



RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 11/04/2019
Tracking No.: 217528

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

OPERATOR INFORMATION

Operator Name: ENERGEN RESOURCES CORPORATION Operator No.: 252002
Operator Address: 3510 N A ST BLDGS A AND B MIDLAND, TX 79705-0000

WELL INFORMATION

API No.: 42-475-35473 County: WARD
Well No.: 4701 RRC District No.: 08
Lease Name: UNIVERSITY "20" Field Name: WAR-WINK, S. (WOLFCAMP)
RRC Lease No.: 39471 Field No.: 95129600
Location: Section: 47, Block: 20, Survey: UL, Abstract:

Latitude: 31 Longitude: -103
This well is located 12 miles in a NW
direction from PYOTE,
which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Well Record Only
Type of completion: Other/Recompletion
Well Type: Producing Completion or Recompletion Date: 08/11/2014

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or Deepen	12/01/2008	673228
Rule 37 Exception		
Fluid Injection Permit		
O&G Waste Disposal Permit		
Other:		

COMPLETION INFORMATION

Spud date: 10/28/2008	Date of first production after rig released: 08/11/2014
Date plug back, deepening, recompletion, or drilling operation commenced: 08/01/2014	Date plug back, deepening, recompletion, or drilling operation ended: 08/10/2014
Number of producing wells on this lease in this field (reservoir) including this well: 1	Distance to nearest well in lease & reservoir (ft.): 0.0
Total number of acres in lease: 640.00	Elevation (ft.): 2758 GL
Total depth TVD (ft.): 11420	Total depth MD (ft.): 13276
Plug back depth TVD (ft.):	Plug back depth MD (ft.):
Was directional survey made other than inclination (Form W-12)? Yes	Rotation time within surface casing (hours):
Recompletion or reclass? Yes	Is Cementing Affidavit (Form W-15) attached? No
Type(s) of electric or other log(s) run: Neutron/Density logs (combo of tools)	Multiple completion? No
Electric Log Other Description:	
Location of well, relative to nearest lease boundaries	Off Lease : No
of lease on which this well is located: 660.0 Feet from the SE Line and 660.0 Feet from the SW Line of the UNIVERSITY 20 Lease.	

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type
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W2: N/A

PACKET:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth (ft.):	300.0	Date: 10/05/2018
SWR 13 Exception	Depth (ft.):		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION	
Date of test:	Production method:
Number of hours tested: 24	Choke size:
Was swab used during this test? No	Oil produced prior to test:
PRODUCTION DURING TEST PERIOD:	
Oil (BBLs):	Gas (MCF):
Gas - Oil Ratio: 0	Flowing Tubing Pressure:
Water (BBLs):	
CALCULATED 24-HOUR RATE	
Oil (BBLs):	Gas (MCF):
Oil Gravity - API - 60.:	Casing Pressure:
Water (BBLs):	

CASING RECORD											
Row	Type of Casing	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi - Stage Depth (ft.)	Multi - Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	1164			C	1090	1809.7	0	Circulated to Surface
2	Intermediate	9 5/8	12 1/4	5044			C	1950	4458.0	0	Circulated to Surface
3	Conventional Production	7	8 3/4	11786			H	1700	3433.0		SURF-Cement Evaluation Log CBL

LINER RECORD									
Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	4	6 1/8	10716	13271	H	333	399.6	0	Circulated to Surface

TUBING RECORD			
Row	Size (in.)	Depth	Size (ft.)
1	2 7/8	10633	
			Packer Depth (ft.)/Type
			10633 /

PRODUCING/INJECTION/DISPOSAL INTERVAL			
Row	Open hole?	From (ft.)	To (ft.)
1	No	L1 11676	13033.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment performed?	No		
Is well equipped with a downhole actuation sleeve?	No	If yes, actuation pressure (PSIG):	
Production casing test pressure (PSIG) prior to hydraulic fracturing treatment:		Actual maximum pressure (PSIG) during hydraulic fracturing:	
Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)?	No		
Row	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

1	Acid	PUMPED 67,000 GAL 15% XYLENE (NEW PERFS ADDED 8/7/14)	12450	13033
2	Acid	PUMPED 89,000 GALS ORIGINAL PERFS (4/9/2009)	11676	12914

FORMATION RECORD

Formations	Encountered	Depth TVD (ft.)	Depth MD (ft.)	Is formation isolated?	Remarks
3RD BONE SPRING	Yes	9472.0	9472.0	Yes	CMT'D BEHIND CSG
BONE SPRING	Yes	11072.0	11072.0	Yes	CMT'D BEHIND CSG
3RD BONE "B" SAND	Yes	11410.0	11410.0	Yes	CMT'D BEHIND CSG
Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)?					No
Is the completion being downhole commingled (SWR 10)?					No

REMARKS

THIS W-2 FOR WORKOVER THAT WAS PERFORMED 8/2014 AND NEVER WAS SUBMITTED TO SHOW ADDED PERFS.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed Name: Vonda Freeman	Title: Regulatory Analyst
Telephone No.: (432) 684-3693	Date Certified: 08/21/2019

APPLICATION FOR ALTERNATE
SURFACE CASING PROGRAM
(Statewide Rule 13(b)(2)(G))

DATE 05 / 21 / 2009

RRC DISTRICT 08

OPERATOR Energen Resources Corporation FIELD War-Wink, S. (Wolfcamp)

LEASE University "20" LOC. SEC. 47 BLK. 20 SUR. University Lands

WELL NO. 4701 DRILLING PERMIT NO. 673228 COUNTY Ward

DISTANCE AND DIRECTION FROM NEAREST TOWN 11 miles North from Pyote

PROPOSED TOTAL DEPTH MD=13276 TVD=11420.37 *INJECTION OR DISPOSAL WELL YES ☐ NO ☐

DEPTH OF DEEPEST USABLE WATER & ANY SEPARATION DEPTHS AS PER TEXAS WATER COMMISSION LETTER

DATE 10/17 /08 S.C.# 6357
(ATTACH COPY OF TWC LETTER)

DISTANCE & DIRECTION OF NEAREST WATER WELL WITHIN 1/4 MILE _____

DEPTH OF WATER WELL _____ TYPE OF WELL (House, City, Stock, etc.) _____

PROPOSED CASING & CEMENTING PROGRAM

[CHECK APPLICABLE BOXES] APPLICATION FOR: SHORT SURFACE STRING ☐

EXCESS SURFACE STRING ☒ NO SURFACE CASING ☐ MULTI-STAGE TOOL ☐

CIRCULATE FROM CASING SHOE: INTERMEDIATE ☐ PRODUCTION ☐

SURFACE CASING DEPTH 1164 FT. 5044 Int. MULTI-STAGE TOOL DEPTH _____ FT.

INTERMEDIATE OR PRODUCTION CASING DEPTH 11786 Prod. _____ FT.

CENTRALIZERS: GIVE NUMBER & PLACEMENT Int=26 Prod=38

CEMENT DATA (as appropriate) - APPLIES TO CEMENT FROM MULTI-STAGE TOOL OR INTERMEDIATE-
PRODUCTION CASING SHOE TO GROUND SURFACE

	TYPE & ADDITIVES	WEIGHT & YIELD	DISPLACEMENT FEET	COMPRESSIVE STRENGTH
LEAD SLURRY	_____	_____	_____	(24 hr.)
TAIL SLURRY	_____	_____	_____	(72 hr.)

REASON FOR REQUEST We set the 13-3/8" surface string deeper than the water board indicated we needed to so that red beds to approx. 1000-1200' below GL would not interfere with our drilling of the intermediate section of the hole and to provide strength and support for the strings of pipe.

Mary Ann Martinez SIGNATURE Mary Ann Martinez-Regulatory Analyst NAME & TITLE 432/688-3323 PHONE NUMBER

ADDRESS 3300 N. 'A' St. Bldg 4 Ste 100 Midland, TX 79705

NOTICE

- *1. If for injection or disposal well, be aware that for short surface strings there will be annual testing requirements and possible permit restrictions.
2. Centralizers must be used through all usable waters. Refer to Rule 13(b)(2)(F).
3. Notify District Office if cement does not circulate.
4. Notify District Office 8 hours prior to setting casing.

DISTRICT OFFICE APPROVAL

RECEIVED
RRCOF TEXAS
MAY 21 2009

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 05 October 2018**GAU Number:** 210103**Attention:** ENERGEN RESOURCES
3510 N A ST BLDGS A AND B
MIDLAND, TX 79705**Operator No.:** 252002**API Number:** 49533377
County: WINKLER
Lease Name: UNIVERSITY 20
Lease Number: 41258
Well Number: 1D
Total Vertical Depth: 6543
Latitude: 31.655629
Longitude: -103.280317
Datum: NAD27**Purpose:** Injection into Producing Zone (H1)**Location:** Survey-UL; Block-20; Section-47

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

The interval from the land surface to a depth of 300 feet must be protected.

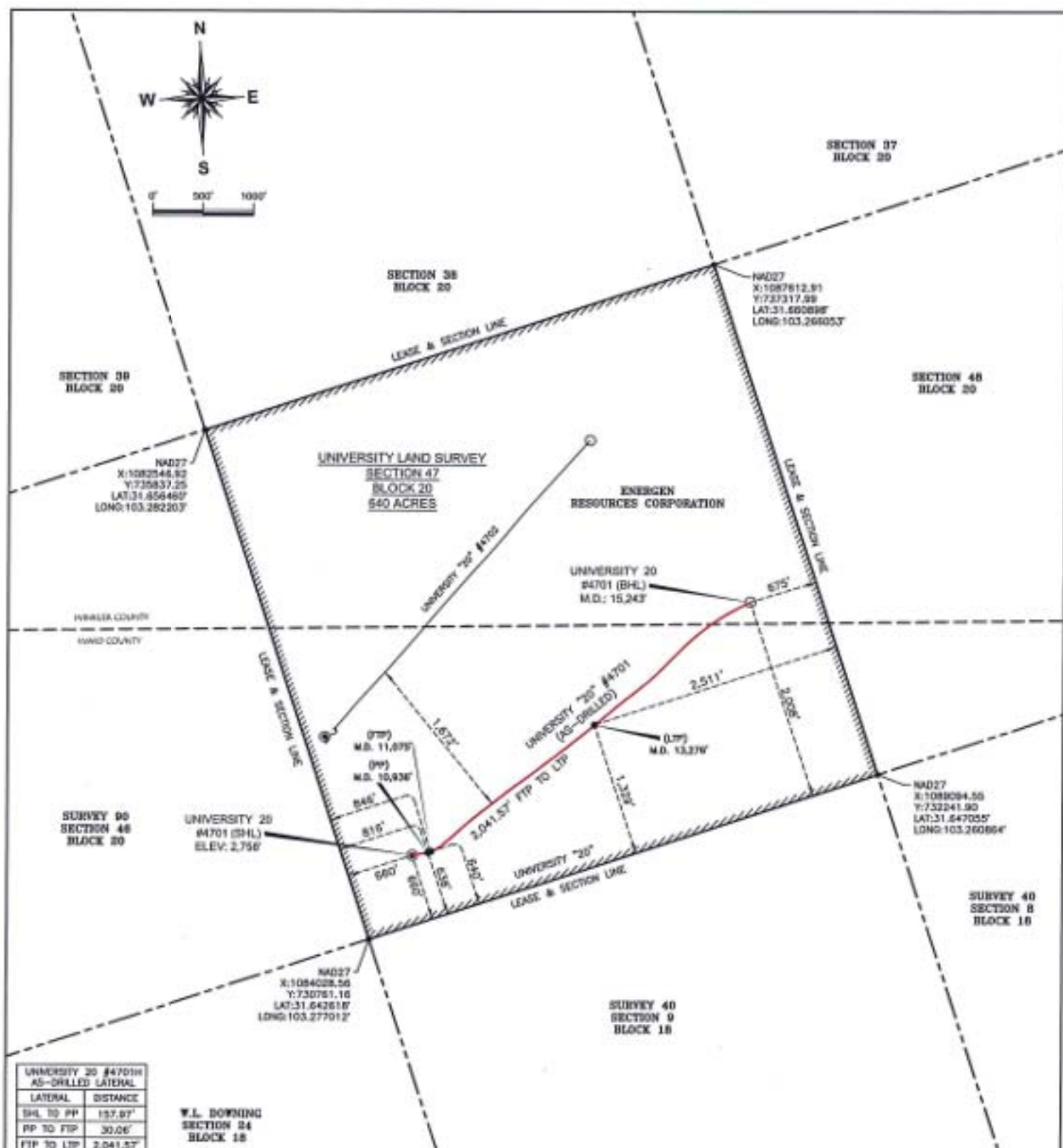
The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1250 feet at the site of the referenced well.

This recommendation is applicable for all wells drilled in this Section 47.

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 10/01/2018. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division



UNIVERSITY 20 #4701H AS-DRILLED LATERAL	
LATERAL	DISTANCE
BHL TO PP	137.87'
PP TO FTP	30.06'
FTP TO LTP	2,041.57'
LTP TO BHL	1,957.41'

W.L. DOWNING
SECTION 24
BLOCK 18

WELL NUMBER	LEASE CALLS	SECTION CALLS	NAD, 27 TEXAS STATE PLANE COORDINATES	NAD, 27 GEOGRAPHIC COORDINATES (GMS)	NAD, 27 GEOGRAPHIC COORDINATES (DD)	NAD, 83 GEOGRAPHIC COORDINATES (DD)
4701H BHL	860' FSEL 860' FSWL	860' FSEL 860' FSWL	Y= 731580.20 X= 1084476.80	LAT= 31°38'41.83"N LONG= 103°16'22.31"W	LAT= 31.644802°N LONG= 103.273842°W	LAT= 31.645032°N LONG= 103.273887°W
4701H PP	838' FSEL 816' FSWL	838' FSEL 816' FSWL	Y= 731602.63 X= 1084832.99	LAT= 31°38'41.81"N LONG= 103°16'30.51"W	LAT= 31.644874°N LONG= 103.275142°W	LAT= 31.645103°N LONG= 103.275088°W
4701H FTP	840' FSEL 846' FSWL	840' FSEL 846' FSWL	Y= 731612.87 X= 1084801.31	LAT= 31°38'42.82"N LONG= 103°16'30.19"W	LAT= 31.645005°N LONG= 103.275052°W	LAT= 31.645132°N LONG= 103.275498°W
4701H LTP	1,328' FSEL 2,511' FSWL	1,328' FSEL 2,511' FSWL	Y= 732813.82 X= 1086512.40	LAT= 31°38'34.33"N LONG= 103°16'11.48"W	LAT= 31.648034°N LONG= 103.268850°W	LAT= 31.648559°N LONG= 103.270296°W
4701H BHL	2,008' FSEL 675' FSWL	2,008' FSEL 675' FSWL	Y= 733980.37 X= 1087884.05	LAT= 31°39'06.28"N LONG= 103°15'53.64"W	LAT= 31.651745°N LONG= 103.268800°W	LAT= 31.651875°N LONG= 103.268546°W

WARNING: PLAN MAY NOT SHOW ALL CROSSINGS OF PIPELINES OR CABLES.
UTILITY TOWNS AND CITIES SHOULD BE CONSULTED FOR LOCATION ON PROPERTY.

ENERGEN RESOURCES CORPORATION

UNIVERSITY 20 #4701 AS-DRILLED
640 ACRES

SITUATED IN

UNIVERSITY SURVEY, SECTION 47, BLOCK 20

APPROXIMATELY 12 MILES NORTHWEST OF PUYOTE, TEXAS
WARD & WINKLER COUNTY, TEXAS

LEGEND

- LEASE LINE
- SECTION LINE
- LATERAL
- SURFACE HOLE LOCATION (SHA)
- BOTTOM HOLE LOCATION (BHL)
- PERFORATION POINT (PP)
- FINAL TOOL POINT (FTP)
- LAST TOOL POINT (LTP)



DRAWN GRJ DATE 02-16-19

CHECKED WS DATE 02-16-19

APPROD DATE

SCALE 1"=1000' PAGE 1 OF 1

REV DATE DESC.

JOB NAME UNIVERSITY 20 #4701

JOB NO. 1893293



Jerry D. Wilkie, Jr.

3/9/19

JERRY D. WILKIE, JR.
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 4724