

April 12, 2017

The Railroad Commission of Texas  
Oil and Gas Division  
PO Drawer 12967  
Capital Station  
Austin, Texas 78711-2967

Attn: Pam Johns

RE: Approach Operating, LLC  
University 42 1216HC (Permit No. 824048)  
Survey: UL / Abstract: U362  
Field: Holt Ranch (Consolidated)  
Crockett County, TX  
API number: 42-105-42194

Dear Pam Johns:

Please find enclosed the original and one copy of the survey performed on the above referenced well by MS Energy Services; RRC Operator No. 592474. Other information required by your office is as follows:

Name of surveyor	Drainhole number	Surveyed depths	Date performed	Type of Survey
Harley Patterson	Original	Surface - 1195'	4/9/2017 - 4/9/2017	Rate Gyro

A certified plat, on which the bottom hole location is oriented, both to the surface location and to the lease lines (or unit lines in case of pooling), is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Sincerely,

Ryan Moran  
MS Survey



RAILROAD COMMISSION OF TEXAS  
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER 824048	DATE PERMIT ISSUED OR AMENDED Mar 31, 2017	DISTRICT * 7C			
API NUMBER 42-105-42194	FORM W-1 RECEIVED Mar 03, 2017	COUNTY CROCKETT			
TYPE OF OPERATION NEW DRILL	WELLBORE PROFILE(S) Horizontal	ACRES 7780.12			
OPERATOR 028625 APPROACH OPERATING LLC ONE RIDGMAR CENTRE 6500 WEST FREEWAY SUITE 800 FORT WORTH, TX 76116-0000		NOTICE This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored. District Office Telephone No: (325) 657-7450			
LEASE NAME UNIVERSITY 42		WELL NUMBER 1216HC			
LOCATION 18 miles NW direction from OZONA		TOTAL DEPTH 7800			
Section, Block and/or Survey SECTION ◀ 12                      BLOCK ◀ 42                      ABSTRACT ◀ U362 SURVEY ◀ UL					
DISTANCE TO SURVEY LINES 330 ft. S    1650 ft. W		DISTANCE TO NEAREST LEASE LINE 100 ft.			
DISTANCE TO LEASE LINES 10547 ft. N    1650 ft. W		DISTANCE TO NEAREST WELL ON LEASE See FIELD(s) Below			
FIELD(s) and LIMITATIONS: * SEE FIELD DISTRICT FOR REPORTING PURPOSES *					
FIELD NAME LEASE NAME		ACRES NEAREST LEASE	DEPTH NEAREST LEASE	WELL # NEAREST WE	DIST
-----		-----	-----	-----	---
HOLT RANCH (CONSOLIDATED)		7780.12	7,800	1216HC	7C
UNIVERSITY 42		100		350	
-----					
WELLBORE PROFILE(s) FOR FIELD: Horizontal					
-----					
RESTRICTIONS:    Lateral: TH1 Penetration Point Location Lease Lines:        10547.0 F N L 1380.0 F W L  Terminus Location BH County: CROCKETT Section: 24                      Block: 42                      Abstract: Survey: UL Lease Lines:                      20.0 F S L 1380.0 F W L Survey Lines:                      20.0 F S L 1380.0 F W L					
THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS					
This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.					





Job Number: SVMO-170266  
 Company: Approach Operating, LLC  
 Lease/Well: University 42 1216HC  
 Location: Crockett County, TX  
 Rig Name: Nomac 133  
 RKB: 22.8'  
 G.L. or M.S.L.: GL

State/Country: Texas/USA  
 Declination: Declination See Details Below  
 Grid: East To Grid North  
 File name: C:\WINSER~1\2017\APPROACH\MO\UNIVER~1\42\1216HC.SVY  
 Date/Time: 10-Apr-17 / 14:06  
 Curve Name: Surface - 1195' M.D. (Rate Gyro)  
 Lat: 30.940583 Long: -101.207361

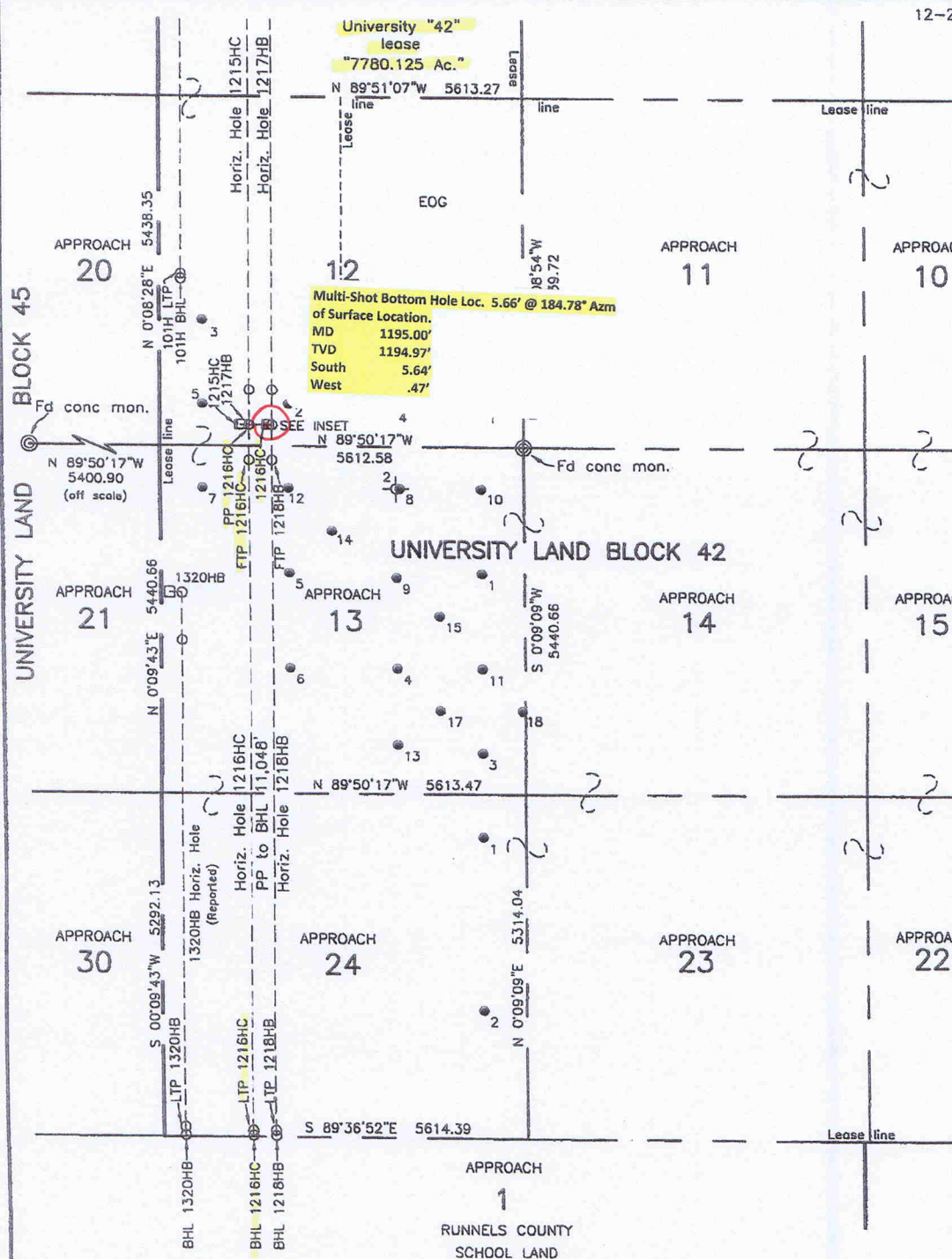
### MS Energy

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 180.16  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Declination To True North: 5.801°  
 Grid Convergence Factor: -0° 27' 0.63278"  
 Total Correction Mag to Grid: 6.25°

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.31	136.28	100.00	-.20	.19	.19	.27	136.28	.31
200.00	.34	132.35	200.00	-.59	.59	.59	.84	134.89	.04
300.00	.32	148.96	300.00	-1.03	.96	1.03	1.41	137.12	.10
400.00	.40	121.25	399.99	-1.45	1.40	1.45	2.02	136.04	.19
500.00	.28	130.51	499.99	-1.79	1.88	1.78	2.60	133.55	.13
600.00	.16	92.45	599.99	-1.95	2.21	1.95	2.95	131.52	.18
700.00	.09	219.09	699.99	-2.02	2.30	2.02	3.06	131.34	.23
800.00	.33	212.40	799.99	-2.33	2.09	2.32	3.13	138.00	.24
900.00	.66	217.69	899.99	-3.02	1.59	3.02	3.42	152.30	.33
1000.00	.72	216.39	999.98	-3.99	.86	3.98	4.08	167.78	.06
1100.00	.59	229.44	1099.97	-4.83	.10	4.83	4.83	178.82	.20
<b>Last Survey Depth Recorded</b>									
1195.00	.64	202.01	1194.97	-5.64	-.47	5.64	5.66	184.78	.31





**LEGEND**

□	= Surface Location (S.L.)
PP	= Penetration Point
●	= Surface well (as drilled)
FTP	= 1st Take Point
LTP	= Last Take Point
BHL	= Bottom Hole Location

**SURFACE LOCATION**

Y = 464,398 ft.  
X = 1,725,990 ft.  
Latitude : 30.9406° N.  
Longitude : 101.2074° W.  
330 ft. FSL and 1650 ft. FWL  
University Land Survey 12, Block 42  
10,547 ft. FNL and 1650 ft. FWL of lease

**PROPOSED PENETRATION POINT**

270 ft. from Surf. 1216HC  
Y = 464,398 ft.  
X = 1,725,720 ft.  
Latitude : 30.9406° N.  
Longitude : 101.2082° W.  
330 ft. FSL and 1380 ft. FWL  
University Land Survey 12, Block 42  
10,547 ft. FNL and 1380 ft. FWL of lease

**PROPOSED 1st TAKE POINT**

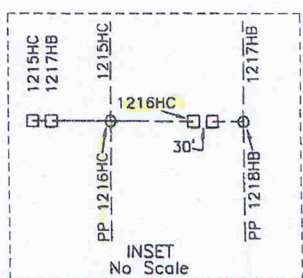
550 ft. from PP 1216HC  
10,518 ft. FSL and 1380 ft. FWL of lease  
220 ft. FNL and 1380 ft. FWL  
University Land Survey 13, Block 42  
Y = 463,848 ft.  
X = 1,725,719 ft.  
Latitude : 30.9391° N.  
Longitude : 101.2082° W.

**PROPOSED LAST TAKE POINT**

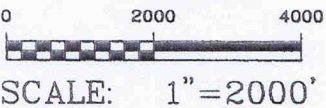
80 ft. from BHL 1216HC  
100 ft. FSL and 1380 ft. FWL of lease  
100 ft. FSL and 1380 ft. FWL  
University Land Survey 24, Block 42  
Y = 453,430 ft.  
X = 1,725,689 ft.  
Latitude : 30.9105° N.  
Longitude : 101.2081° W.

**PROPOSED BOTTOMHOLE LOC.**

Y = 453,350 ft.  
X = 1,725,689 ft.  
Latitude : 30.9103° N.  
Longitude : 101.2081° W.  
20 ft. FSL and 1380 ft. FWL  
University Land Survey 24, Block 42  
20 ft. FSL and 1380 ft. FWL of lease



Located: N 10°W 18 miles from Ozona, Texas.  
" Ac " = Acreage claimed by operator to be in lease.



FIELD COUNTY : Crockett  
COUNTY : Crockett  
OPERATOR : Approach Operating, LLC  
LEASE : University "42"  
WELL NO. : 1216HC  
ELEVATION : 2593 ft. grd.  
LOCATION : 330 ft. FSL and 1650 ft. FWL of University Land Survey 12, Block 42, Crockett County, Texas.

**NOTES**

Courses, distances and coordinates shown hereon are of the Texas Coordinate System of 1927 - Central Zone.

The survey construction shown hereon is sufficient for staking this location and no other purpose.

The lease information shown hereon is based on information provided by operator or its representatives and was relied upon by surveyor for the purpose of staking this location. Said surveyor was not requested to verify lease and accepts no responsibility for the accuracy or status of this information.

Position of surveys shown hereon is based on Frank Friends survey of University Lands Blocks 38 to 57 dated July 24, 1937 on file in the General Land Office.

Perpendicular distances off 1216HC Univ."42" horizontal hole

FTP 1218HB (proposed) = 350'  
LTP 1218HB (proposed) = 350'  
BHL 1218HB (proposed) = 350'  
Well 5 = 600'  
Well 6 = 600'  
Well 12 = 600'

The above sketch represents the location as staked on the ground and is for permit purposes only.

Staked the 2nd day of December, 2014.

*Thomas J. Houston*  
Thomas J. Houston  
Registered Professional Land Surveyor No. 4261  
FIRM NO. 10045600  
OFFICE OF  
**WILSON LAND SURVEYING, INC.**  
1514 W. BEAUREGARD AVE.  
P. O. BOX 3326 PH. 325-653-3916  
SAN ANGELO, TEXAS 76902





## Surveyor Certification Form

Survey company: **MS Energy Services**  
Surveyors name: **Harley Patterson**  
Survey job type: **Rate Gyro**  
Customer: **Approach Operating, LLC**  
Well: **University 42 1216HC**  
API: **42-105-42194**  
Surveyed from: **Surface to a depth of 1195' MD**  
Survey run date: **4/9/2017 to 4/9/2017**  
Surface location: **Crockett County, TX**

I certify that the data is true, correct, complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

# Harley Patterson

Digitally signed by Harley  
Patterson  
DN: cn=Harley Patterson, o=MS  
Energy Services, ou=MS Survey,  
email=HPatterson@msenergyse  
rvices.com, c=US  
Date: 2017.04.12 08:20:55  
-05'00'



# **Approach Resources**

**Crockett County, TX  
University 42  
University 42 1216HC**

**Wellbore #1**

**Survey: Sout MWD**

## **Standard Survey Report**

**28 April, 2017**







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Date: 06/26/2017

Railroad Commission of Texas  
Oil and Gas Division  
1701 North Congress Avenue  
Austin, Texas 78711

Attention: Pam Johns

Re: Approach Resources  
University 42 1216HC  
Crockett County Texas  
API No. 42-105-42194

Enclosed, please find the original and one copy of the survey performed on the referenced well by Scout Downhole Inc. (SDI). (P5#760217). Other information required by your office is as follows:

<u>Name &amp; Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Joe Sammarco	Original Hole	1195' – 14236'	04/20/17 - 04/28/17	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Larry Wright

Enclosures

Cc: Oxy USA Inc.

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**1125 Beach Airport Rd, Conroe, Texas  
77301  
PH 936-756-3225 FAX 936-756-3248**



<b>Company:</b>	Approach Resources	<b>Local Co-ordinate Reference:</b>	Well University 42 1216HC
<b>Project:</b>	Crockett County, TX	<b>TVD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Site:</b>	University 42	<b>MD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Well:</b>	University 42 1216HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.14 Single User Db

Project	Crockett County, TX		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site		University 42			
Site Position:		Northing:		464,398.00 usft	
From:		Easting:		1,725,990.00 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Map		13-3/16 "		30° 56' 26.288 N	
0.00 usft				101° 12' 26.588 W	
				-0.45 °	

Well	University 42 1216HC					
Well Position	+N-S	0.00 usft	Northing:	464,398.00 usft	Latitude:	30° 56' 26.288 N
	+E-W	0.00 usft	Easting:	1,725,990.00 usft	Longitude:	101° 12' 26.588 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,593.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	03/20/17	5.57	59.62	47,640.80000000

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.16	

Survey Program		Date	04/28/17		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	1,195.00	Gyros (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
1,341.00	14,236.00	Sout MWD (Wellbore #1)	MWD	OWSG MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,195.00	0.64	202.01	1,194.97	-5.64	-0.47	5.64	0.00	0.00	0.00
1,341.00	0.53	208.96	1,340.96	-6.98	-1.10	6.99	0.09	-0.08	4.76
1,435.00	0.88	240.60	1,434.95	-7.72	-1.94	7.72	0.54	0.37	33.66
1,530.00	2.11	258.09	1,529.92	-8.44	-4.29	8.45	1.37	1.29	18.41
1,624.00	3.43	263.36	1,623.81	-9.12	-8.78	9.14	1.43	1.40	5.61
1,719.00	4.40	263.01	1,718.59	-9.89	-15.22	9.93	1.02	1.02	-0.37
1,814.00	5.45	260.73	1,813.23	-11.06	-23.29	11.13	1.12	1.11	-2.40
1,909.00	6.07	255.37	1,907.75	-13.06	-32.60	13.15	0.86	0.65	-5.64
2,003.00	5.54	251.67	2,001.27	-15.74	-41.72	15.86	0.69	-0.56	-3.94
2,098.00	4.84	247.54	2,095.88	-18.71	-49.77	18.85	0.83	-0.74	-4.35



<b>Company:</b>	Approach Resources	<b>Local Co-ordinate Reference:</b>	Well University 42 1216HC
<b>Project:</b>	Crockett County, TX	<b>TVD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Site:</b>	University 42	<b>MD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Well:</b>	University 42 1216HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.14 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,192.00	4.66	244.56	2,189.56	-21.87	-56.88	22.03	0.32	-0.19	-3.17
2,287.00	5.10	249.48	2,284.22	-25.01	-64.32	25.19	0.64	0.46	5.18
2,381.00	4.84	249.48	2,377.86	-27.86	-71.95	28.06	0.28	-0.28	0.00
2,475.00	4.57	241.30	2,471.55	-31.05	-78.95	31.27	0.77	-0.29	-8.70
2,569.00	4.92	253.43	2,565.23	-34.00	-86.10	34.24	1.13	0.37	12.90
2,664.00	5.10	257.21	2,659.86	-36.09	-94.12	36.36	0.40	0.19	3.98
2,759.00	4.75	255.19	2,754.51	-38.03	-102.04	38.32	0.41	-0.37	-2.13
2,853.00	5.01	254.84	2,848.17	-40.10	-109.77	40.41	0.28	0.28	-0.37
2,948.00	4.75	256.60	2,942.83	-42.10	-117.60	42.43	0.32	-0.27	1.85
3,043.00	4.84	255.10	3,037.49	-44.04	-125.30	44.39	0.16	0.09	-1.58
3,138.00	5.10	254.14	3,132.14	-46.23	-133.23	46.60	0.29	0.27	-1.01
3,234.00	5.36	257.39	3,227.74	-48.37	-141.71	48.77	0.41	0.27	3.39
3,328.00	5.80	260.55	3,321.29	-50.11	-150.68	50.53	0.57	0.47	3.36
3,423.00	5.19	259.06	3,415.86	-51.71	-159.63	52.16	0.66	-0.64	-1.57
3,518.00	5.63	257.74	3,510.43	-53.52	-168.41	53.99	0.48	0.46	-1.39
3,613.00	6.16	258.27	3,604.93	-55.54	-177.95	56.04	0.56	0.56	0.56
3,707.00	5.01	255.89	3,698.48	-57.57	-186.87	58.09	1.25	-1.22	-2.53
3,802.00	4.92	256.24	3,793.13	-59.55	-194.85	60.09	0.10	-0.09	0.37
3,896.00	4.92	254.22	3,886.78	-61.60	-202.64	62.17	0.18	0.00	-2.15
3,991.00	4.04	251.32	3,981.49	-63.78	-209.73	64.37	0.96	-0.93	-3.05
4,083.00	3.96	251.15	4,073.26	-65.85	-215.81	66.45	0.09	-0.09	-0.18
4,180.00	3.52	250.71	4,170.06	-67.91	-221.79	68.53	0.45	-0.45	-0.45
4,275.00	3.52	258.44	4,264.88	-69.46	-227.40	70.10	0.50	0.00	8.14
4,370.00	4.13	265.12	4,359.67	-70.34	-233.67	70.99	0.79	0.64	7.03
4,465.00	4.04	260.55	4,454.43	-71.18	-240.38	71.85	0.36	-0.09	-4.81
4,560.00	4.48	259.76	4,549.16	-72.39	-247.33	73.08	0.47	0.46	-0.83
4,654.00	4.31	256.77	4,642.89	-73.85	-254.38	74.56	0.30	-0.18	-3.18
4,749.00	4.66	255.45	4,737.60	-75.63	-261.59	76.36	0.38	0.37	-1.39
4,844.00	3.43	253.17	4,832.36	-77.43	-268.05	78.18	1.31	-1.29	-2.40
4,939.00	2.55	249.13	4,927.23	-79.00	-272.74	79.76	0.95	-0.93	-4.25
5,033.00	1.93	244.20	5,021.15	-80.44	-276.12	81.21	0.69	-0.66	-5.24
5,128.00	1.06	239.81	5,116.12	-81.57	-278.32	82.35	0.92	-0.92	-4.62
5,223.00	0.79	236.56	5,211.11	-82.38	-279.63	83.16	0.29	-0.28	-3.42
5,317.00	0.79	223.99	5,305.10	-83.20	-280.62	83.98	0.18	0.00	-13.37
5,412.00	0.35	176.88	5,400.10	-83.96	-281.06	84.75	0.64	-0.46	-49.59
5,506.00	0.35	147.52	5,494.09	-84.49	-280.89	85.27	0.19	0.00	-31.23
5,601.00	0.35	145.06	5,589.09	-84.97	-280.56	85.76	0.02	0.00	-2.59
5,696.00	0.35	133.29	5,684.09	-85.41	-280.19	86.19	0.08	0.00	-12.39
5,791.00	0.26	128.01	5,779.09	-85.74	-279.81	86.52	0.10	-0.09	-5.56
5,843.00	0.26	128.45	5,831.09	-85.89	-279.62	86.67	0.00	0.00	0.85
5,937.00	5.19	164.75	5,924.95	-90.12	-278.33	90.90	5.30	5.24	38.62
5,982.00	10.02	163.70	5,969.55	-95.85	-276.70	96.62	10.74	10.73	-2.33
6,029.00	13.89	173.98	6,015.52	-105.39	-274.96	106.16	9.37	8.23	21.87



<b>Company:</b>	Approach Resources	<b>Local Co-ordinate Reference:</b>	Well University 42 1216HC
<b>Project:</b>	Crockett County, TX	<b>TVD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Site:</b>	University 42	<b>MD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Well:</b>	University 42 1216HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.14 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,077.00	20.58	183.56	6,061.35	-119.56	-274.88	120.32	15.10	13.94	19.96
6,124.00	26.12	185.40	6,104.49	-138.12	-276.37	138.89	11.89	11.79	3.91
6,172.00	30.60	184.44	6,146.71	-160.83	-278.31	161.60	9.38	9.33	-2.00
6,223.00	37.37	176.09	6,189.00	-189.26	-278.26	190.04	16.10	13.27	-16.37
6,267.00	43.09	172.13	6,222.58	-217.50	-275.29	218.27	14.23	13.00	-9.00
6,314.00	47.75	172.92	6,255.56	-250.68	-270.94	251.44	9.99	9.91	1.68
6,362.00	51.00	176.00	6,286.82	-286.93	-267.45	287.68	8.34	6.77	6.42
6,411.00	57.68	176.88	6,315.37	-326.64	-264.99	327.38	13.71	13.63	1.80
6,456.00	60.85	177.85	6,338.36	-365.28	-263.22	366.01	7.28	7.04	2.16
6,506.00	65.69	181.36	6,360.85	-409.91	-262.94	410.64	11.53	9.68	7.02
6,551.00	69.56	184.44	6,377.98	-451.45	-265.06	452.19	10.68	8.60	6.84
6,601.00	72.55	184.17	6,394.21	-498.61	-268.61	499.36	6.00	5.98	-0.54
6,646.00	74.04	183.30	6,407.15	-541.61	-271.41	542.37	3.79	3.31	-1.93
6,695.00	78.96	180.48	6,418.59	-589.22	-272.97	589.98	11.49	10.04	-5.76
6,738.00	85.03	177.67	6,424.57	-631.77	-272.28	632.52	15.53	14.12	-6.53
6,790.00	86.00	177.58	6,428.64	-683.56	-270.13	684.31	1.87	1.87	-0.17
6,885.00	88.90	178.73	6,432.86	-778.41	-267.08	779.15	3.28	3.05	1.21
6,980.00	90.75	180.31	6,433.16	-873.40	-266.28	874.14	2.56	1.95	1.66
7,074.00	88.11	181.54	6,434.09	-967.37	-267.80	968.11	3.10	-2.81	1.31
7,169.00	88.02	181.54	6,437.30	-1,062.28	-270.35	1,063.03	0.09	-0.09	0.00
7,264.00	88.81	181.63	6,439.93	-1,157.21	-272.98	1,157.96	0.84	0.83	0.09
7,359.00	90.13	182.06	6,440.80	-1,252.15	-276.03	1,252.92	1.46	1.39	0.45
7,454.00	90.92	182.77	6,439.93	-1,347.06	-280.04	1,347.84	1.12	0.83	0.75
7,549.00	88.37	181.27	6,440.52	-1,441.99	-283.38	1,442.78	3.11	-2.68	-1.58
7,644.00	88.46	181.71	6,443.15	-1,536.92	-285.85	1,537.71	0.47	0.09	0.46
7,738.00	90.40	181.80	6,444.09	-1,630.87	-288.73	1,631.67	2.07	2.06	0.10
7,835.00	91.80	182.06	6,442.22	-1,727.79	-292.00	1,728.60	1.47	1.44	0.27
7,929.00	91.98	181.63	6,439.12	-1,821.69	-295.02	1,822.51	0.50	0.19	-0.46
8,024.00	90.04	179.25	6,437.45	-1,916.66	-295.75	1,917.48	3.23	-2.04	-2.51
8,119.00	91.98	180.31	6,435.77	-2,011.64	-295.39	2,012.46	2.33	2.04	1.12
8,213.00	85.74	176.35	6,437.64	-2,105.52	-292.65	2,106.33	7.86	-6.64	-4.21
8,308.00	87.23	176.70	6,443.47	-2,200.16	-286.91	2,200.96	1.61	1.57	0.37
8,402.00	90.92	179.25	6,444.99	-2,294.07	-283.59	2,294.85	4.77	3.93	2.71
8,497.00	90.31	178.64	6,443.97	-2,389.05	-281.84	2,389.82	0.91	-0.64	-0.64
8,587.00	89.43	179.08	6,444.17	-2,479.03	-280.05	2,479.80	1.09	-0.98	0.49
8,676.00	90.13	180.39	6,444.51	-2,568.02	-279.64	2,568.79	1.67	0.79	1.47
8,767.00	90.75	180.39	6,443.81	-2,659.02	-280.26	2,659.79	0.68	0.68	0.00
8,853.00	91.63	181.19	6,442.03	-2,744.99	-281.44	2,745.76	1.38	1.02	0.93
8,943.00	88.90	179.78	6,441.61	-2,834.97	-282.20	2,835.75	3.41	-3.03	-1.57
9,033.00	91.28	179.08	6,441.47	-2,924.96	-281.31	2,925.74	2.76	2.64	-0.78
9,124.00	86.44	178.55	6,443.28	-3,015.90	-279.43	3,016.67	5.35	-5.32	-0.58
9,219.00	87.85	179.16	6,448.01	-3,110.76	-277.53	3,111.52	1.62	1.48	0.64
9,313.00	88.99	178.73	6,450.60	-3,204.70	-275.80	3,205.46	1.30	1.21	-0.46



<b>Company:</b>	Approach Resources	<b>Local Co-ordinate Reference:</b>	Well University 42 1216HC
<b>Project:</b>	Crockett County, TX	<b>TVD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Site:</b>	University 42	<b>MD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Well:</b>	University 42 1216HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.14 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,408.00	91.63	179.69	6,450.09	-3,299.68	-274.49	3,300.44	2.96	2.78	1.01
9,502.00	89.60	176.09	6,449.08	-3,393.60	-271.03	3,394.34	4.40	-2.16	-3.83
9,597.00	91.28	175.91	6,448.35	-3,488.36	-264.40	3,489.08	1.78	1.77	-0.19
9,692.00	92.59	178.20	6,445.14	-3,583.17	-259.53	3,583.88	2.78	1.38	2.41
9,786.00	92.15	179.52	6,441.25	-3,677.07	-257.66	3,677.77	1.48	-0.47	1.40
9,881.00	92.51	181.10	6,437.39	-3,771.99	-258.17	3,772.69	1.70	0.38	1.66
9,976.00	91.98	180.75	6,433.67	-3,866.90	-259.70	3,867.61	0.67	-0.56	-0.37
10,071.00	90.84	181.19	6,431.33	-3,961.86	-261.31	3,962.57	1.29	-1.20	0.46
10,166.00	88.99	181.01	6,431.47	-4,056.83	-263.14	4,057.55	1.96	-1.95	-0.19
10,260.00	88.37	183.03	6,433.64	-4,150.74	-266.45	4,151.47	2.25	-0.66	2.15
10,356.00	89.96	185.67	6,435.04	-4,246.45	-273.73	4,247.19	3.21	1.66	2.75
10,450.00	90.48	188.48	6,434.68	-4,339.72	-285.30	4,340.50	3.04	0.55	2.99
10,546.00	90.22	187.78	6,434.09	-4,434.75	-298.88	4,435.57	0.78	-0.27	-0.73
10,641.00	89.34	186.81	6,434.46	-4,528.98	-310.94	4,529.83	1.38	-0.93	-1.02
10,735.00	89.43	184.53	6,435.47	-4,622.51	-320.23	4,623.39	2.43	0.10	-2.43
10,830.00	83.45	181.45	6,441.36	-4,717.14	-325.18	4,718.03	7.08	-6.29	-3.24
10,925.00	87.14	178.99	6,449.16	-4,811.80	-325.54	4,812.69	4.66	3.88	-2.59
11,019.00	91.28	180.13	6,450.45	-4,905.76	-324.82	4,906.65	4.57	4.40	1.21
11,114.00	92.59	180.13	6,447.24	-5,000.71	-325.03	5,001.60	1.38	1.38	0.00
11,209.00	87.49	176.53	6,447.18	-5,095.62	-322.26	5,096.50	6.57	-5.37	-3.79
11,304.00	91.71	179.16	6,447.84	-5,190.52	-318.69	5,191.39	5.23	4.44	2.77
11,399.00	91.54	178.64	6,445.15	-5,285.47	-316.87	5,286.33	0.58	-0.18	-0.55
11,494.00	85.74	176.88	6,447.40	-5,380.32	-313.16	5,381.18	6.38	-6.11	-1.85
11,589.00	86.17	175.91	6,454.10	-5,474.90	-307.20	5,475.73	1.11	0.45	-1.02
11,684.00	90.84	177.58	6,456.58	-5,569.68	-301.81	5,570.50	5.22	4.92	1.76
11,778.00	92.15	177.32	6,454.13	-5,663.55	-297.63	5,664.36	1.42	1.39	-0.28
11,874.00	89.52	176.09	6,452.73	-5,759.37	-292.12	5,760.17	3.02	-2.74	-1.28
11,968.00	88.64	175.74	6,454.24	-5,853.12	-285.42	5,853.90	1.01	-0.94	-0.37
12,063.00	88.99	176.79	6,456.20	-5,947.90	-279.23	5,948.66	1.16	0.37	1.11
12,159.00	90.13	178.20	6,456.94	-6,043.80	-275.04	6,044.55	1.89	1.19	1.47
12,253.00	91.10	177.23	6,455.93	-6,137.72	-271.29	6,138.45	1.46	1.03	-1.03
12,349.00	92.07	177.58	6,453.28	-6,233.58	-266.95	6,234.30	1.07	1.01	0.36
12,443.00	91.98	179.08	6,449.95	-6,327.48	-264.21	6,328.19	1.60	-0.10	1.60
12,538.00	92.24	178.90	6,446.46	-6,422.40	-262.54	6,423.11	0.33	0.27	-0.19
12,632.00	90.66	180.04	6,444.08	-6,516.36	-261.67	6,517.07	2.07	-1.68	1.21
12,727.00	88.46	181.27	6,444.81	-6,611.35	-262.75	6,612.05	2.65	-2.32	1.29
12,822.00	88.99	182.15	6,446.92	-6,706.28	-265.59	6,706.99	1.08	0.56	0.93
12,917.00	89.08	180.92	6,448.52	-6,801.23	-268.13	6,801.95	1.30	0.09	-1.29
13,012.00	90.48	181.98	6,448.89	-6,896.19	-270.54	6,896.92	1.85	1.47	1.12
13,107.00	92.51	182.94	6,446.41	-6,991.07	-274.61	6,991.81	2.36	2.14	1.01
13,202.00	89.43	182.15	6,444.80	-7,085.95	-278.83	7,086.70	3.35	-3.24	-0.83
13,296.00	89.78	182.06	6,445.45	-7,179.88	-282.28	7,180.64	0.38	0.37	-0.10
13,391.00	92.07	184.70	6,443.91	-7,274.69	-287.88	7,275.47	3.68	2.41	2.78
13,485.00	90.48	183.91	6,441.82	-7,368.40	-294.93	7,369.19	1.89	-1.69	-0.84



<b>Company:</b>	Approach Resources	<b>Local Co-ordinate Reference:</b>	Well University 42 1216HC
<b>Project:</b>	Crockett County, TX	<b>TVD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Site:</b>	University 42	<b>MD Reference:</b>	GL 2593' + 22.5' KB @ 2615.50usft (Nomac 133)
<b>Well:</b>	University 42 1216HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.14 Single User Db

#### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,580.00	89.08	182.50	6,442.19	-7,463.25	-300.24	7,464.05	2.09	-1.47	-1.48
13,674.00	86.26	178.90	6,446.01	-7,557.14	-301.39	7,557.95	4.86	-3.00	-3.83
13,769.00	86.35	178.64	6,452.13	-7,651.92	-299.36	7,652.72	0.29	0.09	-0.27
13,864.00	87.67	177.93	6,457.09	-7,746.74	-296.52	7,747.54	1.58	1.39	-0.75
13,959.00	89.08	178.20	6,459.78	-7,841.65	-293.31	7,842.44	1.51	1.48	0.28
14,054.00	92.33	180.92	6,458.61	-7,936.62	-292.58	7,937.40	4.46	3.42	2.86
14,149.00	93.39	180.75	6,453.87	-8,031.49	-293.97	8,032.27	1.13	1.12	-0.18
<b>Last MWD Survey @ 14149' MD</b>									
14,236.00	93.39	180.75	6,448.73	-8,118.33	-295.10	8,119.12	0.00	0.00	0.00
<b>Proj to TD @ 14236' MD</b>									

#### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,149.00	6,453.87	-8,031.49	-293.97	Last MWD Survey @ 14149' MD
14,236.00	6,448.73	-8,118.33	-295.10	Proj to TD @ 14236' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



## LEGEND

□	= Surface Location (S.L.)
PP	= Penetration Point
●	= Surface well (as drilled)
FTP	= 1st Take Point
LTP	= Last Take Point
BHL	= Bottom Hole Location

## SURFACE LOCATION

Y = 464,398 ft.  
X = 1,725,990 ft.  
Latitude : 30.9406° N.  
Longitude : 101.2074° W.  
330 ft. FSL and 1650 ft. FWL  
University Land Survey 12, Block 42  
10,547 ft. FNL and 1650 ft. FWL of lease

## PROPOSED PENETRATION POINT

270 ft. from Surf. 1216HC  
Y = 464,398 ft.  
X = 1,725,720 ft.  
Latitude : 30.9406° N.  
Longitude : 101.2082° W.  
330 ft. FSL and 1380 ft. FWL  
University Land Survey 12, Block 42  
10,547 ft. FNL and 1380 ft. FWL of lease

## PROPOSED 1st TAKE POINT

550 ft. from PP 1216HC  
10,518 ft. FSL and 1380 ft. FWL of lease  
220 ft. FNL and 1380 ft. FWL  
University Land Survey 13, Block 42  
Y = 463,848 ft.  
X = 1,725,719 ft.  
Latitude : 30.9391° N.  
Longitude : 101.2082° W.

## PROPOSED LAST TAKE POINT

80 ft. from BHL 1216HC  
100 ft. FSL and 1380 ft. FWL of lease  
100 ft. FSL and 1380 ft. FWL  
University Land Survey 24, Block 42  
Y = 453,430 ft.  
X = 1,725,689 ft.  
Latitude : 30.9105° N.  
Longitude : 101.2081° W.

## PROPOSED BOTTOMHOLE LOC.

Y = 453,350 ft.  
X = 1,725,689 ft.  
Latitude : 30.9103° N.  
Longitude : 101.2081° W.  
20 ft. FSL and 1380 ft. FWL  
University Land Survey 24, Block 42  
20 ft. FSL and 1380 ft. FWL of lease

UNIVERSITY LAND BLOCK 45

UNIVERSITY LAND BLOCK 42

RUNNELS COUNTY  
SCHOOL LAND

University 42 1216HC BHL: 14236'MD, 93.39° Inc, 180.75° Azi,  
-8118.33' N/S, -295.10' E/W

Located: N 10°W 18 miles from Ozona, Texas.

"Ac" = Acreage claimed by operator  
to be in lease.

0 2000 4000

SCALE: 1"=2000'

FIELD :  
COUNTY : Crockett  
OPERATOR : Approach Operating, LLC  
LEASE : University "42"  
WELL NO. : 1216HC  
ELEVATION : 2593 ft. grd.  
LOCATION : 330 ft. FSL and 1650 ft. FWL of University Land Survey 12,  
Block 42, Crockett County, Texas.

## NOTES

Courses, distances and coordinates shown  
hereon are of the Texas Coordinate  
System of 1927 - Central Zone.

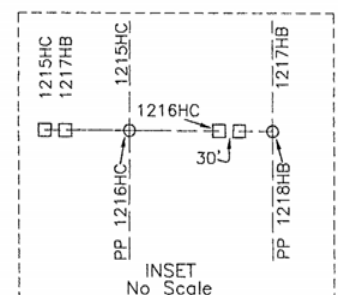
The survey construction shown  
hereon is sufficient for staking this  
location and no other purpose.

The lease information shown hereon  
is based on information provided by  
operator or its representatives and  
was relied upon by surveyor for the  
purpose of staking this location. Said  
surveyor was not requested to verify  
lease and accepts no responsibility for  
the accuracy or status of this information.

Position of surveys shown hereon  
is based on Frank Friends survey  
of University Lands Blocks 38 to 57  
dated July 24, 1937 on file in the  
General Land Office.

Perpendicular distances off 1216HC  
Univ."42" horizontal hole

FTP 1218HB (proposed) = 350'  
LTP 1218HB (proposed) = 350'  
BHL 1218HB (proposed) = 350'  
Well 5 = 600'  
Well 6 = 600'  
Well 12 = 600'

INSET  
No Scale

The above sketch represents the location as staked on the  
ground and is for permit purposes only.

Staked the 2nd day of December, 2014.

Thomas J. Houston  
Registered Professional Land Surveyor No. 4261

FIRM NO. 10045600

OFFICE OF

WILSON LAND SURVEYING, INC.

1514 W. BEAUREGARD AVE.

P. O. BOX 3326 PH. 325-653-3916  
SAN ANGELO, TEXAS 76902COPYRIGHTED  
APP1216HC.DWGC



I **Larry Wright**, certify that I am employed by **Scout Downhole Inc. (SDI)**. That I did on the day(s) of **04/20/17** thru **04/28/17** conduct or supervise the taking of a **MWD Survey** from a depth of **1195'** to a depth of **14236'**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Scout Downhole Inc. (SDI)**.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **Approach Resources** for the **University 42 1216HC** API No. **42-105-42194** in **Crockett County, Texas**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Scout Downhole Inc. (SDI)**.

Larry Wright