

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM06764

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other8. Well Name and No.
HACKBERRY 23 FEDERAL 3H2. Name of Operator
CIMAREX ENERGY COMPANYContact: ARICKA EASTERLING
E-Mail: aeasterling@cimarex.com9. API Well No.
30-015-420783a. Address
202 S CHEYENNE AVE, SUITE 1000
TULSA, OK 741033b. Phone No. (include area code)
Ph: 918-560-706010. Field and Pool, or Exploratory
WILDCAT

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 24 T19S R30E NWSW 2130FSL 180FWL

11. County or Parish, and State

EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Drilling Operations
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Completion:

1/29/15 - Test csg to 9000 psi. Good Test. TOC @ 7979'

1/30/15 to 2/3/15 - Perf Avalon @ 9370'-19190', 518 holes. Frac w/ 3,961,650 gal total fluid & 6,022,421 # sand.

2/8/15 to 2/11/15 - Mill out plugs. PBTD @ 19220'

2/12/15 - Flow Well

2/17/15 - RIH w/ 2 7/8" tubing & ESP, set @ 7912'.

2/18/15 - Turn Well to production.

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 27 2015

RECEIVED

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #298441 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY, sent to the Carlsbad**

Name (Printed/Typed) ARICKA EASTERLING

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 04/16/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****



Cimarex Hackberry 23 Federal #3H XEM + Gyro + MWD 0ft to 19317 Survey Report (Non-Def Survey)



Report Date: December 19, 2014 - 09:44 AM
 Client: Cimarex
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Cimarex Hackberry 23 Federal #3H / Cimarex Hackberry 23 Federal #3H
 Well: Cimarex Hackberry 23 Federal #3H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Hackberry 23 Federal #3H XEM + Gyro + MWD 0ft to 19317
 Survey Date: November 05, 2014
 Tort / AHD / DDI / ERD Ratio: 289.021 ° / 11382.107 ft / 6.871 / 1.332
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 38' 39.96603", W 103° 56' 0.63921"
 Location Grid N/E Y/X: N 598408.000 ftUS, E 664403.400 ftUS
 CRS Grid Convergence Angle: 0.2157 °
 Grid Scale Factor: 0.99992644
 Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 261.844 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3272.000 ft above MSL
 Seabed / Ground Elevation: 3248.000 ft above MSL
 Magnetic Declination: 7.728 °
 Total Gravity Field Strength: 998.5205mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48565.888 nT
 Magnetic Dip Angle: 60.590 °
 Declination Date: November 18, 2014
 Magnetic Declination Model: HDGM 2014
 North Reference: Grid North
 Grid Convergence Used: 0.2157 °
 Total Corr Mag North->Grid North: 7.5128 °
 Local Coord Referenced To: Structure Reference Point

NM OIL CONSERVATION
 ARTESIA DISTRICT
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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 (°)
SHL - Hackberry 23 Federal #3H	0.00	0.00	181.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0M
	120.00	0.38	0.00	120.00	-0.06	0.40	0.00	0.40	0.00	0.32	0M
	203.00	0.64	0.00	203.00	-0.16	1.14	0.00	1.14	0.00	0.31	0M
	232.00	0.20	0.00	231.99	-0.19	1.35	0.00	1.35	0.00	1.52	235.77M
	266.80	0.10	235.77	266.79	-0.17	1.39	-0.03	1.39	358.97	0.77	256.62M
	354.40	0.27	256.62	354.39	0.10	1.30	-0.29	1.33	347.48	0.21	300.1M
	445.20	0.54	300.10	445.19	0.65	1.47	-0.87	1.70	329.41	0.43	312.22M
	531.30	0.85	312.22	531.29	1.38	2.10	-1.69	2.70	321.15	0.40	333.47M
	595.00	0.94	333.47	594.98	1.84	2.88	-2.27	3.67	321.74	0.54	346.05M
	687.40	1.12	346.05	687.36	2.17	4.44	-2.83	5.27	327.48	0.31	0.56M
	780.30	0.88	0.56	780.25	2.16	6.03	-3.04	6.76	333.24	0.37	356.84M
	871.60	0.93	356.84	871.54	1.99	7.47	-3.08	8.08	337.63	0.08	346.9M
	964.60	0.80	346.90	964.53	1.98	8.86	-3.27	9.44	339.77	0.21	0.54M
	1055.80	0.70	0.54	1055.72	1.95	10.04	-3.40	10.60	341.26	0.22	19.41M
	1147.90	0.67	19.41	1147.81	1.61	11.11	-3.22	11.57	343.83	0.25	46.83M

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	1149.70	0.89	46.83	1149.61	1.60	11.13	-3.21	11.58	343.92	23.73	48.09M
	1244.60	1.11	48.09	1244.50	0.23	12.25	-1.99	12.41	350.79	0.23	44.97M
	1339.50	1.27	44.97	1339.38	-1.38	13.60	-0.56	13.62	357.65	0.18	48.82M
	1434.40	1.41	48.82	1434.25	-3.20	15.12	1.06	15.15	4.03	0.18	48.01M
	1529.40	1.20	48.01	1529.23	-5.00	16.55	2.68	16.77	9.21	0.22	45.02M
	1624.30	0.80	45.02	1624.11	-6.36	17.69	3.89	18.11	12.41	0.42	40.35M
	1719.20	0.86	40.35	1719.00	-7.42	18.70	4.82	19.31	14.46	0.10	33M
	1814.10	0.88	33.00	1813.89	-8.44	19.85	5.68	20.65	15.96	0.12	29.88M
	1909.00	0.67	29.88	1908.78	-9.26	20.94	6.35	21.88	16.87	0.23	42.84M
	2004.00	0.16	42.84	2003.78	-9.70	21.52	6.72	22.55	17.34	0.54	38.32M
	2098.90	0.17	38.32	2098.68	-9.91	21.73	6.90	22.80	17.61	0.02	44.12M
	2193.80	0.16	44.12	2193.58	-10.12	21.93	7.08	23.05	17.88	0.02	59.47M
	2288.70	0.13	59.47	2288.48	-10.32	22.08	7.26	23.25	18.20	0.05	58.65M
	2383.60	0.13	58.65	2383.38	-10.52	22.20	7.45	23.41	18.54	0.00	52.69M
	2478.60	0.14	52.69	2478.38	-10.72	22.32	7.63	23.59	18.87	0.02	48.92M
	2573.50	0.14	48.92	2573.28	-10.92	22.47	7.81	23.79	19.17	0.01	44.29M
	2668.20	0.13	44.29	2667.98	-11.10	22.62	7.97	23.98	19.41	0.02	44.89M
	2763.30	0.13	44.89	2763.08	-11.27	22.77	8.12	24.18	19.63	0.00	38.13M
	2858.20	0.14	38.13	2857.98	-11.44	22.94	8.27	24.39	19.82	0.02	37.26M
	2953.20	0.12	37.26	2952.98	-11.60	23.11	8.40	24.59	19.98	0.02	35.77M
	3048.10	0.14	35.77	3047.88	-11.75	23.29	8.53	24.80	20.12	0.02	33.3M
	3143.00	0.13	33.30	3142.78	-11.90	23.47	8.66	25.02	20.25	0.01	31.94M
	3237.90	0.13	31.94	3237.68	-12.04	23.65	8.77	25.23	20.35	0.00	29.69M
	3332.90	0.13	29.69	3332.68	-12.18	23.84	8.88	25.44	20.44	0.01	31.11M
	3427.80	0.13	31.11	3427.58	-12.31	24.02	8.99	25.65	20.52	0.00	38.2M
Last Gyro Survey	3495.40	0.14	38.20	3495.18	-12.42	24.15	9.08	25.80	20.61	0.03	131.85M
	3570.72	0.09	131.85	3570.50	-12.52	24.19	9.18	25.87	20.79	0.23	288.82M
	3603.39	0.22	288.82	3603.17	-12.48	24.19	9.14	25.86	20.71	0.93	139.79M
	3694.45	0.22	139.79	3694.23	-12.42	24.11	9.09	25.77	20.66	0.47	269.13M
	3781.06	0.09	269.13	3780.84	-12.44	23.98	9.13	25.66	20.84	0.33	305.53M
	3876.61	0.09	305.53	3876.39	-12.31	24.03	8.99	25.65	20.52	0.06	180.99M
	3965.59	0.80	180.99	3965.36	-12.16	23.45	8.93	25.09	20.84	0.96	188.31M
	4062.33	3.14	188.31	4062.04	-11.30	20.15	8.53	21.88	22.95	2.43	187.6M
	4154.18	5.52	187.60	4153.62	-9.39	13.28	7.58	15.29	29.73	2.59	186.32M
	4249.39	5.52	186.32	4248.39	-7.00	4.19	6.47	7.71	57.10	0.13	183.42M
	4346.07	5.44	183.42	4344.63	-4.92	-5.01	5.69	7.58	131.36	0.30	176.89M
	4440.18	5.44	176.89	4438.31	-3.63	-13.92	5.67	15.02	157.85	0.66	174.16M
	4535.72	5.44	174.16	4533.42	-3.05	-22.94	6.37	23.81	164.48	0.27	172.18M
	4632.84	5.44	172.18	4630.11	-2.84	-32.08	7.47	32.94	166.90	0.19	177.6M
	4729.94	5.52	177.60	4726.76	-2.34	-41.31	8.29	42.13	168.65	0.54	181.61M
	4827.21	5.51	181.61	4823.58	-1.08	-50.65	8.35	51.34	170.64	0.40	186.41M
	4923.54	5.61	186.41	4919.46	0.89	-59.95	7.70	60.45	172.68	0.49	188.79M
	5020.20	5.52	188.79	5015.67	3.43	-69.24	6.46	69.54	174.67	0.26	191.61M

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	5117.19	5.52	191.61	5112.21	6.37	-78.42	4.81	78.57	176.49	0.28	194.83M
	5200.36	5.52	194.83	5194.99	9.28	-86.21	2.98	86.26	178.02	0.37	194.74M
	5296.47	5.61	194.74	5290.65	12.91	-95.22	0.60	95.22	179.64	0.09	192.32M
	5393.65	5.52	192.32	5387.37	16.40	-104.38	-1.61	104.39	180.88	0.26	189.63M
	5489.65	5.61	189.63	5482.92	19.45	-113.52	-3.38	113.57	181.70	0.29	188.79M
	5580.22	5.52	188.79	5573.06	22.07	-122.19	-4.78	122.28	182.24	0.13	188.53M
	5677.79	5.52	188.53	5670.18	24.78	-131.47	-6.19	131.61	182.70	0.03	189.94M
	5773.71	5.61	189.94	5765.65	27.56	-140.65	-7.69	140.86	183.13	0.17	190.2M
	5870.86	5.61	190.20	5862.33	30.53	-150.00	-9.35	150.29	183.57	0.03	186.02M
	5966.69	5.52	186.02	5957.71	33.14	-159.19	-10.66	159.55	183.83	0.43	182.71M
	6050.10	5.52	182.71	6040.73	34.88	-167.19	-11.27	167.57	183.86	0.38	178.48M
	6145.66	5.52	178.48	6135.85	36.27	-176.37	-11.37	176.74	183.69	0.43	177.47M
	6243.56	5.52	177.47	6233.30	37.28	-185.78	-11.03	186.11	183.40	0.10	180.59M
	6339.66	5.52	180.59	6328.95	38.44	-195.02	-10.88	195.33	183.19	0.31	182.4M
	6430.42	5.21	182.40	6419.31	39.85	-203.51	-11.10	203.81	183.12	0.39	182.18M
	6528.35	4.73	182.18	6516.87	41.39	-211.98	-11.44	212.29	183.09	0.49	178.79M
	6624.40	4.24	178.79	6612.63	42.53	-219.49	-11.51	219.79	183.00	0.58	177.77M
	6714.38	4.64	177.77	6702.34	43.31	-226.45	-11.30	226.73	182.86	0.45	172.88M
	6810.95	4.95	172.88	6798.57	43.79	-234.49	-10.63	234.73	182.60	0.53	175.26M
	6908.36	4.02	175.26	6895.68	44.07	-242.06	-9.83	242.26	182.33	0.97	175.97M
	6998.00	3.93	175.97	6985.11	44.48	-248.26	-9.35	248.43	182.16	0.11	182M
	7094.85	3.93	182.00	7081.73	45.30	-254.89	-9.24	255.05	182.08	0.43	188.13M
	7191.01	3.62	188.13	7177.68	46.73	-261.18	-9.78	261.37	182.14	0.53	194.74M
	7287.18	3.71	194.74	7273.66	48.80	-267.20	-11.00	267.43	182.36	0.45	182.09M
	7377.13	3.80	182.09	7363.41	50.46	-272.99	-11.85	273.25	182.49	0.92	176.76M
	7473.87	4.11	176.76	7459.92	51.32	-279.66	-11.77	279.90	182.41	0.50	166.45M
	7570.53	3.40	166.45	7556.38	51.35	-285.90	-10.90	286.11	182.18	1.01	154.73M
	7662.82	3.23	154.73	7648.51	50.33	-290.91	-9.15	291.06	181.80	0.76	154.73M
	7755.89	3.00	154.73	7741.45	48.84	-295.49	-6.99	295.57	181.36	0.25	160.02M
	7852.71	3.00	160.02	7838.13	47.58	-300.16	-5.05	300.20	180.96	0.29	163.06M
	7945.59	2.83	163.06	7930.89	46.73	-304.64	-3.55	304.66	180.67	0.25	163.94M
	7999.00	2.55	163.94	7984.24	46.36	-307.04	-2.83	307.05	180.53	0.53	173.65M
	8031.00	4.09	173.65	8016.19	46.30	-308.86	-2.51	308.87	180.47	5.11	180.21M
	8062.00	7.48	180.21	8047.03	46.63	-311.98	-2.40	311.99	180.44	11.12	179.44M
	8094.00	11.38	179.44	8078.59	47.35	-317.22	-2.37	317.23	180.43	12.19	13.35R
	8125.00	14.08	182.06	8108.82	48.42	-324.05	-2.48	324.05	180.44	8.90	12.12R
	8156.00	16.62	183.96	8138.72	50.02	-332.24	-2.92	332.25	180.50	8.35	5.31R
	8188.00	21.58	185.21	8168.95	52.35	-342.67	-3.77	342.69	180.63	15.55	11.04L
	8220.00	25.14	183.58	8198.32	55.09	-355.32	-4.73	355.35	180.76	11.31	22.54L
	8252.00	29.36	180.05	8226.76	57.59	-369.96	-5.16	369.99	180.80	14.12	2.36L
	8283.00	33.66	179.73	8253.18	59.86	-386.15	-5.13	386.19	180.76	13.88	0.85R
	8315.00	37.34	179.82	8279.23	62.42	-404.73	-5.06	404.76	180.72	11.50	15.1R
	8346.00	39.99	180.93	8303.44	65.30	-424.10	-5.19	424.13	180.70	8.84	23.14R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	8378.00	42.50	182.51	8327.49	68.92	-445.18	-5.83	445.22	180.75	8.49	24.27R
	8410.00	44.94	184.06	8350.62	73.32	-467.26	-7.10	467.31	180.87	8.33	28.49R
	8441.00	48.40	186.55	8371.89	78.58	-489.70	-9.20	489.79	181.08	12.60	13.21R
	8472.00	52.25	187.69	8391.68	84.87	-513.37	-12.16	513.52	181.36	12.74	30.11R
	8504.00	55.26	189.80	8410.60	92.38	-538.87	-16.10	539.12	181.71	10.80	43.21R
	8536.00	57.56	192.33	8428.30	101.16	-565.03	-21.22	565.43	182.15	9.75	33.71R
	8567.00	59.80	194.05	8444.42	110.80	-590.81	-27.27	591.44	182.64	8.64	15.73R
	8598.00	62.35	194.86	8459.41	121.24	-617.08	-34.04	618.02	183.16	8.54	16.44R
	8630.00	64.90	195.69	8473.62	132.64	-644.73	-41.59	646.07	183.69	8.30	29R
	8662.00	67.68	197.35	8486.49	144.87	-672.82	-49.93	674.67	184.24	9.90	45.22R
	8694.00	70.34	200.17	8497.96	158.40	-701.10	-59.54	703.62	184.85	11.70	50.69R
	8725.00	72.84	203.33	8507.75	173.07	-728.41	-70.44	731.81	185.52	12.59	53.67R
	8757.00	74.28	205.35	8516.80	189.55	-756.37	-83.09	760.92	186.27	7.54	70.38R
	8789.00	75.53	208.89	8525.14	207.40	-783.86	-97.18	789.86	187.07	11.37	75.45R
	8820.00	76.57	212.88	8532.62	226.34	-809.67	-112.62	817.47	187.92	12.93	52.35R
	8852.00	78.48	215.39	8539.53	247.37	-835.53	-130.15	845.61	188.85	9.71	42.23R
	8883.00	82.59	219.13	8544.63	269.14	-859.85	-148.66	872.61	189.81	17.81	18.48R
	8914.00	87.59	220.80	8547.28	292.13	-883.52	-168.50	899.44	190.80	17.00	19.62R
	8945.00	90.79	221.94	8547.72	315.71	-906.78	-188.98	926.26	191.77	10.96	90.6R
	9113.00	90.67	232.21	8545.57	453.51	-1021.03	-311.82	1067.58	196.98	6.11	99.11R
	9208.00	89.95	236.69	8545.06	537.84	-1076.25	-389.09	1144.42	199.88	4.78	46.52L
	9304.00	90.50	236.11	8544.68	624.52	-1129.37	-469.05	1222.90	202.55	0.83	62.37L
Cross Hard Line	9345.00	90.69	235.74	8544.25	661.40	-1152.34	-503.01	1257.34	203.58	1.02	62.38L
	9399.00	90.95	235.25	8543.48	709.78	-1182.93	-547.51	1303.49	204.84	1.02	85.6L
	9494.00	90.98	234.86	8541.88	794.57	-1237.34	-625.37	1386.39	206.81	0.41	50.89R
	9589.00	92.19	236.35	8539.25	879.75	-1290.98	-703.72	1470.32	208.60	2.02	84.92R
	9684.00	92.81	243.54	8535.10	967.75	-1338.48	-785.82	1552.11	210.42	7.59	81.56R
	9778.00	93.84	250.66	8529.64	1058.44	-1374.98	-872.20	1628.28	212.39	7.64	105.45R
	9874.00	92.15	256.71	8524.62	1153.29	-1401.89	-964.17	1701.44	214.52	6.53	119.52R
	9970.00	89.33	261.68	8523.38	1249.14	-1419.88	-1058.42	1770.96	216.70	5.95	5.71R
	10066.00	90.23	261.77	8523.75	1345.14	-1433.69	-1153.42	1840.07	218.82	0.94	42.71L
	10161.00	90.36	261.65	8523.26	1440.14	-1447.39	-1247.42	1910.76	220.76	0.19	118.18L
	10257.00	90.06	261.09	8522.91	1536.13	-1461.80	-1342.33	1984.62	222.56	0.66	78.93R
	10353.00	90.33	262.47	8522.58	1632.13	-1475.52	-1437.35	2059.88	224.25	1.46	112.73R
	10447.00	89.40	264.69	8522.80	1726.08	-1486.03	-1530.75	2133.42	225.85	2.56	68.27R
	10543.00	92.50	272.48	8521.21	1821.32	-1488.40	-1626.62	2204.82	227.54	8.73	89.08L
	10637.00	92.57	267.51	8517.05	1914.25	-1488.41	-1720.50	2274.97	229.14	5.28	105.11R
	10732.00	91.98	269.69	8513.28	2008.51	-1490.73	-1815.39	2349.02	230.61	2.38	97.48R
	10828.00	91.63	272.34	8510.25	2103.23	-1489.03	-1911.32	2422.88	232.08	2.78	96.49R
	10924.00	91.32	275.05	8507.78	2197.14	-1482.84	-2007.08	2495.43	233.54	2.84	122.2R
	11017.00	90.98	275.59	8505.92	2287.56	-1474.22	-2099.66	2565.52	234.93	0.69	92.47L
	11111.00	90.88	273.29	8504.39	2379.28	-1466.95	-2193.36	2638.70	236.22	2.45	93.7L
	11204.00	90.76	271.44	8503.06	2470.70	-1463.11	-2286.26	2714.35	237.38	1.99	69.67L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	11297.00	90.96	270.90	8501.66	2562.46	-1461.21	-2379.23	2792.11	238.44	0.62	79.56L
	11388.00	91.03	270.52	8500.08	2652.36	-1460.08	-2470.21	2869.46	239.41	0.42	90L
	11481.00	91.03	270.30	8498.41	2744.31	-1459.42	-2563.20	2949.56	240.34	0.24	74.98L
	11575.00	91.14	269.89	8496.63	2837.32	-1459.26	-2657.18	3031.51	241.23	0.45	94.57L
	11669.00	91.10	269.39	8494.79	2930.43	-1459.85	-2751.16	3114.49	242.05	0.53	115.02L
	11762.00	91.03	269.24	8493.07	3022.63	-1460.97	-2844.14	3197.43	242.81	0.18	129.29L
	11857.00	90.76	268.91	8491.58	3116.86	-1462.50	-2939.11	3282.88	243.55	0.45	38.66L
	11950.00	90.96	268.75	8490.19	3209.16	-1464.40	-3032.08	3367.19	244.22	0.28	102.1L
	12043.00	90.93	268.61	8488.65	3301.49	-1466.54	-3125.04	3452.05	244.86	0.15	51.33L
	12136.00	91.13	268.36	8486.98	3393.85	-1469.00	-3218.00	3537.44	245.46	0.34	132.88L
	12232.00	91.00	268.22	8485.20	3489.22	-1471.86	-3313.94	3626.09	246.05	0.20	176.63L
	12327.00	90.83	268.21	8483.68	3583.63	-1474.82	-3408.88	3714.24	246.60	0.18	32.34L
	12424.00	91.13	268.02	8482.02	3680.03	-1478.01	-3505.81	3804.63	247.14	0.37	114.44L
	12527.00	90.83	267.36	8480.26	3782.48	-1482.16	-3608.71	3901.23	247.67	0.70	63.43R
	12623.00	90.86	267.42	8478.84	3878.02	-1486.53	-3704.60	3991.72	248.14	0.07	85.68R
	12705.00	90.90	267.95	8477.58	3959.58	-1489.84	-3786.53	4069.08	248.52	0.65	108.44R
	12804.00	90.83	268.16	8476.09	4057.99	-1493.20	-3885.46	4162.50	248.98	0.22	144.06R
	12903.00	90.03	268.74	8475.35	4156.33	-1495.88	-3984.42	4255.97	249.42	1.00	7.97R
	12999.00	91.03	268.88	8474.46	4251.62	-1497.88	-4080.39	4346.63	249.84	1.05	64.98L
	13091.00	91.10	268.73	8472.75	4342.92	-1499.79	-4172.36	4433.73	250.23	0.18	84.46R
	13189.00	91.27	270.49	8470.72	4440.00	-1500.46	-4270.33	4526.27	250.64	1.80	90R
	13283.00	91.27	272.24	8468.64	4532.68	-1498.22	-4364.28	4614.28	251.05	1.86	93.41R
	13378.00	91.20	273.41	8466.59	4625.92	-1493.54	-4459.14	4702.61	251.48	1.23	98.56L
	13473.00	90.93	271.62	8464.82	4719.25	-1489.37	-4554.02	4791.39	251.89	1.91	81.27L
	13568.00	91.14	270.25	8463.11	4813.04	-1487.82	-4648.99	4881.27	252.25	1.46	150.26L
	13664.00	90.65	269.97	8461.61	4908.03	-1487.64	-4744.98	4972.72	252.59	0.59	72.35R
	13757.00	90.72	270.19	8460.50	5000.07	-1487.51	-4837.97	5061.49	252.91	0.25	118.85L
	13950.00	90.45	269.70	8458.53	5191.13	-1487.70	-5030.96	5246.32	253.53	0.29	2.86L
	14046.00	90.65	269.69	8457.60	5286.23	-1488.21	-5126.96	5338.58	253.81	0.21	108.88L
	14142.00	90.52	269.31	8456.62	5381.37	-1489.04	-5222.95	5431.06	254.09	0.42	100.56L
	14237.00	90.41	268.72	8455.85	5475.62	-1490.68	-5317.93	5522.91	254.34	0.63	78.05L
	14331.00	90.52	268.20	8455.09	5568.99	-1493.20	-5411.89	5614.11	254.58	0.57	95.71R
	14427.00	90.48	268.60	8454.25	5664.36	-1495.88	-5507.85	5707.37	254.81	0.42	66.03R
	14522.00	91.00	269.77	8453.03	5758.57	-1497.23	-5602.83	5799.44	255.04	1.35	74.51R
	14616.00	91.31	270.89	8451.13	5851.52	-1496.69	-5696.81	5890.14	255.28	1.24	80.11R
	14711.00	91.55	272.27	8448.76	5945.12	-1494.08	-5791.74	5981.35	255.53	1.47	93.6R
	14807.00	91.41	274.48	8446.28	6039.15	-1488.43	-5887.54	6072.77	255.81	2.31	103.27R
	14902.00	91.20	275.37	8444.12	6131.66	-1480.27	-5982.16	6162.59	256.10	0.96	133.93L
	14996.00	90.41	274.55	8442.80	6223.19	-1472.15	-6075.80	6251.60	256.38	1.21	65.91L
	15093.00	90.79	273.70	8441.78	6317.97	-1465.17	-6172.54	6344.05	256.65	0.96	111.09L
	15188.00	90.52	273.00	8440.69	6411.05	-1459.62	-6267.37	6435.09	256.89	0.79	97.12L
	15283.00	90.41	272.12	8439.92	6504.39	-1455.37	-6362.27	6526.61	257.12	0.93	103.71L
	15378.00	90.10	270.85	8439.50	6598.05	-1452.91	-6457.24	6618.68	257.32	1.38	29.27L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	15473.00	90.76	270.48	8438.79	6691.92	-1451.81	-6552.23	6711.14	257.51	0.80	88.79L
	15569.00	90.79	269.05	8437.49	6786.99	-1452.20	-6648.22	6804.97	257.68	1.49	65.71L
	15666.00	91.48	267.52	8435.57	6883.36	-1455.11	-6745.15	6900.32	257.83	1.73	93L
	15762.00	91.44	266.76	8433.12	6978.92	-1459.89	-6841.00	6995.04	257.95	0.79	90L
	15857.00	91.44	266.62	8430.73	7073.55	-1465.38	-6935.81	7088.92	258.07	0.15	134.31R
	15953.00	91.03	267.04	8428.66	7169.16	-1470.69	-7031.64	7183.79	258.19	0.61	61.46R
	16048.00	91.72	268.31	8426.38	7263.64	-1474.54	-7126.53	7277.48	258.31	1.52	108.07L
	16144.00	91.07	266.32	8424.05	7359.17	-1479.03	-7222.39	7372.28	258.43	2.18	90R
	16238.00	91.07	267.15	8422.29	7452.81	-1484.39	-7316.22	7465.29	258.53	0.88	90R
	16333.00	91.07	267.26	8420.52	7547.38	-1489.02	-7411.09	7559.20	258.64	0.12	175.33L
	16428.00	90.58	267.22	8419.15	7641.95	-1493.59	-7505.97	7653.13	258.75	0.52	24.24L
	16524.00	91.69	266.72	8417.25	7737.54	-1498.67	-7601.82	7748.14	258.85	1.27	132.05R
	16620.00	90.86	267.64	8415.11	7833.10	-1503.39	-7697.68	7843.11	258.95	1.29	61.49R
	16715.00	91.24	268.34	8413.37	7927.54	-1506.72	-7792.60	7936.93	259.06	0.84	84.64R
	16811.00	91.41	270.16	8411.15	8022.71	-1507.97	-7888.56	8031.40	259.18	1.90	90R
	16906.00	91.41	271.82	8408.81	8116.47	-1506.33	-7983.52	8124.38	259.32	1.75	129.6R
	17000.00	90.45	272.98	8407.29	8208.86	-1502.40	-8077.42	8215.96	259.46	1.60	26.56R
	17095.00	90.89	273.20	8406.18	8302.03	-1497.28	-8172.28	8308.31	259.62	0.52	111.22L
	17190.00	90.28	271.63	8405.21	8395.41	-1493.28	-8267.18	8400.96	259.76	1.77	40.91R
	17285.00	91.03	272.28	8404.12	8488.93	-1490.03	-8362.12	8493.84	259.90	1.04	109.8L
	17381.00	90.45	270.67	8402.88	8583.57	-1487.56	-8458.08	8587.89	260.03	1.78	25.06R
	17475.00	91.07	270.96	8401.63	8676.41	-1486.23	-8552.06	8680.24	260.14	0.73	116.1R
	17570.00	90.58	271.96	8400.27	8770.06	-1483.81	-8647.02	8773.40	260.26	1.17	59.74R
	17664.00	90.86	272.44	8399.09	8862.52	-1480.20	-8740.94	8865.38	260.39	0.59	166.68L
	17759.00	90.48	272.35	8397.97	8955.91	-1476.23	-8835.85	8958.32	260.52	0.41	48.23R
	17854.00	91.89	273.93	8396.01	9049.04	-1471.03	-8930.68	9051.02	260.65	2.23	131.91L
	17949.00	90.48	272.36	8394.04	9142.18	-1465.82	-9025.51	9143.77	260.78	2.22	70.25L
	18044.00	90.76	271.58	8393.02	9235.69	-1462.55	-9120.45	9236.97	260.89	0.87	99.92L
	18139.00	90.38	269.41	8392.07	9329.60	-1461.73	-9215.44	9330.64	260.99	2.32	76.3L
	18235.00	90.76	267.85	8391.12	9424.92	-1464.03	-9311.40	9425.79	261.06	1.67	52.9L
	18329.00	91.07	267.44	8389.62	9518.43	-1467.89	-9405.31	9519.17	261.13	0.55	86.38R
	18424.00	91.13	268.39	8387.79	9612.87	-1471.34	-9500.23	9613.49	261.20	1.00	86.76L
	18518.00	91.20	267.15	8385.88	9706.35	-1475.00	-9594.14	9706.86	261.26	1.32	103.39L
	18613.00	91.00	266.31	8384.06	9800.99	-1480.42	-9688.96	9801.41	261.31	0.91	85.6R
	18709.00	91.03	266.70	8382.36	9896.66	-1486.27	-9784.77	9897.00	261.36	0.41	80.53R
	18804.00	91.17	267.54	8380.53	9991.23	-1491.04	-9879.63	9991.51	261.42	0.90	126.41R
	18897.00	90.58	268.34	8379.11	10083.70	-1494.38	-9972.56	10083.90	261.48	1.07	107.05R
	18992.00	90.00	270.23	8378.63	10177.89	-1495.57	-10067.54	10178.02	261.55	2.08	150.35L
	19087.00	89.35	269.86	8379.17	10271.92	-1495.49	-10162.54	10271.99	261.63	0.79	65.02L
	19182.00	90.31	267.80	8379.45	10366.21	-1497.43	-10257.52	10366.24	261.69	2.39	35.66R
Survey 18-Dec-2014	19273.00	92.58	269.43	8377.16	10456.53	-1499.63	-10348.45	10456.55	261.75	3.07	HS
Proj to Bit - TD	19317.00	92.58	269.43	8375.18	10500.10	-1500.07	-10392.40	10500.11	261.79	0.00	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
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Survey Type: Non-Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 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	24.000	Act Stns	30.000	30.000	SLB_MWD-POOR-Depth Only	Original Borehole / Cimarex Hackberry 23 Federal #3H XEM +
	1	24.000	232.000	Act Stns	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Hackberry 23 Federal #3H XEM +
	1	232.000	3495.400	Act Stns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Hackberry 23 Federal #3H XEM +
	1	3495.400	19273.000	Act Stns	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Hackberry 23 Federal #3H XEM +
	1	19273.000	19317.000	Act Stns	30.000	30.000	SLB_BLIND+TREND	Original Borehole / Cimarex Hackberry 23 Federal #3H XEM +

