



Chevron

**Ward County, TX (NAD27 TC)
WAR University 18 22-24
0025WA**

OH / 65108

Survey: Phoenix MWD Surveys

Standard Survey Report

06 August, 2019





Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 0025WA
Project:	Ward County, TX (NAD27 TC)	TVD Reference:	RKB @ 2837.00usft (Pinnergy 1)
Site:	WAR University 18 22-24	MD Reference:	RKB @ 2837.00usft (Pinnergy 1)
Well:	0025WA	North Reference:	Grid
Wellbore:	OH / 65108	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pinnergy 1)	Database:	USA Compass

Project	Ward County, TX (NAD27 TC)		
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	WAR University 18 22-24		
Site Position:		Northing:	719,733.00 usft
From:	Map	Easting:	1,085,633.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	31° 36' 44.736314 N
		Longitude:	103° 16' 15.320011 W
		Grid Convergence:	-1.51 °

Well	0025WA		
Well Position	+N/-S	0.00 usft	Northing: 719,761.00 usft
	+E/-W	0.00 usft	Easting: 1,085,729.00 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	31° 36' 45.038421 N
		Longitude:	103° 16' 14.218766 W
		Ground Level:	2,830.00 usft

Wellbore	OH / 65108		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	8/2/2019	7.05
			Dip Angle (°)
			59.45
			Field Strength (nT)
			47,383.53752234

Design	Surveys (Pinnergy 1)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			343.73

Survey Program	Date	8/5/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,474.00	Phoenix MWD Surveys (OH / 65108)	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.00	0.49	47.40	165.00	0.48	0.52	0.31	0.30	0.30	0.00
First Phoenix MWD Survey									
225.00	0.50	37.10	225.00	0.86	0.87	0.58	0.15	0.02	-17.17
316.00	0.40	50.50	315.99	1.38	1.35	0.95	0.16	-0.11	14.73
398.00	0.18	51.60	397.99	1.64	1.67	1.11	0.27	-0.27	1.34
491.00	0.35	51.60	490.99	1.91	2.01	1.27	0.18	0.18	0.00
583.00	0.20	81.40	582.99	2.11	2.39	1.35	0.22	-0.16	32.39
676.00	0.40	98.80	675.99	2.08	2.87	1.19	0.23	0.22	18.71
769.00	0.53	111.12	768.99	1.88	3.59	0.80	0.18	0.14	13.25
862.00	0.35	105.30	861.98	1.65	4.27	0.39	0.20	-0.19	-6.26



Survey Report



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Site:	WAR University 18 22-24	MD Reference:	RKB @ 2837.00usft (Pinnergy 1)
Well:	0025WA	North Reference:	Grid
Wellbore:	OH / 65108	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pinnergy 1)	Database:	USA Compass

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)
955.00	0.90	100.20	954.98	1.44	5.26	-0.09	0.59	0.59	-5.48
1,050.00	0.70	123.20	1,049.97	0.99	6.48	-0.86	0.39	-0.21	24.21
1,143.00	0.70	125.20	1,142.96	0.35	7.42	-1.74	0.03	0.00	2.15
1,236.00	0.40	270.10	1,235.96	0.03	7.56	-2.09	1.13	-0.32	155.81
1,329.00	0.88	289.30	1,328.95	0.26	6.56	-1.58	0.56	0.52	20.65
1,403.00	1.00	287.10	1,402.94	0.64	5.41	-0.90	0.17	0.16	-2.97
Final Phoenix MWD Survey									
1,474.00	1.00	287.10	1,473.93	1.01	4.22	-0.22	0.00	0.00	0.00
Projection to TD									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
165.00	165.00	0.48	0.52	First Phoenix MWD Survey
1,403.00	1,402.94	0.64	5.41	Final Phoenix MWD Survey
1,474.00	1,473.93	1.01	4.22	Projection to TD

SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

Job #: 65108
 Client: Chevron Energy
 County & State: Ward County, Texas
 Well: WAR University 18 22-24 0025WA
 API No: 42-475-37934
 Proposed Direction: 343.73

TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
		0	0	0	0	Surface
Data Source Company:						Phoenix

SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
3-Aug-19	165 ft	0.49°	47.40°

Last Survey Date	Last Survey Depth	INC	AZM
3-Aug-19	1,403 ft	1.00°	287.10°

Survey Instrument Type
Phoenix MWD

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
4-Aug-19	1,474 ft	1.00°	287.10°

CORRECTION INFORMATION

Magnetic Declination Used	7.05 degrees
Grid Convergence Used	-1.51 degrees

Corrected to True/Grid North
Grid North

Total Correction	8.56 degrees
	490

TO THE BEST OF MY KNOWLEDGE, I
 CERTIFY THIS SURVEY DATA TO BE
 TRUE AND CORRECT.

J Hunter
 Signature

August 4, 2019
 Date



August 6, 2019

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

Attention: Regulatory Department

Re: Chevron
WAR University 18 22-24 0025WA
Ward County, Texas
API #42-475-37934
Job No. 65108

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
J Hunter	0025WA	165	1,403	8/3/19	8/3/19	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.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

NOTE
Approx. 10.03 Miles Northwesterly
From "PYOTE, TEXAS"

LEGEND
--- Approximate Survey Lines
--- Lease Lines
--- Unit Lines

WAR UNIVERSITY 18 22/24 NO. 0025WA WELL	
X= 1,085,729	NAD 27
Y= 719,761	
LAT. 31.612510 N	
LONG. 103.270617 W	
X= 1,382,194	NAD83/86
Y= 10,562,337	
LAT. 31.612642 N	
LONG. 103.271062 W	
PUPP/PP/FTP	
X= 1,086,531	NAD 27
Y= 720,583	
LAT. 31.614827 N	
LONG. 103.268111 W	
X= 1,382,996	NAD83/86
Y= 10,563,158	
LAT. 31.614958 N	
LONG. 103.268557 W	
PLPP/LTP	
X= 1,083,625	NAD 27
Y= 730,539	
LAT. 31.641979 N	
LONG. 103.278290 W	
X= 1,380,090	NAD83/86
Y= 10,573,115	
LAT. 31.642110 N	
LONG. 103.278737 W	
PBHL/TL	
X= 1,083,604	NAD 27
Y= 730,611	
LAT. 31.642176 N	
LONG. 103.278364 W	
X= 1,380,069	NAD83/86
Y= 10,573,187	
LAT. 31.642306 N	
LONG. 103.278811 W	

Ownership	Tract No.	Area In Acres	Percentage Of Unit
UT LEASE #62233	1	320.727	50.0304962
STATE OF TEXAS GLO LEASE #66422	2	320.336	49.9695038
Total:		641.063	100.0000000

SURFACE LOCATION: 464' To North Survey Line 1450' To East Survey Line 464' To North Lease Line 1450' To East Lease Line	PUPP/PP/FTP: 100' To South Survey Line 450' To East Survey Line 100' To South Lease Line 450' To East Lease Line 100' To South Lease Line 450' To East Lease Line	PLPP/LTP: 100' To North Survey Line 450' To East Survey Line 100' To North Lease Line 450' To East Lease Line 100' To North Lease Line 450' To East Lease Line	PBHL/TL: 25' To North Survey Line 450' To East Survey Line 25' To North Lease Line 450' To East Lease Line 25' To North Lease Line 450' To East Lease Line
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NOTES:

- This plat represents a survey made on the ground and meets the requirements for filing a well location plat with the Texas Railroad Commission and is intended solely for that purpose. Lease lines shown hereon were established from field measurements and record data. Mineral title shown hereon was furnished by Chevron U.S.A. Inc. and/or their agent(s). This plat does not meet the requirements for boundary surveys in the State of Texas.
- All bearings, distances, areas and coordinates refer to the Texas Coordinate System of 1927, Central Zone.

PUPP= PROPOSED UPPER PERFORATION POINT
PLPP= PROPOSED LOWER PERFORATION POINT
PBHL= PROPOSED BOTTOM HOLE LOCATION

PP= PENETRATION POINT
FTP= FIRST TAKE POINT
LTP= LAST TAKE POINT
TL= TERMINUS LOCATION

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Rex R. Jones, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

Rex R. Jones
Rex R. Jones
Registration No. 6024

WELL LOCATION PLAT
CHEVRON U.S.A. INC.
WAR UNIVERSITY 18 22/24 NO. 0025WA WELL
UNIVERSITY LANDS SURVEY, ABSTRACT NO. U101, SEC. 22, BLK 18
WARD COUNTY, TEXAS

REVISIONS				
DRAWN BY: RMB	#	BY:	DATE:	DESCRIPTION:
PROJ. MGR.: DBM	1	RMB	05/17/2019	Added unit/tracts & updated well name
DATE: 04/02/2019	2	DMB	05/23/2019	Revise calls
FILENAME: T:\2019\2190158\DWGIWAR University 18 22 24 No. 0025WA RRC.dwg				

C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com
Texas Firm No. 10028500



Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)



March 13, 2020

Railroad Commission of Texas
Oil and Gas Division
PO Box 12967
Capital Station
Austin, Texas 78711

Attention: Pam Johns

Re:

CLIENT: Chevron U.S.A. Inc.
WELL: War University 18 22/24 D 0025WA
FIELD: Phantom (Wolfcamp)

RIG: Patterson 270
COUNTY: Ward
API NO: 42-475-37934
PERMIT: 854196
JOB NO: 20MLI0576

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Fredy Portillo FS	War University 18 22/24 D 0025WA Original Hole	1540.00 Ft to 22018.00 Ft	October 25, 2019 to March 5, 2020	TelePacer SlimPulse

A plat of the bottom hole location is oriented both to the surface location and to the lease lines (or until line in case of pooling), is attached to the survey report.

CC: Chevron U.S.A. Inc.
Enclosures: [2]
County of Ward
State of Texas

Chevron WAR University 18 22-24 No. 0025WA MWD to 22141ft Survey Report (Def Survey)

Report Date: March 06, 2020 - 10:18 AM Client: Chevron Field: TX Ward County (NAD 27) Structure / Slot: Chevron WAR University 18 22-24 Pad 2 / 25WA Well: WAR University 18 22-24 No. 0025WA Borehole: WAR University 18 22-24 No. 0025WA UWI / API#: Unknown / 42-475-37934 Survey Name: Chevron WAR University 18 22-24 No. 0025WA MWD to 22141ft Survey Date: March 05, 2020 Tort / AHD / DDI / ERD Ratio: 352.618 ° / 11908.720 ft / 6.899 / 1.015 Coordinate Reference System: NAD27 Texas State Plane, Central Zone, US Feet Location Lat / Long: N 31° 36' 45.03850", W 103° 16' 14.21877" Location Grid N/E Y/X: N 719761.000 ftUS, E 1085729.000 ftUS CRS Grid Convergence Angle: -1.5129 ° Grid Scale Factor: 0.99993847 Version / Patch: 2.10.794.0	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 343.730 ° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: RKB = 28ft TVD Reference Elevation: 2858.000 ft above MSL Seabed / Ground Elevation: 2830.000 ft above MSL Magnetic Declination: 6.881 ° Total Gravity Field Strength: 998.4670mgn (9.80665 Based) Gravity Model: GARM Total Magnetic Field Strength: 47301.683 nT Magnetic Dip Angle: 59.393 ° Declination Date: March 05, 2020 Magnetic Declination Model: HDGM 2019 North Reference: Grid North Grid Convergence Used: -1.5129 ° Total Corr Mag North->Grid North: 8.3937 ° Local Coord Referenced To: Well Head
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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0M
Adjusted KB	28.00	0.00	0.00	28.00	0.00	0.00	0.00	0.00	0.00	0.00	47.4M
First 3rd Party Survey	186.00	0.49	47.40	186.00	0.30	0.46	0.50	0.68	47.40	0.31	37.1M
	246.00	0.50	37.10	246.00	0.57	0.84	0.84	1.19	45.15	0.15	50.5M
	337.00	0.40	50.50	336.99	0.93	1.36	1.33	1.90	44.36	0.16	51.6M
	419.00	0.18	51.60	418.99	1.09	1.62	1.65	2.31	45.52	0.27	51.6M
	512.00	0.35	51.60	511.99	1.26	1.89	1.99	2.74	46.48	0.18	81.4M
	604.00	0.20	81.40	603.99	1.34	2.09	2.37	3.15	48.60	0.22	98.8M
	697.00	0.40	98.80	696.99	1.18	2.06	2.85	3.52	54.11	0.23	111.12M
	790.00	0.53	111.12	789.99	0.78	1.86	3.57	4.02	62.53	0.18	105.3M
	883.00	0.35	105.30	882.98	0.37	1.63	4.25	4.55	69.04	0.20	100.2M
	976.00	0.90	100.20	975.98	-0.10	1.42	5.24	5.43	74.81	0.59	123.2M
	1071.00	0.70	123.20	1070.97	-0.88	0.97	6.46	6.53	81.44	0.39	125.2M
	1164.00	0.70	125.20	1163.96	-1.75	0.33	7.40	7.40	87.42	0.03	270.1M
	1257.00	0.40	270.10	1256.96	-2.11	0.01	7.54	7.54	89.95	1.13	289.3M
	1350.00	0.88	289.30	1349.95	-1.60	0.24	6.54	6.54	87.87	0.56	287.1M
Last 3rd Party Survey	1424.00	1.00	287.10	1423.94	-0.91	0.62	5.38	5.42	83.42	0.17	281.72M
First SLB MWD Survey	1540.00	1.24	281.72	1539.92	0.23	1.17	3.19	3.40	69.79	0.23	19.92M
	1635.00	0.58	19.92	1634.91	1.10	1.83	2.35	2.98	51.97	1.52	55.6M
	1729.00	2.45	55.60	1728.88	2.11	3.42	4.17	5.39	50.64	2.14	66.33M
	1823.00	3.88	66.33	1822.73	3.15	5.83	8.74	10.50	56.29	1.64	64M
	1918.00	4.35	64.00	1917.49	4.17	8.70	14.92	19.27	59.75	0.53	68.52M
	2013.00	5.24	68.52	2012.15	5.17	11.87	22.19	25.17	61.87	1.02	68.56M
	2107.00	6.80	68.56	2105.63	6.07	15.47	31.37	34.98	63.74	1.66	68.13M
	2296.00	11.18	68.13	2292.26	8.86	26.39	58.80	64.45	65.83	2.32	11.03R
	2484.00	12.48	69.30	2476.27	12.21	40.36	94.72	102.96	66.92	0.70	158.25R
	2579.00	12.41	69.43	2569.04	13.77	47.58	113.88	123.42	67.32	0.08	83.02R
	2675.00	12.42	69.80	2662.79	15.25	54.77	133.22	144.04	67.65	0.08	126.43L
	2770.00	12.30	69.03	2755.59	16.78	61.92	152.26	164.37	67.87	0.21	147.37R
	2864.00	11.83	70.51	2847.51	18.14	68.71	170.69	184.01	68.07	0.60	62.68L
	3054.00	12.22	67.13	3033.35	21.55	83.03	207.58	223.57	68.20	0.42	102.66L
	3148.00	12.14	65.31	3125.23	24.14	91.02	225.73	243.39	68.04	0.42	6.06R
	3243.00	13.01	65.72	3217.95	27.09	99.59	244.55	264.05	67.84	0.92	126.43R
	3337.00	12.87	66.58	3309.56	29.87	108.10	263.80	285.09	67.72	0.25	101.17L
	3432.00	12.67	60.19	3402.22	33.62	117.49	282.55	306.01	67.42	1.50	65.98L
	3526.00	13.13	55.98	3493.85	39.29	128.59	300.35	326.72	66.82	1.11	167.76R
	3621.00	12.38	56.74	3586.50	45.56	140.21	317.81	347.36	66.19	0.81	173.8L
	3715.00	11.62	56.33	3678.45	51.33	150.98	334.11	366.64	65.68	0.81	164.71L
	3810.00	10.87	55.24	3771.62	57.03	161.40	349.43	384.91	65.21	0.82	65.37R
	3999.00	11.34	60.03	3957.09	67.09	180.84	380.17	420.99	64.56	0.55	79.74R
	4094.00	11.37	60.84	4050.23	71.39	190.07	396.44	439.65	64.39	0.17	153.27R
	4188.00	10.67	62.76	4142.49	75.11	198.57	412.27	457.60	64.28	0.84	20.01R
	4282.00	10.92	63.24	4234.83	78.39	206.56	427.96	475.20	64.24	0.28	15.88L
	4377.00	11.60	62.28	4328.00	81.92	215.05	444.45	493.74	64.18	0.74	179.24L
	4472.00	10.50	62.20	4421.24	85.55	223.53	460.56	511.94	64.11	1.16	158.61R
	4566.00	10.06	63.19	4513.73	88.76	231.23	475.46	528.71	64.07	0.50	45.78R
	4661.00	11.08	68.41	4607.12	91.13	238.33	491.36	546.11	64.12	1.47	17.94R
	4755.00	11.96	69.78	4699.22	92.64	245.02	508.90	564.81	64.29	0.98	31.93L
	4850.00	12.98	66.99	4791.98	94.57	252.60	527.95	585.27	64.43	1.25	161.05R
	4944.00	12.52	67.72	4883.67	96.87	260.58	547.10	605.99	64.53	0.52	161.07R
	4987.00	12.20	68.24	4925.67	97.79	264.04	555.63	615.17	64.58	0.79	162.56R
	5143.00	10.96	70.30	5078.49	100.26	275.15	584.90	646.39	64.81	0.84	175.68L
	5238.00	9.77	69.77	5171.94	101.36	280.98	600.97	663.41	64.94	1.26	28.92R
	5333.00	9.92	70.25	5265.54	102.41	286.53	616.23	679.59	65.06	0.18	138.24L
	5428.00	9.78	69.51	5359.14	103.50	292.12	631.49	695.79	65.18	0.20	22.65R
	5522.00	10.51	71.17	5451.67	104.47	297.68	647.09	712.27	65.30	0.84	30.25L
	5617.00	12.55	65.83	5544.75	106.28	304.71	664.71	731.22	65.37	2.42	61.09L
	5806.00	14.23	55.15	5728.63	116.50	326.39	702.51	774.63	65.08	1.58	31.52L
	5900.00	14.64	54.16	5819.67	124.16	339.95	721.62	797.69	64.78	0.51	122.71L
	5995.00	14.48	53.15	5911.62	132.36	354.10	740.86	821.13	64.45	0.32	109.04L
	6090.00	14.43	52.56	6003.61	140.81	368.42	759.76	844.38	64.13	0.16	113.91L
	6184.00	14.28	51.15	6094.67	149.49	382.81	778.09	867.16	63.80	0.40	13.22R
	6279.00	14.45	51.31	6186.70	158.51	397.57	796.47	890.18	63.47	0.18	85.03L
	6374.00	14.47	50.46	6278.69	167.72	412.54	814.87	913.35	63.15	0.22	162.99L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	6468.00	12.80	48.14	6370.04	176.86	426.96	831.68	934.88	62.83	1.87	169.52R
	6563.00	11.29	49.57	6462.95	185.21	440.02	846.60	954.12	62.54	1.62	140.41L
	6657.00	10.12	43.82	6555.31	193.09	451.94	859.32	970.92	62.26	1.68	153R
	6752.00	8.73	48.59	6649.03	200.32	462.73	870.51	985.86	62.01	1.68	167.38R
	6847.00	5.69	55.56	6743.27	204.85	470.17	879.80	997.55	61.88	3.32	59.1M
	6942.00	3.87	59.10	6837.94	207.13	474.48	886.44	1005.44	61.84	1.94	80.07M
	7036.00	2.13	80.07	6931.81	207.74	476.41	890.88	1010.27	61.86	2.16	84.42M
	7130.00	0.48	84.42	7025.78	207.47	476.75	892.99	1012.29	61.90	1.76	238.42M
	7225.00	0.11	238.42	7120.78	207.37	476.74	893.31	1012.57	61.91	0.61	190.29M
	7320.00	0.06	190.29	7215.78	207.30	476.64	893.23	1012.44	61.91	0.09	4.5M
	7414.00	0.18	4.50	7309.78	207.40	476.74	893.23	1012.49	61.91	0.26	28.87M
	7509.00	0.69	28.87	7404.77	207.94	477.39	893.52	1013.05	61.89	0.56	26.21M
	7603.00	0.93	26.21	7498.77	208.90	478.57	894.13	1014.15	61.84	0.26	29.84M
	7698.00	1.19	29.84	7593.75	210.16	480.12	894.96	1015.61	61.79	0.28	32.48M
	7793.00	1.43	32.48	7688.72	211.62	481.97	896.09	1017.48	61.73	0.26	39.1M
	7888.00	1.71	39.10	7783.69	213.21	484.07	897.62	1019.83	61.66	0.35	137.64M
	7983.00	0.08	137.64	7878.67	213.95	485.13	898.56	1021.15	61.64	1.81	193M
	8077.00	0.34	193.00	7972.67	213.65	484.81	898.54	1020.98	61.65	0.32	350.12M
	8172.00	0.22	350.12	8067.67	213.59	484.71	898.44	1020.85	61.65	0.58	34.06M
	8267.00	0.46	34.06	8162.67	214.01	485.21	898.62	1021.25	61.63	0.36	10.23M
	8362.00	0.55	10.23	8257.67	214.66	485.97	898.92	1021.87	61.60	0.24	14.16M
	8457.00	0.83	14.16	8352.66	215.67	487.09	899.17	1022.62	61.56	0.30	23.8M
	8552.00	1.64	23.80	8447.64	217.30	489.00	899.89	1024.16	61.48	0.88	41.5M
	8647.00	0.85	41.50	8542.62	218.72	490.77	900.90	1025.90	61.42	0.92	32.57M
	8741.00	1.29	32.57	8636.60	219.78	492.18	901.93	1027.49	61.38	0.50	331.23M
	8837.00	0.39	331.23	8732.59	220.81	493.38	902.36	1028.43	61.33	1.20	118.24M
	8932.00	0.57	118.24	8827.59	220.80	493.44	902.62	1028.69	61.34	0.97	50.74M
	9027.00	1.52	50.74	8922.57	220.96	494.01	904.01	1030.19	61.34	1.48	326.71M
	9122.00	0.40	326.71	9017.56	221.77	495.09	904.80	1031.40	61.31	1.61	293.69M
	9217.00	1.15	293.69	9112.55	222.70	495.75	903.75	1030.79	61.25	0.89	278.84M
	9311.00	2.58	278.84	9206.50	224.20	496.45	900.79	1028.54	61.14	1.59	292.34M
	9406.00	2.26	292.34	9301.42	226.28	497.49	896.95	1025.68	60.98	0.69	300.25M
	9498.00	3.03	300.25	9393.32	229.17	499.41	893.17	1023.31	60.79	0.92	265.86M
	9592.00	1.46	265.86	9487.25	231.23	500.57	889.83	1020.97	60.64	2.13	254.38M
	9687.00	1.53	254.38	9582.21	231.50	500.14	887.40	1018.64	60.59	0.32	260.27M
	9782.00	1.43	260.27	9677.18	231.65	499.60	885.01	1016.29	60.55	0.19	260.81M
	9877.00	1.73	260.81	9772.15	231.96	499.17	882.43	1013.83	60.50	0.32	262.96M
	9972.00	1.63	262.96	9867.11	232.35	498.78	879.67	1011.24	60.45	0.12	221.3M
	10067.00	0.80	221.30	9962.08	232.21	498.11	877.89	1009.36	60.43	1.22	241.04M
	10162.00	0.75	241.04	10057.08	231.72	497.32	876.91	1008.11	60.44	0.28	241.49M
SLB MWD DMAG Survey	10264.00	1.10	241.49	10159.06	231.37	496.53	875.47	1006.47	60.44	0.34	256.67M
	10359.00	1.12	256.67	10254.05	231.22	495.88	873.76	1004.66	60.42	0.31	260.92M
	10454.00	1.43	260.92	10349.02	231.42	495.47	871.69	1002.66	60.39	0.34	268.8M
	10548.00	1.72	268.80	10442.99	231.93	495.26	869.12	1000.32	60.32	0.38	255.35M
	10643.00	1.71	255.35	10537.94	232.34	494.87	866.32	997.70	60.26	0.42	263.45M
	10737.00	1.68	263.45	10631.90	232.61	494.36	863.60	995.08	60.21	0.26	277.72M
	10831.00	1.50	277.72	10725.87	233.35	494.37	861.01	992.84	60.14	0.46	356.68M
	10926.00	1.93	356.68	10820.84	235.41	496.13	859.68	992.57	60.01	2.32	1.72M
	10973.00	4.57	1.72	10867.76	237.96	498.79	859.69	993.92	59.88	5.64	346.93M
	11020.00	8.54	346.93	10914.44	243.23	504.07	858.96	995.94	59.59	9.11	18.13L
	11114.00	18.69	336.85	11005.69	265.21	524.77	851.44	1000.17	58.35	11.05	4.71R
	11209.00	26.09	338.23	11093.47	301.17	558.21	837.69	1006.64	56.32	7.81	4.51R
	11303.00	32.60	339.18	11175.37	347.03	601.12	821.00	1017.55	53.79	6.94	3.23L
	11398.00	37.33	338.74	11253.20	401.27	651.92	801.45	1033.11	50.87	4.99	0.37R
	11492.00	46.19	338.82	11323.24	463.58	710.22	778.82	1054.03	47.64	9.43	16.03R
	11586.00	53.11	341.29	11384.07	535.02	777.54	754.47	1083.42	44.14	7.63	44.49R
Actual FTP Cross	11622.00	54.49	342.94	11405.34	564.06	805.18	745.56	1097.35	42.80	5.32	43.52R
	11681.00	56.79	345.52	11438.64	612.75	852.05	732.34	1123.52	40.68	5.32	20.59R
	11775.00	62.11	347.77	11486.41	693.56	930.79	713.69	1172.91	37.48	6.02	2.21L
	11870.00	68.91	347.49	11525.76	779.76	1015.18	695.17	1230.39	34.40	7.16	14.11R
	11964.00	74.56	348.96	11555.21	868.71	1102.53	676.98	1293.79	31.55	6.19	9.61R
	12058.00	79.80	349.86	11576.06	959.88	1192.60	660.15	1363.12	28.97	5.65	49.93L
	12152.00	82.17	347.03	11590.79	1052.39	1283.54	641.55	1434.94	26.56	3.90	6.18L
	12270.00	86.32	346.58	11602.62	1169.60	1397.82	614.76	1527.03	23.74	3.54	28.67L
	12364.00	90.00	344.57	11605.64	1263.48	1488.78	591.36	1601.93	21.66	4.46	90L
	12460.00	90.00	343.16	11605.64	1359.48	1581.00	564.68	1678.82	19.65	1.47	86.78R
	12553.00	90.14	345.65	11605.53	1452.47	1670.57	539.68	1755.58	17.90	2.68	73.61L
	12648.00	90.59	344.12	11604.92	1547.44	1762.28	514.91	1835.96	16.29	1.68	117.88L
	12742.00	89.04	341.19	11605.23	1641.41	1851.99	486.89	1914.92	14.73	3.53	51.44L
	12932.00	89.59	340.50	11607.50	1831.16	2031.46	424.55	2075.35	11.80	0.46	73.26L
	13026.00	89.93	339.37	11607.89	1924.95	2119.75	392.30	2155.75	10.49	1.26	67.82R
	13215.00	90.79	341.48	11606.71	2113.62	2297.81	328.98	2321.24	8.15	1.21	79.21L
	13310.00	90.83	341.27	11605.36	2208.53	2387.83	298.65	2406.43	7.13	0.23	46.32R
	13498.00	92.28	342.79	11600.26	2396.37	2566.58	240.67	2577.84	5.36	1.12	110.16R
	13593.00	91.46	345.02	11597.16	2491.31	2657.80	214.35	2666.43	4.61	2.50	23.3R
	13782.00	92.04	345.27	11591.39	2680.16	2840.40	165.92	2845.24	3.34	0.33	131.6L
	13876.00	90.45	343.48	11589.35	2774.13	2930.90	140.61	2934.27	2.75	2.55	105.57L
	13970.00	90.28	342.87	11588.75	2868.12	3020.87	113.40	3023.00	2.15	0.67	70.46R
	14065.00	90.83	344.42	11587.83	2963.11	3112.02	86.65	3113.22	1.59	1.73	153.85R
	14255.00	90.28	344.69	11585.99	3153.08	3295.15	36.05	3295.34	0.63	0.32	80.17R
	14349.00	90.77	347.52	11585.12	3246.99	3386.38	13.48	3386.41	0.23	3.06	156.3R
	14444.00	89.38	348.13	11585.00	3341.74	3479.24	-6.55	3479.25	359.89	1.60	24.75L
	14633.00	90.79	347.48	11584.72	3530.26	3663.97	-46.48	3664.27	359.27	0.82	61.37L
	14728.00	91.51	346.16	11582.81	3625.10	3756.45	-68.13	3757.07	358.96	1.58	107.05L
	14917.00	91.24	345.28	11578.28	3813.93	3939.55	-114.74	3941.22	358.33	0.49	119.47L
	15011.00	90.03	343.14	11577.24	3907.91	4029.99	-140.31	4032.44	358.01	2.62	63.75R
	15106.00	90.75	344.60	11576.59	4002.91	4121.25	-166.70	4124.62	357.68	1.71	113.57L
	15200.00	87.60	337.37	11577.94	4096.72	4210.04	-197.30	4214.66	357.32	8.39	33.52R
	15294.00	89.73	338.78	11580.13	4190.22	4297.21	-232.39	4303.49	356.90	2.72	133.76L
	15389.00	87.11	336.04	11582.75	4284.59	4384.87	-268.86	4393.11	356.49	3.99	58.98R
	15483.00	88.32	338.05	11586.50	4377.87	4471.36	-305.49	4481.78	356.09	2.49	90.54L
	15673.00	88.29	334.50	11592.12	4566.16	4645.20	-381.89	4660.87	355.30	1.87	45.52L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	15767.00	89.97	332.79	11593.55	4658.69	4729.41	-423.61	4748.34	354.88	2.55	61.8R
	15861.00	93.65	339.68	11590.58	4751.76	4815.33	-461.45	4837.39	354.53	8.31	95.12R
	15956.00	92.93	347.38	11585.12	4846.53	4906.21	-488.31	4930.45	354.32	8.13	91.45R
	16050.00	92.85	350.38	11580.38	4940.02	4998.32	-506.42	5023.91	354.21	3.19	156.18R
	16145.00	89.45	351.88	11578.47	5034.20	5092.15	-521.06	5118.73	354.16	3.91	2.39R
	16239.00	90.17	351.91	11578.78	5127.24	5185.21	-534.31	5212.66	354.12	0.77	155.45R
	16334.00	89.01	352.44	11579.46	5221.21	5279.32	-547.24	5307.60	354.08	1.34	75.99L
	16522.00	90.52	346.40	11580.24	5408.19	5464.03	-581.75	5494.91	353.92	3.31	108.16L
	16616.00	90.31	345.76	11579.55	5502.11	5555.26	-604.36	5588.04	353.79	0.72	97.43R
	16710.00	90.07	347.60	11579.24	5595.98	5646.73	-626.01	5681.33	353.67	1.97	101.07R
	16804.00	89.62	349.90	11579.50	5689.61	5738.92	-644.35	5774.98	353.59	2.49	112.11L
	16899.00	88.52	347.19	11581.04	5784.25	5832.00	-663.21	5869.59	353.51	3.08	103.07L
	17089.00	88.11	345.42	11586.63	5973.97	6016.51	-708.17	6058.05	353.29	0.96	114.45L
	17278.00	87.04	343.06	11594.62	6162.78	6198.23	-759.46	6244.59	353.01	1.37	25.96R
	17467.00	88.93	343.98	11601.27	6351.65	6379.34	-813.04	6430.95	352.74	1.11	165.22R
	17561.00	88.21	344.17	11603.62	6445.62	6469.71	-838.82	6523.86	352.61	0.79	154.86R
	17751.00	87.38	344.56	11610.93	6635.46	6652.54	-889.99	6711.81	352.38	0.48	126.42L
	17845.00	85.80	342.41	11616.52	6729.29	6742.50	-916.66	6804.52	352.26	2.84	80.76R
	18035.00	85.94	343.27	11630.20	6918.77	6923.56	-972.57	6991.54	352.00	0.46	48.89R
	18225.00	87.73	345.32	11640.69	7108.45	7106.18	-1023.91	7179.56	351.80	1.43	95.05L
	18319.00	87.60	343.84	11644.52	7202.36	7196.71	-1048.89	7272.75	351.71	1.58	133.09L
	18415.00	85.42	341.50	11650.37	7298.15	7288.18	-1077.42	7367.38	351.59	3.33	41.68R
	18510.00	89.62	345.23	11654.48	7393.03	7379.08	-1104.58	7461.29	351.49	5.91	173.1R
	18605.00	88.38	345.38	11656.14	7487.97	7470.96	-1128.67	7555.73	351.41	1.31	69.3R
	18794.00	88.83	346.57	11660.74	7676.77	7654.26	-1174.46	7743.84	351.28	0.67	114.54L
	18888.00	87.35	343.32	11663.87	7770.68	7744.97	-1198.86	7837.21	351.20	3.80	16.48R
	18983.00	89.65	344.00	11666.36	7865.64	7836.10	-1225.57	7931.36	351.11	2.52	160.98L
	19078.00	88.49	343.60	11667.90	7960.63	7927.31	-1252.07	8025.58	351.02	1.29	12.2R
	19267.00	88.86	343.68	11672.27	8149.57	8108.61	-1305.30	8213.00	350.86	0.20	146.67L
	19361.00	87.69	342.91	11675.10	8243.53	8198.60	-1332.30	8306.15	350.77	1.49	150.76L
	19551.00	87.03	342.54	11683.85	8433.29	8379.84	-1388.66	8494.12	350.59	0.40	16.99R
	19646.00	90.37	343.56	11686.01	8528.25	8470.67	-1416.35	8588.27	350.51	3.68	154.8R
	19836.00	90.03	343.72	11685.34	8718.25	8652.98	-1469.86	8776.93	350.36	0.20	161.39L
	19930.00	88.10	343.07	11686.88	8812.23	8743.04	-1496.72	8870.23	350.29	2.17	29.11R
	20025.00	90.40	344.35	11688.12	8907.21	8834.21	-1523.36	8964.59	350.22	2.77	113.01L
	20120.00	90.09	343.62	11687.71	9002.21	8925.52	-1549.57	9059.04	350.15	0.83	119.02R
	20309.00	89.43	344.81	11688.51	9191.20	9107.39	-1600.99	9247.04	350.03	0.72	132.55L
	20498.00	88.43	343.72	11692.04	9380.15	9289.27	-1652.23	9435.06	349.91	0.78	59.1R
	20593.00	89.40	345.34	11693.83	9475.12	9380.81	-1677.56	9529.63	349.86	1.99	156.04L
	20688.00	88.68	345.02	11695.43	9570.07	9472.63	-1701.86	9624.30	349.81	0.83	33.34R
	20877.00	89.06	345.27	11699.15	9758.98	9655.28	-1750.30	9812.65	349.73	0.24	9.64R
	21066.00	91.12	345.62	11698.86	9947.88	9838.20	-1797.80	10001.12	349.64	1.11	155.42R
	21161.00	88.54	346.80	11699.14	10042.79	9930.46	-1820.44	10095.94	349.61	2.99	150.39R
	21256.00	85.96	348.27	11703.70	10137.46	10023.10	-1840.92	10190.76	349.59	3.12	73.44L
	21376.00	86.70	345.79	11711.38	10257.00	10139.79	-1867.80	10310.38	349.56	2.15	170.86R
	21449.00	84.35	346.17	11717.07	10329.72	10210.39	-1885.43	10383.01	349.54	3.26	50.53L
	21639.00	88.76	340.84	11728.50	10519.26	10392.13	-1939.26	10571.52	349.43	3.64	62.29L
	21733.00	89.69	339.07	11729.77	10613.04	10480.42	-1971.48	10664.24	349.35	2.13	100.49L
	21828.00	89.59	338.53	11730.36	10707.69	10568.99	-2005.83	10757.64	349.25	0.58	81.52R
	21923.00	89.76	339.67	11730.90	10802.37	10657.74	-2039.72	10851.17	349.17	1.21	90L
Last SLB MWD DMAG Survey	22018.00	89.76	339.60	11731.30	10897.13	10746.80	-2072.78	10944.86	349.08	0.07	HS
Actual LTP Cross	22058.00	89.76	339.60	11731.47	10937.03	10784.29	-2086.72	10984.32	349.05	0.00	HS
Projection to Bit	22141.00	89.76	339.60	11731.82	11019.81	10862.08	-2115.66	11066.20	348.98	0.00	

Survey Type: Def Survey

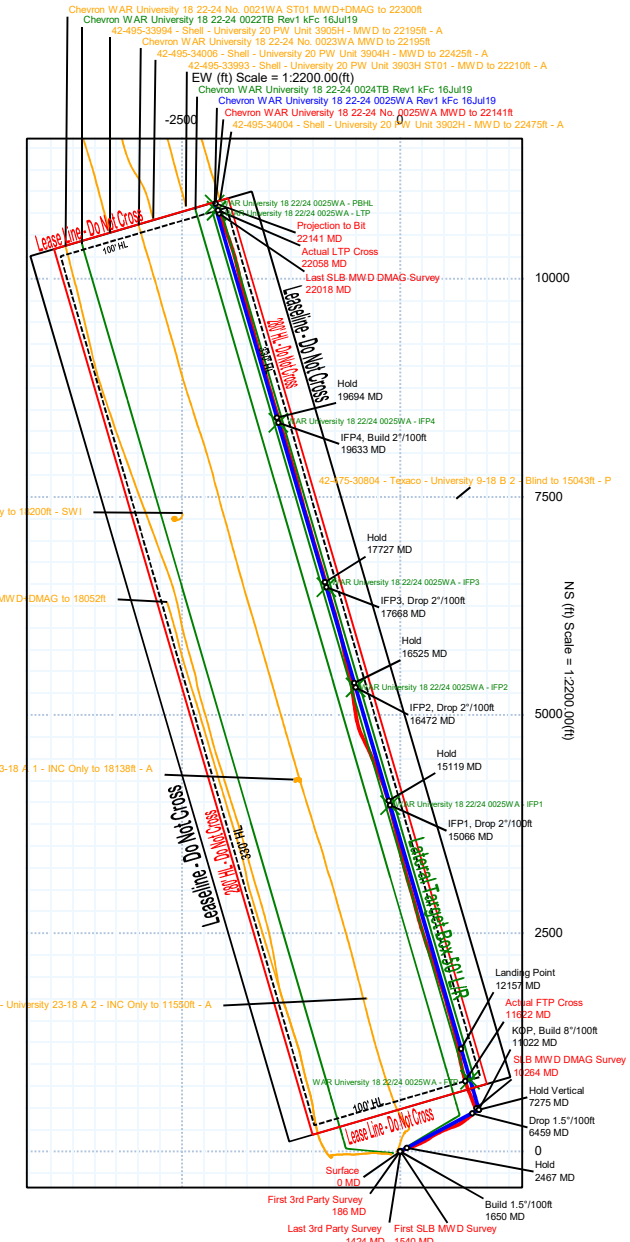
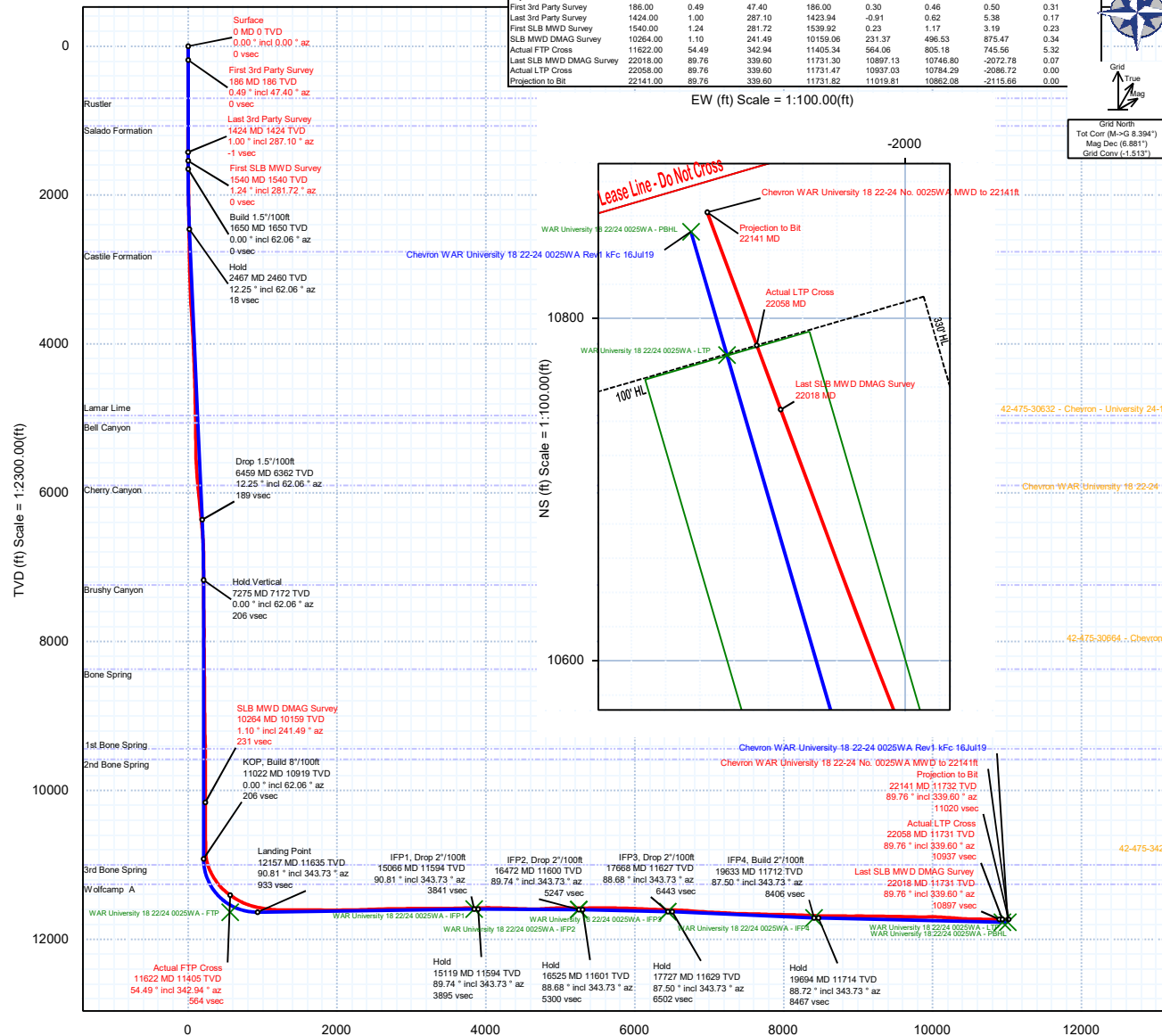
Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	28.000	1/98.425	30.000	30.000	A001Mb_MWD-Depth Only	WAR University 18 22-24 No. 0025WA / Chevron WAR
	1	28.000	28.000	Act Stns	30.000	30.000	A001Mb_MWD-Depth Only	WAR University 18 22-24 No. 0025WA / Chevron WAR
	1	28.000	1424.000	Act Stns	30.000	30.000	A001Mb_MWD	WAR University 18 22-24 No. 0025WA / Chevron WAR
	1	1424.000	10162.000	Act Stns	30.000	30.000	B001Mb_MWD+HRGM	WAR University 18 22-24 No. 0025WA / Chevron WAR
	1	10162.000	22141.000	Act Stns	30.000	30.000	S028Ma_MWD+HRGM+MS	WAR University 18 22-24 No. 0025WA / Chevron WAR

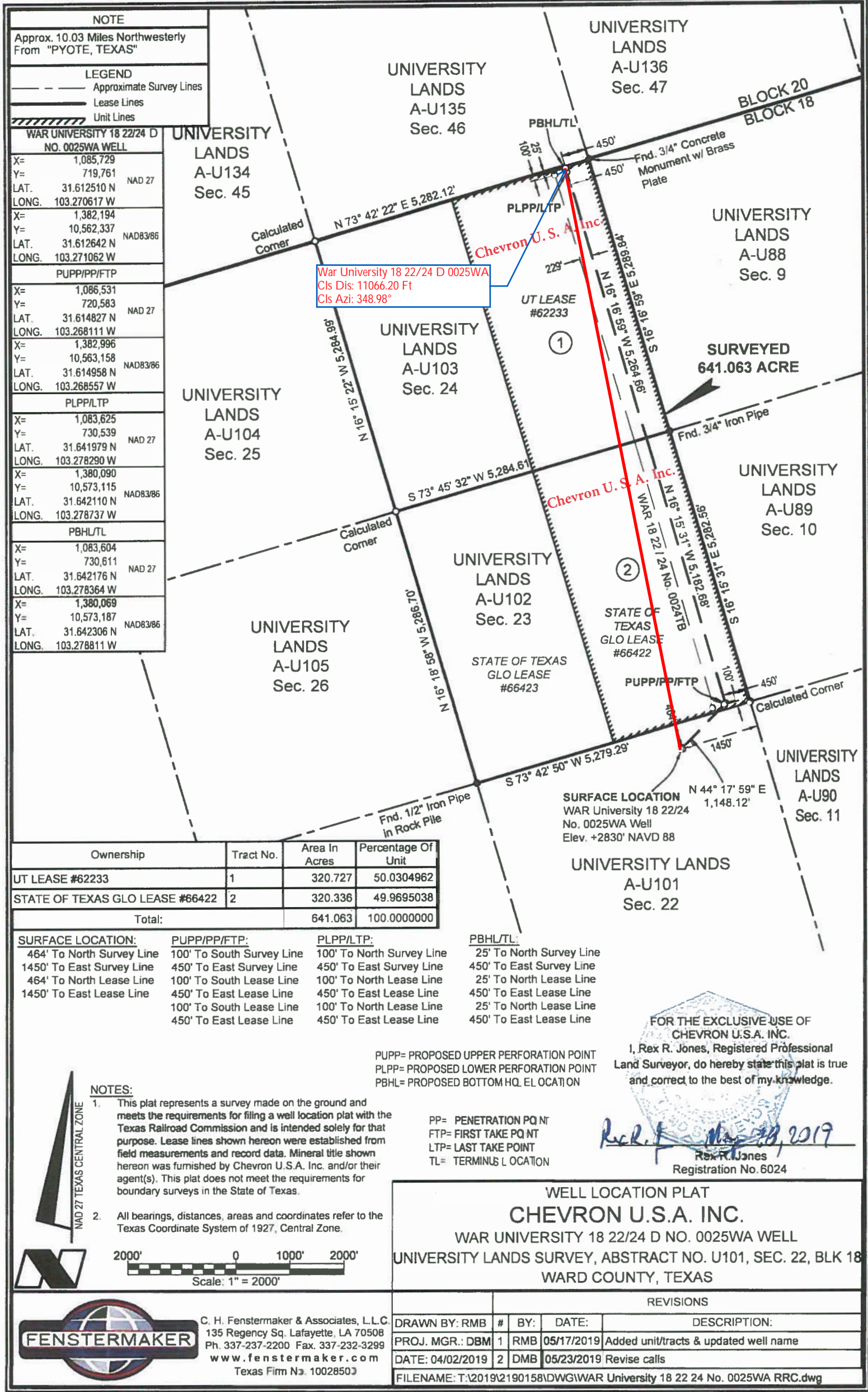


Borehole: WAR University 18 22-24 No. 0025WA				Well: WAR University 18 22-24 No. 0025WA				Field: TX Ward County (NAD 27)				Structure: Chevron WAR University 18 22-24 Pad 2			
Gravity & Magnetic Parameters								Surface Location NAD27 Texas State Plane, Central Zone, US Feet				Miscellaneous			
Model: HDGM 2019		Dip: 59.393°		Date: 05-Mar-2020		Lat: N 31 36 45.04		Northing: 7197611RUS		Grid Conv: -1.5129°		Slot: 25WA		TVD Ref: RKB = 28ft (2858ft above MSL)	
MagDec: 6.881°		FS: 47301.683nT		Gravity FS: 998.467mgn (9.80665 Based)		Lon: W 103 16 14.22		Easting: 1085729RUS		Scale Fact: 0.99993847		Plan: Chevron WAR University 18 22-24 No. 0025WA MWD to 22141ft			

Critical Point	Critical Points							
	MD	INCL	AZIM	YVD	VSEC	Nr(Prc)	Er(Wr)	DLR
Adjusted BC	186.00	0.00	0.00	28.00	0.00			
First 3rd Party Survey	288.00	0.49	47.40	188.00	0.30	0.46	0.50	0.31
Last 3rd Party Survey	1.00	0.00	287.10	1423.94	0.91	0.38	0.52	0.10
SLB MWD Survey	288.00	0.49	47.40	1539.92	0.23	1.17	0.39	0.23
SLB MWD DMAQ Survey	10294.00	1.10	21.31	10159.68	23.37	168.53	875.47	0.44
CP Close	1620.00	14.49	342.94	104.34	646.06	830.58	25.76	0.17
SLB MWD DMAQ Survey	22101.00	89.76	339.60	11731.30	10897.13	10746.80	20122.78	0.07
CP Close	22101.00	89.76	339.60	11731.30	10907.13	10746.80	20122.78	0.07
Protection Bit	22101.00	89.76	339.60	11731.82	11019.81	10852.08	20276.66	0.07



Vertical Section (ft) Azim = 343.73° Scale = 1:2300.00(ft) Origin = 0N/-S, 0E/-W



Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)



I, Fredy Portillo certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 25, 2019 through March 05, 2020, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 1540.00 feet to a depth of 22018.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Chevron U.S.A. Inc. for the War University 18 22/24 D 0025WA Well (Original Hole) API No. 42-475-37934 in Texas; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

A handwritten signature in black ink that reads "Fredy Portillo". The signature is written in a cursive style with a horizontal line underneath the name.

Fredy Portillo
FS