

Results of Directional Survey

API number:	30-025-06841		
OGRID:		Operator:	CHEVRON U S A INC
		Property:	CENTRAL DRINKARD UNIT # 110H

surface	ULSTR:	F	28	T	21S	R	37E
				1874	FNL	1874	FWL

BH Loc	ULSTR:	P	29	T	21S	R	37E
10119	MD	6562.4	TVD	1006	FSL	654	FEL
				4274	FNL		

Top Perf/OH	ULSTR:	F	28	T	21S	R	37E
6800	MD	6607.6	TVD	1990	FNL	1642	FWL

Bot Perf/OH	ULSTR:	P	29	T	21S	R	37E
10119	MD	6562.4	TVD	1006	FSL	654	FEL
				4274	FNL		

	MD	N/S	E/W	VD
	6782	-107.70	-215.70	6607
TOP PERFS/OH	6800	-115.71	-231.78	6607.58
	6813	-121.50	-243.40	6608.00
	10071	-2350.20	-2501.70	6584.00
BOT PERFS/OH	10119	-2400.40	-2528.00	6562.40
	10119	-2400.40	-2528.00	6562.40

NEXT TO LAST	10071	-2350.20	-2501.70	6584.00
LAST READING	10119	-2400.40	-2528.00	6562.40
TD	10119	-2400.40	-2528.00	6562.40

Surface Location	1874	FN	1874	FW
Projected BHL	4274	FN	654	FE
Location of				
Top Perfs/OH	1990	FN	1642	FW
Bottom Perfs/OH	4274	FN	654	FE

SUMMARY of Subsurface Locations

Surface Location	F-28-21S-37E	1874	FN	1874	FW	Vert. Depth
Top Perfs/OH	F-28-21S-37E	1990	FN	1642	FW	6607.58
Bottom Perfs/OH	P-29-21S-37E	4274	FN	654	FE	6562.40
Projected TD	P-29-21S-37E	4274	FN	654	FE	6562.40

APR 16 2012



Scientific Drilling

Chevron

Lea County, New Mexico

Central Drinkard (110H)

110H

Lateral

SUR: F-28-21s-37e, 1874/N & 1874/W
BHL: P-29-21s-37e, 4274/N & 654/E
API # 30-025-06841

Design: Actual

Final Survey Report

19 December, 2011





SDI
Final Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 110H
Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Project	Lea County, New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Central Drinkard (110H)		
Site Position:		Northing:	530,092.10 usft
From:	Map	Easting:	858,906.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0 "
		Latitude:	32° 27' 11.083 N
		Longitude:	103° 18' 13.699 W
		Grid Convergence:	0.55 °

Well	110H					
Well Position	+N/-S	0.0 usft	Northing:	530,092.10 usft	Latitude:	32° 27' 11.083 N
	+E/-W	0.0 usft	Easting:	858,906.90 usft	Longitude:	103° 18' 13.699 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,456.0 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/31/2011	7.45	60.44	48,763

Design		Actual		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	226.50



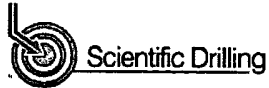
SDI
Final Survey Report



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Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey Program		Date	12/19/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	6,368.0	Survey #1 (Lateral)	SDI Gyro	Gyroscopic Survey	
6,472.0	10,119.0	Survey #2 (Lateral)	SDI MWD	MWD Survey	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0	0.00	530,092.10	858,906.90	
100.0	0.27	280.79	100.0	0.0	-0.2	0.27	0.2	280.79	530,092.14	858,906.67	
200.0	0.35	221.95	200.0	-0.1	-0.7	0.31	0.7	258.23	530,091.96	858,906.23	
300.0	0.16	250.01	300.0	-0.4	-1.0	0.22	1.1	247.57	530,091.69	858,905.90	
400.0	0.28	248.37	400.0	-0.6	-1.4	0.12	1.5	247.93	530,091.55	858,905.54	
500.0	0.23	212.25	500.0	-0.8	-1.7	0.17	1.9	244.42	530,091.29	858,905.20	
600.0	0.15	294.00	600.0	-0.9	-1.9	0.26	2.1	244.23	530,091.17	858,904.98	
700.0	0.19	233.22	700.0	-1.0	-2.2	0.18	2.4	245.87	530,091.13	858,904.73	
800.0	0.07	349.04	800.0	-1.0	-2.3	0.23	2.5	246.39	530,091.09	858,904.58	
900.0	0.26	289.94	900.0	-0.9	-2.5	0.23	2.7	251.00	530,091.22	858,904.36	
1,000.0	0.20	196.97	1,000.0	-1.0	-2.8	0.34	3.0	251.02	530,091.13	858,904.09	
1,100.0	0.21	243.79	1,100.0	-1.2	-3.0	0.16	3.3	248.13	530,090.89	858,903.88	
1,200.0	0.11	142.37	1,200.0	-1.4	-3.1	0.26	3.4	246.35	530,090.73	858,903.77	
1,300.0	0.06	243.07	1,300.0	-1.5	-3.1	0.13	3.4	244.75	530,090.63	858,903.78	
1,400.0	0.22	187.25	1,400.0	-1.7	-3.2	0.19	3.6	242.15	530,090.42	858,903.71	
1,500.0	0.13	142.76	1,500.0	-2.0	-3.1	0.16	3.7	237.99	530,090.14	858,903.76	
1,600.0	0.13	110.82	1,600.0	-2.1	-3.0	0.07	3.6	234.78	530,090.00	858,903.93	
1,700.0	0.10	49.73	1,700.0	-2.1	-2.8	0.12	3.5	233.36	530,090.02	858,904.10	
1,800.0	0.12	37.73	1,800.0	-1.9	-2.7	0.03	3.3	233.95	530,090.16	858,904.23	
1,900.0	0.56	62.70	1,900.0	-1.6	-2.2	0.45	2.7	232.99	530,090.47	858,904.73	
2,000.0	1.03	65.95	2,000.0	-1.0	-0.9	0.47	1.4	221.17	530,091.06	858,905.99	



SDI
Final Survey Report



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Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
2,100.0	1.03	59.93	2,100.0	-0.2	0.7	0.11	0.7	108.24	530,091.87	858,907.59	
2,200.0	1.27	61.08	2,199.9	0.8	2.4	0.24	2.6	72.66	530,092.86	858,909.33	
2,300.0	1.41	50.59	2,299.9	2.1	4.4	0.28	4.8	64.50	530,094.18	858,911.25	
2,400.0	1.31	60.00	2,399.9	3.4	6.3	0.24	7.2	61.42	530,095.53	858,913.20	
2,500.0	1.37	53.36	2,499.9	4.7	8.2	0.17	9.5	60.24	530,096.81	858,915.14	
2,600.0	1.25	68.22	2,599.8	5.8	10.2	0.36	11.8	60.28	530,097.93	858,917.12	
2,700.0	1.09	61.01	2,699.8	6.7	12.1	0.22	13.8	60.95	530,098.80	858,918.96	
2,800.0	1.36	60.43	2,799.8	7.7	13.9	0.27	15.9	60.92	530,099.85	858,920.83	
2,900.0	1.12	60.19	2,899.8	8.8	15.8	0.24	18.1	60.85	530,100.92	858,922.71	
3,000.0	0.92	55.65	2,999.8	9.8	17.3	0.22	19.9	60.61	530,101.86	858,924.22	
3,100.0	0.64	75.59	3,099.7	10.3	18.5	0.39	21.2	60.81	530,102.45	858,925.42	
3,200.0	0.59	67.62	3,199.7	10.7	19.5	0.10	22.3	61.33	530,102.78	858,926.44	
3,300.0	0.32	64.29	3,299.7	11.0	20.3	0.27	23.1	61.51	530,103.10	858,927.17	
3,400.0	0.38	107.56	3,399.7	11.0	20.8	0.26	23.6	62.12	530,103.12	858,927.73	
3,500.0	0.41	81.49	3,499.7	11.0	21.5	0.18	24.1	62.96	530,103.07	858,928.40	
3,600.0	0.41	88.16	3,599.7	11.0	22.2	0.05	24.8	63.58	530,103.14	858,929.11	
3,700.0	0.32	71.18	3,699.7	11.1	22.8	0.14	25.4	64.00	530,103.24	858,929.74	
3,800.0	0.23	59.51	3,799.7	11.3	23.3	0.11	25.9	64.04	530,103.43	858,930.17	
3,900.0	0.25	63.62	3,899.7	11.5	23.6	0.03	26.3	64.00	530,103.63	858,930.54	
4,000.0	0.22	36.26	3,999.7	11.8	24.0	0.11	26.7	63.81	530,103.88	858,930.85	
4,100.0	0.34	349.07	4,099.7	12.2	24.0	0.25	26.9	63.01	530,104.33	858,930.91	
4,200.0	0.52	284.08	4,199.7	12.6	23.5	0.49	26.7	61.76	530,104.73	858,930.41	
4,300.0	0.64	49.03	4,299.7	13.1	23.5	1.03	26.9	60.84	530,105.21	858,930.39	
4,400.0	0.59	13.15	4,399.7	14.0	24.0	0.38	27.8	59.82	530,106.07	858,930.93	
4,500.0	0.51	324.93	4,499.7	14.8	23.9	0.46	28.1	58.16	530,106.94	858,930.79	
4,600.0	0.51	308.68	4,599.7	15.5	23.3	0.14	28.0	56.39	530,107.58	858,930.19	
4,700.0	0.47	316.56	4,699.7	16.1	22.7	0.08	27.8	54.68	530,108.16	858,929.56	



SDI Final Survey Report



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Well:	110H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
4,800.0	0.20	337.51	4,799.7	16.5	22.3	0.29	27.8	53.49	530,108.62	858,929.21	
4,900.0	0.06	6.05	4,899.7	16.7	22.3	0.15	27.8	53.06	530,108.83	858,929.15	
5,000.0	0.19	192.04	4,999.7	16.6	22.2	0.25	27.7	53.21	530,108.72	858,929.12	
5,100.0	0.32	163.75	5,099.7	16.2	22.3	0.18	27.5	53.98	530,108.29	858,929.17	
5,200.0	0.43	155.37	5,199.7	15.6	22.5	0.12	27.4	55.30	530,107.68	858,929.40	
5,300.0	0.48	150.58	5,299.7	14.9	22.9	0.06	27.3	56.95	530,106.97	858,929.76	
5,400.0	0.39	159.82	5,399.7	14.2	23.2	0.11	27.2	58.53	530,106.29	858,930.09	
5,500.0	0.38	124.35	5,499.7	13.7	23.6	0.23	27.3	59.87	530,105.78	858,930.48	
5,600.0	0.47	156.45	5,599.7	13.1	24.0	0.25	27.4	61.35	530,105.22	858,930.91	
5,700.0	0.19	180.60	5,699.7	12.6	24.2	0.31	27.3	62.51	530,104.68	858,931.08	
5,800.0	0.26	147.02	5,799.7	12.2	24.3	0.15	27.2	63.30	530,104.32	858,931.20	
5,900.0	0.35	194.40	5,899.7	11.7	24.3	0.26	27.0	64.26	530,103.84	858,931.25	
6,000.0	0.39	174.25	5,999.7	11.1	24.3	0.14	26.7	65.45	530,103.20	858,931.20	
6,100.0	0.41	165.81	6,099.7	10.4	24.4	0.06	26.6	66.90	530,102.52	858,931.33	
6,200.0	0.44	208.26	6,199.7	9.7	24.3	0.31	26.2	68.20	530,101.83	858,931.23	
6,300.0	0.29	126.93	6,299.7	9.2	24.4	0.49	26.0	69.22	530,101.34	858,931.25	
6,368.0	0.24	87.02	6,367.7	9.1	24.6	0.27	26.3	69.63	530,101.25	858,931.53	
SDI Gyro Tie-In											
6,472.0	16.85	246.43	6,470.2	3.1	10.9	16.42	11.4	74.24	530,095.18	858,917.83	
6,500.0	24.49	246.36	6,496.4	-0.9	1.9	27.29	2.1	114.83	530,091.23	858,908.78	
6,532.0	35.56	243.30	6,524.0	-7.7	-12.6	34.91	14.7	238.36	530,084.37	858,894.35	
6,563.0	49.31	241.98	6,546.9	-17.4	-31.1	44.45	35.6	240.82	530,074.75	858,875.83	
6,594.0	59.19	238.55	6,565.0	-29.9	-52.9	33.10	60.7	240.55	530,062.25	858,854.04	
6,625.0	65.09	242.07	6,579.4	-43.4	-76.7	21.51	88.1	240.49	530,048.70	858,830.24	
6,657.0	71.51	245.00	6,591.3	-56.6	-103.3	21.79	117.8	241.26	530,035.48	858,803.63	
6,688.0	78.46	246.28	6,599.3	-69.0	-130.5	22.77	147.6	242.15	530,023.14	858,776.37	
6,720.0	85.19	246.87	6,603.8	-81.5	-159.6	21.11	179.2	242.93	530,010.56	858,747.32	



SDI
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Design:	Actual	Database:	EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
6,751.0	88.15	244.64	6,605.6	-94.3	-187.8	11.95	210.1	243.35	529,997.85	858,719.11	
6,782.0	86.90	244.01	6,607.0	-107.7	-215.7	4.51	241.1	243.47	529,984.43	858,691.20	
6,813.0	89.50	243.11	6,608.0	-121.5	-243.4	8.87	272.1	243.48	529,970.64	858,663.45	
6,845.0	91.48	243.12	6,607.7	-135.9	-272.0	6.19	304.1	243.44	529,956.17	858,634.92	
6,876.0	91.34	243.27	6,606.9	-149.9	-299.6	0.66	335.1	243.42	529,942.19	858,607.26	
6,907.0	92.82	242.84	6,605.8	-163.9	-327.3	4.97	366.0	243.39	529,928.15	858,579.64	
6,938.0	92.69	242.73	6,604.3	-178.1	-354.8	0.55	397.0	243.34	529,913.99	858,552.10	
6,969.0	92.69	242.76	6,602.9	-192.3	-382.3	0.10	428.0	243.30	529,899.81	858,524.58	
7,000.0	93.83	241.41	6,601.1	-206.8	-409.7	5.69	458.9	243.22	529,885.32	858,497.23	
7,032.0	91.61	240.14	6,599.6	-222.4	-437.6	7.99	490.8	243.06	529,869.72	858,469.34	
7,063.0	91.51	240.45	6,598.7	-237.7	-464.5	1.05	521.8	242.89	529,854.36	858,442.42	
7,094.0	91.41	240.45	6,597.9	-253.0	-491.4	0.32	552.8	242.76	529,839.08	858,415.46	
7,125.0	91.55	240.08	6,597.1	-268.4	-518.3	1.28	583.7	242.63	529,823.71	858,388.55	
7,156.0	91.24	240.04	6,596.4	-283.9	-545.2	1.01	614.7	242.50	529,808.24	858,361.70	
7,188.0	91.51	240.06	6,595.6	-299.8	-572.9	0.85	646.6	242.38	529,792.27	858,333.98	
7,219.0	91.61	239.90	6,594.8	-315.3	-599.8	0.61	677.6	242.27	529,776.77	858,307.15	
7,250.0	90.30	239.54	6,594.3	-331.0	-626.5	4.38	708.6	242.15	529,761.14	858,280.38	
7,281.0	90.81	239.54	6,594.0	-346.7	-653.2	1.65	739.5	242.04	529,745.42	858,253.66	
7,313.0	90.97	239.82	6,593.5	-362.8	-680.9	1.01	771.5	241.95	529,729.27	858,226.04	
7,344.0	91.35	239.74	6,592.8	-378.4	-707.6	1.25	802.5	241.86	529,713.67	858,199.26	
7,375.0	89.09	239.60	6,592.7	-394.1	-734.4	7.30	833.5	241.78	529,698.02	858,172.50	
7,406.0	88.99	239.39	6,593.2	-409.8	-761.1	0.75	864.4	241.70	529,682.28	858,145.80	
7,438.0	88.82	239.25	6,593.8	-426.1	-788.6	0.69	896.4	241.61	529,665.96	858,118.28	
7,469.0	88.52	239.87	6,594.6	-441.8	-815.3	2.22	927.4	241.55	529,650.26	858,091.56	
7,500.0	88.59	241.42	6,595.3	-457.0	-842.3	5.00	958.3	241.52	529,635.07	858,064.55	
7,544.0	89.13	243.18	6,596.2	-477.5	-881.3	4.18	1,002.3	241.55	529,614.62	858,025.60	
7,575.0	90.00	243.16	6,596.5	-491.5	-909.0	2.81	1,033.3	241.60	529,600.63	857,997.94	



SDI
Final Survey Report



Company: Chevron
Project: Lea County, New Mexico
Site: Central Drinkard (110H)
Well: 110H
Wellbore: Lateral
Design: Actual

Local Co-ordinate Reference: Well 110H
TVD Reference: RKB @ 3472.0usft (Key #555)
MD Reference: RKB @ 3472.0usft (Key #555)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
7,606.0	91.21	242.41	6,596.1	-505.6	-936.5	4.59	1,064.3	241.63	529,586.45	857,970.38	
7,637.0	91.75	242.41	6,595.3	-520.0	-964.0	1.74	1,095.3	241.66	529,572.10	857,942.91	
7,669.0	91.88	241.50	6,594.3	-535.0	-992.2	2.87	1,127.3	241.66	529,557.06	857,914.68	
7,700.0	91.98	241.18	6,593.3	-549.9	-1,019.4	1.08	1,158.3	241.66	529,542.20	857,887.50	
7,731.0	90.91	239.24	6,592.5	-565.3	-1,046.3	7.14	1,189.2	241.62	529,526.80	857,860.60	
7,761.0	91.51	239.02	6,591.8	-580.7	-1,072.0	2.13	1,219.2	241.56	529,511.42	857,834.86	
7,793.0	92.29	239.66	6,590.8	-597.0	-1,099.6	3.15	1,251.2	241.50	529,495.11	857,807.35	
7,824.0	91.65	238.02	6,589.7	-613.0	-1,126.1	5.68	1,282.1	241.44	529,479.08	857,780.84	
7,856.0	91.75	237.78	6,588.8	-630.0	-1,153.2	0.81	1,314.0	241.35	529,462.08	857,753.74	
7,887.0	90.50	236.33	6,588.2	-646.9	-1,179.2	6.17	1,344.9	241.25	529,445.22	857,727.73	
7,917.0	89.97	235.13	6,588.0	-663.8	-1,204.0	4.37	1,374.8	241.13	529,428.33	857,702.94	
7,949.0	89.33	234.93	6,588.2	-682.1	-1,230.2	2.10	1,406.6	240.99	529,409.99	857,676.72	
7,980.0	89.29	233.67	6,588.6	-700.2	-1,255.4	4.07	1,437.4	240.85	529,391.90	857,651.55	
8,012.0	88.62	232.57	6,589.2	-719.4	-1,280.9	4.02	1,469.1	240.68	529,372.70	857,625.96	
8,042.0	88.29	232.28	6,590.0	-737.7	-1,304.7	1.46	1,498.8	240.52	529,354.42	857,602.19	
8,074.0	89.16	230.75	6,590.7	-757.6	-1,329.8	5.50	1,530.4	240.33	529,334.51	857,577.15	
8,105.0	89.23	230.48	6,591.2	-777.3	-1,353.7	0.90	1,561.0	240.14	529,314.84	857,553.19	
8,136.0	89.23	230.20	6,591.6	-797.0	-1,377.6	0.90	1,591.5	239.95	529,295.06	857,529.33	
8,167.0	90.07	228.34	6,591.8	-817.3	-1,401.1	6.58	1,622.0	239.74	529,274.83	857,505.84	
8,198.0	90.40	227.76	6,591.6	-838.0	-1,424.1	2.15	1,652.4	239.53	529,254.11	857,482.78	
8,228.0	90.13	227.62	6,591.5	-858.2	-1,446.3	1.01	1,681.8	239.32	529,233.91	857,460.59	
8,259.0	89.66	226.82	6,591.5	-879.2	-1,469.1	2.99	1,712.1	239.10	529,212.86	857,437.84	
8,291.0	89.13	226.62	6,591.9	-901.2	-1,492.4	1.77	1,743.3	238.87	529,190.92	857,414.55	
8,322.0	90.07	227.13	6,592.1	-922.4	-1,515.0	3.45	1,773.7	238.67	529,169.73	857,391.92	
8,353.0	90.37	226.09	6,592.0	-943.7	-1,537.5	3.49	1,804.0	238.46	529,148.44	857,369.40	
8,384.0	90.91	226.71	6,591.6	-965.0	-1,560.0	2.65	1,834.3	238.26	529,127.06	857,346.95	
8,415.0	90.71	226.14	6,591.2	-986.4	-1,582.4	1.95	1,864.7	238.06	529,105.69	857,324.49	



SDI Final Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 110H
Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grd
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
8,446.0	89.56	225.09	6,591.1	-1,008.1	-1,604.6	5.02	1,895.0	237.86	529,084.01	857,302.34	
8,477.0	89.29	221.93	6,591.4	-1,030.6	-1,625.9	10.23	1,925.0	237.63	529,061.53	857,281.00	
8,508.0	90.00	221.21	6,591.6	-1,053.8	-1,646.5	3.26	1,954.8	237.38	529,038.34	857,260.43	
8,539.0	90.84	219.73	6,591.4	-1,077.3	-1,666.6	5.49	1,984.5	237.12	529,014.76	857,240.31	
8,571.0	92.29	218.00	6,590.5	-1,102.2	-1,686.7	7.05	2,014.9	236.84	528,989.85	857,220.24	
8,602.0	92.52	217.05	6,589.2	-1,126.8	-1,705.5	3.15	2,044.1	236.55	528,965.29	857,201.37	
8,633.0	92.79	215.78	6,587.8	-1,151.7	-1,723.9	4.18	2,073.2	236.25	528,940.37	857,182.99	
8,664.0	92.52	215.05	6,586.4	-1,177.0	-1,741.9	2.51	2,102.2	235.95	528,915.13	857,165.05	
8,695.0	92.29	214.15	6,585.1	-1,202.5	-1,759.4	2.99	2,131.1	235.65	528,889.64	857,147.46	
8,726.0	92.62	213.64	6,583.7	-1,228.2	-1,776.7	1.96	2,159.9	235.35	528,863.93	857,130.19	
8,758.0	88.93	213.29	6,583.3	-1,254.9	-1,794.4	11.58	2,189.6	235.03	528,837.24	857,112.55	
8,789.0	88.52	212.68	6,584.0	-1,280.9	-1,811.2	2.37	2,218.4	234.73	528,811.25	857,095.67	
8,820.0	89.06	213.03	6,584.6	-1,306.9	-1,828.0	2.08	2,247.2	234.44	528,785.21	857,078.86	
8,851.0	89.06	213.62	6,585.1	-1,332.8	-1,845.1	1.90	2,276.1	234.16	528,759.31	857,061.83	
8,883.0	89.16	213.82	6,585.6	-1,359.4	-1,862.8	0.70	2,306.1	233.88	528,732.70	857,044.07	
8,914.0	88.76	213.65	6,586.2	-1,385.2	-1,880.0	1.40	2,335.2	233.62	528,706.92	857,026.86	
8,945.0	88.79	214.06	6,586.9	-1,410.9	-1,897.3	1.33	2,364.4	233.36	528,681.18	857,009.59	
8,977.0	89.73	212.58	6,587.3	-1,437.7	-1,914.9	5.48	2,394.5	233.10	528,654.45	856,992.01	
9,008.0	90.23	212.64	6,587.3	-1,463.8	-1,931.6	1.62	2,423.6	232.85	528,628.33	856,975.31	
9,039.0	90.81	211.67	6,587.0	-1,490.0	-1,948.1	3.65	2,452.6	232.59	528,602.09	856,958.81	
9,071.0	91.75	211.40	6,586.3	-1,517.3	-1,964.8	3.06	2,482.5	232.32	528,574.82	856,942.08	
9,102.0	91.88	212.15	6,585.3	-1,543.6	-1,981.1	2.45	2,511.5	232.08	528,548.48	856,925.76	
9,133.0	91.44	211.61	6,584.4	-1,569.9	-1,997.5	2.25	2,540.6	231.83	528,522.17	856,909.40	
9,165.0	91.08	212.26	6,583.7	-1,597.1	-2,014.4	2.32	2,570.7	231.59	528,495.02	856,892.47	
9,195.0	90.34	211.83	6,583.3	-1,622.5	-2,030.3	2.85	2,599.0	231.37	528,469.59	856,876.56	
9,227.0	90.30	211.68	6,583.2	-1,649.7	-2,047.2	0.49	2,629.2	231.14	528,442.38	856,859.72	
9,258.0	90.71	211.77	6,582.9	-1,676.1	-2,063.5	1.35	2,658.4	230.91	528,416.02	856,843.42	



SDI
Final Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 110H
Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
9,289.0	91.21	211.89	6,582.4	-1,702.4	-2,079.8	1.66	2,687.7	230.70	528,389.68	856,827.07	
9,320.0	90.94	211.46	6,581.8	-1,728.8	-2,096.1	1.64	2,717.1	230.49	528,363.31	856,810.79	
9,352.0	90.61	211.29	6,581.4	-1,756.1	-2,112.8	1.16	2,747.3	230.27	528,335.99	856,794.14	
9,383.0	90.54	211.04	6,581.0	-1,782.6	-2,128.8	0.84	2,776.6	230.06	528,309.46	856,778.09	
9,414.0	90.64	209.52	6,580.7	-1,809.4	-2,144.4	4.91	2,805.8	229.84	528,282.69	856,762.46	
9,446.0	91.11	210.13	6,580.2	-1,837.2	-2,160.3	2.41	2,835.9	229.62	528,254.94	856,746.55	
9,477.0	92.82	211.83	6,579.2	-1,863.7	-2,176.3	7.78	2,865.3	229.42	528,228.38	856,730.60	
9,508.0	92.86	212.39	6,577.6	-1,889.9	-2,192.8	1.81	2,894.8	229.24	528,202.15	856,714.15	
9,539.0	92.69	212.14	6,576.1	-1,916.1	-2,209.3	0.97	2,924.5	229.06	528,175.97	856,697.62	
9,570.0	93.39	212.36	6,574.5	-1,942.3	-2,225.8	2.37	2,954.1	228.89	528,149.79	856,681.10	
9,602.0	94.11	212.65	6,572.4	-1,969.2	-2,243.0	2.42	2,984.8	228.72	528,122.86	856,663.94	
9,633.0	92.15	213.07	6,570.7	-1,995.2	-2,259.8	6.47	3,014.5	228.56	528,096.86	856,647.15	
9,664.0	92.08	213.90	6,569.6	-2,021.1	-2,276.8	2.69	3,044.5	228.41	528,071.02	856,630.05	
9,696.0	91.38	214.33	6,568.6	-2,047.6	-2,294.8	2.57	3,075.5	228.26	528,044.54	856,612.11	
9,727.0	90.03	214.72	6,568.2	-2,073.1	-2,312.4	4.53	3,105.6	228.12	528,019.00	856,594.55	
9,758.0	90.74	214.08	6,568.0	-2,098.7	-2,329.9	3.08	3,135.7	227.99	527,993.43	856,577.03	
9,789.0	90.81	214.20	6,567.6	-2,124.3	-2,347.3	0.45	3,165.8	227.85	527,967.77	856,559.64	
9,820.0	89.36	213.54	6,567.5	-2,150.1	-2,364.5	5.14	3,195.9	227.72	527,942.03	856,542.36	
9,852.0	89.53	213.31	6,567.9	-2,176.8	-2,382.2	0.89	3,226.9	227.58	527,915.33	856,524.73	
9,883.0	89.70	213.10	6,568.1	-2,202.7	-2,399.1	0.87	3,257.0	227.44	527,889.39	856,507.76	
9,914.0	90.44	213.24	6,568.0	-2,228.7	-2,416.1	2.43	3,287.0	227.31	527,863.44	856,490.80	
9,945.0	91.24	212.91	6,567.6	-2,254.6	-2,433.0	2.79	3,317.1	227.18	527,837.47	856,473.88	
9,976.0	92.02	212.49	6,566.7	-2,280.7	-2,449.8	2.86	3,347.1	227.05	527,811.39	856,457.14	
10,007.0	91.38	213.27	6,565.8	-2,306.7	-2,466.6	3.25	3,377.1	226.92	527,785.37	856,440.32	
10,038.0	91.44	213.28	6,565.0	-2,332.6	-2,483.6	0.20	3,407.3	226.80	527,759.46	856,423.32	
10,071.0	91.91	213.22	6,564.0	-2,360.2	-2,501.7	1.44	3,439.3	226.67	527,731.87	856,405.23	



SDI Final Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 110H
Project:	Lea County, New Mexico	TVD Reference:	RKB @ 3472.0usft (Key #555)
Site:	Central Drinkard (110H)	MD Reference:	RKB @ 3472.0usft (Key #555)
Well:	110H	North Reference:	Grd
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Houston-District

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
10,119.0	91.91	213.22	6,562.4	-2,400.4	-2,528.0	0.00	3,486.0	226.48	527,691.74	856,378.95
Projected Depth										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,368.0	6,367.7	9.1	24.6	SDI Gyro Tie-in
10,119.0	6,562.4	-2,400.4	-2,528.0	Projected Depth

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Lea County, New Mexico
Central Drinkard (110H) 110H
Actual vs Plan #3
Rig: Key #555

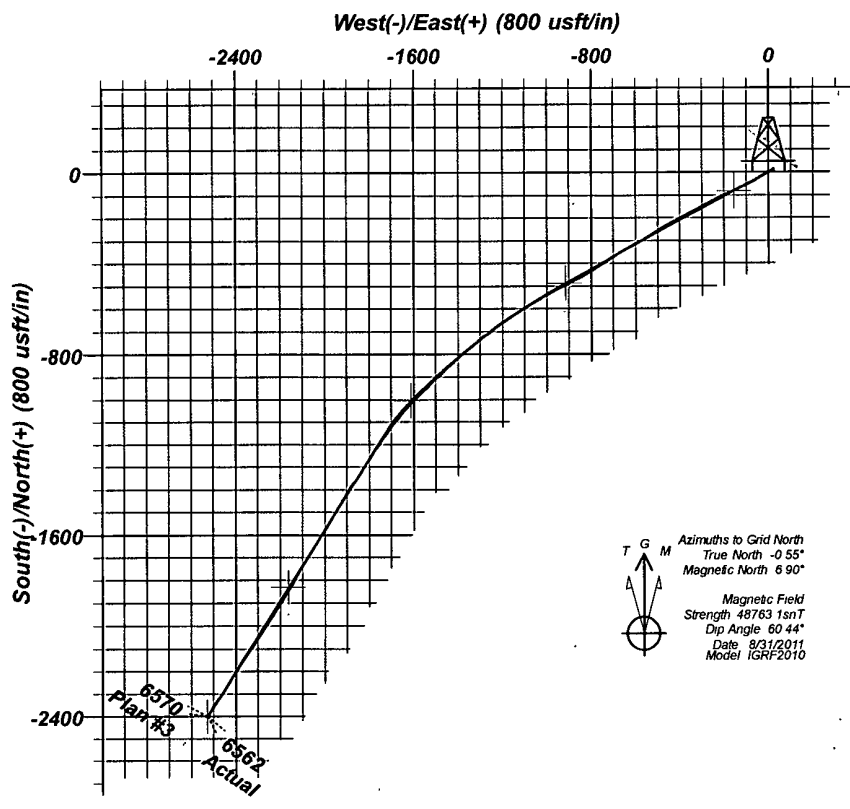
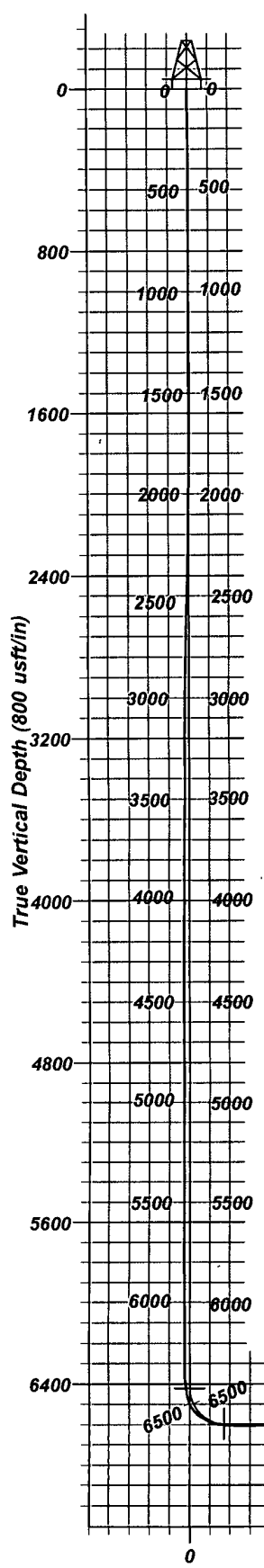


Section View Depths Shown are
Measured Depths

Plan View Depths Shown are
True Vertical Depths

WELL DETAILS: 110H

	Ground Level:	3456.0	
Northing	Easting	Latitude	Longitude
530092.10	858906.90	32° 27' 11.083 N	103° 18' 13.699 W

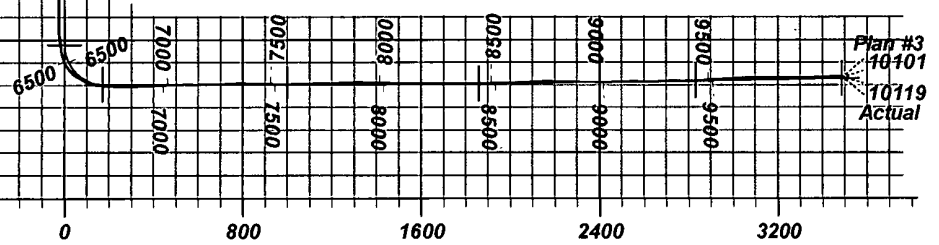


Azimuths to Grid North
True North -0.55°
Magnetic North 6.90°

Magnetic Field
Strength 48763 1snT
Dip Angle 60.44°
Date 8/31/2011
Model IGRF2010

Bottom Hole Closure

10119.0' MD 91.91° Inc 213.22° Az 6562.4' TVD
2400.4' South 2528.0' West of Surface Location
3486.0' Closure Distance 226.48° Closure Azimuth



Vertical Section at 226.50° (800 usft/in)