

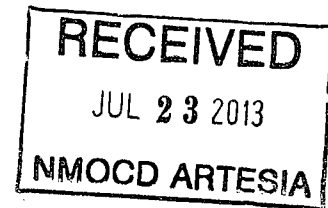
Pathfinder

6213 WCR, 112
Midland, Texas, 79706-3725, USA
Tel. (432)-687-1647
Fax (432)-687-1544

April 30, 2013

PATHFINDER
A Schlumberger Company

Cimarex Energy Co. Of Colorado
Attn: Genea Holloway
15 E 5TH Street Ste 1000
Tulsa, OK 74103



RE: Cimarex Energy Co. Of Colorado
FORTY NINER RIDGE 23 FEDERAL 2H
EDDY COUNTY, NEW MEXICO
API No: 30-015-40649
Rig: Cactus 104
PES File No.: 13MLD0026

Dear Sir or Madam:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA

- 1 – Original survey report
- 2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647.

Sincerely,

A handwritten signature in black ink, appearing to be "K.D." or "Kirk Davis", written over a horizontal line.

KIRK DAVIS
M/LWD Service Coordinator
PathFinder Energy Services



A Schlumberger Company

RECEIVED

JUL 23 2013

NMOCD ARTESIA

DIRECTIONAL SURVEY REPORT

CIMAREX ENERGY CO. OF COLORADO

FORTY NINER RIDGE 23 FEDERAL 2H

EDDY COUNTY, NEW MEXICO

PREPARED BY: KIRK DAVIS

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) ZACH LOFTIES
B) WAYNE ALLICK, JR.
3. POSITION OF SAID PERSON(S): (A) SURVEYORS (FIELD ENGINEER)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 3/10/13 TO 3/17/13
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

CIMAREX ENERGY CO. OF COLORADO
FORTY NINER RIDGE 23 FEDERAL 2H
EDDY COUNTY, NEW MEXICO
RIG: CACTUS 104
9. SURVEY CERTIFIED FROM: 9268 TO 14121 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4560.95 FEET ON A BEARING OF 359.20 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED DEPTH OF 14169.00 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



KIRK DAVIS
M/LWD Service Coordinator

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 03/10/2013
Date Completed: 03/17/2013

CIMAREX ENERGY COMPANY
FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
EDDY COUNTY, NM
Rig:CACTUS 104
PathFinder Office Supervisor: MARCUS MITCHAM
PathFinder Field Engineers:Z.LOFTIES
W.ALICK

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.17.3.5025 N LON:103.50.57.6511 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 690903.3000 Y: 467500.8000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.51°EAST TO GRID
Vertical Section Plane: 359.63
Survey Vert. Reference: 20.00' Rotary Table To Ground
Altitude:3270.00' Ground To MSL

Measured Depth	14169.00	(feet)
Inclination	89.87	(deg)
Azimuth	358.93	(deg)
True Vertical Depth	9809.64	(feet)
Vertical Section	4560.82	(feet)
Survey X cord	690839.51	(feet)
Survey Y cord	472061.31	(feet)
Survey Lat	32.29684286 N	(deg)
Survey Lon	103.84948738 W	(deg)
Rectangular Corr. N/S	4560.51 N	(feet)
Rectangular Corr. E/W	63.79 W	(feet)
Closure Distance	4560.95	(feet)
Direction of Closure	359.20	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
EDDY COUNTY, NM
Rig:CACTUS 104
PathFinder Office Supervisor: MARCUS MITCHAM
PathFinder Field Engineers: Z.LOFTIES
W.ALLICK

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.17.3.5025 N LON:103.50.57.6511 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 690903.3000 Y: 467500.8000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.25°EAST TO GRID
Vertical Section Plane: 359.63
Survey Vert. Reference: 20.00' Rotary Table To Ground
Altitude:3270.00' Ground To MSL

Survey Calculations by RX5 V6.04C using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE GYRO DATA GYRO SURVEYS.										
44.00	0.21	169.86	44.00	0.00	-0.32	0.32 S	0.11 E	0.33@	161.16	0.00
139.00	0.34	201.61	139.00	95.00	-0.75	0.75 S	0.03 E	0.75@	177.34	0.21
234.30	0.23	230.95	234.30	95.30	-1.13	1.13 S	0.22 W	1.15@	190.89	0.19
329.60	0.43	281.98	329.60	95.30	-1.17	1.18 S	0.72 W	1.38@	211.27	0.35
424.70	0.49	282.32	424.69	95.10	-1.01	1.02 S	1.46 W	1.78@	235.15	0.06
520.00	0.61	291.76	519.99	95.30	-0.73	0.74 S	2.33 W	2.45@	252.32	0.16
614.60	0.55	301.52	614.59	94.60	-0.30	0.32 S	3.19 W	3.20@	264.28	0.12
709.30	0.34	237.95	709.28	94.70	-0.21	0.23 S	3.81 W	3.82@	266.53	0.53
803.90	0.64	214.17	803.88	94.60	-0.79	0.82 S	4.35 W	4.42@	259.36	0.38
993.10	0.58	228.64	993.07	189.20	-2.29	2.32 S	5.66 W	6.12@	247.67	0.09
1087.80	0.77	318.86	1087.76	94.70	-2.12	2.16 S	6.44 W	6.79@	251.44	1.02
1182.80	0.31	301.79	1182.76	95.00	-1.50	1.55 S	7.08 W	7.24@	257.68	0.51
1277.80	0.64	311.72	1277.76	95.00	-1.01	1.06 S	7.69 W	7.76@	262.17	0.36
1373.30	0.55	304.90	1373.25	95.50	-0.39	0.44 S	8.46 W	8.48@	267.03	0.12
1468.40	0.61	297.16	1468.35	95.10	0.11	0.05 N	9.29 W	9.29@	270.32	0.10
1563.40	0.55	313.44	1563.34	95.00	0.66	0.60 N	10.07 W	10.09@	273.39	0.18
1658.20	0.50	317.58	1658.14	94.80	1.28	1.22 N	10.68 W	10.75@	276.49	0.07
1752.80	0.40	315.17	1752.73	94.60	1.83	1.75 N	11.19 W	11.33@	278.91	0.11
1847.80	0.57	336.61	1847.73	95.00	2.50	2.42 N	11.61 W	11.86@	281.79	0.26
1942.70	0.73	336.22	1942.63	94.90	3.49	3.41 N	12.04 W	12.52@	285.81	0.17
2037.60	0.67	327.89	2037.52	94.90	4.51	4.43 N	12.58 W	13.34@	289.41	0.12
2132.50	0.61	318.65	2132.41	94.90	5.37	5.28 N	13.21 W	14.23@	291.79	0.13
2227.40	0.75	302.54	2227.31	94.90	6.09	6.00 N	14.07 W	15.29@	293.08	0.25
2322.40	1.06	316.28	2322.29	95.00	7.06	6.96 N	15.20 W	16.72@	294.62	0.40
2417.10	1.24	321.36	2416.97	94.70	8.50	8.40 N	16.44 W	18.47@	297.05	0.22

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
 FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
 EDDY COUNTY, NM
 RIG:CACTUS 104

Page 02/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2511.80	1.64	332.02	2511.64	94.70	10.51	10.40 N	17.72 W	20.54@	300.40	0.51
2606.60	2.12	335.74	2606.39	94.80	13.31	13.19 N	19.08 W	23.19@	304.66	0.52
2701.20	2.00	316.68	2700.93	94.60	16.12	15.99 N	20.93 W	26.34@	307.38	0.73
2795.80	1.90	299.10	2795.48	94.60	18.10	17.95 N	23.43 W	29.52@	307.46	0.64
2890.40	1.97	291.84	2890.03	94.60	19.49	19.32 N	26.31 W	32.64@	306.29	0.27
2985.10	1.80	288.74	2984.67	94.70	20.59	20.40 N	29.23 W	35.65@	304.91	0.21
3079.80	1.27	295.51	3079.34	94.70	21.54	21.33 N	31.59 W	38.12@	304.03	0.59
3174.50	0.71	284.74	3174.03	94.70	22.15	21.93 N	33.10 W	39.71@	303.53	0.62
3269.30	0.95	279.60	3268.82	94.80	22.44	22.21 N	34.44 W	40.99@	302.82	0.27
3364.10	0.91	284.74	3363.60	94.80	22.77	22.54 N	35.95 W	42.43@	302.09	0.10
3458.80	0.42	257.81	3458.30	94.70	22.89	22.65 N	37.01 W	43.40@	301.47	0.60
3553.50	0.36	207.84	3552.99	94.70	22.56	22.32 N	37.49 W	43.63@	300.77	0.35
3648.20	0.37	356.60	3647.69	94.70	22.60	22.36 N	37.65 W	43.79@	300.71	0.74
3742.90	0.61	63.04	3742.39	94.70	23.13	22.89 N	37.22 W	43.70@	301.60	0.61
THE FOLLOWING ARE EXTREME ENGINEERING ELECTRO-MAGNETIC SURVEYS.										
3835.00	0.22	230.25	3834.49	92.10	23.24	23.00 N	36.92 W	43.50@	301.93	0.90
3878.00	0.88	346.57	3877.49	43.00	23.51	23.27 N	37.06 W	43.76@	302.13	2.32
3972.00	1.19	44.67	3971.48	94.00	24.90	24.67 N	36.54 W	44.09@	304.03	1.11
4067.00	1.01	38.47	4066.46	95.00	26.25	26.03 N	35.32 W	43.88@	306.38	0.23
4162.00	1.10	37.85	4161.44	95.00	27.62	27.40 N	34.24 W	43.86@	308.67	0.10
4258.00	1.01	30.47	4257.43	96.00	29.07	28.86 N	33.25 W	44.03@	310.96	0.17
4353.00	1.01	37.06	4352.41	95.00	30.46	30.25 N	32.32 W	44.27@	313.10	0.12
4447.00	0.79	27.35	4446.40	94.00	31.69	31.48 N	31.52 W	44.55@	314.97	0.28
4542.00	1.01	30.95	4541.39	95.00	32.98	32.78 N	30.79 W	44.98@	316.80	0.24
4638.00	0.88	39.48	4637.37	96.00	34.27	34.08 N	29.89 W	45.33@	318.75	0.20
4733.00	0.79	22.17	4732.36	95.00	35.44	35.25 N	29.18 W	45.76@	320.38	0.28
4828.00	0.79	29.94	4827.36	95.00	36.61	36.42 N	28.60 W	46.31@	321.86	0.11
4924.00	0.79	27.44	4923.35	96.00	37.76	37.58 N	27.97 W	46.85@	323.35	0.04

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
 FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
 EDDY COUNTY, NM
 RIG:CACTUS 104

Page 03/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5017.00	0.70	17.46	5016.34	93.00	38.87	38.69 N	27.50 W	47.47@	324.60	0.17
5112.00	0.70	17.38	5111.33	95.00	39.98	39.80 N	27.15 W	48.18@	325.70	0.00
5207.00	0.62	30.47	5206.33	95.00	40.97	40.80 N	26.72 W	48.77@	326.78	0.18
5302.00	0.79	25.77	5301.32	95.00	42.00	41.83 N	26.17 W	49.34@	327.97	0.19
5492.00	0.70	16.14	5491.30	190.00	44.29	44.13 N	25.28 W	50.86@	330.19	0.08
5587.00	0.70	13.46	5586.29	95.00	45.41	45.25 N	24.99 W	51.69@	331.09	0.03
5681.00	0.79	20.67	5680.29	94.00	46.57	46.41 N	24.62 W	52.54@	332.05	0.14
5777.00	0.79	17.95	5776.28	96.00	47.82	47.66 N	24.19 W	53.45@	333.09	0.04
5871.00	0.70	10.26	5870.27	94.00	49.00	48.84 N	23.88 W	54.37@	333.94	0.14
5967.00	0.48	9.55	5966.26	96.00	49.97	49.82 N	23.71 W	55.17@	334.55	0.23
6062.00	0.62	17.55	6061.26	95.00	50.85	50.70 N	23.49 W	55.88@	335.14	0.17
6156.00	0.31	44.67	6155.26	94.00	51.51	51.36 N	23.16 W	56.34@	335.73	0.40
6251.00	0.09	355.14	6250.26	95.00	51.77	51.62 N	22.98 W	56.51@	336.00	0.27
6347.00	0.22	106.14	6346.26	96.00	51.79	51.65 N	22.81 W	56.46@	336.17	0.28
6443.00	0.09	84.35	6442.26	96.00	51.75	51.60 N	22.56 W	56.32@	336.38	0.15
6538.00	0.22	202.17	6537.26	95.00	51.58	51.44 N	22.56 W	56.17@	336.32	0.29
6633.00	0.31	151.98	6632.25	95.00	51.19	51.04 N	22.50 W	55.78@	336.21	0.25
6728.00	0.31	157.87	6727.25	95.00	50.72	50.58 N	22.29 W	55.27@	336.22	0.03
6823.00	0.31	181.25	6822.25	95.00	50.23	50.08 N	22.20 W	54.78@	336.10	0.13
6919.00	0.48	173.38	6918.25	96.00	49.57	49.42 N	22.16 W	54.16@	335.85	0.19
7014.00	0.62	190.74	7013.25	95.00	48.67	48.52 N	22.21 W	53.36@	335.41	0.23
7109.00	0.70	196.28	7108.24	95.00	47.61	47.46 N	22.46 W	52.51@	334.67	0.11
7205.00	0.79	191.57	7204.23	96.00	46.40	46.25 N	22.76 W	51.55@	333.80	0.11
7301.00	0.79	183.18	7300.22	96.00	45.09	44.94 N	22.93 W	50.45@	332.97	0.12
7397.00	0.88	179.27	7396.21	96.00	43.69	43.54 N	22.96 W	49.23@	332.20	0.11
7492.00	0.88	179.67	7491.20	95.00	42.23	42.09 N	22.94 W	47.93@	331.40	0.01
7587.00	1.01	183.44	7586.19	95.00	40.67	40.52 N	22.99 W	46.59@	330.43	0.15
7681.00	0.88	204.14	7680.17	94.00	39.18	39.03 N	23.34 W	45.48@	329.13	0.39

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
 FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
 EDDY COUNTY, NM
 RIG:CACTUS 104

Page 04/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7777.00	0.79	193.24	7776.17	96.00	37.87	37.72 N	23.79 W	44.59@	327.76	0.19
7872.00	0.79	203.35	7871.16	95.00	36.63	36.48 N	24.20 W	43.77@	326.44	0.15
7966.00	0.79	209.46	7965.15	94.00	35.48	35.32 N	24.77 W	43.14@	324.95	0.09
8058.00	0.62	243.08	8057.14	92.00	34.71	34.54 N	25.53 W	42.95@	323.53	0.48
8153.00	0.48	242.86	8152.14	95.00	34.30	34.13 N	26.34 W	43.11@	322.34	0.15
8248.00	0.62	214.56	8247.13	95.00	33.70	33.52 N	26.99 W	43.04@	321.16	0.32
8344.00	0.79	190.65	8343.12	96.00	32.62	32.44 N	27.40 W	42.47@	319.81	0.35
8439.00	1.01	200.76	8438.11	95.00	31.20	31.02 N	27.82 W	41.67@	318.11	0.28
8535.00	1.01	203.26	8534.10	96.00	29.63	29.45 N	28.46 W	40.95@	315.98	0.05
8631.00	0.70	188.67	8630.09	96.00	28.28	28.09 N	28.88 W	40.29@	314.21	0.39
8727.00	1.10	179.36	8726.07	96.00	26.78	26.59 N	28.96 W	39.31@	312.56	0.44
8821.00	1.19	190.26	8820.06	94.00	24.92	24.73 N	29.12 W	38.20@	310.34	0.25
8916.00	1.19	195.88	8915.04	95.00	23.00	22.81 N	29.57 W	37.34@	307.65	0.12
9013.00	0.88	186.65	9012.02	97.00	21.29	21.10 N	29.93 W	36.62@	305.19	0.36
9109.00	0.88	160.24	9108.01	96.00	19.87	19.67 N	29.76 W	35.68@	303.47	0.42
** TIED INTO EXTREME ENGINEERING ELECTRO-MAGNETIC SURVEYS AT 9202'MD.										
9202.00	1.41	183.38	9200.99	93.00	18.05	17.86 N	29.59 W	34.56@	301.11	0.75
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
9268.00	1.41	184.82	9266.97	66.00	16.43	16.24 N	29.71 W	33.86@	298.67	0.05
9299.00	1.58	194.96	9297.96	31.00	15.64	15.45 N	29.85 W	33.61@	297.36	1.01
9331.00	1.32	208.66	9329.95	32.00	14.89	14.70 N	30.14 W	33.53@	296.00	1.35
9362.00	1.32	324.00	9360.95	31.00	14.87	14.67 N	30.52 W	33.86@	295.68	7.20
9394.00	4.31	352.17	9392.90	32.00	16.36	16.16 N	30.90 W	34.87@	297.61	10.02
9426.00	7.74	358.80	9424.72	32.00	19.71	19.51 N	31.11 W	36.72@	302.09	10.92
9458.00	11.70	1.16	9456.26	32.00	25.11	24.91 N	31.09 W	39.84@	308.70	12.43
9490.00	16.18	4.26	9487.31	32.00	32.80	32.60 N	30.69 W	44.78@	316.73	14.19
9521.00	19.43	5.93	9516.82	31.00	42.23	42.04 N	29.84 W	51.55@	324.64	10.61
9553.00	22.69	7.69	9546.68	32.00	53.64	53.46 N	28.46 W	60.56@	331.97	10.38
9585.00	26.56	8.83	9575.76	32.00	66.82	66.65 N	26.54 W	71.74@	338.29	12.18

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
EDDY COUNTY, NM
RIG:CACTUS 104

Page 05/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9617.00	30.95	8.57	9603.81	32.00	82.02	81.86 N	24.21 W	85.37@	343.52	13.72
9648.00	35.44	7.95	9629.74	31.00	98.79	98.65 N	21.78 W	101.03@	347.55	14.52
9680.00	39.92	6.99	9655.06	32.00	118.16	118.04 N	19.25 W	119.60@	350.74	14.12
9712.00	44.67	6.81	9678.73	32.00	139.52	139.42 N	16.66 W	140.41@	353.19	14.85
9743.00	49.77	6.02	9699.78	31.00	162.11	162.02 N	14.13 W	162.63@	355.02	16.56
9775.00	54.26	5.05	9719.47	32.00	187.19	187.12 N	11.70 W	187.48@	356.42	14.23
9807.00	57.51	4.35	9737.41	32.00	213.57	213.52 N	9.53 W	213.73@	357.44	10.32
9838.00	61.64	3.21	9753.11	31.00	240.23	240.18 N	7.78 W	240.31@	358.15	13.70
9870.00	66.21	1.98	9767.17	32.00	268.93	268.89 N	6.48 W	268.97@	358.62	14.69
9902.00	71.31	0.13	9778.76	32.00	298.73	298.70 N	5.94 W	298.76@	358.86	16.82
9934.00	75.97	358.11	9787.77	32.00	329.42	329.39 N	6.42 W	329.45@	358.88	15.77
9965.00	79.67	356.26	9794.31	31.00	359.69	359.65 N	7.91 W	359.74@	358.74	13.28
9997.00	82.48	355.30	9799.27	32.00	391.23	391.17 N	10.24 W	391.31@	358.50	9.27
10028.00	85.30	355.38	9802.57	31.00	421.96	421.89 N	12.74 W	422.08@	358.27	9.10
10055.00	87.76	355.38	9804.21	27.00	448.84	448.75 N	14.91 W	449.00@	358.10	9.11
10150.00	89.87	355.47	9806.17	95.00	543.56	543.42 N	22.49 W	543.89@	357.63	2.22
10245.00	90.75	358.73	9805.66	95.00	638.45	638.29 N	27.29 W	638.87@	357.55	3.55
10340.00	90.57	359.08	9804.56	95.00	733.44	733.26 N	29.11 W	733.84@	357.73	0.41
10436.00	89.96	358.20	9804.12	96.00	829.42	829.23 N	31.39 W	829.83@	357.83	1.12
10531.00	89.78	358.46	9804.34	95.00	924.39	924.19 N	34.16 W	924.82@	357.88	0.33
10626.00	90.31	358.81	9804.26	95.00	1019.38	1019.16 N	36.42 W	1019.81@	357.95	0.67
10720.00	90.66	359.60	9803.46	94.00	1113.37	1113.15 N	37.72 W	1113.79@	358.06	0.92
10815.00	91.36	359.69	9801.79	95.00	1208.36	1208.13 N	38.31 W	1208.74@	358.18	0.74
10910.00	91.19	1.19	9799.68	95.00	1303.32	1303.10 N	37.58 W	1303.65@	358.35	1.59
11006.00	91.19	1.80	9797.68	96.00	1399.25	1399.05 N	35.08 W	1399.49@	358.56	0.64
11101.00	89.87	1.27	9796.80	95.00	1494.19	1494.01 N	32.53 W	1494.36@	358.75	1.50
11196.00	88.64	0.57	9798.04	95.00	1589.15	1588.99 N	31.01 W	1589.29@	358.88	1.49
11292.00	88.02	0.66	9800.84	96.00	1685.10	1684.94 N	29.98 W	1685.21@	358.98	0.65

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
 FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
 EDDY COUNTY, NM
 RIG:CACTUS 104

Page 06/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
11387.00	89.25	0.40	9803.10	95.00	1780.06	1779.91 N	29.10 W	1780.15@	359.06	1.32
11482.00	88.81	0.66	9804.71	95.00	1875.03	1874.89 N	28.22 W	1875.10@	359.14	0.54
11577.00	88.72	0.66	9806.76	95.00	1970.00	1969.86 N	27.13 W	1970.05@	359.21	0.09
11671.00	88.72	0.22	9808.86	94.00	2063.96	2063.84 N	26.41 W	2064.00@	359.27	0.47
11766.00	88.81	0.22	9810.90	95.00	2158.94	2158.81 N	26.04 W	2158.97@	359.31	0.09
11861.00	86.61	359.52	9814.70	95.00	2253.85	2253.73 N	26.26 W	2253.88@	359.33	2.43
11957.00	87.76	359.88	9819.41	96.00	2349.74	2349.61 N	26.76 W	2349.76@	359.35	1.26
12052.00	89.69	0.07	9821.53	95.00	2444.70	2444.58 N	26.80 W	2444.73@	359.37	2.04
12147.00	90.31	0.27	9821.53	95.00	2539.70	2539.58 N	26.52 W	2539.72@	359.40	0.69
12243.00	90.57	0.39	9820.79	96.00	2635.69	2635.58 N	25.96 W	2635.71@	359.44	0.30
12338.00	90.75	0.15	9819.70	95.00	2730.68	2730.57 N	25.52 W	2730.69@	359.46	0.32
12432.00	90.84	0.08	9818.39	94.00	2824.67	2824.56 N	25.33 W	2824.67@	359.49	0.12
12527.00	91.10	359.94	9816.78	95.00	2919.65	2919.55 N	25.31 W	2919.66@	359.50	0.31
12622.00	91.19	359.25	9814.88	95.00	3014.63	3014.53 N	25.98 W	3014.64@	359.51	0.73
12718.00	91.54	359.27	9812.60	96.00	3110.60	3110.49 N	27.22 W	3110.61@	359.50	0.36
12813.00	91.63	358.91	9809.97	95.00	3205.56	3205.44 N	28.73 W	3205.57@	359.49	0.39
12908.00	90.31	358.44	9808.36	95.00	3300.53	3300.40 N	30.93 W	3300.54@	359.46	1.48
13003.00	91.54	358.24	9806.83	95.00	3395.49	3395.35 N	33.68 W	3395.51@	359.43	1.31
13098.00	90.22	358.29	9805.37	95.00	3490.45	3490.29 N	36.55 W	3490.48@	359.40	1.39
13194.00	90.40	358.41	9804.85	96.00	3586.43	3586.25 N	39.32 W	3586.46@	359.37	0.23
13289.00	89.43	357.77	9804.99	95.00	3681.39	3681.19 N	42.48 W	3681.44@	359.34	1.22
13383.00	90.84	357.70	9804.77	94.00	3775.34	3775.12 N	46.20 W	3775.40@	359.30	1.50
13479.00	92.51	357.15	9801.96	96.00	3871.22	3870.97 N	50.51 W	3871.30@	359.25	1.83
13574.00	88.02	357.64	9801.52	95.00	3966.12	3965.85 N	54.83 W	3966.23@	359.21	4.75
13669.00	86.53	358.06	9806.04	95.00	4060.97	4060.67 N	58.39 W	4061.09@	359.18	1.63
13764.00	88.37	359.36	9810.27	95.00	4155.85	4155.55 N	60.52 W	4155.99@	359.17	2.37
13859.00	90.75	359.95	9811.00	95.00	4250.84	4250.54 N	61.09 W	4250.98@	359.18	2.58
13953.00	90.92	359.87	9809.63	94.00	4344.83	4344.53 N	61.24 W	4344.96@	359.19	0.20

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY COMPANY
 FORTY NINER RIDGE 23 FED #2H / API#: 30-015-40649
 EDDY COUNTY, NM
 RIG:CACTUS 104

Page 07/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
14048.00	89.60	359.41	9809.20	95.00	4439.83	4439.52 N	61.84 W	4439.95@	359.20	1.47
14121.00	89.87	358.93	9809.53	73.00	4512.83	4512.51 N	62.90 W	4512.95@	359.20	0.75
STRAIGHT LINE PROJECTION TO BIT AT 14169'MD.										
14169.00	89.87	358.93	9809.64	48.00	4560.82	4560.51 N	63.79 W	4560.95@	359.20	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.

RECEIVED

JUL 23 2013

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 334-8178 Fax: (505) 334-8170

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 746-1200 Fax: (505) 746-0720

DISTRICT III
1000 Rio Drazos Rd., Aztec, NM 87410
Phone (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3463

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-40649	Pool Code 96053	Pool Name Forty Niner Ridge Bone Spring Wildcat
Property Code 39406	Property Name FORTY NINER RIDGE 23 FEDERAL	Well Number 2H
OGRIID No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3270'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	23	23 S	30 E		390	SOUTH	1980	EAST	EDDY

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	23	23 S	30 E		330	NORTH	1980	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160.0			

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

PROPOSED BOTTOM HOLE LOCATION Lot - N 32°17'48.68" Long - W 103°50'57.75" NMSPCE- N 472086.1 E 690873.9 (NAD-83)		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 undivided 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. 5/31/12 <i>Zeno Farris</i> Signature _____ Date _____ Printed Name Zeno Farris Email Address zfarris@cimarex.com
SURFACE LOCATION Lot - N 32°17'03.50" Long - W 103°50'57.65" NMSPCE- N 467500.8 E 690903.3 (NAD-83)		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. Date Surveyed Aug 1, 2012 Signature and Seal of Professional Surveyor Gary L. Jones Certificate No. Gary L. Jones 7977 Basin Surveys 26645



Cimarex Forty Niner Ridge 23 Federal #2H Gyro+MWD 0ft to 14169ft MD

(Def Survey)

Report Date: March 18, 2013 - 06:32 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cactus 104 / Cimarex Forty Niner Ridge 23 Federal #2H
Well: Cimarex Forty Niner Ridge 23 Federal #2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Forty Niner Ridge 23 Federal #2H Gyro+MWD 0ft to 14169ft MD
Survey Date: March 01, 2013
Tort / AHD / DDI / ERD Ratio: 165.426 ° / 4673.559 ft / 6.047 / 0.476
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 17' 3.50249", W 103° 50' 57.65111"
Location Grid N/E Y/X: N 467500.800 ftUS, E 690903.300 ftUS
CRS Grid Convergence Angle: 0.2585 °
Grid Scale Factor: 0.99993471

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.630 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3290.000 ft above
Seabed / Ground Elevation: 3270.000 ft above
Magnetic Declination: 7.614 °
Total Gravity Field Strength: 998.5045mgn (9.80665 Based)
Total Magnetic Field Strength: 48428.655 nT
Magnetic Dip Angle: 60.110 °
Declination Date: March 01, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.2585 °
Total Corr Mag North->Grid North: 7.3554 °
Local Coord Referenced To: Structure Reference Point



Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Forty Niner Ridge 23 Fed #2H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	169.86M
	44.40	0.21	169.86	44.40	-0.08	-0.08	0.01	0.08	169.86	0.47	201.61M
	139.30	0.34	201.61	139.30	-0.51	-0.51	-0.06	0.52	186.53	0.21	230.95M
	234.30	0.23	230.95	234.30	-0.89	-0.90	-0.31	0.95	199.14	0.19	281.98M
	329.60	0.43	281.98	329.60	-0.94	-0.94	-0.81	1.24	220.67	0.35	282.32M
	424.70	0.49	282.32	424.69	-0.77	-0.78	-1.56	1.74	243.35	0.06	291.76M
	520.00	0.61	291.76	519.99	-0.49	-0.51	-2.42	2.48	258.22	0.16	301.52M
	614.60	0.55	301.52	614.58	-0.06	-0.08	-3.28	3.28	268.57	0.12	237.95M
	709.30	0.34	237.95	709.28	0.03	0.01	-3.91	3.91	270.10	0.53	214.17M
	803.90	0.64	214.17	803.88	-0.55	-0.58	-4.44	4.48	262.57	0.38	204.91M
	898.50	0.73	204.91	898.47	-1.53	-1.56	-4.99	5.23	252.61	0.15	228.64M
	993.10	0.58	228.64	993.07	-2.39	-2.43	-5.60	6.11	246.59	0.32	318.86M
	1087.80	0.77	318.86	1087.76	-2.22	-2.26	-6.38	6.77	250.47	1.02	301.79M
	1182.80	0.31	301.79	1182.76	-1.60	-1.65	-7.02	7.21	256.80	0.51	311.72M
	1277.80	0.64	311.72	1277.75	-1.11	-1.16	-7.63	7.72	261.37	0.36	304.9M
	1373.30	0.55	304.90	1373.25	-0.49	-0.54	-8.41	8.43	266.32	0.12	297.16M
	1468.40	0.61	297.16	1468.34	0.01	-0.05	-9.23	9.23	269.69	0.10	313.44M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	1563.40	0.55	313.44	1563.34	0.56	0.50	-10.01	10.03	272.83	0.18	317.58M
	1658.20	0.50	317.58	1658.13	1.18	1.11	-10.62	10.68	275.98	0.07	315.17M
	1752.80	0.40	315.17	1752.73	1.72	1.65	-11.14	11.26	278.44	0.11	336.61M
	1847.80	0.57	336.61	1847.73	2.40	2.32	-11.56	11.79	281.36	0.26	336.22M
	1942.70	0.73	336.22	1942.62	3.38	3.31	-11.99	12.44	285.42	0.17	327.89M
	2037.60	0.67	327.89	2037.51	4.41	4.33	-12.53	13.25	289.07	0.12	318.65M
	2132.50	0.61	318.65	2132.41	5.26	5.18	-13.16	14.14	291.49	0.13	302.54M
	2227.40	0.75	302.54	2227.30	5.98	5.89	-14.01	15.20	292.81	0.25	316.28M
	2322.40	1.06	316.28	2322.29	6.96	6.86	-15.14	16.63	294.38	0.40	321.36M
	2417.10	1.24	321.36	2416.97	8.40	8.30	-16.39	18.37	296.85	0.22	332.02M
	2511.80	1.64	332.02	2511.64	10.41	10.29	-17.66	20.44	300.23	0.51	335.74M
	2606.60	2.12	335.74	2606.39	13.21	13.09	-19.02	23.09	304.53	0.52	316.68M
	2701.20	2.00	316.68	2700.93	16.02	15.89	-20.87	26.23	307.27	0.73	299.1M
	2795.80	1.90	299.10	2795.48	18.00	17.85	-23.38	29.41	307.37	0.64	291.84M
	2890.40	1.97	291.84	2890.02	19.39	19.22	-26.26	32.54	306.20	0.27	288.74M
	2985.10	1.80	288.74	2984.67	20.49	20.30	-29.17	35.54	304.83	0.21	295.51M
	3079.80	1.27	295.51	3079.34	21.43	21.23	-31.53	38.01	303.95	0.59	284.74M
	3174.50	0.71	284.74	3174.02	22.04	21.83	-33.05	39.61	303.45	0.62	279.6M
	3269.30	0.95	279.60	3268.81	22.33	22.11	-34.39	40.88	302.74	0.26	284.72M
	3364.10	0.91	284.72	3363.60	22.67	22.43	-35.89	42.33	302.01	0.10	257.81M
	3458.80	0.42	257.81	3458.29	22.79	22.55	-36.96	43.30	301.39	0.60	207.84M
	3553.50	0.36	207.84	3552.99	22.46	22.22	-37.44	43.53	300.69	0.35	356.6M
	3648.20	0.37	356.60	3647.69	22.50	22.26	-37.59	43.69	300.63	0.74	63.04M
Final Gyro Survey	3742.90	0.61	63.04	3742.39	23.03	22.79	-37.16	43.59	301.52	0.61	230.25M
	3835.00	0.22	230.25	3834.49	23.14	22.90	-36.86	43.40	301.85	0.90	346.57M
	3878.00	0.88	346.57	3877.48	23.41	23.17	-37.00	43.66	302.05	2.32	44.67M
	3972.00	1.19	44.67	3971.47	24.80	24.57	-36.48	43.98	303.96	1.11	38.47M
	4067.00	1.01	38.47	4066.45	26.15	25.92	-35.27	43.77	306.32	0.23	37.85M
	4162.00	1.10	37.85	4161.44	27.52	27.30	-34.19	43.75	308.61	0.10	30.47M
	4258.00	1.01	30.47	4257.42	28.97	28.76	-33.19	43.92	310.90	0.17	37.06M
	4353.00	1.01	37.06	4352.41	30.35	30.15	-32.26	44.16	313.06	0.12	27.35M
	4447.00	0.79	27.35	4446.40	31.58	31.38	-31.47	44.44	314.92	0.28	30.95M
	4542.00	1.01	30.95	4541.38	32.88	32.68	-30.74	44.86	316.76	0.24	39.48M
	4638.00	0.88	39.48	4637.37	34.17	33.98	-29.83	45.21	318.72	0.20	22.17M
	4733.00	0.79	22.17	4732.36	35.33	35.15	-29.12	45.64	320.36	0.28	29.94M
	4828.00	0.79	29.94	4827.35	36.50	36.32	-28.55	46.20	321.83	0.11	27.44M
	4924.00	0.79	27.44	4923.34	37.66	37.48	-27.91	46.73	323.33	0.04	17.46M
	5017.00	0.70	17.46	5016.33	38.77	38.59	-27.45	47.36	324.58	0.17	17.38M
	5112.00	0.70	17.38	5111.33	39.87	39.70	-27.10	48.07	325.68	0.00	30.47M
	5207.00	0.62	30.47	5206.32	40.87	40.70	-26.66	48.65	326.77	0.18	25.77M
	5302.00	0.79	25.77	5301.31	41.90	41.73	-26.12	49.23	327.96	0.19	17.24M
	5397.00	0.79	17.24	5396.31	43.11	42.94	-25.64	50.02	329.16	0.12	16.14M
	5492.00	0.70	16.14	5491.30	44.29	44.13	-25.28	50.86	330.19	0.10	13.46M
	5587.00	0.70	13.46	5586.29	45.41	45.25	-24.99	51.69	331.09	0.03	20.67M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	5681.00	0.79	20.67	5680.28	46.57	46.41	-24.63	52.54	332.05	0.14	17.95M
	5777.00	0.79	17.95	5776.27	47.82	47.66	-24.19	53.45	333.09	0.04	10.26M
	5871.00	0.70	10.26	5870.27	49.00	48.84	-23.89	54.37	333.94	0.14	9.55M
	5967.00	0.48	9.55	5966.26	49.97	49.82	-23.71	55.17	334.54	0.23	17.55M
	6062.00	0.62	17.55	6061.26	50.85	50.70	-23.49	55.88	335.14	0.17	44.67M
	6156.00	0.31	44.67	6155.25	51.51	51.37	-23.16	56.35	335.73	0.40	355.14M
	6251.00	0.09	355.14	6250.25	51.77	51.62	-22.99	56.51	336.00	0.27	106.14M
	6347.00	0.22	106.14	6346.25	51.79	51.65	-22.82	56.46	336.16	0.28	84.35M
	6443.00	0.09	84.35	6442.25	51.75	51.60	-22.56	56.32	336.38	0.15	202.17M
	6538.00	0.22	202.17	6537.25	51.59	51.44	-22.56	56.17	336.32	0.29	151.98M
	6633.00	0.31	151.98	6632.25	51.19	51.05	-22.51	55.79	336.21	0.25	157.87M
	6728.00	0.31	157.87	6727.25	50.72	50.58	-22.29	55.27	336.22	0.03	181.25M
	6823.00	0.31	181.25	6822.25	50.23	50.09	-22.20	54.78	336.10	0.13	173.38M
	6919.00	0.48	173.38	6918.25	49.57	49.43	-22.16	54.17	335.85	0.19	190.74M
	7014.00	0.62	190.74	7013.24	48.67	48.53	-22.21	53.37	335.41	0.23	196.28M
	7109.00	0.70	196.28	7108.23	47.61	47.46	-22.47	52.51	334.67	0.11	191.57M
	7205.00	0.79	191.57	7204.23	46.40	46.25	-22.76	51.55	333.80	0.11	183.18M
	7301.00	0.79	183.18	7300.22	45.09	44.94	-22.93	50.46	332.97	0.12	179.27M
	7397.00	0.88	179.27	7396.21	43.69	43.55	-22.96	49.23	332.20	0.11	179.67M
	7492.00	0.88	179.67	7491.20	42.23	42.09	-22.95	47.94	331.40	0.01	183.44M
	7587.00	1.01	183.44	7586.18	40.67	40.52	-22.99	46.59	330.43	0.15	204.14M
	7681.00	0.88	204.14	7680.17	39.19	39.04	-23.34	45.48	329.13	0.39	193.24M
	7777.00	0.79	193.24	7776.16	37.87	37.72	-23.79	44.59	327.76	0.19	203.35M
	7872.00	0.79	203.35	7871.15	36.64	36.48	-24.20	43.78	326.44	0.15	209.46M
	7966.00	0.79	209.46	7965.14	35.48	35.32	-24.78	43.14	324.95	0.09	243.08M
	8058.00	0.62	243.08	8057.14	34.71	34.54	-25.53	42.95	323.53	0.48	242.86M
	8153.00	0.48	242.86	8152.13	34.30	34.13	-26.34	43.11	322.34	0.15	214.56M
	8248.00	0.62	214.56	8247.13	33.70	33.52	-26.99	43.04	321.16	0.32	190.65M
	8344.00	0.79	190.65	8343.12	32.62	32.45	-27.41	42.47	319.81	0.35	200.76M
	8439.00	1.01	200.76	8438.11	31.20	31.02	-27.82	41.67	318.11	0.28	203.26M
	8535.00	1.01	203.26	8534.09	29.63	29.45	-28.46	40.95	315.98	0.05	188.67M
	8631.00	0.70	188.67	8630.08	28.28	28.09	-28.88	40.29	314.21	0.39	179.36M
	8727.00	1.10	179.36	8726.07	26.78	26.59	-28.96	39.32	312.56	0.44	190.26M
	8821.00	1.19	190.26	8820.05	24.92	24.73	-29.12	38.21	310.34	0.25	195.88M
	8916.00	1.19	195.88	8915.03	23.00	22.81	-29.57	37.34	307.65	0.12	186.65M
	9013.00	0.88	186.65	9012.02	21.29	21.10	-29.93	36.62	305.19	0.36	160.24M
	9109.00	0.88	160.24	9108.00	19.87	19.68	-29.77	35.68	303.47	0.42	183.38M
Final Extreme Survey	9202.00	1.41	183.38	9200.99	18.05	17.86	-29.59	34.57	301.11	0.75	184.82M
	9268.00	1.41	184.82	9266.97	16.43	16.24	-29.71	33.86	298.67	0.05	194.96M
	9299.00	1.58	194.96	9297.96	15.64	15.45	-29.85	33.61	297.36	1.01	208.66M
	9331.00	1.32	208.66	9329.95	14.89	14.70	-30.14	33.53	296.00	1.35	324M
	9362.00	1.32	324.00	9360.94	14.87	14.67	-30.52	33.87	295.68	7.20	352.17M
	9394.00	4.31	352.17	9392.90	16.36	16.16	-30.90	34.88	297.61	10.02	358.8M
	9426.00	7.74	358.80	9424.72	19.71	19.51	-31.11	36.72	302.09	10.92	1.16M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Survey 11-Mar-13	9458.00	11.70	1.16	9456.25	25.11	24.91	-31.09	39.84	308.70	12.43	10.97R
	9490.00	16.18	4.26	9487.30	32.80	32.61	-30.69	44.78	316.73	14.19	9.73R
	9521.00	19.43	5.93	9516.82	42.24	42.04	-29.84	51.56	324.63	10.61	11.8R
	9553.00	22.69	7.69	9546.67	53.64	53.46	-28.46	60.56	331.97	10.38	7.52R
	9585.00	26.56	8.83	9575.76	66.82	66.65	-26.54	71.74	338.29	12.18	1.75L
	9617.00	30.95	8.57	9603.81	82.02	81.86	-24.21	85.37	343.52	13.72	4.58L
	9648.00	35.44	7.95	9629.74	98.79	98.65	-21.78	101.03	347.55	14.53	7.84L
	9680.00	39.92	6.99	9655.06	118.17	118.04	-19.25	119.60	350.74	14.12	1.53L
	9712.00	44.67	6.81	9678.72	139.52	139.42	-16.66	140.41	353.18	14.85	6.76L
	9743.00	49.77	6.02	9699.77	162.11	162.02	-14.13	162.64	355.02	16.56	9.96L
	9775.00	54.26	5.05	9719.46	187.19	187.12	-11.70	187.48	356.42	14.23	10.31L
	9807.00	57.51	4.35	9737.41	213.58	213.52	-9.54	213.73	357.44	10.32	13.68L
	9838.00	61.64	3.21	9753.10	240.23	240.19	-7.78	240.31	358.14	13.69	13.87L
	9870.00	66.21	1.98	9767.16	268.93	268.89	-6.48	268.97	358.62	14.69	19.02L
	9902.00	71.31	0.13	9778.75	298.73	298.70	-5.94	298.76	358.86	16.82	22.88L
	9934.00	75.97	358.11	9787.77	329.43	329.39	-6.42	329.45	358.88	15.77	26.25L
	9965.00	79.67	356.26	9794.31	359.69	359.65	-7.91	359.74	358.74	13.28	18.73L
	9997.00	82.48	355.30	9799.27	391.23	391.17	-10.24	391.31	358.50	9.27	1.82R
	10028.00	85.30	355.39	9802.57	421.97	421.89	-12.74	422.08	358.27	9.10	0.23L
	10055.00	87.76	355.38	9804.20	448.84	448.75	-14.91	449.00	358.10	9.11	2.44R
Survey 12-Mar-13	10150.00	89.87	355.47	9806.17	543.56	543.42	-22.48	543.89	357.63	2.22	74.89R
	10245.00	90.75	358.73	9805.65	638.45	638.29	-27.29	638.87	357.55	3.55	117.22R
	10340.00	90.57	359.08	9804.56	733.44	733.26	-29.11	733.84	357.73	0.41	124.73L
	10436.00	89.96	358.20	9804.12	829.42	829.23	-31.38	829.83	357.83	1.12	124.7R
	10531.00	89.78	358.46	9804.33	924.40	924.19	-34.15	924.82	357.88	0.33	33.44R
	10626.00	90.31	358.81	9804.26	1019.38	1019.17	-36.42	1019.82	357.95	0.67	66.1R
	10720.00	90.66	359.60	9803.46	1113.37	1113.15	-37.72	1113.79	358.06	0.92	7.32R
	10815.00	91.36	359.69	9801.79	1208.36	1208.14	-38.31	1208.74	358.18	0.74	96.45R
	10910.00	91.19	1.19	9799.67	1303.32	1303.11	-37.58	1303.65	358.35	1.59	90R
	11006.00	91.19	1.80	9797.68	1399.25	1399.05	-35.08	1399.49	358.56	0.64	158.12L
Survey 13-Mar-13	11101.00	89.87	1.27	9796.80	1494.19	1494.01	-32.53	1494.37	358.75	1.50	150.36L
	11196.00	88.64	0.57	9798.03	1589.16	1588.99	-31.01	1589.29	358.88	1.49	171.75R
	11292.00	88.02	0.66	9800.83	1685.10	1684.94	-29.98	1685.21	358.98	0.65	11.94L
	11387.00	89.25	0.40	9803.10	1780.06	1779.91	-29.10	1780.15	359.06	1.32	149.43R
	11482.00	88.81	0.66	9804.70	1875.04	1874.89	-28.22	1875.10	359.14	0.54	LS
	11577.00	88.72	0.66	9806.75	1970.00	1969.86	-27.12	1970.05	359.21	0.09	90L
	11671.00	88.72	0.22	9808.85	2063.96	2063.84	-26.40	2064.01	359.27	0.47	HS
	11766.00	88.81	0.22	9810.90	2158.94	2158.81	-26.04	2158.97	359.31	0.09	162.38L
	11861.00	86.61	359.52	9814.69	2253.85	2253.73	-26.25	2253.88	359.33	2.43	17.37R
	11957.00	87.76	359.88	9819.41	2349.74	2349.61	-26.75	2349.77	359.35	1.26	5.62R
Survey 15-Mar-13	12052.00	89.69	0.07	9821.52	2444.71	2444.58	-26.80	2444.73	359.37	2.04	17.88R
	12147.00	90.31	0.27	9821.52	2539.70	2539.58	-26.51	2539.72	359.40	0.69	24.77R
	12243.00	90.57	0.39	9820.79	2635.69	2635.58	-25.96	2635.71	359.44	0.30	53.13L
	12338.00	90.75	0.15	9819.69	2730.68	2730.57	-25.51	2730.69	359.46	0.32	37.87L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	12432.00	90.84	0.08	9818.39	2824.67	2824.56	-25.32	2824.68	359.49	0.12	28.3L
Survey 16-Mar-13	12527.00	91.10	359.94	9816.78	2919.65	2919.55	-25.31	2919.66	359.50	0.31	82.56L
	12622.00	91.19	359.25	9814.88	3014.63	3014.53	-25.98	3014.64	359.51	0.73	3.27R
	12718.00	91.54	359.27	9812.59	3110.60	3110.49	-27.22	3110.61	359.50	0.37	75.95L
	12813.00	91.63	358.91	9809.97	3205.56	3205.44	-28.73	3205.57	359.49	0.39	160.4L
	12908.00	90.31	358.44	9808.36	3300.53	3300.40	-30.92	3300.55	359.46	1.47	9.23L
Surveys 17-Mar-13	13003.00	91.54	358.24	9806.82	3395.49	3395.35	-33.68	3395.51	359.43	1.31	177.83R
	13098.00	90.22	358.29	9805.36	3490.45	3490.29	-36.55	3490.48	359.40	1.39	33.69R
	13194.00	90.40	358.41	9804.85	3586.43	3586.25	-39.32	3586.47	359.37	0.23	146.58L
	13289.00	89.43	357.77	9804.99	3681.39	3681.20	-42.48	3681.44	359.34	1.22	2.84L
	13383.00	90.84	357.70	9804.76	3775.34	3775.12	-46.20	3775.40	359.30	1.50	18.21L
Final Survey Proj to TD	13479.00	92.51	357.15	9801.96	3871.22	3870.98	-50.51	3871.31	359.25	1.83	173.77R
	13574.00	88.02	357.64	9801.52	3966.13	3965.85	-54.82	3966.23	359.21	4.75	164.28R
	13669.00	86.53	358.06	9806.04	4060.97	4060.68	-58.38	4061.10	359.18	1.63	35.25R
	13764.00	88.37	359.36	9810.26	4155.86	4155.55	-60.52	4155.99	359.17	2.37	13.93R
	13859.00	90.75	359.95	9810.99	4250.85	4250.54	-61.09	4250.98	359.18	2.58	25.2L
	13953.00	90.92	359.87	9809.62	4344.84	4344.53	-61.24	4344.96	359.19	0.20	160.79L
	14048.00	89.60	359.41	9809.19	4439.83	4439.53	-61.84	4439.96	359.20	1.47	60.64L
	14121.00	89.87	358.93	9809.53	4512.83	4512.52	-62.89	4512.95	359.20	0.75	HS
	14169.00	89.97	358.93	9809.60	4560.82	4560.51	-63.79	4560.95	359.20	0.21	

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	20.000	Act Stns	30.000	30.000	SLB_CNSG+DPIPE-Depth Only	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #2H Gyro+MWD 0ft to 14169ft MD
	20.000	3742.900	Act Stns	30.000	30.000	SLB_CNSG+DPIPE	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #2H
	3742.900	9202.000	Act Stns	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #2H
	9202.000	14169.000	Act Stns	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #2H