

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

NMOCD - Rec'd10/06/2020

Form C-102

Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT
As-Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45118	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP (GAS)
⁴ Property Code 322146	⁵ Property Name HH SO 8 5 FED 003	⁶ Well Number 4H
⁷ OGRID No. 4323	⁸ Operator Name CHEVRON U.S.A. INC.	⁹ Elevation 3265'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	17	26 SOUTH	27 EAST, N.M.P.M.		554'	NORTH	2309'	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	5	26 SOUTH	27 EAST, N.M.P.M.		182'	NORTH	2007'	EAST	EDDY

¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ <table border="1"> <tr><th colspan="2">FINAL LAST TAKE POINT</th></tr> <tr><td>X= 538,245'</td><td>NAD 27</td></tr> <tr><td>Y= 392,106'</td><td></td></tr> <tr><td>LAT. 32.077954° N</td><td></td></tr> <tr><td>LONG. 104.209855° W</td><td></td></tr> <tr><td>X= 579,429'</td><td>NAD83/86</td></tr> <tr><td>Y= 392,163'</td><td></td></tr> <tr><td>LAT. 32.078075° N</td><td></td></tr> <tr><td>LONG. 104.210349° W</td><td></td></tr> </table> <table border="1"> <tr><th colspan="2">MID POINT</th></tr> <tr><td>X= 538,202'</td><td>NAD 27</td></tr> <tr><td>Y= 387,130'</td><td></td></tr> <tr><td>LAT. 32.064276° N</td><td></td></tr> <tr><td>LONG. 104.210014° W</td><td></td></tr> <tr><td>X= 579,385'</td><td>NAD83/86</td></tr> <tr><td>Y= 387,187'</td><td></td></tr> <tr><td>LAT. 32.064397° N</td><td></td></tr> <tr><td>LONG. 104.210508° W</td><td></td></tr> </table> <table border="1"> <tr><th colspan="2">FINAL FIRST TAKE POINT</th></tr> <tr><td>X= 538,119'</td><td>NAD 27</td></tr> <tr><td>Y= 382,134'</td><td></td></tr> <tr><td>LAT. 32.050542° N</td><td></td></tr> <tr><td>LONG. 104.210300° W</td><td></td></tr> <tr><td>X= 579,302'</td><td>NAD83/86</td></tr> <tr><td>Y= 382,191'</td><td></td></tr> <tr><td>LAT. 32.050664° N</td><td></td></tr> <tr><td>LONG. 104.210794° W</td><td></td></tr> </table> <table border="1"> <tr><th colspan="2">KICK OFF POINT</th></tr> <tr><td>X= 538,123'</td><td>NAD 27</td></tr> <tr><td>Y= 381,435'</td><td></td></tr> <tr><td>LAT. 32.048619° N</td><td></td></tr> <tr><td>LONG. 104.210289° W</td><td></td></tr> <tr><td>X= 579,307'</td><td>NAD83/86</td></tr> <tr><td>Y= 381,491'</td><td></td></tr> <tr><td>LAT. 32.048741° N</td><td></td></tr> <tr><td>LONG. 104.210782° W</td><td></td></tr> </table>	FINAL LAST TAKE POINT		X= 538,245'	NAD 27	Y= 392,106'		LAT. 32.077954° N		LONG. 104.209855° W		X= 579,429'	NAD83/86	Y= 392,163'		LAT. 32.078075° N		LONG. 104.210349° W		MID POINT		X= 538,202'	NAD 27	Y= 387,130'		LAT. 32.064276° N		LONG. 104.210014° W		X= 579,385'	NAD83/86	Y= 387,187'		LAT. 32.064397° N		LONG. 104.210508° W		FINAL FIRST TAKE POINT		X= 538,119'	NAD 27	Y= 382,134'		LAT. 32.050542° N		LONG. 104.210300° W		X= 579,302'	NAD83/86	Y= 382,191'		LAT. 32.050664° N		LONG. 104.210794° W		KICK OFF POINT		X= 538,123'	NAD 27	Y= 381,435'		LAT. 32.048619° N		LONG. 104.210289° W		X= 579,307'	NAD83/86	Y= 381,491'		LAT. 32.048741° N		LONG. 104.210782° W		<table border="1"> <tr><th colspan="2">ACTUAL BOTTOM HOLE LOCATION</th></tr> <tr><td>X= 538,250'</td><td>NAD 27</td></tr> <tr><td>Y= 392,266'</td><td></td></tr> <tr><td>LAT. 32.078393° N</td><td></td></tr> <tr><td>LONG. 104.209840° W</td><td></td></tr> <tr><td>X= 579,433'</td><td>NAD83/86</td></tr> <tr><td>Y= 392,323'</td><td></td></tr> <tr><td>LAT. 32.078515° N</td><td></td></tr> <tr><td>LONG. 104.210334° W</td><td></td></tr> </table> CORNER COORDINATES TABLE (NAD 27) A - Y=392446.14, X=537606.87 B - Y=392449.96, X=540258.92 C - Y=387132.57, X=537574.14 D - Y=387122.04, X=540212.94 E - Y=381810.94, X=534988.20 F - Y=381805.09, X=537646.07 G - Y=381799.23, X=540303.95 H - Y=376480.27, X=535066.16 I - Y=376477.58, X=537710.13 <table border="1"> <tr><th colspan="2">HH SO 8 5 FED 003 4H WELL</th></tr> <tr><td>X= 537,306'</td><td>NAD 27</td></tr> <tr><td>Y= 381,252'</td><td></td></tr> <tr><td>LAT. 32.048119° N</td><td></td></tr> <tr><td>LONG. 104.212927° W</td><td></td></tr> <tr><td>X= 578,490'</td><td>NAD83/86</td></tr> <tr><td>Y= 381,309'</td><td></td></tr> <tr><td>LAT. 32.048241° N</td><td></td></tr> <tr><td>LONG. 104.213421° W</td><td></td></tr> <tr><td colspan="2">ELEVATION +3265' NAVD 88</td></tr> </table>	ACTUAL BOTTOM HOLE LOCATION		X= 538,250'	NAD 27	Y= 392,266'		LAT. 32.078393° N		LONG. 104.209840° W		X= 579,433'	NAD83/86	Y= 392,323'		LAT. 32.078515° N		LONG. 104.210334° W		HH SO 8 5 FED 003 4H WELL		X= 537,306'	NAD 27	Y= 381,252'		LAT. 32.048119° N		LONG. 104.212927° W		X= 578,490'	NAD83/86	Y= 381,309'		LAT. 32.048241° N		LONG. 104.213421° W		ELEVATION +3265' NAVD 88			¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Kayla McConnell</i> 2/25/2020 Signature Date Kayla McConnell Printed Name kaylamcconnell@chevron.com E-mail Address ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 04/07/2017 Date of Survey Signature and Seal of Professional Surveyor: <i>Robert L. Lastrapes</i> 23006 12/13/2019 Certificate Number
FINAL LAST TAKE POINT																																																																																																																	
X= 538,245'	NAD 27																																																																																																																
Y= 392,106'																																																																																																																	
LAT. 32.077954° N																																																																																																																	
LONG. 104.209855° W																																																																																																																	
X= 579,429'	NAD83/86																																																																																																																
Y= 392,163'																																																																																																																	
LAT. 32.078075° N																																																																																																																	
LONG. 104.210349° W																																																																																																																	
MID POINT																																																																																																																	
X= 538,202'	NAD 27																																																																																																																
Y= 387,130'																																																																																																																	
LAT. 32.064276° N																																																																																																																	
LONG. 104.210014° W																																																																																																																	
X= 579,385'	NAD83/86																																																																																																																
Y= 387,187'																																																																																																																	
LAT. 32.064397° N																																																																																																																	
LONG. 104.210508° W																																																																																																																	
FINAL FIRST TAKE POINT																																																																																																																	
X= 538,119'	NAD 27																																																																																																																
Y= 382,134'																																																																																																																	
LAT. 32.050542° N																																																																																																																	
LONG. 104.210300° W																																																																																																																	
X= 579,302'	NAD83/86																																																																																																																
Y= 382,191'																																																																																																																	
LAT. 32.050664° N																																																																																																																	
LONG. 104.210794° W																																																																																																																	
KICK OFF POINT																																																																																																																	
X= 538,123'	NAD 27																																																																																																																
Y= 381,435'																																																																																																																	
LAT. 32.048619° N																																																																																																																	
LONG. 104.210289° W																																																																																																																	
X= 579,307'	NAD83/86																																																																																																																
Y= 381,491'																																																																																																																	
LAT. 32.048741° N																																																																																																																	
LONG. 104.210782° W																																																																																																																	
ACTUAL BOTTOM HOLE LOCATION																																																																																																																	
X= 538,250'	NAD 27																																																																																																																
Y= 392,266'																																																																																																																	
LAT. 32.078393° N																																																																																																																	
LONG. 104.209840° W																																																																																																																	
X= 579,433'	NAD83/86																																																																																																																
Y= 392,323'																																																																																																																	
LAT. 32.078515° N																																																																																																																	
LONG. 104.210334° W																																																																																																																	
HH SO 8 5 FED 003 4H WELL																																																																																																																	
X= 537,306'	NAD 27																																																																																																																
Y= 381,252'																																																																																																																	
LAT. 32.048119° N																																																																																																																	
LONG. 104.212927° W																																																																																																																	
X= 578,490'	NAD83/86																																																																																																																
Y= 381,309'																																																																																																																	
LAT. 32.048241° N																																																																																																																	
LONG. 104.213421° W																																																																																																																	
ELEVATION +3265' NAVD 88																																																																																																																	

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

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)

Schlumberger

May 21, 2019

Chevron USA Inc.
9525 CAMINO MEDIA #1392
BAKERSFIELD, CA

Re:

17, 26S, 27E, EDDY NM
32.04824 104.21343

CLIENT: Chevron USA Inc.
WELL: HH SO 8 5 FED 003 4H
FIELD: PURPLE SAGE (WOLFCAMP)

RIG: PATTERSON 815
COUNTY: EDDY
API NO: 30-015-45118-0000
JOB NO: 18MLD3956

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>
KHALID ISSA FS	HH SO 8 5 FED 003 4H Original Hole	506.00 Ft to 20289.00 Ft	December 1, 2018 to May 15, 2019	TelePacer

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Field Service Manager

Schlumberger-Private

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)

Schlumberger

Well Reference:
17, 26S, 27E, EDDY NM
32.04824 104.21343

I, KHALID ISSA certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of December 01, 2018 through May 15, 2019, conduct or supervise the taking of the TelePacer surveys from a depth of 506.00 feet to a depth of 20289.00 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 USA Inc. for the HH SO 8 5 FED 003 4H Well (Original Hole) API No. 30-015-45118-0000 in New Mexico; 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.

By
KHALID ISSA
FS

Khalid Issa

Subscribed and Sworn to before me this 21st day of May (month) 2019 (yr)

My Commission expires:

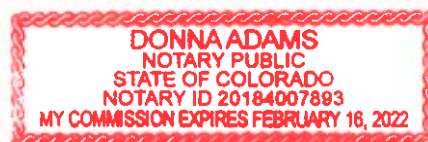
2-11-2022

D. Adams -

(signature)

Notary Public

Adams County Colorado
(County State)



Chevron HH SO 8 5 FED 003 No. 4H MWD to 20331ft Survey Geodetic Report (Def Survey)

Report Date: May 16, 2019 - 08:41 AM
Client: Chevron
Field: NM Eddy County (NAD 27)
Structure / Slot: Chevron HH SO 8 5 FED 003 No. 4H / Chevron HH SO 8 5 FED 003 No. 4H
Well: Chevron HH SO 8 5 FED 003 No. 4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Chevron HH SO 8 5 FED 003 No. 4H MWD to 20331ft
Survey Date: May 16, 2019
Tort / AHD / DDI / ERD Ratio: 298.812 ° / 11750.647 ft / 6.867 / 1.211
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 2' 53.23011", W 104° 12' 46.53521"
Location Grid N/E Y/X: N 381252.000 ftUS, E 537306.000 ftUS
CRS Grid Convergence Angle: 0.0639 °
Grid Scale Factor: 0.99991068
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.760 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 28ft
TVD Reference Elevation: 3293.000 ft above MSL
Seabed / Ground Elevation: 3265.000 ft above MSL
Magnetic Declination: 7.229 °
Total Gravity Field Strength: 998.4291mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47776.006 nT
Magnetic Dip Angle: 59.658 °
Declination Date: May 16, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0639 °
Total Corr Mag North->Grid North: 7.1654 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	381252.00	537306.00	N 32 2 53.23	W 104 12 46.54
First 3rd Party Survey	148.00	0.60	284.41	148.00	0.20	0.19	-0.75	0.41	381252.19	537305.25	N 32 2 53.23	W 104 12 46.54
	193.00	1.10	128.14	193.00	-0.01	-0.02	-0.64	3.70	381251.98	537305.36	N 32 2 53.23	W 104 12 46.54
	282.00	0.40	97.91	281.99	-0.59	-0.59	0.34	0.88	381251.41	537306.34	N 32 2 53.22	W 104 12 46.53
	372.00	0.50	147.40	371.98	-0.96	-0.96	0.86	0.43	381251.04	537306.86	N 32 2 53.22	W 104 12 46.53
Last 3rd Party Survey	452.00	1.40	173.30	451.97	-2.23	-2.22	1.17	1.22	381249.78	537307.17	N 32 2 53.21	W 104 12 46.52
	506.00	0.80	211.45	505.96	-3.21	-3.20	1.05	1.70	381248.80	537307.05	N 32 2 53.20	W 104 12 46.52
First SLB MWD Survey	595.00	0.92	27.25	594.96	-3.10	-3.10	1.05	1.93	381248.90	537307.05	N 32 2 53.20	W 104 12 46.52
	687.00	2.35	61.84	686.92	-1.56	-1.55	3.05	1.82	381250.45	537309.05	N 32 2 53.21	W 104 12 46.50
	874.00	4.57	75.98	873.57	2.01	2.07	13.66	1.26	381254.07	537319.66	N 32 2 53.25	W 104 12 46.38
	968.00	6.67	77.11	967.12	4.10	4.19	22.62	2.24	381256.19	537328.61	N 32 2 53.27	W 104 12 46.27
	1063.00	7.93	80.50	1061.34	6.36	6.50	34.46	1.40	381258.50	537340.45	N 32 2 53.29	W 104 12 46.13
	1157.00	8.79	77.64	1154.34	8.91	9.11	47.87	1.02	381261.11	537353.86	N 32 2 53.32	W 104 12 45.98
	1252.00	10.05	75.59	1248.06	12.46	12.73	62.99	1.37	381264.73	537368.98	N 32 2 53.36	W 104 12 45.80
	1346.00	9.63	74.75	1340.68	16.51	16.84	78.52	0.47	381268.84	537384.51	N 32 2 53.40	W 104 12 45.62
	1441.00	9.69	77.22	1434.33	20.30	20.70	93.98	0.44	381272.69	537399.97	N 32 2 53.43	W 104 12 45.44
	1535.00	9.49	77.91	1527.02	23.61	24.07	109.27	0.25	381276.07	537415.26	N 32 2 53.47	W 104 12 45.27
	1630.00	9.02	78.25	1620.78	26.70	27.23	124.22	0.50	381279.22	537430.21	N 32 2 53.50	W 104 12 45.09
	1724.00	10.57	77.25	1713.41	30.04	30.63	139.85	1.66	381282.63	537445.83	N 32 2 53.53	W 104 12 44.91
	1818.00	11.39	77.81	1805.69	33.83	34.49	157.33	0.88	381286.49	537463.31	N 32 2 53.57	W 104 12 44.71
	1913.00	11.51	79.07	1898.80	37.53	38.27	175.80	0.29	381290.27	537481.79	N 32 2 53.61	W 104 12 44.49
	2007.00	10.77	75.13	1991.03	41.49	42.30	193.50	1.13	381294.30	537499.48	N 32 2 53.65	W 104 12 44.29
	2102.00	10.43	73.48	2084.41	46.14	47.02	210.32	0.48	381299.02	537516.30	N 32 2 53.69	W 104 12 44.09
	2196.00	10.19	72.83	2176.89	50.95	51.90	226.43	0.28	381303.89	537532.40	N 32 2 53.74	W 104 12 43.90
	2291.00	10.17	74.46	2270.39	55.61	56.63	242.53	0.30	381308.62	537548.51	N 32 2 53.79	W 104 12 43.72
	2385.00	10.33	74.03	2362.89	60.08	61.17	258.63	0.19	381313.16	537564.61	N 32 2 53.83	W 104 12 43.53
	2480.00	10.14	74.34	2456.38	64.62	65.77	274.87	0.21	381317.76	537580.85	N 32 2 53.88	W 104 12 43.34
	2574.00	10.26	75.14	2548.89	68.93	70.15	290.93	0.20	381322.14	537596.91	N 32 2 53.92	W 104 12 43.15
	2669.00	10.07	73.75	2642.40	73.36	74.64	307.08	0.33	381326.64	537613.06	N 32 2 53.97	W 104 12 42.97
	2763.00	10.25	73.61	2734.93	77.95	79.30	323.00	0.19	381331.30	537628.97	N 32 2 54.01	W 104 12 42.78
	2857.00	10.18	74.49	2827.44	82.46	83.88	339.02	0.18	381335.88	537644.99	N 32 2 54.06	W 104 12 42.60
	2952.00	9.97	75.77	2920.97	86.66	88.15	355.09	0.32	381340.14	537661.05	N 32 2 54.10	W 104 12 42.41
	3047.00	9.40	76.00	3014.62	90.50	92.05	370.58	0.60	381344.04	537676.55	N 32 2 54.14	W 104 12 42.23
	3141.00	9.42	75.93	3107.36	94.16	95.78	385.49	0.02	381347.77	537691.46	N 32 2 54.17	W 104 12 42.06
	3330.00	9.33	77.46	3293.83	101.12	102.86	415.45	0.14	381354.85	537721.41	N 32 2 54.24	W 104 12 41.71
	3424.00	9.59	77.07	3386.55	104.47	106.27	430.52	0.28	381358.26	537736.48	N 32 2 54.28	W 104 12 41.53
	3519.00	9.47	77.55	3480.24	107.86	109.73	445.87	0.15	381361.72	537751.83	N 32 2 54.31	W 104 12 41.35
	3616.00	9.10	78.32	3575.97	111.07	113.00	461.17	0.40	381364.99	537767.13	N 32 2 54.34	W 104 12 41.18
	3708.00	9.40	78.69	3666.77	113.95	115.94	475.66	0.33	381367.93	537781.62	N 32 2 54.37	W 104 12 41.01
	3802.00	10.07	76.73	3759.42	117.28	119.34	491.19	0.80	381371.33	537797.14	N 32 2 54.41	W 104 12 40.83
	3897.00	10.29	77.68	3852.93	120.93	123.05	507.56	0.29	381375.04	537813.52	N 32 2 54.44	W 104 12 40.64
	3991.00	10.27	78.36	3945.42	124.34	126.54	523.97	0.13	381378.52	537829.92	N 32 2 54.48	W 104 12 40.45
	4086.00	9.92	78.83	4038.95	127.56	129.83	540.29	0.38	381381.82	537846.24	N 32 2 54.51	W 104 12 40.26
	4180.00	9.41	78.49	4131.61	130.60	132.93	555.77	0.55	381384.92	537861.72	N 32 2 54.54	W 104 12 40.08
	4369.00	8.87	79.42	4318.21	136.24	138.69	585.23	0.30	381390.68	537891.18	N 32 2 54.60	W 104 12 39.73
	4558.00	8.46	79.34	4505.05	141.37	143.94	613.22	0.22	381395.92	537919.16	N 32 2 54.65	W 104 12 39.41
	4653.00	8.36	80.09	4599.03	143.79	146.42	626.89	0.16	381398.40	537932.83	N 32 2 54.67	W 104 12 39.25
	4842.00	7.88	79.80	4786.14	148.34	151.08	653.17	0.25	381403.06	537959.11	N 32 2 54.72	W 104 12 38.94
	4936.00	7.55	80.43	4879.28	150.46	153.24	665.60	0.36	381405.23	537971.54	N 32 2 54.74	W 104 12 38.80
	5031.00	7.80	80.68	4973.43	152.48	155.33	678.12	0.27	381407.31	537984.06	N 32 2 54.76	W 104 12 38.65
	5126.00	7.74	80.63	5067.56	154.52	157.41	690.79	0.06	381409.40	537996.73	N 32 2 54.78	W 104 12 38.51
	5220.00	7.60	81.11	5160.72	156.46	159.40	703.18	0.16	381411.39	538009.12	N 32 2 54.80	W 104 12 38.36
	5314.00	7.55	80.81	5253.90	158.35	161.35	715.42	0.07	381413.34	538021.35	N 32 2 54.82	W 104 12 38.22
	5409.00	7.25	81.40	5348.11	160.19	163.24	727.51	0.33	381415.23	538033.44	N 32 2 54.84	W 104 12 38.08
	5504.00	6.93	80.44	5442.38	161.99	165.09	739.08	0.36	381417.08	538045.02	N 32 2 54.86	W 104 12 37.95
	5599.00	6.72	70.21	5536.71	164.78	167.92	749.97	1.30	381419.91	538055.90	N 32 2 54.88	W 104 12 37.82
	5694.00	6.04	65.53	5631.12	168.69	171.88	759.75	0.90	381423.86	538065.68	N 32 2 54.92	W 104 12 37.71
5789.00	5.02	62.33	5725.68	172.66	175.88	767.98	1.12	381427.86	538073.91	N 32 2 54.96	W 104 12 37.61	
5883.00	4.43	63.72	5819.36	176.15	179.40	774.87	0.64	381431.38	538080.80	N 32 2 55.00	W 104 12 37.53	
5978.00	3.42	63.93	5914.14	178.99	182.26	780.71	1.06	381434.25	538086.64	N 32 2 55.03	W 104 12 37.46	
6072.00	2.58	59.97	6008.01	181.27	184.56	785.06	0.92	381436.54	538090.99	N 32 2 55.05	W 104 12 37.41	
6166.00	2.36	51.50	6101.92	183.52	186.82	788.41	0.45	381438.80	538094.33	N 32 2 55.07	W 104 12 37.37	
6261.00	2.58	56.62	6196.83	185.90	189.21	791.72	0.33	381441.20	538097.65	N 32 2 55.09	W 104 12 37.33	
6355.00	3.10	70.11	6290.72	187.91	191.24	795.88	0.90	381443.22	538101.81	N 32 2 55.11	W 104 12 37.29	
6450.00	1.90	68.12	6385.63	189.35	192.70	799.76	1.27	381444.69	538105.68	N 32 2 55.13	W 104 12 37.24	
6544.00	1.11	65.48	6479.59	190.30	193.66	802.03	0.84	381445.64	538107.96	N 32 2 55.14	W 104 12 37.21	
6639.00	1.48	47.34	6574.57	191.51	194.87	803.77	0.58	381446.86	538109.70	N 32 2 55.15	W 104 12 37.19	
6734.00	1.19	47.60	6669.54	193.00	196.37	805.40	0.31	381448.35	538111.33	N 32 2 55.16	W 104 12 37.18	
6829.00	0.90	13.70	6764.53	194.38	197.76	806.31	0.70	381449.74	538112.23	N 32 2 55.18	W 104 12 37.16	
6924.00	0.83	13.82	6859.52	195.77	199.15	806.65	0.07	381451.14	538112.57	N 32 2 55.19	W 104 12 37.16	
7018.00	0.28	352.32	6953.51	196.66	200.04	806.78	0.62	381452.03	538112.70	N 32 2 55.20	W 104 12 37.16	
7113.00	0.48	315.73	7048.51	197.18	200.56	806.47	0.32	381452.54	538112.40	N 32 2 55.21	W 104 12 37.16	
7208.00	0.62	51.49	7143.51	197.78	201.16	806.59	0.86	381453.14	538112.52	N 32 2 55.21	W 104 12 37.16	
7302.00	1.03	81.75	7237.50	198.22	201.60	807.83	0.62	381453.58	538113.75	N 32 2 55.22	W 104 12 37.15	
7397.00												

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	7870.00	0.72	154.29	7805.43	193.27	196.69	814.76	0.77	381448.67	538120.69	N 32 2 55.17	W 104 12 37.07
	7964.00	0.13	141.52	7899.42	192.66	196.07	815.09	0.63	381448.06	538121.01	N 32 2 55.16	W 104 12 37.06
	8059.00	0.34	322.77	7994.42	192.80	196.21	814.98	0.49	381448.20	538120.91	N 32 2 55.16	W 104 12 37.06
	8153.00	0.28	257.92	8088.42	192.97	196.39	814.59	0.36	381448.37	538120.51	N 32 2 55.16	W 104 12 37.07
	8248.00	0.30	232.25	8183.42	192.77	196.19	814.17	0.14	381448.17	538120.09	N 32 2 55.16	W 104 12 37.07
	8297.00	0.56	182.66	8232.42	192.46	195.87	814.05	0.88	381447.85	538119.98	N 32 2 55.16	W 104 12 37.07
	8435.00	1.05	170.56	8370.40	190.54	193.95	814.23	0.37	381445.93	538120.15	N 32 2 55.14	W 104 12 37.07
	8549.00	1.08	162.86	8484.38	188.48	191.89	814.72	0.13	381443.87	538120.64	N 32 2 55.12	W 104 12 37.07
	8629.00	1.03	163.45	8564.37	187.06	190.48	815.14	0.06	381442.46	538121.07	N 32 2 55.11	W 104 12 37.06
	8724.00	0.94	176.34	8659.36	185.47	188.88	815.44	0.25	381440.87	538121.36	N 32 2 55.09	W 104 12 37.06
	8820.00	1.06	172.36	8755.34	183.80	187.22	815.61	0.14	381439.20	538121.53	N 32 2 55.07	W 104 12 37.06
	8912.00	1.06	165.93	8847.33	182.13	185.55	815.93	0.13	381437.53	538121.85	N 32 2 55.06	W 104 12 37.05
	9007.00	1.17	154.79	8942.31	180.40	183.82	816.55	0.26	381435.80	538122.48	N 32 2 55.04	W 104 12 37.05
	9101.00	0.40	120.60	9036.30	179.36	182.78	817.24	0.92	381434.77	538123.17	N 32 2 55.03	W 104 12 37.04
	9148.00	6.63	0.67	9083.20	181.99	185.42	817.42	14.55	381437.40	538123.34	N 32 2 55.06	W 104 12 37.04
	9196.00	13.45	354.52	9130.44	190.33	193.75	816.92	14.36	381445.74	538122.84	N 32 2 55.14	W 104 12 37.04
	9243.00	16.67	353.14	9175.82	202.47	205.89	815.59	6.89	381457.87	538121.51	N 32 2 55.26	W 104 12 37.06
	9291.00	19.93	353.22	9221.38	217.44	220.86	813.80	6.79	381472.84	538119.72	N 32 2 55.41	W 104 12 37.08
	9338.00	24.96	357.65	9264.81	235.33	238.73	812.45	11.28	381490.71	538118.37	N 32 2 55.58	W 104 12 37.09
	9386.00	29.03	4.79	9307.58	257.06	260.47	813.00	10.83	381512.45	538118.93	N 32 2 55.80	W 104 12 37.09
	9433.00	31.36	7.55	9348.21	280.54	283.96	815.56	5.77	381535.94	538121.49	N 32 2 56.03	W 104 12 37.06
	9480.00	34.31	6.12	9387.69	305.83	309.26	818.58	6.49	381561.23	538124.51	N 32 2 56.28	W 104 12 37.02
	9528.00	37.95	1.83	9426.46	334.04	337.48	820.50	9.23	381589.45	538126.42	N 32 2 56.56	W 104 12 37.00
	9575.00	44.18	358.80	9461.88	364.89	368.33	820.62	13.91	381620.30	538126.54	N 32 2 56.87	W 104 12 37.00
	9622.00	47.76	359.48	9494.55	398.68	402.11	820.11	7.69	381654.08	538126.04	N 32 2 57.20	W 104 12 37.00
	9669.00	51.91	0.52	9524.85	434.58	438.02	820.12	8.99	381688.98	538126.05	N 32 2 57.56	W 104 12 37.00
	9716.00	55.44	359.87	9552.69	472.44	475.88	820.25	7.59	381727.84	538126.17	N 32 2 57.93	W 104 12 37.00
	9764.00	59.49	359.38	9578.50	512.90	516.34	819.98	8.48	381768.29	538125.91	N 32 2 58.33	W 104 12 37.00
	9811.00	63.01	359.39	9601.10	554.10	557.54	819.54	7.49	381809.49	538125.46	N 32 2 58.74	W 104 12 37.01
	9859.00	68.06	357.56	9620.98	597.76	601.19	818.36	11.08	381853.14	538124.29	N 32 2 59.17	W 104 12 37.02
	9906.00	71.89	356.97	9637.07	641.87	645.29	816.25	8.23	381897.24	538122.18	N 32 2 59.61	W 104 12 37.04
	9953.00	72.58	357.24	9651.41	686.58	690.00	813.99	1.57	381941.93	538119.92	N 32 3 0.05	W 104 12 37.07
	10000.00	79.06	359.17	9662.92	732.11	735.52	812.58	14.35	381987.45	538118.50	N 32 3 0.50	W 104 12 37.08
	10048.00	86.24	0.98	9669.05	779.68	783.09	812.64	15.42	382035.02	538118.57	N 32 3 0.97	W 104 12 37.08
	10095.00	88.77	0.21	9671.10	826.62	830.04	813.13	5.63	382081.96	538119.06	N 32 3 1.43	W 104 12 37.08
	10143.00	88.65	359.29	9672.18	874.61	878.02	812.92	1.93	382129.94	538118.85	N 32 3 1.91	W 104 12 37.08
Heel HL Cross	10148.00	88.65	359.25	9672.30	879.61	883.02	812.86	0.78	382134.94	538118.78	N 32 3 1.96	W 104 12 37.08
	10208.00	88.65	358.78	9673.71	939.59	943.00	811.83	0.78	382194.91	538117.75	N 32 3 2.55	W 104 12 37.09
	10290.00	90.06	358.42	9674.64	1021.56	1024.96	809.82	1.77	382276.87	538115.75	N 32 3 3.36	W 104 12 37.11
	10385.00	89.38	354.83	9675.10	1119.78	1123.97	804.23	3.85	382371.68	538110.16	N 32 3 4.30	W 104 12 37.18
	10480.00	88.82	350.52	9676.59	1210.64	1213.97	792.13	4.57	382465.86	538098.05	N 32 3 5.23	W 104 12 37.32
	10574.00	88.77	349.62	9678.57	1303.28	1306.54	775.92	0.96	382558.42	538081.85	N 32 3 6.15	W 104 12 37.50
	10669.00	88.77	348.64	9680.61	1396.63	1399.82	758.01	1.03	382651.69	538063.94	N 32 3 7.07	W 104 12 37.71
	10763.00	88.88	347.75	9682.54	1488.70	1491.81	738.78	0.95	382743.67	538044.71	N 32 3 7.98	W 104 12 37.93
	10858.00	89.83	347.46	9683.61	1581.56	1584.59	718.39	1.05	382836.44	538024.33	N 32 3 8.90	W 104 12 38.17
	10953.00	89.27	347.25	9684.35	1674.34	1677.28	697.60	0.63	382929.13	538003.53	N 32 3 9.82	W 104 12 38.41
	11047.00	90.39	347.47	9684.63	1766.15	1769.00	677.03	1.21	383020.84	537982.97	N 32 3 10.73	W 104 12 38.65
	11142.00	90.28	347.23	9684.08	1858.93	1861.69	656.22	0.28	383113.52	537962.16	N 32 3 11.65	W 104 12 38.89
	11236.00	90.06	349.64	9683.80	1951.09	1953.77	637.38	2.57	383205.60	537943.32	N 32 3 12.56	W 104 12 39.10
	11330.00	90.06	351.26	9683.70	2043.85	2046.47	621.78	1.72	383298.28	537927.73	N 32 3 13.47	W 104 12 39.28
	11425.00	90.34	350.71	9683.37	2137.73	2140.29	606.90	0.65	383392.10	537912.84	N 32 3 14.40	W 104 12 39.46
	11519.00	90.28	355.84	9682.86	2231.10	2233.62	595.90	5.46	383485.41	537901.84	N 32 3 15.33	W 104 12 39.58
	11614.00	90.11	356.78	9682.53	2325.93	2328.42	589.78	1.01	383580.20	537895.73	N 32 3 16.26	W 104 12 39.65
	11708.00	92.02	359.63	9680.79	2419.86	2422.34	586.84	3.65	383674.12	537882.78	N 32 3 17.19	W 104 12 39.69
	11803.00	90.84	1.00	9678.42	2514.82	2517.31	587.36	1.90	383769.08	537893.31	N 32 3 18.13	W 104 12 39.68
	11898.00	91.29	3.36	9676.65	2609.71	2612.21	590.97	2.53	383863.97	537896.92	N 32 3 19.07	W 104 12 39.63
	11992.00	90.11	5.32	9675.50	2703.40	2705.93	598.08	2.43	383957.68	537904.03	N 32 3 20.00	W 104 12 39.55
	12087.00	89.38	9.82	9675.92	2797.49	2800.08	610.60	4.80	384051.82	537916.54	N 32 3 20.93	W 104 12 39.40
	12181.00	89.78	8.98	9676.61	2890.16	2892.81	625.95	0.99	384144.55	537931.89	N 32 3 21.85	W 104 12 39.22
	12276.00	89.83	13.95	9676.94	2983.16	2985.89	644.83	5.23	384237.61	537950.77	N 32 3 22.77	W 104 12 39.00
	12371.00	90.22	15.56	9676.90	3074.92	3077.75	669.02	1.74	384329.47	537974.96	N 32 3 23.68	W 104 12 38.72
	12465.00	91.07	15.12	9675.84	3165.46	3168.39	693.89	1.02	384420.10	537999.82	N 32 3 24.58	W 104 12 38.43
	12559.00	90.84	11.68	9674.27	3256.78	3259.81	715.66	3.67	384511.51	538021.60	N 32 3 25.48	W 104 12 38.18
	12654.00	90.22	10.86	9673.39	3349.87	3352.97	734.23	1.08	384604.66	538040.16	N 32 3 26.40	W 104 12 37.96
	12749.00	90.17	10.42	9673.07	3443.16	3446.34	751.77	0.47	384698.02	538057.70	N 32 3 27.33	W 104 12 37.76
	12843.00	90.90	8.98	9672.19	3535.74	3538.99	767.61	1.72	384790.66	538073.54	N 32 3 28.24	W 104 12 37.57
	12938.00	91.35	8.09	9670.33	3629.61	3632.91	781.70	1.05	384884.58	538087.63	N 32 3 29.17	W 104 12 37.41
	13033.00	90.84	7.54	9668.51	3723.65	3727.01	794.62	0.79	384978.67	538100.54	N 32 3 30.10	W 104 12 37.25
	13127.00	91.29	7.48	9666.76	3816.78	3820.19	806.90	0.48	385071.84	538112.83	N 32 3 31.02	W 104 12 37.11
	13222.00	92.02	9.02	9664.02	3910.69	3914.17	820.53	1.79	385165.81	538126.45	N 32 3 31.95	W 104 12 36.95
	13316.00	91.40	8.38	9661.21	4003.51	4007.04	834.74	0.95	385258.68	538140.66	N 32 3 32.87	W 104 12 36.78
	13411.00	91.29	8.14	9658.98	4097.44	4101.03	848.38	0.28	385352.66	538154.30	N 32 3 33.80	W 104 12 36.62
	13505.00	91.40	7.52	9656.78	4190.48	4194.13	861.18	0.67	385445.75	538167.11	N 32 3 34.72	W 104 12 36.47
	13600.00	91.29	6.85	9654.55	4284.66	4288.36	873.06	0.71	385539.96	538178.98	N 32 3 35.66	W 104 12 36.34
	13694.00	91.23	5.90	9652.48	4378.01	4381.75	885.50	1.01	385633.35	538189.42	N 32 3 36.58	W 104 12 36.21
	13789.00	90.79	6.11	9650.81	4472.43	4476.21	893.43	0.51	385727.81	538199.35	N 32 3 37.52	W 104 12 36.10
	13884.00	89.33	4.46	9646.99	4566.99	4570.80						

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17100.00	91.01	358.30	9703.12	7780.60	7784.46	904.21	1.72	389035.75	538210.13	N 32 4 10.25	W 104 12 35.93
	17194.00	89.21	359.43	9702.94	7874.59	7878.43	902.35	2.26	389129.72	538208.27	N 32 4 11.18	W 104 12 35.95
	17289.00	88.93	0.29	9704.48	7969.57	7973.42	902.12	0.95	389224.69	538208.03	N 32 4 12.12	W 104 12 35.95
	17383.00	91.46	2.98	9704.16	8063.51	8067.37	904.80	3.93	389318.63	538210.72	N 32 4 13.05	W 104 12 35.92
	17478.00	91.01	1.86	9702.12	8158.38	8162.26	908.81	1.27	389413.51	538214.72	N 32 4 13.99	W 104 12 35.87
	17573.00	92.41	2.24	9699.28	8253.26	8257.15	912.20	1.53	389508.40	538218.12	N 32 4 14.93	W 104 12 35.83
	17667.00	92.58	2.92	9695.19	8347.05	8350.97	916.43	0.75	389602.20	538222.35	N 32 4 15.86	W 104 12 35.78
	17762.00	89.55	1.84	9693.42	8441.93	8445.86	920.38	3.39	389697.08	538226.29	N 32 4 16.80	W 104 12 35.73
	17857.00	90.11	2.61	9693.70	8536.84	8540.78	924.06	1.00	389792.00	538229.98	N 32 4 17.74	W 104 12 35.69
	17951.00	88.15	2.79	9695.13	8630.70	8634.66	928.49	2.09	389885.87	538234.41	N 32 4 18.67	W 104 12 35.63
	18046.00	89.33	2.52	9697.22	8725.55	8729.54	932.89	1.27	389980.74	538238.80	N 32 4 19.60	W 104 12 35.58
	18140.00	89.89	1.12	9697.86	8819.49	8823.48	935.88	1.60	390074.68	538241.79	N 32 4 20.53	W 104 12 35.54
	18235.00	88.37	0.39	9699.30	8914.46	8918.46	937.13	1.77	390169.65	538243.04	N 32 4 21.47	W 104 12 35.53
	18329.00	90.62	1.17	9700.13	9008.43	9012.44	938.41	2.53	390263.62	538244.32	N 32 4 22.40	W 104 12 35.51
	18424.00	91.01	0.76	9698.78	9103.40	9107.42	940.01	0.60	390358.59	538245.92	N 32 4 23.34	W 104 12 35.49
	18518.00	89.66	359.34	9698.23	9197.39	9201.41	940.09	2.08	390452.57	538246.00	N 32 4 24.27	W 104 12 35.49
	18613.00	89.66	358.93	9698.79	9292.39	9296.40	938.65	0.43	390547.55	538244.57	N 32 4 25.21	W 104 12 35.51
	18707.00	90.34	359.98	9698.79	9386.38	9390.39	937.76	1.33	390641.54	538243.67	N 32 4 26.14	W 104 12 35.52
	18802.00	89.78	359.80	9698.70	9481.38	9485.39	937.58	0.62	390736.53	538243.49	N 32 4 27.08	W 104 12 35.52
	18897.00	90.17	359.57	9698.74	9576.38	9580.39	937.06	0.48	390831.52	538242.97	N 32 4 28.02	W 104 12 35.52
	18991.00	91.01	359.44	9697.77	9670.38	9674.38	936.24	0.90	390925.50	538242.16	N 32 4 28.95	W 104 12 35.53
	19086.00	91.35	359.33	9695.81	9765.35	9769.36	935.22	0.38	391020.46	538241.14	N 32 4 29.89	W 104 12 35.54
	19181.00	91.40	0.09	9693.53	9860.33	9864.33	934.74	0.80	391115.43	538240.66	N 32 4 30.83	W 104 12 35.54
	19370.00	89.16	358.36	9692.61	10049.30	10053.29	932.19	1.50	391304.37	538238.10	N 32 4 32.70	W 104 12 35.57
	19465.00	89.27	358.43	9693.91	10144.26	10148.24	929.53	0.14	391399.32	538235.44	N 32 4 33.64	W 104 12 35.60
	19560.00	89.10	358.28	9695.26	10239.22	10243.19	926.80	0.24	391494.26	538232.71	N 32 4 34.58	W 104 12 35.63
	19654.00	90.28	359.32	9695.77	10333.20	10337.17	924.83	1.67	391588.22	538230.75	N 32 4 35.51	W 104 12 35.65
	19749.00	90.45	1.30	9695.17	10428.19	10432.16	925.34	2.09	391683.21	538231.26	N 32 4 36.45	W 104 12 35.65
	19844.00	90.17	1.54	9694.65	10523.15	10527.13	927.70	0.39	391778.17	538233.61	N 32 4 37.39	W 104 12 35.62
	19939.00	91.23	1.93	9693.49	10618.09	10622.08	930.58	1.19	391873.11	538236.49	N 32 4 38.33	W 104 12 35.58
	20033.00	91.07	2.02	9691.60	10712.00	10716.00	933.81	0.20	391967.02	538239.73	N 32 4 39.26	W 104 12 35.54
	20128.00	91.80	2.55	9689.22	10806.87	10810.90	937.60	0.95	392061.91	538243.51	N 32 4 40.20	W 104 12 35.50
Toe HL Cross	20183.00	90.65	1.95	9688.05	10861.81	10865.84	939.76	2.36	392116.85	538245.67	N 32 4 40.74	W 104 12 35.47
	20222.00	89.83	1.53	9687.89	10900.78	10904.82	940.95	2.36	392155.83	538246.86	N 32 4 41.13	W 104 12 35.46
Last SLB MWD Survey	20289.00	90.11	1.60	9687.92	10967.75	10971.80	942.78	0.43	392222.79	538248.69	N 32 4 41.79	W 104 12 35.44
Projection to Bit	20331.00	90.11	1.60	9687.84	11009.73	11013.78	943.95	0.00	392264.77	538249.86	N 32 4 42.21	W 104 12 35.42

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	A001Ma_MWD-Depth Only	Original Borehole / Chevron HH SO 8 5 FED 003 No. 4H MWD to
	1	28.000	28.000	Act Stns	30.000	30.000	A001Ma_MWD-Depth Only	Original Borehole / Chevron HH SO 8 5 FED 003 No. 4H MWD to
	1	28.000	452.000	Act Stns	30.000	30.000	A001Ma_MWD	Original Borehole / Chevron HH SO 8 5 FED 003 No. 4H MWD to
	1	452.000	20331.000	Act Stns	30.000	30.000	B001Ma_MWD+HDGM	Original Borehole / Chevron HH SO 8 5 FED 003 No. 4H MWD to