

MUNCHKIN FEDERAL #19 EDDY COUNTY, NEW MEXICO



30-D15-37986

Survey: WH SY#1 (19/ST01)							
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg
31	4945.00	26.10	321.90	4741.42	817.79	-542.70	0.00
							981.43

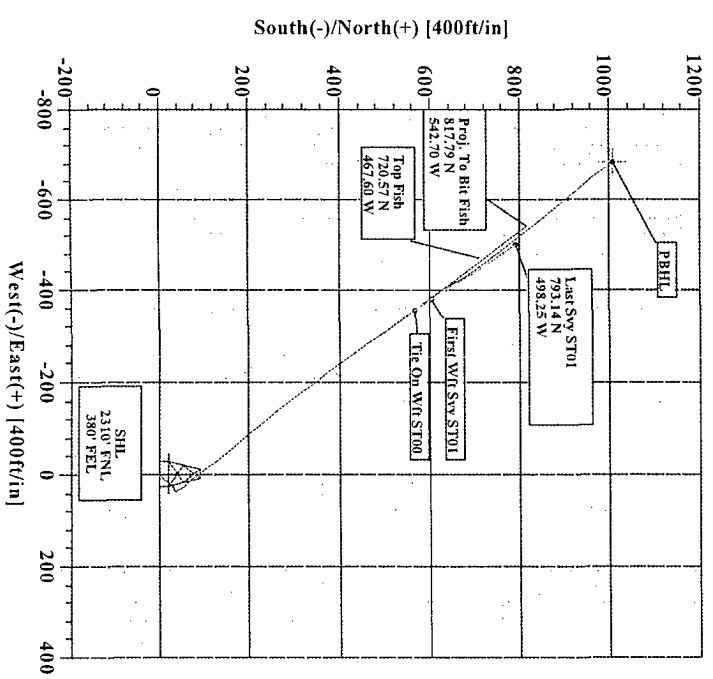
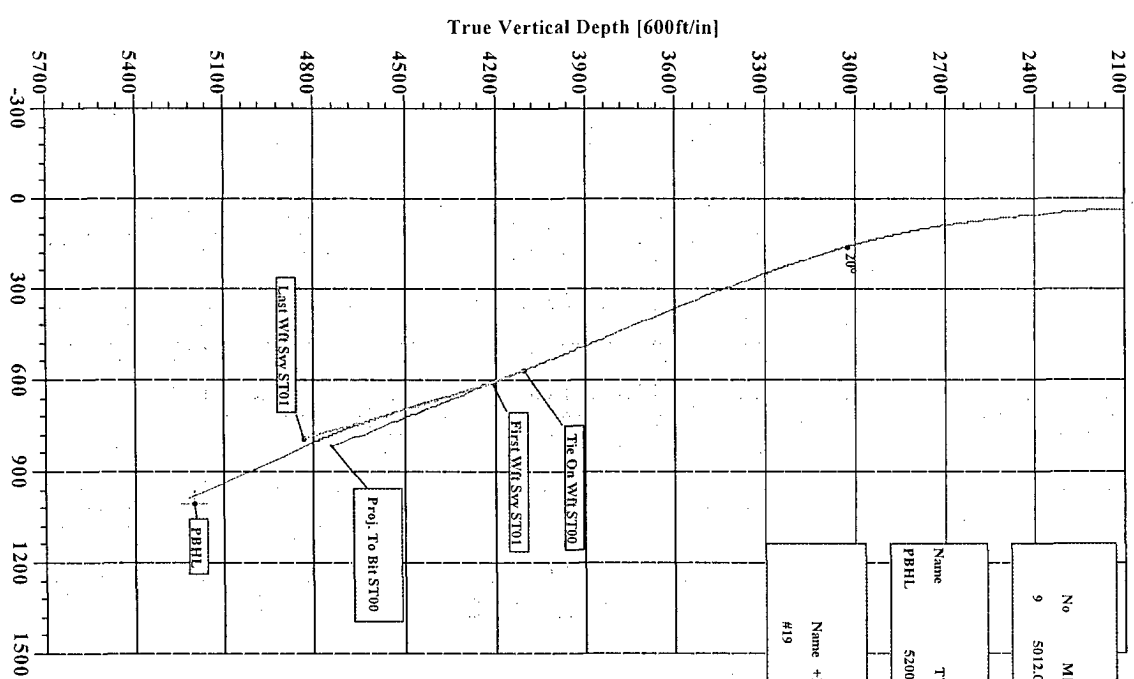
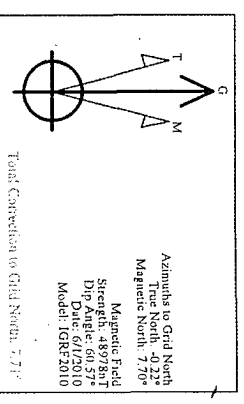
Survey: WH SY#1 (19/ST01)							
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg
9	5012.00	17.75	327.09	4833.23	793.14	-498.25	0.81
							168.52
							793.14

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL	5200.00	1008.70	-683.00	610746.00	622802.30	32°40'42.290N	103°56'12.570W
							Point

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
#19	0.00	0.00	609737.30	622685.30	32°40'32.283N	103°56'04.623W	N/A

FIELD DETAILS
Eddy Co., NM
Geodetic System: US State Plane Coordinate System 1927
Ellipsoid: NAD27 (Clarke 1866)
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS
Munchkin Federal #19
2310' FNL 320' FEL of SEC 11 T19S R30E
Site Centre Northing: 609737.30
Easting: 622685.30
Ground Level: 3416.00
Positional Uncertainty: 0.00
Convergence: 0.22



LEGEND
#19 ST01 Plan #1 ST01
#19 (ST00)
WH SY#1 ST01

Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: Chi Energy	Date: 6/8/2010	Time: 11:26:58	Page: 1
Field: Eddy Co., NM	Co-ordinate(NE) Reference:	Well: #19, Grid North	
Site: Munchkin Federal #19	Vertical (TVD) Reference:	SITE 0.0	
Well: #19	Section (VS) Reference:	Well (0.00N,0.00E,325.90Azi)	
Wellpath: ST00	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Wft Svy	Start Date: 5/19/2010
Company: Weatherford International Ltd.	Engineer: Russell W Joyner
Tool: MWD;MWD - Standard	Tied-to: User Defined

Field: Eddy Co., NM	
Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: Munchkin Federal #19	
2310' FNL 320' FEL of SEC 11 T19S R30E	
Site Position:	Northing: 609737.30 ft
From: Map	Easting: 622685.30 ft
Position Uncertainty: 0.00 ft	Latitude: 32 40 32.283 N
Ground Level: 3426.00 ft	Longitude: 103 56 4.623 W
	North Reference: Grid
	Grid Convergence: 0.22 deg

Well: #19	Slot Name:
Well Position: +N/-S 0.00 ft	Northing: 609737.30 ft
+E/-W 0.00 ft	Easting: 622685.30 ft
Position Uncertainty: 0.00 ft	Latitude: 32 40 32.283 N
	Longitude: 103 56 4.623 W

Wellpath: ST00	Drilled From: Surface
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 5/10/2010	Above System Datum: Mean Sea Level
Field Strength: 48984 nT	Declination: 7.92 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 60.57 deg
ft	+N/-S ft
0.00	0.00
	0.00
	325.90

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
2148.00	1.21	37.74	2147.29	37.48	36.38	0.00	10.64	609774.78	622721.68	Tie On SDI First Wft Svy
2239.00	4.68	328.31	2238.17	41.40	35.02	4.84	14.65	609778.70	622720.32	
2334.00	6.38	323.71	2332.73	48.95	29.86	1.85	23.80	609786.25	622715.16	
2430.00	6.25	324.34	2428.14	57.50	23.65	0.15	34.35	609794.80	622708.95	
2525.00	7.13	322.96	2522.50	66.41	17.09	0.94	45.41	609803.71	622702.39	
2619.00	8.81	322.59	2615.59	76.78	9.20	1.79	58.42	609814.08	622694.50	
2714.00	11.18	321.90	2709.14	89.81	-0.90	2.50	74.87	609827.11	622684.40	
2809.00	13.80	323.47	2801.88	106.16	-13.33	2.78	95.38	609843.46	622671.97	
2911.00	16.27	323.93	2900.38	127.49	-28.99	2.42	121.82	609864.79	622656.31	
3007.00	18.72	322.06	2991.93	150.52	-46.38	2.62	150.64	609887.82	622638.92	
3102.00	22.14	320.49	3080.95	176.36	-67.15	3.65	183.68	609913.66	622618.15	
3197.00	22.32	320.99	3168.89	204.19	-89.90	0.27	219.48	609941.49	622595.40	
3289.00	23.82	320.75	3253.53	232.15	-112.65	1.63	255.39	609969.45	622572.65	
3384.00	25.45	322.07	3339.88	263.11	-137.33	1.81	294.86	610000.41	622547.97	
3480.00	25.31	323.47	3426.61	295.87	-162.23	0.64	335.94	610033.17	622523.07	
3574.00	26.60	323.81	3511.13	329.00	-186.62	1.38	377.05	610066.30	622498.68	
3669.00	27.00	323.71	3595.92	363.54	-211.94	0.42	419.86	610100.84	622473.36	
3762.00	26.85	323.97	3678.84	397.54	-236.79	0.21	461.94	610134.84	622448.51	
3856.00	26.67	324.26	3762.78	431.83	-261.59	0.24	504.24	610169.13	622423.71	
3950.00	26.42	324.76	3846.87	466.04	-285.98	0.36	546.24	610203.34	622399.32	
4044.00	25.64	325.26	3931.33	499.83	-309.64	0.86	587.49	610237.13	622375.66	
4139.00	24.88	326.57	4017.25	533.40	-332.36	0.99	628.02	610270.70	622352.94	
4235.00	25.40	325.29	4104.15	567.18	-355.21	0.78	668.80	610304.48	622330.09	
4328.00	26.26	324.17	4187.86	600.26	-378.61	1.06	709.31	610337.56	622306.69	

Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: Chi Energy	Date: 6/8/2010	Time: 11:26:58	Page: 2
Field: Eddy Co., NM	Co-ordinate(NE) Reference: Well: #19, Grid North		
Site: Munchkin Federal #19	Vertical (TVD) Reference: SITE 0.0		
Well: #19	Section (VS) Reference: Well (0.00N,0.00E,325.90Azi)		
Wellpath: ST00	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
4422.00	25.79	324.03	4272.33	633.67	-402.80	0.50	750.54	610370.97	622282.50	
4518.00	26.71	323.47	4358.43	667.90	-427.91	0.99	792.97	610405.20	622257.39	
4613.00	25.61	322.78	4443.70	701.41	-453.04	1.20	834.80	610438.71	622232.26	
4668.00	26.28	322.73	4493.15	720.57	-467.60	1.22	858.83	610457.87	622217.70	Top Fish
4707.00	26.76	322.70	4528.05	734.42	-478.15	1.22	876.21	610471.72	622207.15	
4800.00	26.27	322.39	4611.27	767.38	-503.40	0.55	917.66	610504.68	622181.90	
4893.00	26.10	321.90	4694.72	799.78	-528.58	0.30	958.61	610537.08	622156.72	Last Wft Svy
4945.00	26.10	321.90	4741.42	817.79	-542.70	0.00	981.43	610555.09	622142.60	Proj. To Bit

Annotation

MD ft	TVD ft	
2148.00	2147.29	Tie On SDI
2239.00	2238.17	First Wft Svy
4668.00	4493.15	Top Fish
4893.00	4694.72	Last Wft Svy
4945.00	4741.42	Proj. To Bit



Company: Chi Energy	Date: 6/8/2010	Time: 11:24:52	Page: 1
Field: Eddy Co., NM	Co-ordinate(NE) Reference:	Well: #19, Grid North	
Site: Munchkin Federal #19	Vertical (TVD) Reference:	SITE 0.0	
Well: #19	Section (VS) Reference:	Well (0.00N,0.00E,0.00Azi)	
Wellpath: ST01	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Wft Svy ST01	Start Date: 6/8/2010
Company: Weatherford International Ltd.	Engineer: Russell W Joyner
Tool: MWD;MWD - Standard	Tied-to: From: Definitive Path

Field: Eddy Co., NM

Map System: US State Plane Coordinate System 1927
 Geo Datum: NAD27 (Clarke 1866)
 Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
 Coordinate System: Well Centre
 Geomagnetic Model: IGRF2010

Site: Munchkin Federal #19

2310' FNL 320' FEL of SEC 11 T19S R30E

Site Position:	Northing: 609737.30 ft	Latitude: 32 40 32.283 N
From: Map	Easting: 622685.30 ft	Longitude: 103 56 4.623 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3426.00 ft		Grid Convergence: 0.22 deg

Well: #19

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 609737.30 ft	Latitude: 32 40 32.283 N
+E/-W 0.00 ft	Easting: 622685.30 ft	Longitude: 103 56 4.623 W
Position Uncertainty: 0.00 ft		

Wellpath: ST01

Drilled From: ST00
 Tie-on Depth: 4235.00 ft
 Above System Datum: Mean Sea Level
 Declination: 7.92 deg
 Mag Dip Angle: 60.57 deg
 +E/-W Direction
 ft deg

Current Datum: SITE	Height 0.00 ft
Magnetic Data: 6/1/2010	
Field Strength: 48978 nT	
Vertical Section: Depth From (TVD)	+N/-S
ft	ft
0.00	0.00

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
4235.00	25.40	325.29	4104.15	567.16	-355.22	0.00	567.16	610304.46	622330.08	Tie On Wft ST00
4351.00	21.81	327.58	4210.43	605.82	-380.95	3.19	605.82	610343.12	622304.35	First Wft Svy ST01
4446.00	21.31	327.84	4298.79	635.33	-399.60	0.54	635.33	610372.63	622285.70	
4540.00	20.47	328.03	4386.61	663.73	-417.39	0.90	663.73	610401.03	622267.91	
4634.00	19.12	328.65	4475.05	690.82	-434.10	1.45	690.82	610428.12	622251.20	
4730.00	18.69	328.58	4565.87	717.38	-450.30	0.45	717.38	610454.68	622235.00	
4825.00	18.90	328.55	4655.81	743.49	-466.27	0.22	743.49	610480.79	622219.03	
4918.00	18.50	326.59	4743.90	768.66	-482.25	0.80	768.66	610505.96	622203.05	
5012.00	17.75	327.09	4833.23	793.14	-498.25	0.81	793.14	610530.44	622187.05	Last Wft Svy ST01

Annotation

MD ft	TVD ft	
4235.00	4104.15	Tie On Wft ST00
4351.00	4210.43	First Wft Svy ST01
5012.00	4833.23	Last Wft Svy ST01

CHI ENERGY MUNCHKIN #19 ST00 SVY

Weatherford International Ltd.
WFT Survey Report X & Y's

Company: Chi Energy
Time: 11:58:34 Page: 1
Field: Eddy Co., NM
Reference: well: #19, Grid North
Site: Munchkin Federal #19
Reference: SITE 0.0
Well: #19
Reference: Well (0.00N,0.00E,325.90Azi)
Wellpath: ST00
Method: Minimum Curvature Db: Sybase

Date: 6/8/2010
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey: Wft Svy
5/19/2010

Start Date:

Company: Weatherford International Ltd.
Russell W Joyner
Tool: MWD;MWD - Standard
User Defined

Engineer:

Tied-to:

Field: Eddy Co., NM

Map System:US State Plane Coordinate System 1927
New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1866)
Well Centre
Sys Datum: Mean Sea Level
IGRF2010

Map Zone:
Coordinate System:
Geomagnetic Model:

Site: Munchkin Federal #19

2310' FNL 320' FEL of SEC 11 T19S R30E

Site Position: Northing: 609737.30 ft
32 40 32.283 N
From: Map Easting: 622685.30 ft
103 56 4.623 W
Position Uncertainty: 0.00 ft
Grid
Ground Level: 3426.00 ft
0.22 deg

Latitude:
Longitude:
North Reference:
Grid Convergence:

Well: #19

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 609737.30 ft
32 40 32.283 N
+E/-W 0.00 ft Easting : 622685.30 ft
103 56 4.623 W
Position Uncertainty: 0.00 ft

Latitude:
Longitude:

Wellpath: ST00
Surface

Drilled From:

Tie-on Depth:

0.00 ft
Current Datum: SITE
Datum: Mean Sea Level

Height 0.00 ft Above System

CHI ENERGY MUNCHKIN #19 ST00 SVY
 Magnetic Data: 5/10/2010 Declination:
 7.92 deg
 Field Strength: 48984 nT Mag Dip Angle:
 60.57 deg

Vertical Section: Depth From (TVD) +N/-S +E/-W
 Direction ft ft ft
 deg
 325.90 0.00 0.00 0.00

Survey	MD	Incl	Azim	TVD	N/S	E/W	DLS	VS
MapN	ft	deg	MapE	ft	ft	ft	deg/100ft	ft
ft	ft	deg	ft	ft	ft	ft	deg/100ft	ft
2148.00	1.21	37.74	2147.29	37.48	36.38	0.00		
10.64	609774.78	622721.68	Tie On SDI					
2239.00	4.68	328.31	2238.17	41.40	35.02	4.84		
14.65	609778.70	622720.32	First wft Svy					
2334.00	6.38	323.71	2332.73	48.95	29.86	1.85		
23.80	609786.25	622715.16						
2430.00	6.25	324.34	2428.14	57.50	23.65	0.15		
34.35	609794.80	622708.95						
2525.00	7.13	322.96	2522.50	66.41	17.09	0.94		
45.41	609803.71	622702.39						
2619.00	8.81	322.59	2615.59	76.78	9.20	1.79		
58.42	609814.08	622694.50						
2714.00	11.18	321.90	2709.14	89.81	-0.90	2.50		
74.87	609827.11	622684.40						
2809.00	13.80	323.47	2801.88	106.16	-13.33	2.78		
95.38	609843.46	622671.97						
2911.00	16.27	323.93	2900.38	127.49	-28.99	2.42		
121.82	609864.79	622656.31						
3007.00	18.72	322.06	2991.93	150.52	-46.38	2.62		
150.64	609887.82	622638.92						
3102.00	22.14	320.49	3080.95	176.36	-67.15	3.65		
183.68	609913.66	622618.15						
3197.00	22.32	320.99	3168.89	204.19	-89.90	0.27		
219.48	609941.49	622595.40						
3289.00	23.82	320.75	3253.53	232.15	-112.65	1.63		
255.39	609969.45	622572.65						
3384.00	25.45	322.07	3339.88	263.11	-137.33	1.81		
294.86	610000.41	622547.97						
3480.00	25.31	323.47	3426.61	295.87	-162.23	0.64		
335.94	610033.17	622523.07						
3574.00	26.60	323.81	3511.13	329.00	-186.62	1.38		
377.05	610066.30	622498.68						
3669.00	27.00	323.71	3595.92	363.54	-211.94	0.42		
419.86	610100.84	622473.36						
3762.00	26.85	323.97	3678.84	397.54	-236.79	0.21		
461.94	610134.84	622448.51						
3856.00	26.67	324.26	3762.78	431.83	-261.59	0.24		
504.24	610169.13	622423.71						
3950.00	26.42	324.76	3846.87	466.04	-285.98	0.36		
546.24	610203.34	622399.32						
4044.00	25.64	325.26	3931.33	499.83	-309.64	0.86		
587.49	610237.13	622375.66						

CHI ENERGY MUNCHKIN #19 ST00 SVY						
4139.00	24.88	326.57	4017.25	533.40	-332.36	0.99
628.02	610270.70	622352.94				
4235.00	25.40	325.29	4104.15	567.18	-355.21	0.78
668.80	610304.48	622330.09				
4328.00	26.26	324.17	4187.86	600.26	-378.61	1.06
709.31	610337.56	622306.69				

Weatherford International Ltd.
WFT Survey Report X & Y's

Company: Chi Energy
Time: 11:58:34
Field: Eddy Co., NM
Reference: well: #19, Grid North
Site: Munchkin Federal #19
Reference: SITE 0.0
Well: #19
Reference: well (0.00N,0.00E,325.90Azi)
wellpath: ST00
Method: Minimum Curvature
Page: 2
Db: Sybase

Date: 6/8/2010
Co-ordinate(NE)
Vertical (TVD)
Section (VS)
Survey Calculation

Survey MD MapN ft ft	Incl deg	Azim MapE deg	TVD Comment ft	N/S ft	E/W ft	DLS deg/100ft	VS ft
4422.00	25.79	324.03	4272.33	633.67	-402.80	0.50	
750.54	610370.97	622282.50					
4518.00	26.71	323.47	4358.43	667.90	-427.91	0.99	
792.97	610405.20	622257.39					
4613.00	25.61	322.78	4443.70	701.41	-453.04	1.20	
834.80	610438.71	622232.26					
4668.00	26.28	322.73	4493.15	720.57	-467.60	1.22	
858.83	610457.87	622217.70	Top Fish				
4707.00	26.76	322.70	4528.05	734.42	-478.15	1.22	
876.21	610471.72	622207.15					
4800.00	26.27	322.39	4611.27	767.38	-503.40	0.55	
917.66	610504.68	622181.90					
4893.00	26.10	321.90	4694.72	799.78	-528.58	0.30	
958.61	610537.08	622156.72	Last wft Svy				
4945.00	26.10	321.90	4741.42	817.79	-542.70	0.00	
981.43	610555.09	622142.60	Proj. To Bit				

Annotation

MD ft	TVD ft	
2148.00	2147.29	Tie On SDI
2239.00	2238.17	First wft Svy

4668.00	4493.15	CHI ENERGY MUNCHKIN #19 ST00 SVY
4893.00	4694.72	Top Fish
4945.00	4741.42	Last Wft Svy
		Proj. To Bit

CHI ENERGY MUNCHKIN #19 ST01 SVY

Weatherford International Ltd.
WFT Survey Report X & Y's

Company: Chi Energy	Date: 6/8/2010
Time: 11:58:57	Page: 1
Field: Eddy Co., NM	Co-ordinate(NE)
Reference: well: #19, Grid North	Vertical (TVD)
Site: Munchkin Federal #19	Section (VS)
Reference: SITE 0.0	Survey Calculation
Well: #19	
Reference: Well (0.00N,0.00E,0.00Azi)	
Wellpath: ST01	
Method: Minimum Curvature	Db: Sybase

Survey: Wft SVY ST01	Start Date:
6/8/2010	

Company: Weatherford International Ltd.	Engineer:
Russell W Joyner	
Tool: MWD;MWD - Standard	Tied-to:
From: Definitive Path	
Field: Eddy Co., NM	

Map System:US State Plane Coordinate System 1927	Map Zone:
New Mexico, Eastern Zone	
Geo Datum: NAD27 (Clarke 1866)	Coordinate System:
Well Centre	
Sys Datum: Mean Sea Level	Geomagnetic Model:
IGRF2010	

Site: Munchkin Federal #19

2310' FNL 320' FEL of SEC 11 T19S R30E

Site Position:	Northing: 609737.30 ft	Latitude:
32 40 32.283 N		
From: Map	Easting: 622685.30 ft	Longitude:
103 56 4.623 W		
Position Uncertainty: 0.00 ft		North Reference:
Grid		
Ground Level: 3426.00 ft		Grid Convergence:
0.22 deg		

Well: #19	Slot Name:
-----------	------------

Well Position: +N/-S 0.00 ft	Northing: 609737.30 ft	Latitude:
32 40 32.283 N		
+E/-W 0.00 ft	Easting : 622685.30 ft	Longitude:
103 56 4.623 W		
Position Uncertainty: 0.00 ft		

Wellpath: ST01	Drilled From:
ST00	

4235.00 ft	Tie-on Depth:
Current Datum: SITE	
Datum: Mean Sea Level	Height 0.00 ft Above System

CHI ENERGY MUNCHKIN #19 ST01 SVY
6/1/2010

Magnetic Data:
7.92 deg
Field Strength:
60.57 deg

48978 nT

Declination:

Mag Dip Angle:

Vertical Section: Depth From (TVD)
Direction

+N/-S

+E/-W

deg
0.00

ft
0.00

ft
0.00

ft
0.00

Survey MD MapN ft	Incl deg	Azim MapE deg	TVD Comment ft	N/S ft	E/W ft	DLS deg/100ft	VS ft
4235.00	25.40	325.29	4104.15	567.16	-355.22	0.00	
567.16	610304.46	622330.08	Tie On wft ST00				
4351.00	21.81	327.58	4210.43	605.82	-380.95	3.19	
605.82	610343.12	622304.35	First wft svy ST0				
4446.00	21.31	327.84	4298.79	635.33	-399.60	0.54	
635.33	610372.63	622285.70					
4540.00	20.47	328.03	4386.61	663.73	-417.39	0.90	
663.73	610401.03	622267.91					
4634.00	19.12	328.65	4475.05	690.82	-434.10	1.45	
690.82	610428.12	622251.20					
4730.00	18.69	328.58	4565.87	717.38	-450.30	0.45	
717.38	610454.68	622235.00					
4825.00	18.90	328.55	4655.81	743.49	-466.27	0.22	
743.49	610480.79	622219.03					
4918.00	18.50	326.59	4743.90	768.66	-482.25	0.80	
768.66	610505.96	622203.05					
5012.00	17.75	327.09	4833.23	793.14	-498.25	0.81	
793.14	610530.44	622187.05	Last wft svy ST01				

Annotation

MD ft	TVD ft	
4235.00	4104.15	Tie On wft ST00
4351.00	4210.43	First wft svy ST01
5012.00	4833.23	Last wft svy ST01