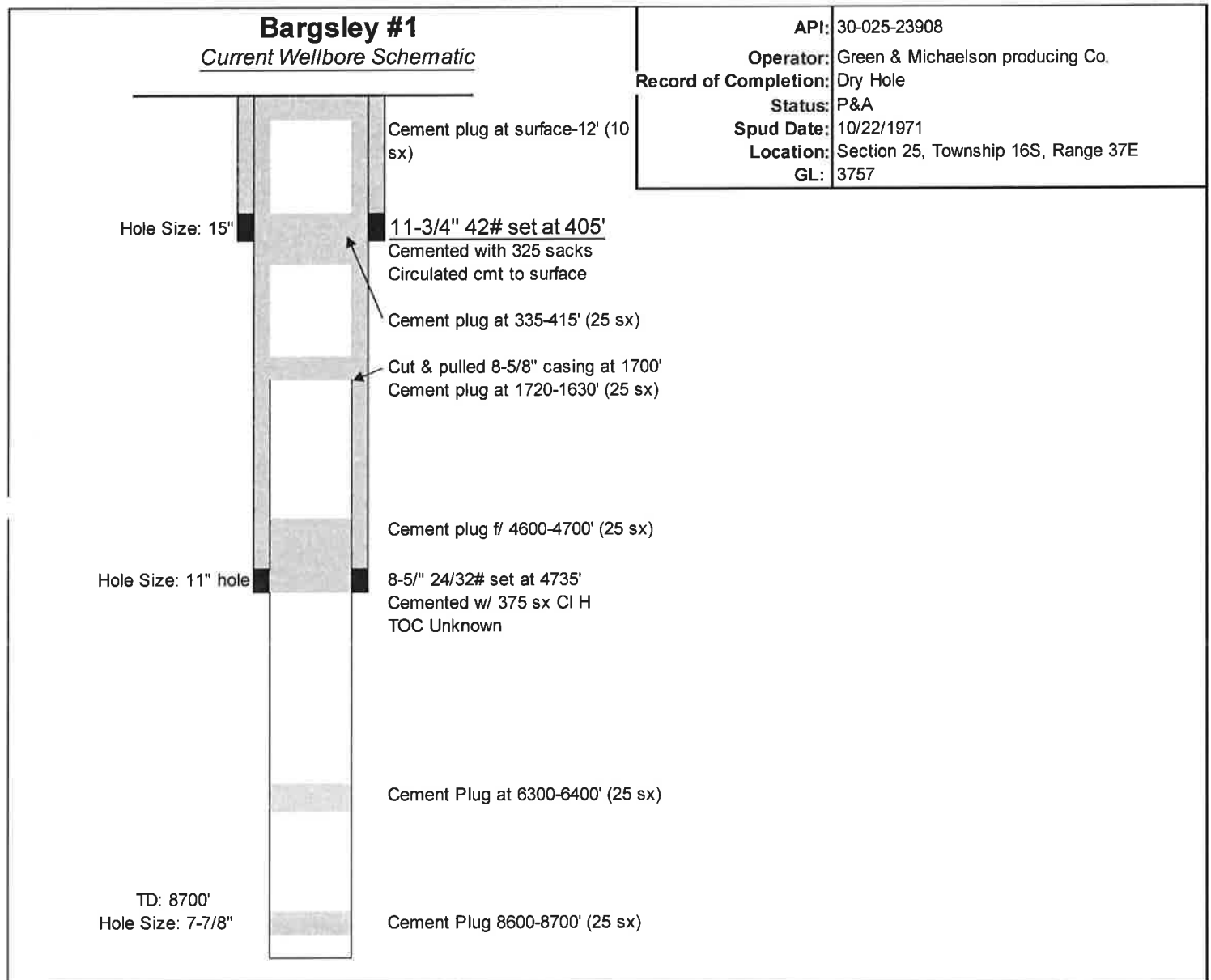


Figure 12: Bullis 20 #1 Wellbore Schematic

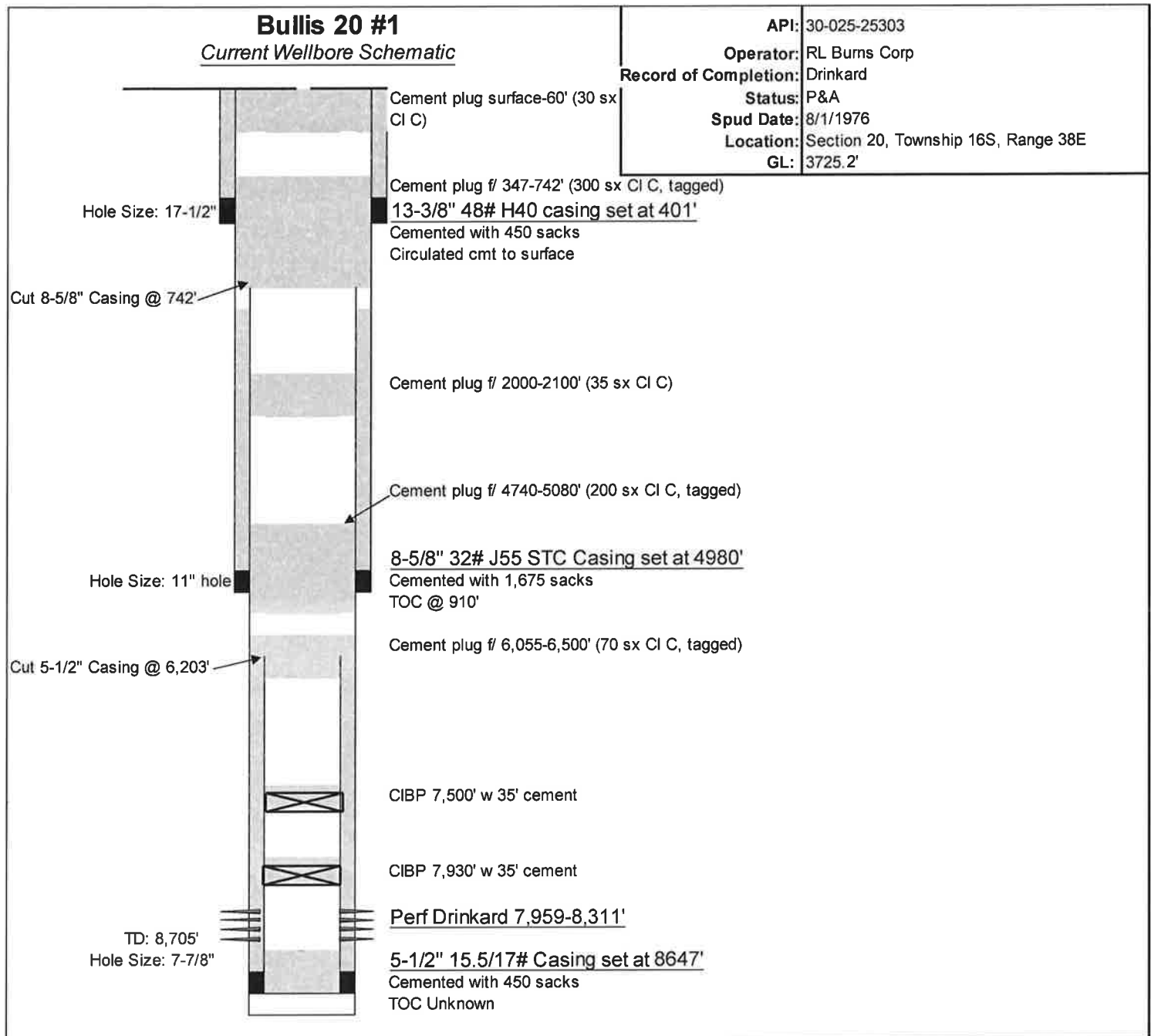


Figure 13: Winn Federal #1 Wellbore Schematic

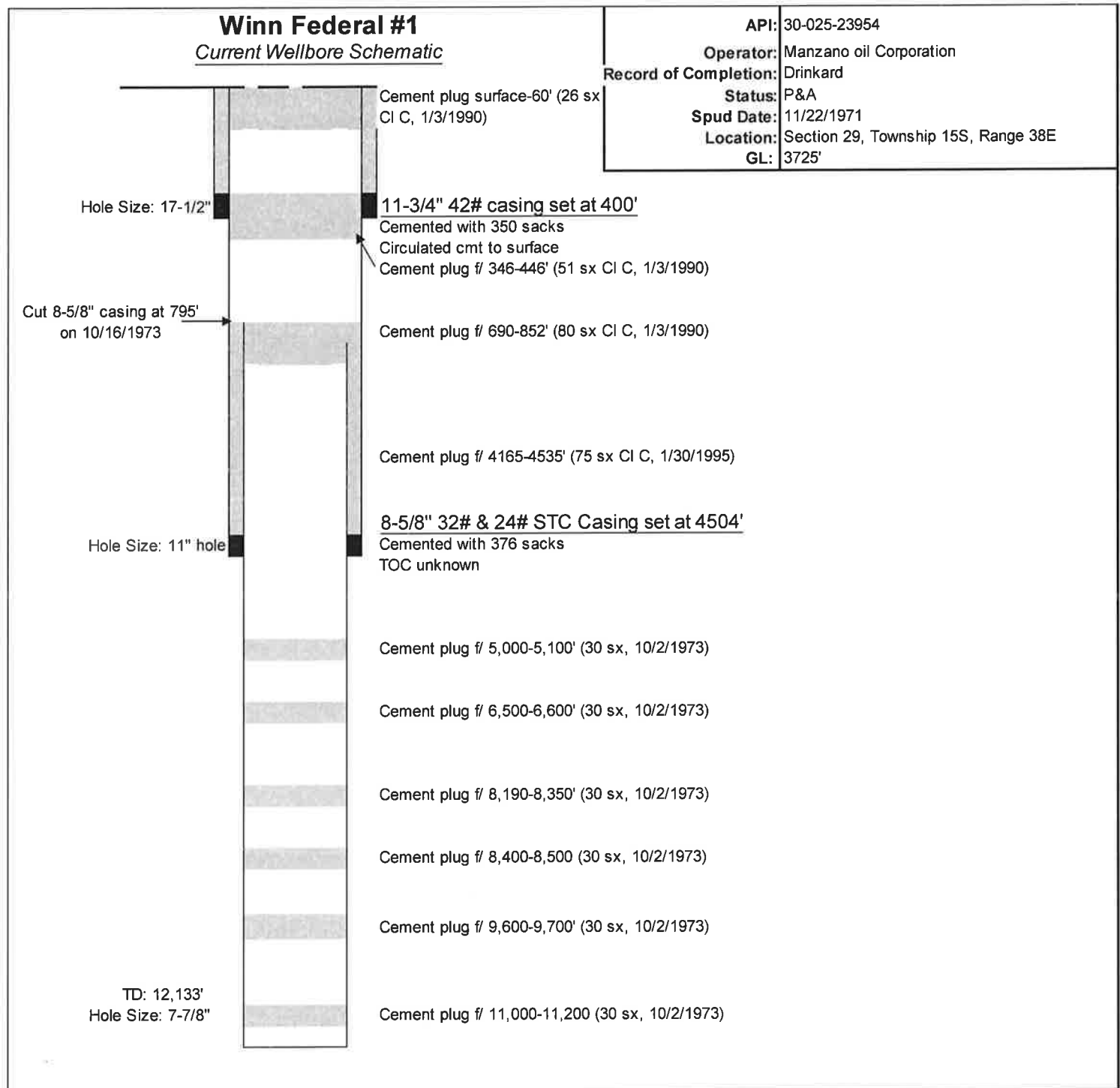
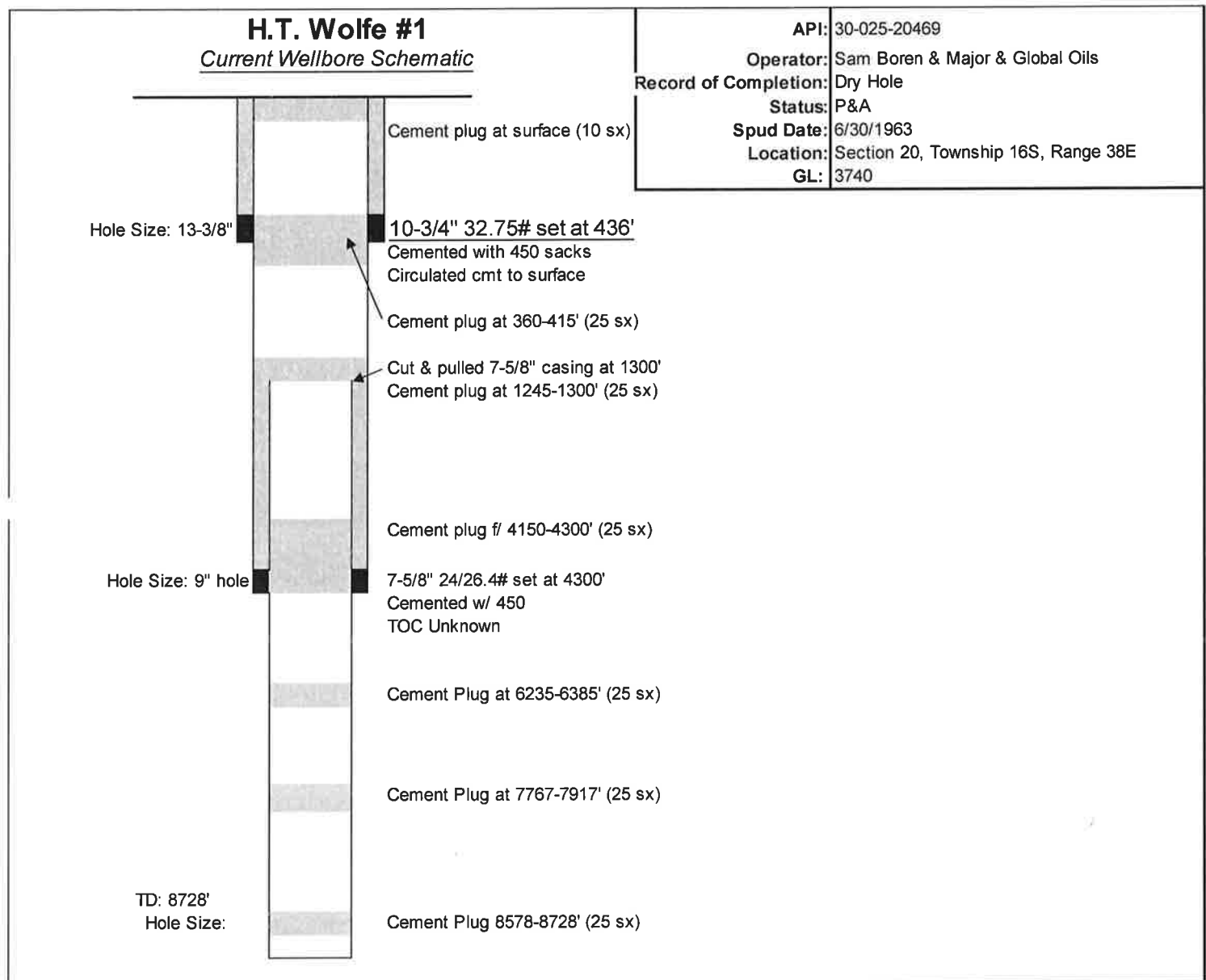


Figure 14: H.T. Wolfe #1 Wellbore Schematic



E. Section VII: Proposed Operation

1. Proposed average and maximum daily rate and volume of fluids to be injected;
 - a. Proposed average daily rate: 300 bpd per proposed injection well
 - b. Proposed Maximum daily rate: 750 bpd per proposed injection well
 - c. Proposed maximum volume to be injected: 650 Mbbls (total)
2. Whether the system is open or closed;
 - a. The system is closed
3. Proposed average and maximum injection pressure;
 - a. Murphy #1 Average injection pressure: 1,500 psig
 - b. Murphy #1 Maximum injection pressure: 1,642 psig
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 - a. Texland plans on utilizing the White #1 as a San Andres WSW. The well is located 1-1/2 miles SW of planned waterflood project.
 - b. Section VII **Figure 15** is a Drinkard produced water analysis from the Stovall #1 (API: 30-025-37584)
 - c. Section VII **Figure 16** is a San Andres water analysis from the Sinai #1 (42-165-38727) located in Texas. This sample was utilized due to not having any San Andres production near the proposed unit to gather a sample from.
 - d. Section VII **Figure 17** is a compatibility analysis between the San Andres and Drinkard produced water. A chemical program will be utilized to managed scale precipitation.
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.)
 - a. The proposed injection well is not for disposal.

Figure 15: Stovall #1-Drinkard produced water analysis



Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

Customer:	Texland Petroleum	Sample #:	106050
Area:	Permian Basin	Analysis ID #:	98831
Lease:	Stovall		
Location:	1		0
Sample Point:	Wellhead		

		Anions		Cations	
		mg/l	meq/l	mg/l	meq/l
Sampling Date:	10/1/2019	Chloride:	57309.8	Sodium:	28690.0
Analysis Date:	10/7/2019	Bicarbonate:	24.4	Magnesium:	1098.0
Analyst:	Catalyst	Carbonate:		Calcium:	5693.0
TDS (mg/l or g/m3):	95264.8	Sulfate:	1280.0	Potassium:	800.7
Density (g/cm3):	1.067	Borate*:	232.0	Strontium:	165.1
		Phosphate*		Barium:	1.6
Hydrogen Sulfide:	17	*Calculated based on measured elemental boron and phosphorus.		Iron:	0.1
Carbon Dioxide:	70			Manganese:	0.148
Comments:				Conductivity (micro-mhos/cm):	121475
				Resistivity (ohm meter):	.0823
		pH at time of sampling:	6.2		
		pH at time of analysis:			
		pH used in Calculation:	6.2		
		Temperature @ lab conditions (F):	75		

	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
80	-1.02	0.00	-0.12	0.00	-0.14	0.00	0.13	26.17	1.22	0.96	
100	-0.92	0.00	-0.16	0.00	-0.12	0.00	0.12	24.26	1.04	0.96	
120	-0.82	0.00	-0.19	0.00	-0.07	0.00	0.12	24.26	0.89	0.64	
140	-0.71	0.00	-0.21	0.00	0.00	0.00	0.13	26.17	0.75	0.64	
160	-0.60	0.00	-0.23	0.00	0.09	104.38	0.14	29.37	0.64	0.64	
180	-0.48	0.00	-0.23	0.00	0.19	205.57	0.17	33.20	0.55	0.64	
200	-0.36	0.00	-0.24	0.00	0.31	294.94	0.19	37.67	0.47	0.64	
220	-0.24	0.00	-0.24	0.00	0.44	369.96	0.22	42.13	0.42	0.64	

Figure 16: Sinai #1: San Andres Water Analysis



Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79738
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

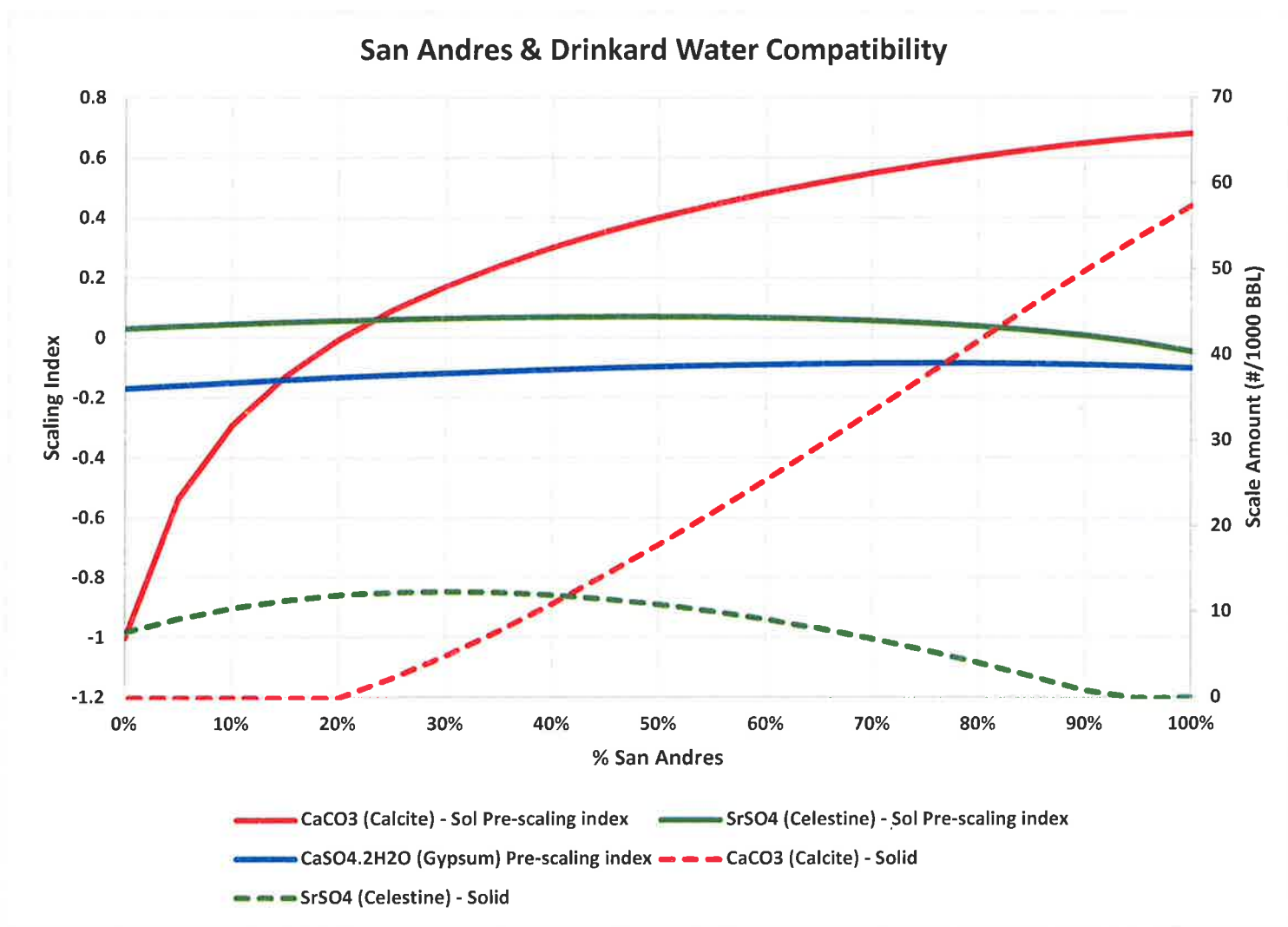
Customer:	Textand Petroleum	Sample #:	106049
Area:	Permian Basin	Analysis ID #:	98830
Lease:	Sinai		
Location:	1 0		
Sample Point:	Wellhead		

		Anions		Cations	
		mg/l	meq/l	mg/l	meq/l
Sampling Date:	10/1/2019	Chloride:	17102.0	Sodium:	9314.0
Analysis Date:	10/7/2019	Bicarbonate:	585.0	Magnesium:	519.1
Analyst:	Catalyst	Carbonate:		Calcium:	1737.0
TDS (mg/l or g/m3):	32018.6	Sulfate:	2400.0	Potassium:	280.0
Density (g/cm3):	1.022	Borate*:	43.5	Strontium:	36.4
		Phosphate*		Barium:	1.4
Hydrogen Sulfide:	1326	*Calculated based on measured elemental boron and phosphorus.		Iron:	0.1
Carbon Dioxide:	130			Manganese:	0.056
Comments:		pH at time of sampling:	6.78		
		pH at time of analysis:			
		pH used in Calculation:	6.78		
		Temperature @ lab conditions (F):	75	Conductivity (micro-mhos/cm):	43826
				Resistivity (ohm meter):	.2282

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.54	47.53	-0.02	0.00	-0.08	0.00	0.06	3.40	1.77	0.68
100	0.65	57.72	-0.05	0.00	-0.04	0.00	0.06	3.40	1.81	0.68
120	0.77	67.91	-0.06	0.00	0.03	62.13	0.07	4.07	1.48	0.68
140	0.89	78.43	-0.06	0.00	0.12	219.67	0.10	5.09	1.36	0.68
160	1.02	88.62	-0.05	0.00	0.23	380.95	0.13	6.45	1.27	0.68
180	1.14	98.46	-0.04	0.00	0.36	534.07	0.16	8.15	1.20	0.68
200	1.27	107.63	-0.02	0.00	0.49	670.56	0.20	9.51	1.14	0.68
220	1.41	116.12	-0.01	0.00	0.64	787.02	0.24	11.20	1.10	0.68

Figure 17: San Andres & Drinkard Water Compatibility



F. Section VIII: Geologic Data

a. Geologic Name of Injection Zone

i. Drinkard Formation

b. Geologic Description

- i. Injection will be into the Permian Drinkard formation. The proposed injection interval is from 8100-8450'. These units are composed of Dolomite with a gross thickness of about 350'. The reservoir units were deposited as complex shoals near the Drinkard shelf margin. These units are dominated by packstones with mostly vuggy porosity. Porosity in the reservoir ranges from 2% to as much as 12%.

c. Fresh Water Sources

- i. Fresh water production in this area is from the Tertiary Ogallala aquifer. The productive interval is from 50' to 150'. Other possible, but currently unused water sources, are the Triassic Santa Rosa from 280' to the top of the Permian Rustler Formation at 2075'. No other fresh water sources overlie the injection interval.

G. Section IX: Proposed Stimulation

- a. At this time, Texland does not have any stimulations planned. If scale deposition is encountered when converting the well to an injection well, a small acid stimulation will be pumped.

H. Section X: Logging and Test Data

- a. The log and test data have already been filed with the Division for the Murphy #1.

I. Section XI: Offset Fresh Water Chemical Analysis

- a. Section XI **Figure 18** is a chemical analysis from a fresh water well (Stovall WW) utilized for agriculture production located .15 miles south of the Murphy #1. Section XI **Figure 19** is a chemical analysis from the 2nd fresh water well (Shelton WW) that is located .7 miles east of the Murphy #1.

Figure 18: Stovall WW Fresh Water Analysis



PHONE (575) 393-2326 • 101 S. MARLAND • HOBBS, NM 88240

Analytical Results For:

TEXLAND PETROLEUM
P. O. BOX 3446
HOBBS NM, 88241

Project: WATER SAMPLES
Project Number: STOUVALL / SHELTON
Project Manager: RONNIE MC CRACKEN
Fax To: (432) 596-4235

Reported:
09-Oct-19 15:23

STOVALL WW
H903355-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Alkalinity, Bicarbonate	278		5.00	mg/L	1	9092417	AC	02-Oct-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9092417	AC	02-Oct-19	310.1	
Chloride*	68.0		4.00	mg/L	1	9100204	AC	02-Oct-19	4500-Cl-B	
Conductivity*	693		1.00	uS/cm	1	9100209	AC	02-Oct-19	120.1	
pH*	7.74		0.100	pH Units	1	9100209	AC	02-Oct-19	150.1	
Sulfate*	120		25.0	mg/L	2.5	9100203	AC	03-Oct-19	375.4	
TDS*	503		5.00	mg/L	1	9100107	AC	03-Oct-19	160.1	
Alkalinity, Total*	228		4.00	mg/L	1	9092417	AC	02-Oct-19	310.1	

Green Analytical Laboratories

Total Recoverable Metals by ICP (E200.7)

Calcium*	87.8		0.500	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Magnesium*	18.0		0.500	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Potassium*	2.16	0.339	5.00	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Sodium*	49.4		5.00	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Figure 19: Shelton WW Fresh Water Analysis



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Analytical Results For:**TEXLAND PETROLEUM**P. O. BOX 3446
HOBBS NM, 88241

Project: WATER SAMPLES

Project Number: STOUVALL / SHELTON

Project Manager: RONNIE MC CRACKEN

Fax To: (432) 596-4235

Reported:

09-Oct-19 15:23

SHELTON WW

H903355-02 (Water)

Analyze	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	268		5.00	mg/L	1	9092417	AC	02-Oct-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9092417	AC	02-Oct-19	310.1	
Chloride*	56.0		4.00	mg/L	1	9100204	AC	02-Oct-19	4500-Cl-B	
Conductivity*	653		1.00	uS/cm	1	9100209	AC	02-Oct-19	120.1	
pH*	7.58		0.100	pH Units	1	9100209	AC	02-Oct-19	150.1	
Sulfate*	112		25.0	mg/L	2.5	9100203	AC	03-Oct-19	375.4	
TDS*	481		5.00	mg/L	1	9100107	AC	03-Oct-19	160.1	
Alkalinity, Total*	220		4.00	mg/L	1	9092417	AC	02-Oct-19	310.1	

Green Analytical Laboratories**Total Recoverable Metals by ICP (E200.7)**

Calcium*	82.6		0.500	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Magnesium*	16.8		0.500	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Potassium*	2.69	0.339	5.00	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	
Sodium*	54.9		5.00	mg/L	5	B910039	AES	08-Oct-19	EPA200.7	

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

J. Section XII: Affirmative Statement for Disposal Wells

Texland Petroleum conducted a hydrogeologic investigation related to the proposed injection well to determine whether a hydrologic connection between the proposed injection interval and any sources of underground drinking water. In support of this analysis, I reviewed available geologic information and engineering data, in addition to confidential and proprietary data sets. Based on that review and my analysis, I have determined that there is no evidence in the data of open faulting or any other hydrologic connection between the injection interval and any underground sources of drinking water.



Bryan Lee
Vice President Exploration
Texland Petroleum, L.P.



Date

K. Proof of Notice

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