



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (Office)
936.442.2599 (Fax)
www.msenergyservices.com

July 26, 2017

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

Attn: Pam Johns

RE: Zarvona Enery, LLC
ULS 5-9 Unit 6 (Permit No. 826299)
Survey: UL / Abstract: U108
Field: Emma (Mississippian)
Andrews County, TX
API number: 42-003-47556

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
Eric Zirngible	Original	Surface - 5300'	7/7/2017 - 7/7/2017	SRG

A certified plat, on which the bottom hole location is oriented, both to the survice 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

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

Page 3 of 4



Job Number: SVMO-170479
 Company: Zarvona Energy LLC.
 Lease/Well: ULS 5-9 Unit 6
 Location: Andrews County, TX
 Rig Name: Norton 2
 RKB: 17'
 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\ZARVONA\MO\ULS\5-9UNI~1\6.SVY
 Date/Time: 10-Jul-17 / 15:16
 Curve Name: Surface - 5300' M.D. (SRG)
 Lat: 32.494183 Long: -102.366169

MS Energy

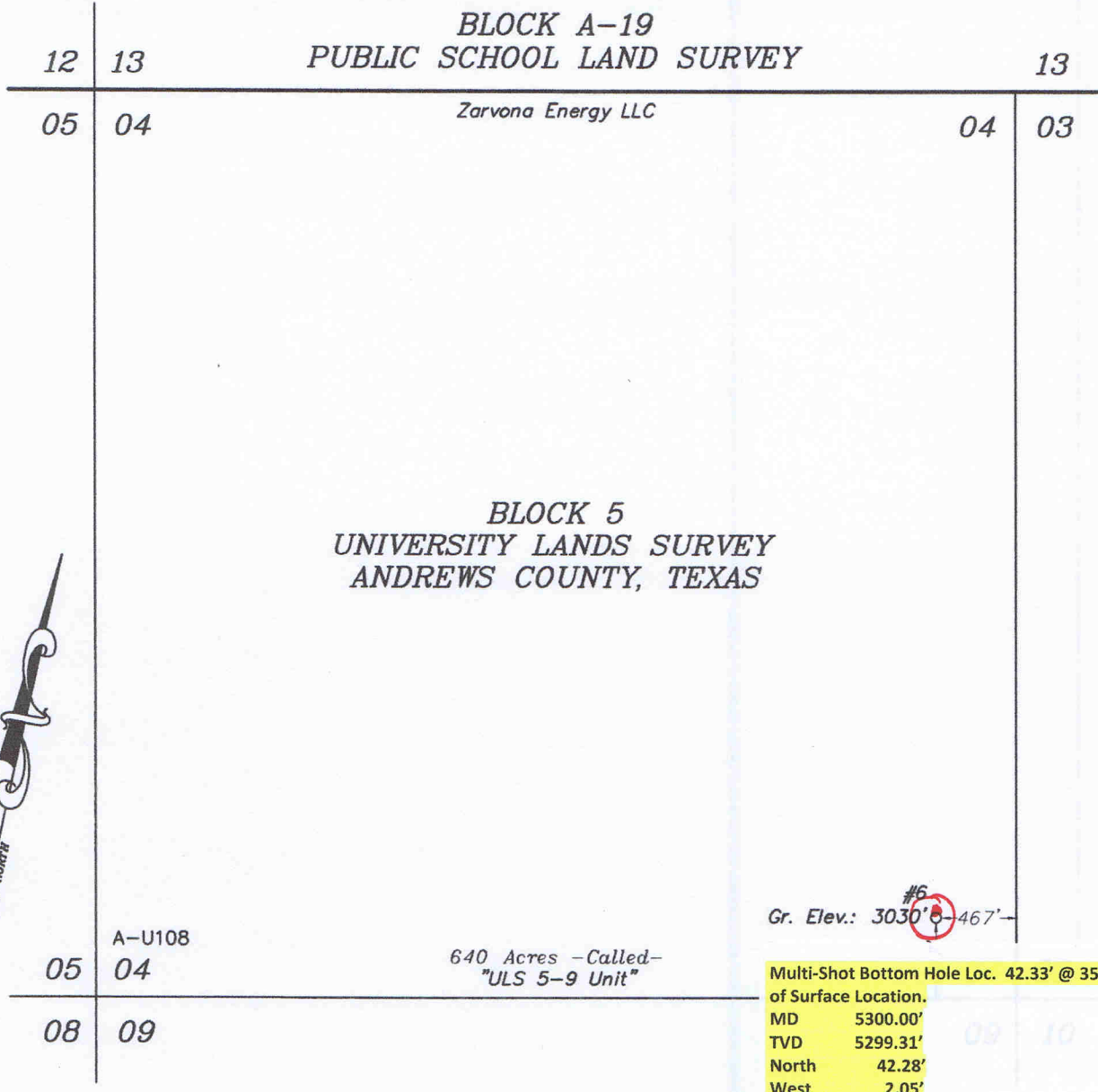
Declination To True North: 6.4°
 Grid Convergence Factor: -2° 39' 14.33389"
 Total Correction Mag to Grid: 8.87°

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

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	.47	223.19	100.00	-.30	-.28	-.30	.41	223.19	.47
200.00	.59	209.62	199.99	-1.05	-.82	-1.05	1.33	217.96	.17
300.00	.73	188.57	299.99	-2.12	-1.17	-2.12	2.42	208.76	.28
400.00	.70	175.11	399.98	-3.36	-1.21	-3.36	3.57	199.77	.17
500.00	.47	177.63	499.98	-4.38	-1.14	-4.38	4.53	194.58	.23
600.00	.50	212.03	599.97	-5.16	-1.35	-5.16	5.33	194.70	.29
700.00	.63	222.95	699.97	-5.93	-1.96	-5.93	6.25	198.28	.17
800.00	.72	237.52	799.96	-6.67	-2.86	-6.67	7.26	203.23	.19
900.00	.79	228.02	899.95	-7.47	-3.91	-7.47	8.43	207.61	.14
1000.00	.86	212.51	999.94	-8.56	-4.82	-8.56	9.83	209.38	.23
1100.00	.84	186.57	1099.93	-9.93	-5.31	-9.93	11.26	208.14	.38
1200.00	.49	175.53	1199.92	-11.08	-5.36	-11.08	12.31	205.82	.37

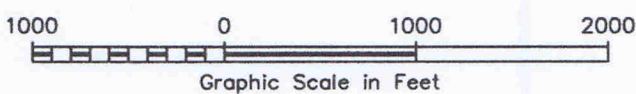
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1300.00	.44	148.45	1299.92	-11.83	-5.13	-11.83	12.90	203.42	.22
1400.00	.42	123.72	1399.92	-12.36	-4.62	-12.36	13.20	200.49	.19
1500.00	.26	138.77	1499.92	-12.74	-4.17	-12.74	13.40	198.11	.18
1600.00	.38	354.87	1599.92	-12.58	-4.05	-12.58	13.21	197.83	.61
1700.00	.46	349.12	1699.91	-11.85	-4.15	-11.85	12.56	199.30	.09
1800.00	.28	331.14	1799.91	-11.25	-4.35	-11.25	12.06	201.12	.21
1900.00	.22	87.25	1899.91	-11.02	-4.27	-11.02	11.82	201.18	.43
2000.00	.43	108.89	1999.91	-11.14	-3.72	-11.14	11.74	198.49	.24
2100.00	.35	102.38	2099.91	-11.32	-3.07	-11.32	11.73	195.18	.09
2200.00	.91	52.42	2199.90	-10.90	-2.14	-10.90	11.11	191.12	.74
2300.00	.82	44.80	2299.89	-9.91	-1.01	-9.91	9.96	185.82	.15
2400.00	.94	36.68	2399.88	-8.75	-.02	-8.75	8.75	180.10	.17
2500.00	.91	42.80	2499.86	-7.51	1.01	-7.51	7.57	172.31	.10
2600.00	.73	35.60	2599.85	-6.40	1.92	-6.40	6.69	163.28	.21
2700.00	.56	19.51	2699.85	-5.43	2.46	-5.43	5.96	155.63	.25
2800.00	.48	4.44	2799.84	-4.55	2.65	-4.55	5.27	149.73	.16
2900.00	.62	10.95	2899.84	-3.60	2.79	-3.60	4.55	142.22	.15
3000.00	.58	4.82	2999.83	-2.56	2.93	-2.56	3.90	131.14	.08
3100.00	.62	19.33	3099.83	-1.55	3.16	-1.55	3.52	116.13	.16
3200.00	.76	37.40	3199.82	-.51	3.74	-.51	3.77	97.78	.26
3300.00	.79	46.66	3299.81	.49	4.64	.49	4.67	83.99	.13
3400.00	.85	48.56	3399.80	1.45	5.70	1.45	5.88	75.70	.07
3500.00	.94	32.78	3499.79	2.63	6.70	2.63	7.20	68.54	.26
3600.00	1.13	17.06	3599.77	4.27	7.43	4.27	8.57	60.15	.34
3700.00	1.14	5.59	3699.75	6.20	7.82	6.20	9.98	51.59	.23
3800.00	1.16	345.25	3799.73	8.17	7.66	8.17	11.20	43.16	.41
3900.00	1.30	337.70	3899.71	10.20	6.97	10.20	12.35	34.36	.21
4000.00	1.11	343.34	3999.69	12.17	6.26	12.17	13.69	27.22	.22
4100.00	1.26	344.44	4099.67	14.16	5.69	14.16	15.26	21.89	.15
4200.00	1.65	346.79	4199.63	16.62	5.07	16.62	17.38	16.95	.39
4300.00	1.66	341.71	4299.59	19.40	4.28	19.40	19.87	12.45	.15
4400.00	1.45	336.26	4399.56	21.93	3.32	21.93	22.18	8.60	.26
4500.00	1.15	341.46	4499.53	24.04	2.49	24.04	24.17	5.91	.32
4600.00	1.21	350.67	4599.51	26.03	2.00	26.03	26.11	4.39	.20

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
4700.00	1.55	353.80	4699.48	28.42	1.68	28.42	28.47	3.39	.35
4800.00	1.68	344.77	4799.44	31.18	1.15	31.18	31.20	2.11	.29
4900.00	1.40	340.13	4899.40	33.74	.35	33.74	33.74	.60	.31
5000.00	1.11	345.57	4999.38	35.83	-.31	35.83	35.83	359.51	.31
5100.00	1.33	350.30	5099.36	37.91	-.74	37.91	37.92	358.88	.24
5200.00	1.38	343.16	5199.33	40.21	-1.29	40.21	40.23	358.17	.18
Last Survey Depth Recorded									
5300.00	1.16	335.64	5299.31	42.28	-2.05	42.28	42.33	357.22	.28



	State Plane Coordinate		Geodetic (D.M.S.)		Geodetic (D.D.)	
Surface Location	X = 500,180.55	Y = 335,795.34	Lat = 32°29'39.06" N	Long = 102°21'58.21" W	Lat = 32.49418355° N	Long = 102.36616943° W

The ULS 5-9 Unit #6 is located approximately
16 miles Northeast of Andrews, Texas

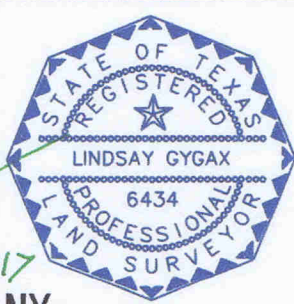


NOTE:
1) Plane Coordinates shown hereon are Lambert Grid and Conform to the "Texas Coordinate System", Texas North Central Zone, North American Datum of 1927, unless otherwise noted. Scale factor is 1.000217847.
2) Geodetic Coordinate shown hereon references the North American Datum of 1927, unless otherwise noted.
3) This plat is provided only for filing purposes with the Texas Railroad Commission and should not be construed as a boundary survey.

- Legend**
- Denotes Proposed Well Bore
 - Denotes Unit Boundary
 - Denotes Tract Line
 - - Denotes Proposed Well Location
 - - Denotes Proposed Penetration/ Take Points
 - ⊗ - Denotes Proposed Bottom Hole Location

CERTIFICATION:
I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

Lindsay Gygax
Texas R.P.L.S. No. 6434
05-03-17



WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432) 687-0868
FIRM Registration Number: 100682-00

ZARVONA ENERGY LLC

Location of the
ULS 5-9 UNIT #6
467' FSL & 467' FEL
Section 4, Block 5
University Lands Survey,
Andrews County, Texas

Scale: 1"= 1000'	W.O.: 2017-0303
Surveyed: 04/28/2017	Drawn By: SC
File: J:\2017\2017-0303\2017-0303 The ULS 5-9 Unit #6.dwg	

Surveyor Certification Form

Survey company: MS Energy Services
Surveyors name: Eric Zirngible
Survey job type: SRG
Customer: Zarvona Enery, LLC
Well: ULS 5-9 Unit 6
API: 42-003-47556
Surveyed from: Surface to a depth of 5300' MD
Survey run date: 7/7/2017 to 7/7/2017
Surface location: Andrews 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.

Eric
Zirngible

Digitally signed by Eric Zirngible
DN: cn=Eric Zirngible, o=MS
Energy Services, ou=MS Survey,
email=EZirngible@msenergyser
vices.com, c=US
Date: 2017.07.26 08:40:59
-05'00'



NABORS DRILLING TECHNOLOGIES USA, INC.

515 West Greens Road

Houston, TX 77067

Phone: 281.874.0035

Fax: 281.872.5205

Monday, July 17, 2017

Railroad Commission of Texas

Oil and Gas Division

PO Box 12967

Capitol Station

Austin, TX 78711-2967

Subject: **Survey Certification Letter**

Attention: **Pam Johns**

Survey Company: **NABORS DRILLING TECH USA, INC.**

Job Number: **B0515**

Survey Job Type: **Nabors MWD**

Customer: **Zarvona Energy LLC**

Well Name: **ULS 5-9 Unit #6**

Rig Name: **Norton #2**

Operator #: **598880**

Surface: **32.49418348, 102.3661694**

A.P.I. No: **42-003-47556**

Location: **Andrews, TX**

RKB Height: **17'**

Distance to Bit: **62'**

								TD Straight
Surveyor Name	Surveyor Title	Borehole Number	Start Depth	End Depth	Start Date	End Date	Type of	Line Projection
Jack Line	MWD Supervisor	OH	5300'	12768'	07/07/17	07/17/17	MWD	12830'

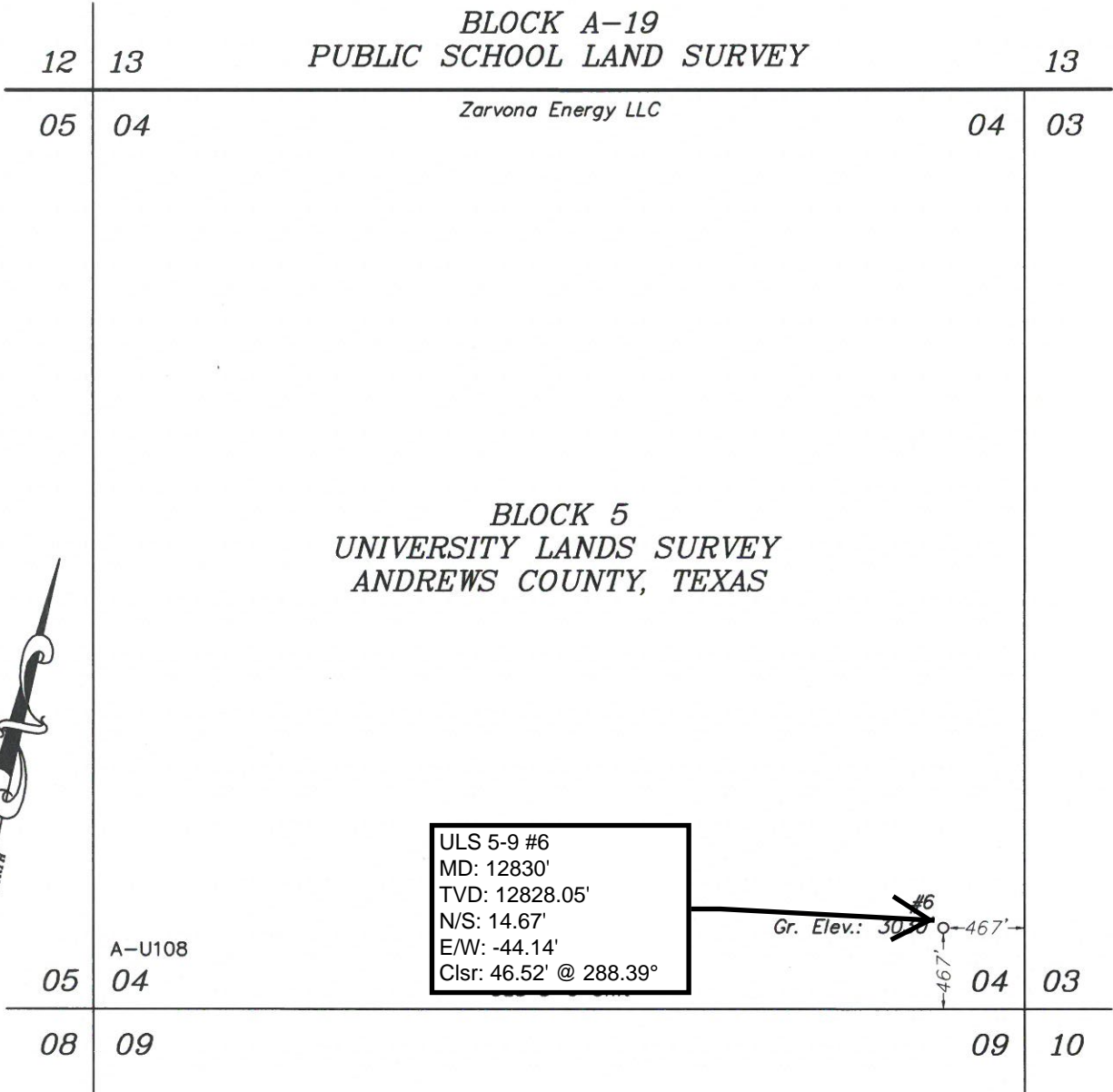
The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by NABORS DRILLING TECHNOLOGIES USA, INC. I am authorized and qualified to review the data, calculations and these reports; the reports represents true and correct Directional Surveys of this well based on the original data, the minimum curvature method, corrected to #ERROR SET SURVEY CORRECTION ON HEADER and obtained at the well site

Jack Line

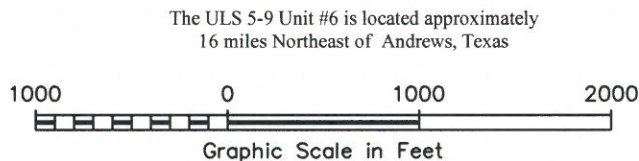
MWD Supervisor

NABORS DRILLING TECHNOLOGIES USA, INC.

BLOCK A-19
PUBLIC SCHOOL LAND SURVEY



	State Plane Coordinate		Geodetic (D.M.S.)		Geodetic (D.D.)	
Surface Location	X = 500,180.55	Y = 335,795.34	Lat = 32°29'39.06" N	Long = 102°21'58.21" W	Lat = 32.49418355° N	Long = 102.36616943° W



Legend

- Denotes Proposed Well Bore
- Denotes Unit Boundary
- Denotes Tract Line
- - Denotes Proposed Well Location
- - Denotes Proposed Penetration/ Take Points
- ⊗ - Denotes Proposed Bottom Hole Location

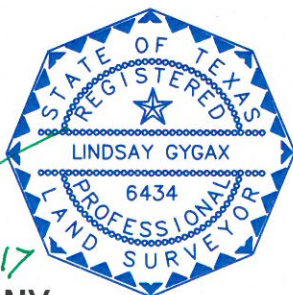
NOTE:

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I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

Lindsay Gygax
Texas R.P.L.S. No. 6434



05-03-17

WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432) 687-0868
FIRM Registration Number: 100682-00

ZARVONA ENERGY LLC

Location of the
ULS 5-9 UNIT #6
467' FSL & 467' FEL
Section 4, Block 5
University Lands Survey,
Andrews County, Texas

Scale: 1"= 1000'	W.O.: 2017-0303
Surveyed: 04/28/2017	Drawn By: SC
File: J:\2017\2017-0303\2017-0303 The ULS 5-9 Unit #6.dwg	

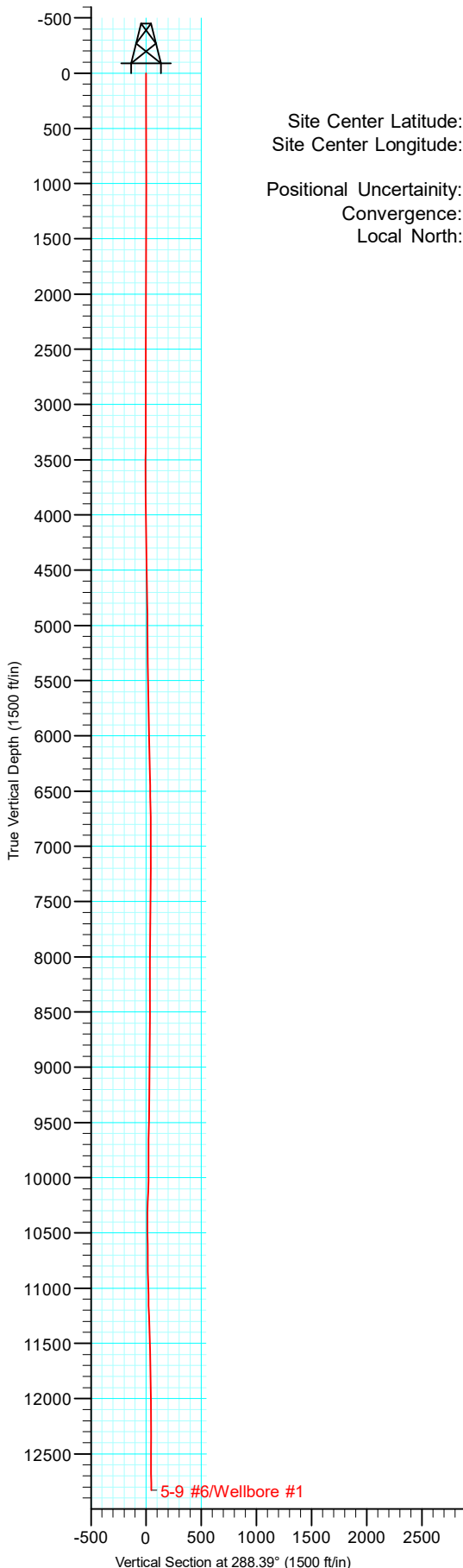


Project: Andrews Co., TX
Site: Univeristy Lands Survey
Well: 5-9 #6
Wellbore: Wellbore #1
Design: Wellbore #1



Azimuths to Grid North
True North: 2.65°
Magnetic North: 8.87°

Magnetic Field
Strength: 48127.7snT
Dip Angle: 60.22°
Date: 6/13/2017
Model: HDGM

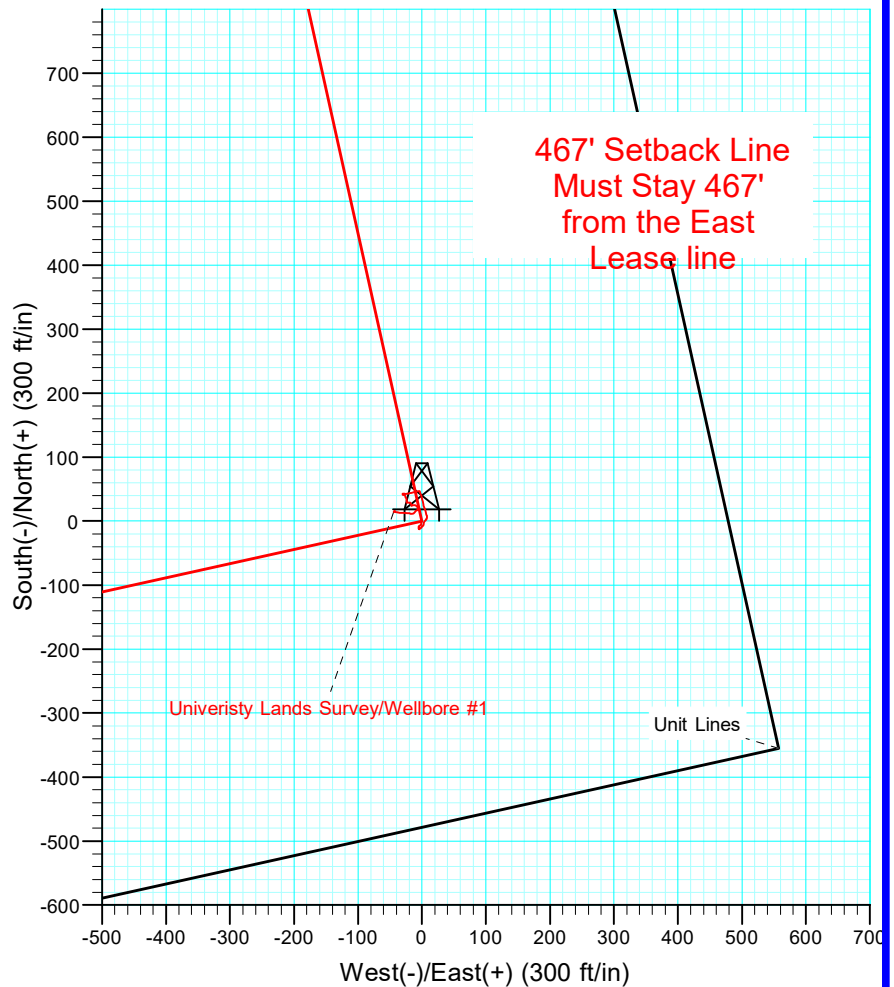


Site Center Latitude: 32° 29' 39.06053 N
Site Center Longitude: 102° 21' 58.20996 W
Positional Uncertainty: 0.00
Convergence: -2.65
Local North: Grid

Andrews Co., TX

Geodetic System: US State Plane 1927 (Exact solution)

Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Texas North Central 4202
System Datum: Mean Sea Level





Zarvona Energy

**Andrews Co., TX
Univeristy Lands Survey
5-9 #6
Wellbore #1**

Design: Wellbore #1

Completion Report

19 July, 2017





Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	288.39

Survey Program	Date 7/19/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	5,300.00	Survey #1 MS Gyro Surveys (Wellbore #1)	GYRO-GMS-ISGYRO-WL	MSE ISGYRO multishot memory rate gyro running in w
5,300.00	12,830.00	Survey #2 NDS Surveys (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.47	223.19	100.00	0.17	-0.30	-0.28	0.41	223.19	0.47	
200.00	0.59	209.62	199.99	0.44	-1.05	-0.82	1.33	217.96	0.17	
300.00	0.73	188.57	299.99	0.44	-2.12	-1.17	2.42	208.76	0.28	
400.00	0.70	175.11	399.98	0.09	-3.36	-1.21	3.57	199.77	0.17	
500.00	0.47	177.63	499.98	-0.30	-4.38	-1.14	4.53	194.58	0.23	
600.00	0.50	212.03	599.97	-0.34	-5.16	-1.35	5.33	194.70	0.29	
700.00	0.63	222.95	699.97	-0.01	-5.93	-1.96	6.25	198.28	0.17	
800.00	0.72	237.52	799.96	0.61	-6.67	-2.86	7.26	203.23	0.19	
900.00	0.79	228.02	899.95	1.35	-7.47	-3.91	8.43	207.61	0.14	
1,000.00	0.86	212.51	999.94	1.88	-8.56	-4.82	9.83	209.38	0.23	
1,100.00	0.84	186.57	1,099.93	1.91	-9.93	-5.31	11.26	208.14	0.38	
1,200.00	0.49	175.53	1,199.92	1.59	-11.08	-5.36	12.31	205.82	0.37	
1,300.00	0.44	148.45	1,299.92	1.13	-11.83	-5.13	12.90	203.42	0.22	
1,400.00	0.42	123.72	1,399.92	0.48	-12.36	-4.62	13.20	200.49	0.19	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
1,500.00	0.26	138.77	1,499.92	-0.06	-12.74	-4.17	13.40	198.11	0.18	
1,600.00	0.38	354.87	1,599.92	-0.13	-12.58	-4.05	13.21	197.83	0.61	
1,700.00	0.46	349.12	1,699.91	0.20	-11.85	-4.15	12.56	199.30	0.09	
1,800.00	0.28	331.14	1,799.91	0.58	-11.25	-4.35	12.06	201.12	0.21	
1,900.00	0.22	87.25	1,899.91	0.58	-11.02	-4.27	11.82	201.18	0.43	
2,000.00	0.43	108.89	1,999.91	0.02	-11.14	-3.72	11.74	198.49	0.24	
2,100.00	0.35	102.38	2,099.91	-0.66	-11.32	-3.07	11.73	195.18	0.09	
2,200.00	0.91	52.42	2,199.90	-1.40	-10.90	-2.14	11.11	191.12	0.74	
2,300.00	0.82	44.80	2,299.89	-2.17	-9.91	-1.01	9.96	185.82	0.15	
2,400.00	0.94	36.68	2,399.88	-2.74	-8.75	-0.02	8.75	180.10	0.17	
2,500.00	0.91	42.80	2,499.86	-3.33	-7.51	1.01	7.57	172.31	0.10	
2,600.00	0.73	35.60	2,599.85	-3.85	-6.40	1.92	6.69	163.28	0.21	
2,700.00	0.56	19.51	2,699.85	-4.04	-5.43	2.46	5.96	155.63	0.25	
2,800.00	0.48	4.44	2,799.84	-3.95	-4.55	2.65	5.27	149.73	0.16	
2,900.00	0.62	10.95	2,899.84	-3.78	-3.60	2.79	4.55	142.22	0.15	
3,000.00	0.58	4.82	2,999.83	-3.59	-2.56	2.93	3.90	131.14	0.08	
3,100.00	0.62	19.33	3,099.83	-3.48	-1.55	3.16	3.52	116.13	0.16	
3,200.00	0.76	37.40	3,199.82	-3.71	-0.51	3.74	3.77	97.78	0.26	
3,300.00	0.79	46.66	3,299.81	-4.25	0.49	4.64	4.67	83.99	0.13	
3,400.00	0.85	48.56	3,399.80	-4.95	1.45	5.70	5.88	75.70	0.07	
3,500.00	0.94	32.78	3,499.79	-5.53	2.63	6.70	7.20	68.54	0.26	
3,600.00	1.13	17.06	3,599.77	-5.71	4.27	7.43	8.57	60.15	0.34	
3,700.00	1.14	5.59	3,699.75	-5.46	6.20	7.82	9.98	51.59	0.23	
3,800.00	1.16	345.25	3,799.73	-4.69	8.17	7.66	11.20	43.16	0.41	
3,900.00	1.30	337.70	3,899.71	-3.40	10.20	6.97	12.35	34.36	0.21	
4,000.00	1.11	343.34	3,999.69	-2.10	12.17	6.26	13.69	27.22	0.22	
4,100.00	1.26	344.44	4,099.67	-0.93	14.16	5.69	15.26	21.89	0.15	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
4,200.00	1.65	346.79	4,199.63	0.44	16.62	5.07	17.38	16.95	0.39	
4,300.00	1.66	341.71	4,299.59	2.05	19.40	4.28	19.87	12.45	0.15	
4,400.00	1.45	336.26	4,399.56	3.77	21.93	3.32	22.18	8.60	0.26	
4,500.00	1.15	341.46	4,499.53	5.22	24.04	2.49	24.17	5.91	0.32	
4,600.00	1.21	350.67	4,599.51	6.31	26.03	2.00	26.11	4.39	0.20	
4,700.00	1.55	353.80	4,699.48	7.37	28.42	1.68	28.47	3.39	0.35	
4,800.00	1.68	344.77	4,799.44	8.74	31.18	1.15	31.20	2.11	0.29	
4,900.00	1.40	340.13	4,899.40	10.31	33.74	0.35	33.74	0.60	0.31	
5,000.00	1.11	345.57	4,999.38	11.59	35.83	-0.31	35.83	359.51	0.31	
5,100.00	1.33	350.30	5,099.36	12.66	37.91	-0.74	37.92	358.88	0.24	
5,200.00	1.38	343.16	5,199.33	13.90	40.21	-1.29	40.23	358.17	0.18	
5,300.00	1.16	335.64	5,299.31	15.29	42.28	-2.05	42.33	357.22	0.28	
5,500.00	0.88	346.72	5,499.27	17.47	45.62	-3.24	45.74	355.94	0.17	
5,600.00	0.63	299.61	5,599.27	18.41	46.64	-3.90	46.80	355.23	0.65	
5,695.00	1.13	266.39	5,694.25	19.79	46.84	-5.28	47.14	353.56	0.73	
5,788.00	1.50	247.41	5,787.23	21.56	46.31	-7.32	46.89	351.01	0.61	
5,881.00	1.56	258.83	5,880.20	23.58	45.60	-9.69	46.62	348.00	0.33	
5,976.00	1.75	260.24	5,975.16	25.98	45.11	-12.39	46.78	344.64	0.20	
6,071.00	1.50	254.08	6,070.12	28.29	44.52	-15.01	46.98	341.36	0.32	
6,166.00	1.25	255.14	6,165.09	30.18	43.91	-17.21	47.16	338.60	0.26	
6,261.00	1.19	262.17	6,260.07	31.93	43.51	-19.19	47.56	336.20	0.17	
6,356.00	1.19	255.49	6,355.05	33.65	43.13	-21.12	48.02	333.91	0.15	
6,451.00	1.56	257.95	6,450.02	35.59	42.61	-23.34	48.59	331.29	0.39	
6,546.00	0.94	272.54	6,545.00	37.45	42.38	-25.38	49.40	329.08	0.73	
6,641.00	1.00	289.24	6,639.99	39.03	42.69	-26.95	50.48	327.74	0.30	
6,736.00	0.75	275.71	6,734.98	40.47	43.02	-28.35	51.52	326.62	0.34	
6,830.00	0.69	264.81	6,828.97	41.59	43.03	-29.52	52.18	325.55	0.16	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
6,924.00	0.19	252.68	6,922.97	42.23	42.93	-30.24	52.51	324.85	0.54	
7,018.00	0.50	164.96	7,016.96	42.13	42.49	-30.28	52.17	324.53	0.56	
7,112.00	0.63	163.03	7,110.96	41.61	41.60	-30.02	51.30	324.18	0.14	
7,206.00	0.31	181.66	7,204.96	41.24	40.85	-29.88	50.61	323.82	0.37	
7,300.00	0.31	62.13	7,298.96	40.99	40.72	-29.66	50.37	323.93	0.57	
7,394.00	0.31	57.91	7,392.95	40.65	40.97	-29.22	50.32	324.50	0.02	
7,488.00	0.63	111.35	7,486.95	39.97	40.92	-28.52	49.88	325.12	0.54	
7,583.00	0.75	115.92	7,581.94	38.83	40.46	-27.48	48.90	325.82	0.14	
7,677.00	1.00	145.63	7,675.93	37.57	39.51	-26.46	47.55	326.19	0.54	
7,771.00	0.75	164.61	7,769.92	36.58	38.24	-25.83	46.15	325.96	0.40	
7,864.00	0.81	157.23	7,862.91	35.81	37.05	-25.42	44.93	325.55	0.13	
7,958.00	0.81	154.42	7,956.90	34.91	35.83	-24.87	43.62	325.23	0.04	
8,052.00	0.44	136.14	8,050.90	34.13	34.97	-24.34	42.61	325.17	0.44	
8,146.00	0.19	147.03	8,144.90	33.68	34.58	-24.00	42.10	325.24	0.27	
8,239.00	0.31	216.99	8,237.90	33.64	34.25	-24.07	41.86	324.90	0.33	
8,334.00	0.44	168.13	8,332.90	33.54	33.69	-24.15	41.45	324.37	0.35	
8,429.00	0.38	203.99	8,427.89	33.39	33.05	-24.20	40.96	323.78	0.27	
8,522.00	0.25	228.77	8,520.89	33.52	32.63	-24.48	40.79	323.12	0.20	
8,617.00	0.44	121.90	8,615.89	33.27	32.30	-24.33	40.44	323.02	0.60	
8,711.00	0.69	152.48	8,709.89	32.52	31.61	-23.76	39.54	323.07	0.41	
8,805.00	0.56	177.44	8,803.88	31.94	30.65	-23.48	38.61	322.55	0.32	
8,900.00	0.94	203.11	8,898.87	31.84	29.47	-23.76	37.85	321.12	0.52	
8,994.00	0.13	112.76	8,992.87	31.80	28.72	-23.97	37.40	320.15	1.01	
9,087.00	0.81	82.00	9,085.86	31.11	28.77	-23.22	36.97	321.09	0.75	
9,182.00	1.38	90.61	9,180.85	29.42	28.85	-21.41	35.92	323.42	0.62	
9,277.00	0.94	74.79	9,275.83	27.68	29.04	-19.51	34.99	326.10	0.57	
9,371.00	0.50	134.03	9,369.82	26.66	28.96	-18.47	34.35	327.46	0.86	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
9,465.00	0.75	169.89	9,463.82	26.00	28.07	-18.07	33.38	327.23	0.48	
9,559.00	1.00	130.86	9,557.81	24.95	26.93	-17.34	32.03	327.21	0.67	
9,653.00	1.00	134.03	9,651.79	23.45	25.82	-16.13	30.44	328.00	0.06	
9,746.00	0.63	191.68	9,744.78	22.66	24.75	-15.65	29.29	327.69	0.91	
9,841.00	1.19	246.00	9,839.77	23.33	23.84	-16.66	29.08	325.06	1.02	
9,935.00	1.94	61.60	9,933.76	22.96	24.20	-16.15	29.10	326.28	3.33	
10,030.00	1.63	83.75	10,028.71	20.63	25.11	-13.39	28.46	331.93	0.79	
10,124.00	1.44	109.07	10,122.68	18.23	24.87	-10.95	27.18	336.24	0.74	
10,218.00	2.56	130.16	10,216.62	15.10	23.13	-8.23	24.55	340.42	1.41	
10,312.00	1.63	164.26	10,310.56	12.40	20.49	-6.26	21.43	343.01	1.61	
10,406.00	1.19	209.26	10,404.54	11.84	18.35	-6.37	19.43	340.85	1.23	
10,500.00	1.19	243.01	10,498.52	12.71	17.06	-7.72	18.73	335.65	0.73	
10,594.00	0.88	239.14	10,592.50	13.87	16.25	-9.21	18.68	330.45	0.34	
10,688.00	1.00	217.70	10,686.49	14.61	15.23	-10.33	18.40	325.84	0.39	
10,783.00	1.44	213.83	10,781.47	15.20	13.58	-11.50	17.80	319.73	0.47	
10,877.00	1.56	237.21	10,875.44	16.32	11.90	-13.24	17.80	311.97	0.66	
10,970.00	1.63	267.27	10,968.40	18.34	11.16	-15.62	19.20	305.53	0.89	
11,064.00	1.63	292.76	11,062.37	20.92	11.61	-18.19	21.58	302.55	0.77	
11,159.00	1.19	279.22	11,157.34	23.25	12.29	-20.41	23.83	301.05	0.58	
11,253.00	2.00	271.14	11,251.30	25.78	12.48	-23.01	26.18	298.47	0.89	
11,349.00	1.75	274.48	11,347.25	28.80	12.63	-26.15	29.04	295.77	0.28	
11,442.00	1.75	271.66	11,440.20	31.54	12.78	-28.99	31.68	293.79	0.09	
11,537.00	1.69	274.30	11,535.16	34.28	12.93	-31.83	34.36	292.10	0.10	
11,632.00	1.50	273.42	11,630.12	36.84	13.11	-34.47	36.88	290.82	0.20	
11,728.00	1.31	278.34	11,726.10	39.14	13.34	-36.81	39.15	289.92	0.23	
11,823.00	1.00	281.68	11,821.08	41.03	13.67	-38.70	41.04	289.45	0.33	
11,918.00	0.75	279.22	11,916.07	42.47	13.93	-40.12	42.47	289.15	0.27	



Nabors Corporate Services
Completion Report



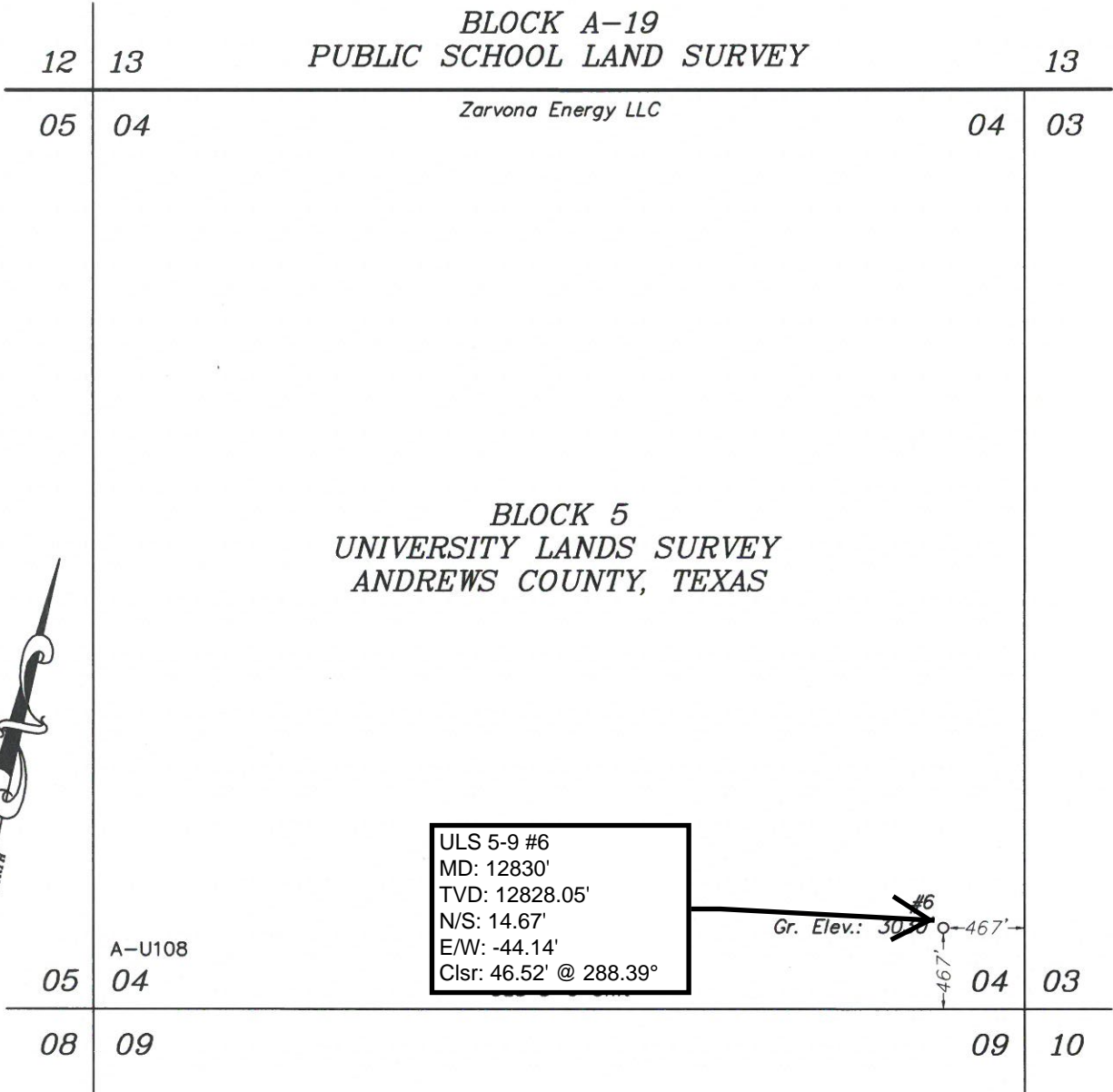
Company: Zarvona Energy
Project: Andrews Co., TX
Site: Univeristy Lands Survey
Well: 5-9 #6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well 5-9 #6
TVD Reference: RKB=17' @ 3047.00ft (Norton 7)
MD Reference: RKB=17' @ 3047.00ft (Norton 7)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_Compass

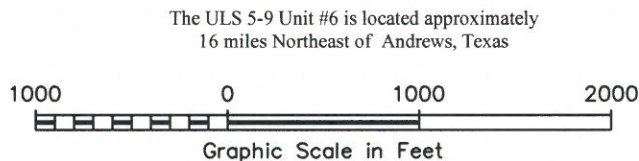
Survey									
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
12,014.00	0.50	286.08	12,012.06	43.51	14.15	-41.15	43.51	288.98	0.27
12,110.00	0.38	314.03	12,108.06	44.21	14.49	-41.78	44.22	289.12	0.25
12,205.00	0.31	331.25	12,203.06	44.69	14.93	-42.13	44.69	289.52	0.13
12,301.00	0.31	321.76	12,299.05	45.09	15.36	-42.41	45.11	289.91	0.05
12,396.00	0.25	295.22	12,394.05	45.51	15.65	-42.76	45.53	290.11	0.15
12,492.00	0.00	11.33	12,490.05	45.72	15.74	-42.95	45.74	290.13	0.26
12,588.00	0.13	251.45	12,586.05	45.81	15.71	-43.05	45.83	290.04	0.14
12,683.00	0.25	215.94	12,681.05	45.96	15.51	-43.28	45.97	289.71	0.17
12,768.00	0.56	228.07	12,766.05	46.22	15.08	-43.69	46.22	289.04	0.38
12,801.73	0.56	228.07	12,799.78	46.38	14.86	-43.94	46.38	288.68	0.00
5-9 #6 BHL (467' offset BOX)									
12,830.00	0.56	228.07	12,828.05	46.52	14.67	-44.14	46.52	288.39	0.00

Checked By: _____ Approved By: _____ Date: _____

BLOCK A-19
PUBLIC SCHOOL LAND SURVEY



	State Plane Coordinate		Geodetic (D.M.S.)		Geodetic (D.D.)	
Surface Location	X = 500,180.55	Y = 335,795.34	Lat = 32°29'39.06" N	Long = 102°21'58.21" W	Lat = 32.49418355° N	Long = 102.36616943° W



Legend

- Denotes Proposed Well Bore
- Denotes Unit Boundary
- Denotes Tract Line
- - Denotes Proposed Well Location
- - Denotes Proposed Penetration/ Take Points
- ⊗ - Denotes Proposed Bottom Hole Location

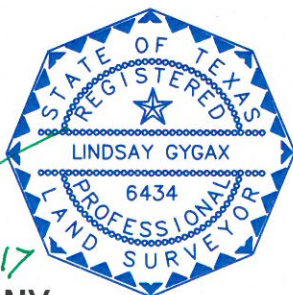
NOTE:

- 1) Plane Coordinates shown hereon are Lambert Grid and Conform to the "Texas Coordinate System", Texas North Central Zone, North American Datum of 1927, unless otherwise noted. Scale factor is 1.000217847.
- 2) Geodetic Coordinate shown hereon references the North American Datum of 1927, unless otherwise noted.
- 3) This plat is provided only for filing purposes with the Texas Railroad Commission and should not be construed as a boundary survey.

CERTIFICATION:

I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

Lindsay Gygax
Texas R.P.L.S. No. 6434



05-03-17

WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432) 687-0868
FIRM Registration Number: 100682-00

ZARVONA ENERGY LLC

Location of the
ULS 5-9 UNIT #6
467' FSL & 467' FEL
Section 4, Block 5
University Lands Survey,
Andrews County, Texas

Scale: 1"= 1000'	W.O.: 2017-0303
Surveyed: 04/28/2017	Drawn By: SC
File: J:\2017\2017-0303\2017-0303 The ULS 5-9 Unit #6.dwg	



Zarvona Energy

**Andrews Co., TX
Univeristy Lands Survey
5-9 #6
Wellbore #1**

Design: Wellbore #1

Completion Report

19 July, 2017





Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	288.39

Survey Program	Date 7/19/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	5,300.00	Survey #1 MS Gyro Surveys (Wellbore #1)	GYRO-GMS-ISGYRO-WL	MSE ISGYRO multishot memory rate gyro running in w
5,300.00	12,830.00	Survey #2 NDS Surveys (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.47	223.19	100.00	0.17	-0.30	-0.28	0.41	223.19	0.47	
200.00	0.59	209.62	199.99	0.44	-1.05	-0.82	1.33	217.96	0.17	
300.00	0.73	188.57	299.99	0.44	-2.12	-1.17	2.42	208.76	0.28	
400.00	0.70	175.11	399.98	0.09	-3.36	-1.21	3.57	199.77	0.17	
500.00	0.47	177.63	499.98	-0.30	-4.38	-1.14	4.53	194.58	0.23	
600.00	0.50	212.03	599.97	-0.34	-5.16	-1.35	5.33	194.70	0.29	
700.00	0.63	222.95	699.97	-0.01	-5.93	-1.96	6.25	198.28	0.17	
800.00	0.72	237.52	799.96	0.61	-6.67	-2.86	7.26	203.23	0.19	
900.00	0.79	228.02	899.95	1.35	-7.47	-3.91	8.43	207.61	0.14	
1,000.00	0.86	212.51	999.94	1.88	-8.56	-4.82	9.83	209.38	0.23	
1,100.00	0.84	186.57	1,099.93	1.91	-9.93	-5.31	11.26	208.14	0.38	
1,200.00	0.49	175.53	1,199.92	1.59	-11.08	-5.36	12.31	205.82	0.37	
1,300.00	0.44	148.45	1,299.92	1.13	-11.83	-5.13	12.90	203.42	0.22	
1,400.00	0.42	123.72	1,399.92	0.48	-12.36	-4.62	13.20	200.49	0.19	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
1,500.00	0.26	138.77	1,499.92	-0.06	-12.74	-4.17	13.40	198.11	0.18	
1,600.00	0.38	354.87	1,599.92	-0.13	-12.58	-4.05	13.21	197.83	0.61	
1,700.00	0.46	349.12	1,699.91	0.20	-11.85	-4.15	12.56	199.30	0.09	
1,800.00	0.28	331.14	1,799.91	0.58	-11.25	-4.35	12.06	201.12	0.21	
1,900.00	0.22	87.25	1,899.91	0.58	-11.02	-4.27	11.82	201.18	0.43	
2,000.00	0.43	108.89	1,999.91	0.02	-11.14	-3.72	11.74	198.49	0.24	
2,100.00	0.35	102.38	2,099.91	-0.66	-11.32	-3.07	11.73	195.18	0.09	
2,200.00	0.91	52.42	2,199.90	-1.40	-10.90	-2.14	11.11	191.12	0.74	
2,300.00	0.82	44.80	2,299.89	-2.17	-9.91	-1.01	9.96	185.82	0.15	
2,400.00	0.94	36.68	2,399.88	-2.74	-8.75	-0.02	8.75	180.10	0.17	
2,500.00	0.91	42.80	2,499.86	-3.33	-7.51	1.01	7.57	172.31	0.10	
2,600.00	0.73	35.60	2,599.85	-3.85	-6.40	1.92	6.69	163.28	0.21	
2,700.00	0.56	19.51	2,699.85	-4.04	-5.43	2.46	5.96	155.63	0.25	
2,800.00	0.48	4.44	2,799.84	-3.95	-4.55	2.65	5.27	149.73	0.16	
2,900.00	0.62	10.95	2,899.84	-3.78	-3.60	2.79	4.55	142.22	0.15	
3,000.00	0.58	4.82	2,999.83	-3.59	-2.56	2.93	3.90	131.14	0.08	
3,100.00	0.62	19.33	3,099.83	-3.48	-1.55	3.16	3.52	116.13	0.16	
3,200.00	0.76	37.40	3,199.82	-3.71	-0.51	3.74	3.77	97.78	0.26	
3,300.00	0.79	46.66	3,299.81	-4.25	0.49	4.64	4.67	83.99	0.13	
3,400.00	0.85	48.56	3,399.80	-4.95	1.45	5.70	5.88	75.70	0.07	
3,500.00	0.94	32.78	3,499.79	-5.53	2.63	6.70	7.20	68.54	0.26	
3,600.00	1.13	17.06	3,599.77	-5.71	4.27	7.43	8.57	60.15	0.34	
3,700.00	1.14	5.59	3,699.75	-5.46	6.20	7.82	9.98	51.59	0.23	
3,800.00	1.16	345.25	3,799.73	-4.69	8.17	7.66	11.20	43.16	0.41	
3,900.00	1.30	337.70	3,899.71	-3.40	10.20	6.97	12.35	34.36	0.21	
4,000.00	1.11	343.34	3,999.69	-2.10	12.17	6.26	13.69	27.22	0.22	
4,100.00	1.26	344.44	4,099.67	-0.93	14.16	5.69	15.26	21.89	0.15	



Nabors Corporate Services
Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
4,200.00	1.65	346.79	4,199.63	0.44	16.62	5.07	17.38	16.95	0.39	
4,300.00	1.66	341.71	4,299.59	2.05	19.40	4.28	19.87	12.45	0.15	
4,400.00	1.45	336.26	4,399.56	3.77	21.93	3.32	22.18	8.60	0.26	
4,500.00	1.15	341.46	4,499.53	5.22	24.04	2.49	24.17	5.91	0.32	
4,600.00	1.21	350.67	4,599.51	6.31	26.03	2.00	26.11	4.39	0.20	
4,700.00	1.55	353.80	4,699.48	7.37	28.42	1.68	28.47	3.39	0.35	
4,800.00	1.68	344.77	4,799.44	8.74	31.18	1.15	31.20	2.11	0.29	
4,900.00	1.40	340.13	4,899.40	10.31	33.74	0.35	33.74	0.60	0.31	
5,000.00	1.11	345.57	4,999.38	11.59	35.83	-0.31	35.83	359.51	0.31	
5,100.00	1.33	350.30	5,099.36	12.66	37.91	-0.74	37.92	358.88	0.24	
5,200.00	1.38	343.16	5,199.33	13.90	40.21	-1.29	40.23	358.17	0.18	
5,300.00	1.16	335.64	5,299.31	15.29	42.28	-2.05	42.33	357.22	0.28	
5,500.00	0.88	346.72	5,499.27	17.47	45.62	-3.24	45.74	355.94	0.17	
5,600.00	0.63	299.61	5,599.27	18.41	46.64	-3.90	46.80	355.23	0.65	
5,695.00	1.13	266.39	5,694.25	19.79	46.84	-5.28	47.14	353.56	0.73	
5,788.00	1.50	247.41	5,787.23	21.56	46.31	-7.32	46.89	351.01	0.61	
5,881.00	1.56	258.83	5,880.20	23.58	45.60	-9.69	46.62	348.00	0.33	
5,976.00	1.75	260.24	5,975.16	25.98	45.11	-12.39	46.78	344.64	0.20	
6,071.00	1.50	254.08	6,070.12	28.29	44.52	-15.01	46.98	341.36	0.32	
6,166.00	1.25	255.14	6,165.09	30.18	43.91	-17.21	47.16	338.60	0.26	
6,261.00	1.19	262.17	6,260.07	31.93	43.51	-19.19	47.56	336.20	0.17	
6,356.00	1.19	255.49	6,355.05	33.65	43.13	-21.12	48.02	333.91	0.15	
6,451.00	1.56	257.95	6,450.02	35.59	42.61	-23.34	48.59	331.29	0.39	
6,546.00	0.94	272.54	6,545.00	37.45	42.38	-25.38	49.40	329.08	0.73	
6,641.00	1.00	289.24	6,639.99	39.03	42.69	-26.95	50.48	327.74	0.30	
6,736.00	0.75	275.71	6,734.98	40.47	43.02	-28.35	51.52	326.62	0.34	
6,830.00	0.69	264.81	6,828.97	41.59	43.03	-29.52	52.18	325.55	0.16	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
6,924.00	0.19	252.68	6,922.97	42.23	42.93	-30.24	52.51	324.85	0.54	
7,018.00	0.50	164.96	7,016.96	42.13	42.49	-30.28	52.17	324.53	0.56	
7,112.00	0.63	163.03	7,110.96	41.61	41.60	-30.02	51.30	324.18	0.14	
7,206.00	0.31	181.66	7,204.96	41.24	40.85	-29.88	50.61	323.82	0.37	
7,300.00	0.31	62.13	7,298.96	40.99	40.72	-29.66	50.37	323.93	0.57	
7,394.00	0.31	57.91	7,392.95	40.65	40.97	-29.22	50.32	324.50	0.02	
7,488.00	0.63	111.35	7,486.95	39.97	40.92	-28.52	49.88	325.12	0.54	
7,583.00	0.75	115.92	7,581.94	38.83	40.46	-27.48	48.90	325.82	0.14	
7,677.00	1.00	145.63	7,675.93	37.57	39.51	-26.46	47.55	326.19	0.54	
7,771.00	0.75	164.61	7,769.92	36.58	38.24	-25.83	46.15	325.96	0.40	
7,864.00	0.81	157.23	7,862.91	35.81	37.05	-25.42	44.93	325.55	0.13	
7,958.00	0.81	154.42	7,956.90	34.91	35.83	-24.87	43.62	325.23	0.04	
8,052.00	0.44	136.14	8,050.90	34.13	34.97	-24.34	42.61	325.17	0.44	
8,146.00	0.19	147.03	8,144.90	33.68	34.58	-24.00	42.10	325.24	0.27	
8,239.00	0.31	216.99	8,237.90	33.64	34.25	-24.07	41.86	324.90	0.33	
8,334.00	0.44	168.13	8,332.90	33.54	33.69	-24.15	41.45	324.37	0.35	
8,429.00	0.38	203.99	8,427.89	33.39	33.05	-24.20	40.96	323.78	0.27	
8,522.00	0.25	228.77	8,520.89	33.52	32.63	-24.48	40.79	323.12	0.20	
8,617.00	0.44	121.90	8,615.89	33.27	32.30	-24.33	40.44	323.02	0.60	
8,711.00	0.69	152.48	8,709.89	32.52	31.61	-23.76	39.54	323.07	0.41	
8,805.00	0.56	177.44	8,803.88	31.94	30.65	-23.48	38.61	322.55	0.32	
8,900.00	0.94	203.11	8,898.87	31.84	29.47	-23.76	37.85	321.12	0.52	
8,994.00	0.13	112.76	8,992.87	31.80	28.72	-23.97	37.40	320.15	1.01	
9,087.00	0.81	82.00	9,085.86	31.11	28.77	-23.22	36.97	321.09	0.75	
9,182.00	1.38	90.61	9,180.85	29.42	28.85	-21.41	35.92	323.42	0.62	
9,277.00	0.94	74.79	9,275.83	27.68	29.04	-19.51	34.99	326.10	0.57	
9,371.00	0.50	134.03	9,369.82	26.66	28.96	-18.47	34.35	327.46	0.86	



Nabors Corporate Services

Completion Report



Company:	Zarvona Energy	Local Co-ordinate Reference:	Well 5-9 #6
Project:	Andrews Co., TX	TVD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Site:	Univeristy Lands Survey	MD Reference:	RKB=17' @ 3047.00ft (Norton 7)
Well:	5-9 #6	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
9,465.00	0.75	169.89	9,463.82	26.00	28.07	-18.07	33.38	327.23	0.48	
9,559.00	1.00	130.86	9,557.81	24.95	26.93	-17.34	32.03	327.21	0.67	
9,653.00	1.00	134.03	9,651.79	23.45	25.82	-16.13	30.44	328.00	0.06	
9,746.00	0.63	191.68	9,744.78	22.66	24.75	-15.65	29.29	327.69	0.91	
9,841.00	1.19	246.00	9,839.77	23.33	23.84	-16.66	29.08	325.06	1.02	
9,935.00	1.94	61.60	9,933.76	22.96	24.20	-16.15	29.10	326.28	3.33	
10,030.00	1.63	83.75	10,028.71	20.63	25.11	-13.39	28.46	331.93	0.79	
10,124.00	1.44	109.07	10,122.68	18.23	24.87	-10.95	27.18	336.24	0.74	
10,218.00	2.56	130.16	10,216.62	15.10	23.13	-8.23	24.55	340.42	1.41	
10,312.00	1.63	164.26	10,310.56	12.40	20.49	-6.26	21.43	343.01	1.61	
10,406.00	1.19	209.26	10,404.54	11.84	18.35	-6.37	19.43	340.85	1.23	
10,500.00	1.19	243.01	10,498.52	12.71	17.06	-7.72	18.73	335.65	0.73	
10,594.00	0.88	239.14	10,592.50	13.87	16.25	-9.21	18.68	330.45	0.34	
10,688.00	1.00	217.70	10,686.49	14.61	15.23	-10.33	18.40	325.84	0.39	
10,783.00	1.44	213.83	10,781.47	15.20	13.58	-11.50	17.80	319.73	0.47	
10,877.00	1.56	237.21	10,875.44	16.32	11.90	-13.24	17.80	311.97	0.66	
10,970.00	1.63	267.27	10,968.40	18.34	11.16	-15.62	19.20	305.53	0.89	
11,064.00	1.63	292.76	11,062.37	20.92	11.61	-18.19	21.58	302.55	0.77	
11,159.00	1.19	279.22	11,157.34	23.25	12.29	-20.41	23.83	301.05	0.58	
11,253.00	2.00	271.14	11,251.30	25.78	12.48	-23.01	26.18	298.47	0.89	
11,349.00	1.75	274.48	11,347.25	28.80	12.63	-26.15	29.04	295.77	0.28	
11,442.00	1.75	271.66	11,440.20	31.54	12.78	-28.99	31.68	293.79	0.09	
11,537.00	1.69	274.30	11,535.16	34.28	12.93	-31.83	34.36	292.10	0.10	
11,632.00	1.50	273.42	11,630.12	36.84	13.11	-34.47	36.88	290.82	0.20	
11,728.00	1.31	278.34	11,726.10	39.14	13.34	-36.81	39.15	289.92	0.23	
11,823.00	1.00	281.68	11,821.08	41.03	13.67	-38.70	41.04	289.45	0.33	
11,918.00	0.75	279.22	11,916.07	42.47	13.93	-40.12	42.47	289.15	0.27	



Nabors Corporate Services
Completion Report



Company: Zarvona Energy
Project: Andrews Co., TX
Site: Univeristy Lands Survey
Well: 5-9 #6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well 5-9 #6
TVD Reference: RKB=17' @ 3047.00ft (Norton 7)
MD Reference: RKB=17' @ 3047.00ft (Norton 7)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_Compass

Survey										
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
12,014.00	0.50	286.08	12,012.06	43.51	14.15	-41.15	43.51	288.98	0.27	
12,110.00	0.38	314.03	12,108.06	44.21	14.49	-41.78	44.22	289.12	0.25	
12,205.00	0.31	331.25	12,203.06	44.69	14.93	-42.13	44.69	289.52	0.13	
12,301.00	0.31	321.76	12,299.05	45.09	15.36	-42.41	45.11	289.91	0.05	
12,396.00	0.25	295.22	12,394.05	45.51	15.65	-42.76	45.53	290.11	0.15	
12,492.00	0.00	11.33	12,490.05	45.72	15.74	-42.95	45.74	290.13	0.26	
12,588.00	0.13	251.45	12,586.05	45.81	15.71	-43.05	45.83	290.04	0.14	
12,683.00	0.25	215.94	12,681.05	45.96	15.51	-43.28	45.97	289.71	0.17	
12,768.00	0.56	228.07	12,766.05	46.22	15.08	-43.69	46.22	289.04	0.38	
12,801.73	0.56	228.07	12,799.78	46.38	14.86	-43.94	46.38	288.68	0.00	
5-9 #6 BHL (467' offset BOX)										
12,830.00	0.56	228.07	12,828.05	46.52	14.67	-44.14	46.52	288.39	0.00	

Checked By: _____ Approved By: _____ Date: _____



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

April 27, 2019

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711

Attention: Pamela Johns

Re: Zarvona Energy LLC
ULS 5-9 Unit #6H
Andrews County, Texas
API No. 42-003-47556

Enclosed, please find the original and one copy of the survey performed on the referenced well by Aim Directional Services, LLC (P-5 No. 009134). Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Date Performed</u>	<u>Type of Survey</u>
<u>of Surveyor</u> Mickey Berry MWD Manager	Original hole	11450' – 22935'	01/09/19 – 02/24/19	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and the lease line (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.

Mickey Berry
MWD Manager

Enclosures
cc:



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

April 27, 2019

State of Texas
County of Andrews

I, Mickey Berry, certify that; I am employed by Aim Directional Services, LLC; that I did on the day(s) of January 9, 2019 through February 24, 2019 conduct or supervise the taking of a directional MWD survey from a depth of 11450 feet to a depth of 22935 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Aim Directional Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Zarvona Energy LLC for ULS 5-9 Unit #6H API No. 42-003-47556 in Andrews County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Aim Directional Services, LLC.

Mickey Berry
MWD Manager

Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Project	Andrews County, TX		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas North Central 4202		

Site	ULS 5-9 Unit #6H		
Site Position:		Northing:	335,795.34 usft
From:	Map	Easting:	500,180.55 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 29' 39.061 N
		Longitude:	102° 21' 58.210 W
		Grid Convergence:	-2.65 °

Well	#6H		
Well Position	+N/-S	0.00 usft	Northing: 335,795.34 usft
	+E/-W	0.00 usft	Easting: 500,180.55 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 29' 39.061 N
		Longitude:	102° 21' 58.210 W
		Ground Level:	3,030.00 usft

Wellbore	RRC Surveys		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	1/10/2019	6.07
			Dip Angle (°) 60.14
			Field Strength (nT) 47,943.19237113

Design	Aim MWD Surveys		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	11,253.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 167.49

Survey Program	Date	4/29/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
108.00	5,308.00	MS Gyro Surveys (Original Hole Gyro Surv	MSE_C705Ga_GYRO-GMS-	MSE ISGYRO multishot memory rate gyro running in d
5,508.00	11,253.00	MWD Surveys (Original Hole MWD Survey	B001Mb_MWD+HRGM	OWSG MWD + HRGM
11,253.00	22,935.00	Aim MWD Surveys (RRC Surveys)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

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)	
11,253.00	2.00	271.14	11,251.30	12.48	-23.01	-17.17	0.00	0.00	0.00	
Tie-on to OH										
11,450.00	4.75	193.91	11,448.01	4.63	-28.41	-10.67	2.40	1.40	-39.20	
First Aim MWD Survey										
11,482.00	4.57	195.14	11,479.91	2.11	-29.07	-8.36	0.64	-0.56	3.84	
11,576.00	6.33	183.89	11,573.48	-6.68	-30.40	-0.07	2.18	1.87	-11.97	
11,623.00	5.76	179.76	11,620.22	-11.62	-30.56	4.72	1.52	-1.21	-8.79	
11,694.00	5.54	174.04	11,690.88	-18.59	-30.19	11.61	0.85	-0.31	-8.06	

Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	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)
11,741.00	9.32	167.71	11,737.47	-24.57	-29.15	17.67	8.22	8.04	-13.47
11,790.00	16.18	165.25	11,785.24	-35.06	-26.56	28.47	14.04	14.00	-5.02
11,837.00	21.23	164.55	11,829.74	-49.60	-22.62	43.53	10.76	10.74	-1.49
11,885.00	24.53	161.83	11,873.96	-67.45	-17.20	62.13	7.22	6.88	-5.67
11,932.00	24.66	163.23	11,916.70	-86.11	-11.33	81.61	1.27	0.28	2.98
11,979.00	24.97	167.27	11,959.36	-105.18	-6.31	101.31	3.67	0.66	8.60
12,026.00	26.46	170.97	12,001.71	-125.20	-2.48	121.69	4.66	3.17	7.87
12,073.00	33.85	169.21	12,042.32	-148.43	1.62	145.26	15.83	15.72	-3.74
12,120.00	40.62	167.01	12,079.72	-176.23	7.51	173.67	14.68	14.40	-4.68
12,169.00	45.41	161.39	12,115.55	-208.34	16.68	207.00	12.51	9.78	-11.47
12,216.00	51.87	159.28	12,146.59	-241.53	28.57	241.98	14.15	13.74	-4.49
12,264.00	58.07	161.65	12,174.13	-278.56	41.68	280.97	13.53	12.92	4.94
12,311.00	64.22	163.93	12,196.80	-317.86	53.83	321.98	13.76	13.09	4.85
12,359.00	69.89	165.69	12,215.51	-360.50	65.39	366.11	12.29	11.81	3.67
12,406.00	75.60	167.45	12,229.45	-404.14	75.80	410.97	12.66	12.15	3.74
12,454.00	76.31	167.71	12,241.10	-449.62	85.81	457.53	1.57	1.48	0.54
12,559.00	75.96	167.71	12,266.26	-549.22	107.51	559.47	0.33	-0.33	0.00
12,590.00	77.89	167.89	12,273.27	-578.74	113.89	589.67	6.25	6.23	0.58
12,622.00	79.91	167.71	12,279.43	-609.43	120.53	621.07	6.34	6.31	-0.56
12,654.00	83.56	167.45	12,284.03	-640.35	127.34	652.73	11.43	11.41	-0.81
12,701.00	88.35	166.31	12,287.35	-685.99	137.98	699.59	10.47	10.19	-2.43
12,749.00	90.37	166.48	12,287.88	-732.64	149.27	747.58	4.22	4.21	0.35
12,845.00	90.73	165.43	12,286.96	-825.77	172.57	843.54	1.16	0.38	-1.09
12,940.00	91.65	166.57	12,284.99	-917.92	195.54	938.48	1.54	0.97	1.20
13,035.00	90.33	168.51	12,283.35	-1,010.66	216.03	1,033.46	2.47	-1.39	2.04
13,130.00	91.52	168.07	12,281.81	-1,103.67	235.31	1,128.44	1.34	1.25	-0.46
13,226.00	91.21	167.98	12,279.52	-1,197.56	255.23	1,224.41	0.34	-0.32	-0.09
13,321.00	90.42	168.24	12,278.17	-1,290.51	274.80	1,319.39	0.88	-0.83	0.27
13,416.00	91.08	168.33	12,276.93	-1,383.52	294.08	1,414.37	0.70	0.69	0.09
13,511.00	90.73	166.75	12,275.43	-1,476.27	314.58	1,509.36	1.70	-0.37	-1.66
13,608.00	87.91	165.78	12,276.58	-1,570.48	337.60	1,606.32	3.07	-2.91	-1.00
13,704.00	87.03	165.43	12,280.82	-1,663.37	361.45	1,702.17	0.99	-0.92	-0.36
13,799.00	86.46	165.52	12,286.21	-1,755.19	385.23	1,796.96	0.61	-0.60	0.09
13,893.00	90.86	165.52	12,288.41	-1,846.15	408.73	1,890.86	4.68	4.68	0.00
13,987.00	100.26	164.81	12,279.31	-1,936.49	432.65	1,984.23	10.03	10.00	-0.76
14,035.00	101.49	164.55	12,270.26	-1,981.95	445.10	2,031.31	2.62	2.56	-0.54
14,052.00	101.67	164.55	12,266.84	-1,998.01	449.54	2,047.94	1.06	1.06	0.00
14,084.00	100.84	165.60	12,260.60	-2,028.33	457.62	2,079.30	4.13	-2.59	3.28
14,115.00	98.68	166.57	12,255.34	-2,057.98	464.97	2,109.84	7.62	-6.97	3.13
14,147.00	98.46	166.66	12,250.57	-2,088.77	472.29	2,141.48	0.74	-0.69	0.28
14,178.00	95.34	167.54	12,246.85	-2,118.76	479.16	2,172.25	10.45	-10.06	2.84
14,210.00	91.78	168.15	12,244.86	-2,149.98	485.88	2,204.18	11.29	-11.13	1.91
14,241.00	89.49	168.51	12,244.52	-2,180.33	492.15	2,235.17	7.48	-7.39	1.16
14,272.00	91.03	168.42	12,244.38	-2,210.71	498.35	2,266.17	4.98	4.97	-0.29

Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	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)
14,367.00	91.34	167.10	12,242.42	-2,303.53	518.49	2,361.15	1.43	0.33	-1.39
14,462.00	90.42	167.19	12,240.96	-2,396.13	539.62	2,456.13	0.97	-0.97	0.09
14,557.00	91.47	168.07	12,239.39	-2,488.91	559.97	2,551.12	1.44	1.11	0.93
14,652.00	90.29	166.22	12,237.93	-2,581.51	581.10	2,646.10	2.31	-1.24	-1.95
14,747.00	92.44	168.07	12,235.67	-2,674.10	602.23	2,741.06	2.99	2.26	1.95
14,842.00	93.71	169.03	12,230.57	-2,767.07	621.06	2,835.90	1.67	1.34	1.01
14,936.00	91.65	171.58	12,226.18	-2,859.61	636.87	2,929.67	3.48	-2.19	2.71
15,031.00	87.69	173.25	12,226.72	-2,953.76	649.41	3,024.30	4.52	-4.17	1.76
15,127.00	87.03	172.55	12,231.14	-3,048.92	661.26	3,119.77	1.00	-0.69	-0.73
15,222.00	88.48	168.86	12,234.87	-3,142.58	676.59	3,214.53	4.17	1.53	-3.88
15,318.00	89.93	165.96	12,236.20	-3,236.25	697.51	3,310.51	3.38	1.51	-3.02
15,412.00	89.80	164.02	12,236.42	-3,327.04	721.86	3,404.41	2.07	-0.14	-2.06
15,508.00	92.26	163.76	12,234.70	-3,419.25	748.49	3,500.20	2.58	2.56	-0.27
15,604.00	88.62	166.75	12,233.96	-3,512.06	772.91	3,596.10	4.91	-3.79	3.11
15,698.00	87.78	166.75	12,236.91	-3,603.51	794.45	3,690.04	0.89	-0.89	0.00
15,797.00	90.99	166.75	12,237.97	-3,699.86	817.13	3,789.01	3.24	3.24	0.00
15,892.00	88.66	168.77	12,238.26	-3,792.68	837.27	3,884.00	3.25	-2.45	2.13
15,988.00	89.27	168.94	12,240.00	-3,886.86	855.83	3,979.96	0.66	0.64	0.18
16,084.00	88.53	169.03	12,241.84	-3,981.07	874.16	4,075.91	0.78	-0.77	0.09
16,179.00	88.22	169.03	12,244.53	-4,074.30	892.24	4,170.83	0.33	-0.33	0.00
16,267.00	89.63	169.91	12,246.19	-4,160.80	908.31	4,258.76	1.89	1.60	1.00
16,363.00	89.19	169.03	12,247.17	-4,255.18	925.86	4,354.70	1.02	-0.46	-0.92
16,457.00	92.40	166.56	12,245.87	-4,347.02	945.72	4,448.67	4.31	3.41	-2.63
16,513.00	93.80	166.12	12,242.84	-4,401.36	958.93	4,504.58	2.62	2.50	-0.79
16,554.00	94.15	166.74	12,240.00	-4,441.12	968.52	4,545.47	1.73	0.85	1.51
16,597.00	92.09	166.65	12,237.66	-4,482.90	978.40	4,588.40	4.80	-4.79	-0.21
16,649.00	93.14	167.44	12,235.29	-4,533.52	990.05	4,640.34	2.53	2.02	1.52
16,682.00	90.42	167.09	12,234.26	-4,565.69	997.32	4,673.32	8.31	-8.24	-1.06
16,713.00	91.43	166.65	12,233.76	-4,595.88	1,004.36	4,704.32	3.55	3.26	-1.42
16,745.00	91.08	165.24	12,233.06	-4,626.91	1,012.13	4,736.30	4.54	-1.09	-4.41
16,777.00	91.47	164.10	12,232.35	-4,657.76	1,020.59	4,768.25	3.76	1.22	-3.56
16,808.00	91.65	163.75	12,231.50	-4,687.54	1,029.17	4,799.18	1.27	0.58	-1.13
16,840.00	90.59	162.61	12,230.88	-4,718.16	1,038.43	4,831.08	4.86	-3.31	-3.56
16,873.00	91.25	163.49	12,230.35	-4,749.73	1,048.05	4,863.98	3.33	2.00	2.67
16,905.00	91.12	163.22	12,229.69	-4,780.38	1,057.21	4,895.89	0.94	-0.41	-0.84
16,936.00	91.65	162.78	12,228.94	-4,810.02	1,066.27	4,926.78	2.22	1.71	-1.42
16,968.00	91.65	161.73	12,228.02	-4,840.48	1,076.02	4,958.63	3.28	0.00	-3.28
17,031.00	91.56	164.89	12,226.25	-4,900.79	1,094.10	5,021.43	5.02	-0.14	5.02
17,063.00	91.16	165.68	12,225.49	-4,931.74	1,102.23	5,053.40	2.77	-1.25	2.47
17,094.00	90.95	164.54	12,224.92	-4,961.69	1,110.19	5,084.37	3.74	-0.68	-3.68
17,125.00	91.25	164.72	12,224.33	-4,991.57	1,118.41	5,115.32	1.13	0.97	0.58
17,157.00	90.73	164.28	12,223.77	-5,022.41	1,126.96	5,147.28	2.13	-1.63	-1.38
17,189.00	91.87	164.54	12,223.05	-5,053.22	1,135.56	5,179.22	3.65	3.56	0.81

Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	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)
17,222.00	91.96	164.72	12,221.94	-5,085.02	1,144.30	5,212.16	0.61	0.27	0.55
17,254.00	91.03	166.39	12,221.11	-5,116.00	1,152.28	5,244.13	5.97	-2.91	5.22
17,285.00	90.64	166.30	12,220.66	-5,146.12	1,159.60	5,275.12	1.29	-1.26	-0.29
17,317.00	90.20	167.62	12,220.42	-5,177.29	1,166.82	5,307.12	4.35	-1.38	4.13
17,348.00	92.09	170.78	12,219.80	-5,207.73	1,172.62	5,338.09	11.88	6.10	10.19
17,379.00	90.90	170.25	12,218.99	-5,238.30	1,177.73	5,369.04	4.20	-3.84	-1.71
17,412.00	90.51	170.17	12,218.59	-5,270.81	1,183.34	5,402.00	1.21	-1.18	-0.24
17,459.00	90.51	170.25	12,218.17	-5,317.13	1,191.33	5,448.94	0.17	0.00	0.17
17,508.00	91.38	171.13	12,217.36	-5,365.47	1,199.26	5,497.86	2.53	1.78	1.80
17,555.00	90.02	170.87	12,216.79	-5,411.89	1,206.61	5,544.77	2.95	-2.89	-0.55
17,600.00	90.37	171.13	12,216.63	-5,456.34	1,213.65	5,589.68	0.97	0.78	0.58
17,647.00	91.47	171.48	12,215.88	-5,502.79	1,220.75	5,636.57	2.46	2.34	0.74
17,698.00	90.99	170.96	12,214.78	-5,553.18	1,228.54	5,687.45	1.39	-0.94	-1.02
17,745.00	89.27	169.90	12,214.68	-5,599.52	1,236.35	5,734.39	4.30	-3.66	-2.26
17,794.00	89.98	169.73	12,215.00	-5,647.75	1,245.01	5,783.35	1.49	1.45	-0.35
17,841.00	91.03	169.20	12,214.58	-5,693.96	1,253.61	5,830.31	2.50	2.23	-1.13
17,889.00	91.25	167.18	12,213.63	-5,740.93	1,263.43	5,878.30	4.23	0.46	-4.21
17,936.00	89.67	166.47	12,213.25	-5,786.69	1,274.14	5,925.29	3.69	-3.36	-1.51
17,983.00	90.90	166.56	12,213.02	-5,832.39	1,285.10	5,972.28	2.62	2.62	0.19
18,030.00	90.59	166.39	12,212.41	-5,878.08	1,296.09	6,019.27	0.75	-0.66	-0.36
18,078.00	91.21	166.74	12,211.65	-5,924.76	1,307.24	6,067.26	1.48	1.29	0.73
18,125.00	91.12	166.21	12,210.70	-5,970.45	1,318.23	6,114.24	1.14	-0.19	-1.13
18,172.00	91.96	166.12	12,209.43	-6,016.07	1,329.47	6,161.21	1.80	1.79	-0.19
18,219.00	90.68	165.68	12,208.35	-6,061.64	1,340.91	6,208.18	2.88	-2.72	-0.94
18,267.00	91.74	165.77	12,207.34	-6,108.15	1,352.75	6,256.15	2.22	2.21	0.19
18,314.00	91.12	166.74	12,206.17	-6,153.79	1,363.91	6,303.12	2.45	-1.32	2.06
18,363.00	91.65	166.91	12,204.98	-6,201.48	1,375.07	6,352.10	1.14	1.08	0.35
18,410.00	90.95	166.30	12,203.91	-6,247.19	1,385.96	6,399.08	1.98	-1.49	-1.30
18,458.00	91.87	166.39	12,202.73	-6,293.82	1,397.29	6,447.06	1.93	1.92	0.19
18,505.00	90.95	165.51	12,201.58	-6,339.40	1,408.69	6,494.03	2.71	-1.96	-1.87
18,552.00	90.55	165.33	12,200.96	-6,384.88	1,420.52	6,540.99	0.93	-0.85	-0.38
18,599.00	90.59	164.63	12,200.49	-6,430.27	1,432.70	6,587.95	1.49	0.09	-1.49
18,647.00	90.68	164.28	12,199.96	-6,476.52	1,445.57	6,635.88	0.75	0.19	-0.73
18,694.00	90.51	166.83	12,199.47	-6,522.02	1,457.29	6,682.84	5.44	-0.36	5.43
18,743.00	89.63	166.91	12,199.41	-6,569.74	1,468.42	6,731.84	1.80	-1.80	0.16
18,790.00	90.73	166.83	12,199.27	-6,615.51	1,479.10	6,778.83	2.35	2.34	-0.17
18,837.00	90.24	167.18	12,198.87	-6,661.31	1,489.66	6,825.83	1.28	-1.04	0.74
18,884.00	89.49	168.85	12,198.98	-6,707.28	1,499.42	6,872.83	3.90	-1.60	3.55
18,931.00	89.85	168.06	12,199.25	-6,753.33	1,508.83	6,919.82	1.85	0.77	-1.68
18,978.00	89.58	167.70	12,199.48	-6,799.28	1,518.70	6,966.82	0.96	-0.57	-0.77
19,026.00	89.98	167.26	12,199.67	-6,846.14	1,529.10	7,014.82	1.24	0.83	-0.92
19,073.00	89.49	167.18	12,199.89	-6,891.97	1,539.50	7,061.82	1.06	-1.04	-0.17
19,122.00	89.54	167.35	12,200.30	-6,939.77	1,550.30	7,110.81	0.36	0.10	0.35

Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	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)	
19,169.00	90.55	167.53	12,200.26	-6,985.64	1,560.52	7,157.81	2.18	2.15	0.38	
19,217.00	89.19	168.85	12,200.37	-7,032.62	1,570.35	7,205.81	3.95	-2.83	2.75	
19,264.00	89.93	169.46	12,200.73	-7,078.78	1,579.19	7,252.79	2.04	1.57	1.30	
19,312.00	90.11	169.11	12,200.72	-7,125.94	1,588.11	7,300.76	0.82	0.38	-0.73	
19,359.00	89.76	168.50	12,200.77	-7,172.05	1,597.24	7,347.75	1.50	-0.74	-1.30	
19,408.00	89.32	167.97	12,201.16	-7,220.02	1,607.23	7,396.74	1.41	-0.90	-1.08	
19,455.00	90.15	167.97	12,201.38	-7,265.98	1,617.02	7,443.74	1.77	1.77	0.00	
19,504.00	89.89	167.70	12,201.36	-7,313.88	1,627.35	7,492.74	0.76	-0.53	-0.55	
19,551.00	89.32	167.26	12,201.69	-7,359.76	1,637.54	7,539.74	1.53	-1.21	-0.94	
19,599.00	90.02	166.74	12,201.96	-7,406.53	1,648.34	7,587.74	1.82	1.46	-1.08	
19,646.00	90.07	166.39	12,201.93	-7,452.25	1,659.26	7,634.73	0.75	0.11	-0.74	
19,693.00	89.76	166.03	12,202.00	-7,497.89	1,670.46	7,681.72	1.01	-0.66	-0.77	
19,740.00	89.58	168.50	12,202.27	-7,543.73	1,680.82	7,728.71	5.27	-0.38	5.26	
19,788.00	89.93	167.88	12,202.47	-7,590.71	1,690.64	7,776.71	1.48	0.73	-1.29	
19,835.00	89.36	167.09	12,202.76	-7,636.60	1,700.83	7,823.71	2.07	-1.21	-1.68	
19,884.00	90.20	167.18	12,202.95	-7,684.37	1,711.74	7,872.70	1.72	1.71	0.18	
19,931.00	90.55	169.37	12,202.64	-7,730.38	1,721.29	7,919.70	4.72	0.74	4.66	
19,979.00	89.67	169.29	12,202.55	-7,777.55	1,730.17	7,967.67	1.84	-1.83	-0.17	
20,074.00	89.89	168.67	12,202.92	-7,870.80	1,748.33	8,062.64	0.69	0.23	-0.65	
20,169.00	89.10	168.85	12,203.75	-7,963.97	1,766.85	8,157.61	0.85	-0.83	0.19	
20,265.00	89.67	168.58	12,204.79	-8,058.11	1,785.63	8,253.58	0.66	0.59	-0.28	
20,360.00	89.80	167.97	12,205.22	-8,151.13	1,804.94	8,348.57	0.66	0.14	-0.64	
20,454.00	89.93	167.88	12,205.45	-8,243.05	1,824.60	8,442.57	0.17	0.14	-0.10	
20,549.00	90.07	168.14	12,205.45	-8,335.97	1,844.34	8,537.56	0.31	0.15	0.27	
20,645.00	90.37	167.18	12,205.08	-8,429.75	1,864.85	8,633.56	1.05	0.31	-1.00	
20,740.00	89.45	167.44	12,205.23	-8,522.43	1,885.72	8,728.56	1.01	-0.97	0.27	
20,835.00	89.85	167.26	12,205.81	-8,615.12	1,906.53	8,823.56	0.46	0.42	-0.19	
20,930.00	90.15	166.30	12,205.81	-8,707.60	1,928.25	8,918.55	1.06	0.32	-1.01	
21,024.00	90.81	167.35	12,205.02	-8,799.13	1,949.68	9,012.54	1.32	0.70	1.12	
21,119.00	90.81	167.18	12,203.68	-8,891.78	1,970.62	9,107.53	0.18	0.00	-0.18	
21,213.00	90.37	168.23	12,202.71	-8,983.62	1,990.63	9,201.52	1.21	-0.47	1.12	
21,309.00	90.33	169.55	12,202.12	-9,077.81	2,009.13	9,297.49	1.38	-0.04	1.38	
21,402.00	90.77	169.73	12,201.23	-9,169.29	2,025.85	9,390.42	0.51	0.47	0.19	
21,498.00	90.33	169.64	12,200.31	-9,263.74	2,043.04	9,486.34	0.47	-0.46	-0.09	
21,594.00	90.51	169.37	12,199.60	-9,358.13	2,060.53	9,582.28	0.34	0.19	-0.28	
21,690.00	90.51	169.11	12,198.75	-9,452.44	2,078.45	9,678.23	0.27	0.00	-0.27	
21,785.00	90.29	167.62	12,198.09	-9,545.48	2,097.61	9,773.22	1.59	-0.23	-1.57	
21,881.00	90.51	165.68	12,197.42	-9,638.88	2,119.77	9,869.20	2.03	0.23	-2.02	
21,977.00	90.02	163.75	12,196.97	-9,731.48	2,145.08	9,965.08	2.07	-0.51	-2.01	
22,072.00	89.76	165.77	12,197.15	-9,823.13	2,170.05	10,059.97	2.14	-0.27	2.13	
22,166.00	90.24	166.65	12,197.15	-9,914.42	2,192.46	10,153.94	1.07	0.51	0.94	
22,261.00	91.34	168.06	12,195.84	-10,007.10	2,213.25	10,248.93	1.88	1.16	1.48	
22,355.00	89.05	166.91	12,195.52	-10,098.86	2,233.62	10,342.92	2.73	-2.44	-1.22	
22,450.00	89.76	169.90	12,196.51	-10,191.91	2,252.71	10,437.89	3.23	0.75	3.15	

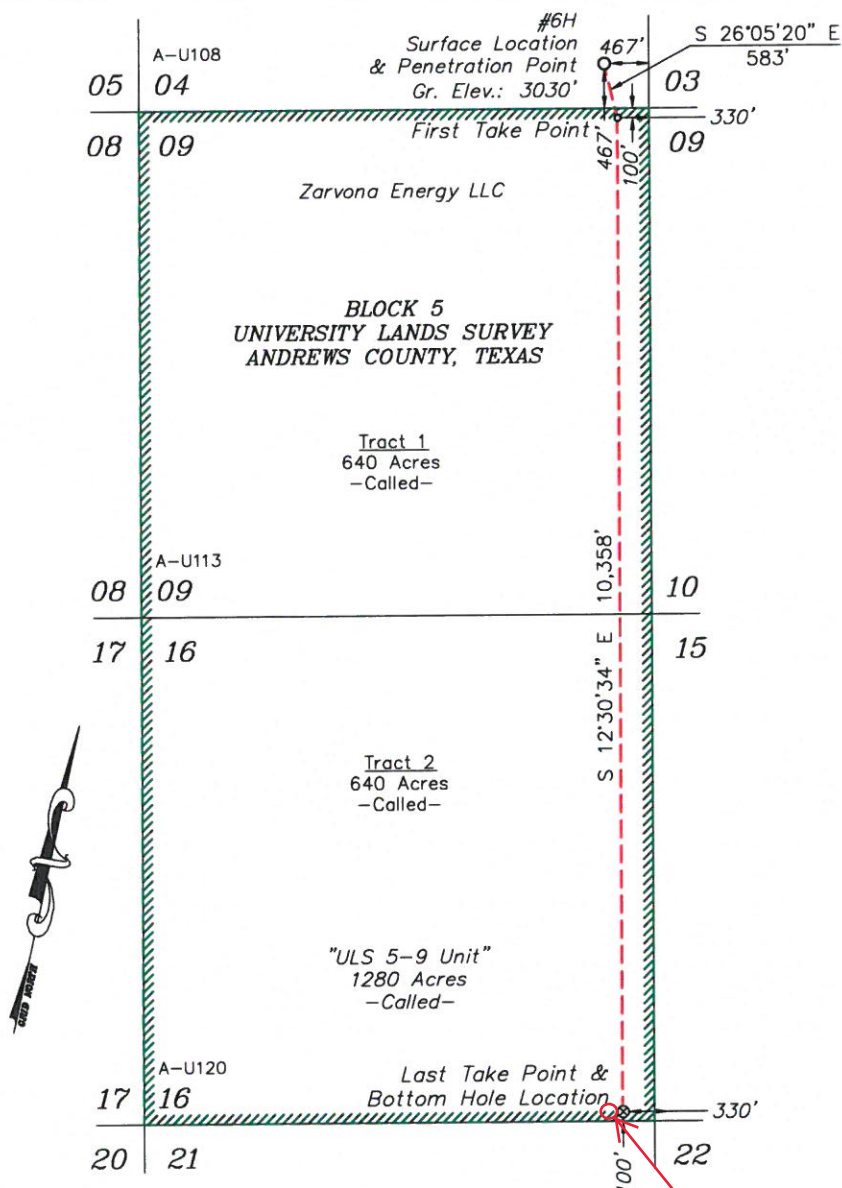
Aim Directional Services, LLC

Survey Report

Company:	Zarvona Energy, LLC	Local Co-ordinate Reference:	Site ULS 5-9 Unit #6H
Project:	Andrews County, TX	TVD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Site:	ULS 5-9 Unit #6H	MD Reference:	3030'GL+25'KB @ 3055.00usft (Latshaw 7)
Well:	#6H	North Reference:	Grid
Wellbore:	RRC Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	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)
22,545.00	91.08	171.92	12,195.82	-10,285.70	2,267.72	10,532.71	2.54	1.39	2.13
22,640.00	90.77	169.55	12,194.28	-10,379.45	2,283.01	10,627.54	2.52	-0.33	-2.49
22,735.00	91.16	169.64	12,192.68	-10,472.87	2,300.16	10,722.46	0.42	0.41	0.09
22,830.00	90.20	169.64	12,191.55	-10,566.31	2,317.25	10,817.39	1.01	-1.01	0.00
22,881.00	89.71	168.85	12,191.59	-10,616.42	2,326.76	10,868.37	1.82	-0.96	-1.55
Last Aim MWD Survey									
22,935.00	89.71	168.85	12,191.87	-10,669.40	2,337.20	10,922.35	0.00	0.00	0.00
Projection to BHL									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,253.00	11,251.30	12.48	-23.01	Tie-on to OH
11,450.00	11,448.01	4.63	-28.41	First Aim MWD Survey
22,881.00	12,191.59	-10,616.42	2,326.76	Last Aim MWD Survey
22,935.00	12,191.87	-10,669.40	2,337.20	Projection to BHL

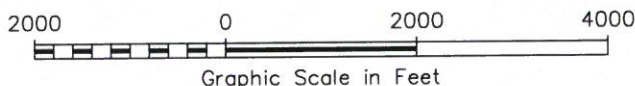


Section & Lease Line Calls	
Surface Location	467' FEL & 467' FSL
Penetration Point	467' FEL & 467' FSL
First Take Point	100' FNL & 330' FEL
Last Take Point	100' FSL & 330' FEL
Bottom Hole Location	100' FSL & 330' FEL

ULS 5-9 Unit #6H
MD = 22935.00' TVD = 12191.87
INC = 89.71° AZM = 168.85°
N-S = -10669.40' E-W = 2337.20'
Closure = 10922.39' @ 167.64° Azm

	State Plane Coordinate		Geodetic (D.M.S.)		Geodetic (D.D.)	
Surface Location & Penetration Point	X = 500,180.55	Y = 335,795.34	Lat = 32°29'39.06" N	Long = 102°21'58.21" W	Lat = 32.49418355° N	Long = 102.36616943° W
First Take Point	X = 500,437.09	Y = 335,271.42	Lat = 32°29'34.36" N	Long = 102°21'56.52" W	Lat = 32.49287701° N	Long = 102.36569909° W
Last Take Point & Bottom Hole Location	X = 502,680.72	Y = 325,158.93	Lat = 32°27'55.06" N	Long = 102°21'23.31" W	Lat = 32.46529489° N	Long = 102.35647498° W

The ULS 5-9 Unit #6H is located approximately
16 miles Northeast of Andrews, Texas.

**NOTE:**

- 1) Plane Coordinates shown hereon are Lambert Grid and Conform to the "Texas Coordinate System", Texas North Central Zone, North American Datum of 1927, unless otherwise noted. Scale factor is 1.000217847.
- 2) Geodetic Coordinate shown hereon references the North American Datum of 1927, unless otherwise noted.
- 3) This plat is provided only for filing purposes with the Texas Railroad Commission and should not be construed as a boundary survey.
- 4) Preliminary for Office Review 05/29/18, Issued as Final 05/30/18

Legend

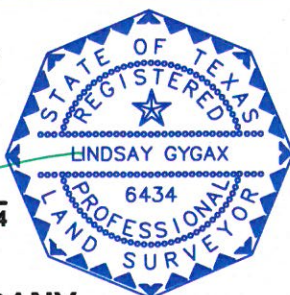
- - - - - Denotes Proposed Well Bore
- ▨▨▨▨▨ Denotes Unit Boundary
- - - - - Denotes Tract Line
- Denotes Proposed Well Location
- Denotes Proposed Take Points
- ⊗ Denotes Proposed Bottom Hole Location

CERTIFICATION:

I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

Lindsay Gygax

Texas R.P.L.S. No. 6434



WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432) 687-0868
FIRM Registration Number: 100682-00

ZARVONA ENERGY LLC

Location of the
ULS 5-9 UNIT #6 H

SL (467' FSL & 467' FEL) Section 04
BHL (100' FSL & 330' FEL) Section 16
All in Block 5, University Lands Survey
Andrews County, Texas

Scale: 1"= 2000'

W.O.: 2017-0303-1

Surveyed: 04/28/2017

Drawn By: SC

File: J:\2018\2017-0303-1\2017-0303-1 The ULS 5-9 Unit #6H.dwg



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

April 27, 2019

State of Texas
County of Andrews

I, Mickey Berry, certify that; I am employed by Aim Directional Services, LLC; that I did on the day(s) of January 9, 2019 through February 24, 2019 conduct or supervise the taking of a directional MWD survey from a depth of 11450 feet to a depth of 22935 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Aim Directional Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Zarvona Energy LLC for ULS 5-9 Unit #6H API No. 42-003-47556 in Andrews County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Aim Directional Services, LLC.

Mickey Berry
MWD Manager