REPORT OF

SUB-SURFACE DIRECTIONAL SURVEY

API

PETROLEUM DEVELOPMENT CORPORATION

WATTAM FEDERAL NO. 4

CHAVES COUNTY, NEW MEXICO

JOB NUMBER	TYPE OF SURVEY	DATE
430-1612	Gyroscopic Survey	May 13, 1993
430-1612	Steering Tool	May 18, 1993

SURVEY BY RALPH RICE/RON COLLINS

OFFICE: MIDLAND, TX

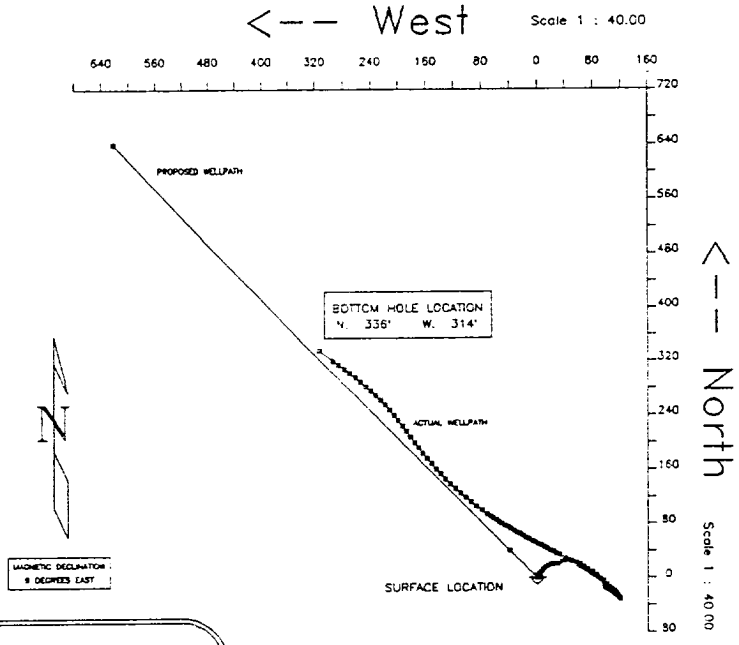
PETROLEUM DEVELOPMENT CORPORATION

Structure : SAN ANDRES FIELD Well : WATFED4

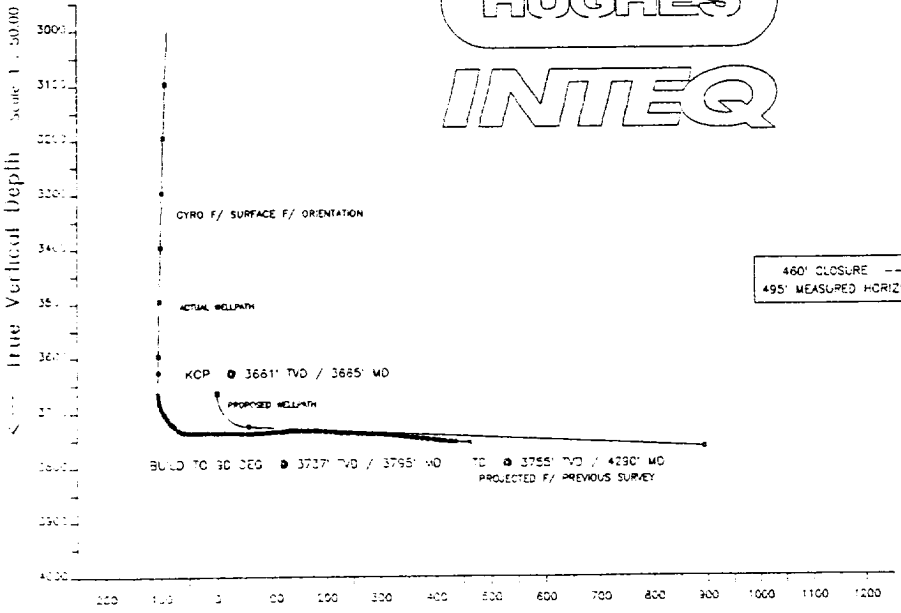
Field : SECTION 6 T8S, R31E CHAVES COUNTY Location : CHAVES COUNTY, NEW MEXICO

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East
Tie on	3664	0.00	315.82	3664	0	0
KOP	3665	0.00	315.82	3665	0	0
End of Build	3756	87.33	315.82	3725	41	-40
Target	4594	87.33	315.82	3764	641	-623



BAKER HUGHES INTEQ



460' CLOSURE -- 565' VERTICAL SECTION
495' MEASURED HORIZONTAL DISPLACEMENT IN ZONE

Vertical Section on 315.82 azimuth with reference 0.00 N, 0.00 E from structure

PETROLEUM DEVELOPMENT CORPORATION — SURVEY LISTING — Page 1
SAN ANDRES FIELD,WATFED4 — Your ref : GYRO F/ ORIENTATION
SECTION 6 T8S, R31E CHAVES COUNTY,CHAVES COUNTY — Last revised : 3-Jul-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/100Ft	Vert Sect	
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00	
100.00	0.28	23.02	100.00	0.22 N	0.10 E	0.28	0.04	
200.00	0.85	24.81	199.99	1.12 N	0.50 E	0.57	0.20	
300.00	1.09	15.10	299.98	2.71 N	1.06 E	0.29	0.34	
400.00	1.50	28.22	399.95	4.79 N	1.93 E	0.50	0.66	
500.00	1.43	41.70	499.92	6.87 N	3.38 E	0.35	1.54	
600.00	1.61	40.16	599.89	8.88 N	5.11 E	0.18	2.72	
700.00	1.79	38.06	699.84	11.18 N	6.98 E	0.19	3.95	
800.00	1.93	40.02	799.79	13.70 N	9.03 E	0.15	5.30	
900.00	2.24	53.00	899.72	16.16 N	11.67 E	0.56	7.24	
1000.00	2.31	66.93	999.65	18.13 N	15.09 E	0.56	10.05	
1100.00	2.13	64.74	1099.57	19.71 N	18.62 E	0.20	13.08	
1200.00	1.96	89.23	1199.51	20.53 N	22.01 E	0.88	16.15	
1300.00	1.88	89.38	1299.45	20.57 N	25.36 E	0.08	19.38	
1400.00	2.14	70.59	1399.39	21.21 N	28.76 E	0.70	22.52	
1500.00	2.50	44.61	1499.31	23.38 N	32.06 E	1.10	25.16	
1600.00	2.65	73.73	1599.22	25.58 N	35.81 E	1.30	28.24	
1700.00	2.13	78.03	1699.13	26.61 N	39.84 E	0.55	31.89	
1800.00	3.12	98.87	1799.02	26.58 N	44.35 E	1.36	36.26	
1900.00	3.54	107.92	1898.86	25.21 N	49.98 E	0.67	42.05	
2000.00	3.75	116.07	1998.66	22.82 N	55.85 E	0.56	48.33	
2100.00	3.75	122.35	2098.44	19.64 N	61.55 E	0.41	54.65	
2200.00	3.97	120.70	2198.21	16.12 N	67.29 E	0.25	61.09	
2300.00	4.12	121.78	2297.96	12.46 N	73.32 E	0.17	67.84	
2400.00	4.27	125.61	2397.70	8.40 N	79.40 E	0.32	74.75	
2500.00	4.35	131.73	2497.42	3.71 N	85.26 E	0.47	81.60	
2600.00	4.09	133.38	2597.14	1.26 S	90.68 E	0.29	88.09	
2700.00	3.62	131.22	2696.92	5.79 S	95.65 E	0.49	94.04	
2800.00	3.26	131.87	2796.74	9.77 S	100.14 E	0.36	99.39	
2900.00	3.15	132.65	2896.58	13.53 S	104.28 E	0.12	104.34	
3000.00	2.60	133.68	2996.45	16.96 S	107.94 E	0.55	108.74	
3100.00	2.14	131.67	3096.37	19.77 S	110.97 E	0.47	112.38	
3200.00	1.82	146.36	3196.31	22.33 S	113.25 E	0.60	115.23	
3300.00	1.68	148.61	3296.26	24.90 S	114.89 E	0.16	117.46	
3400.00	1.23	148.18	3396.23	27.07 S	116.22 E	0.45	119.29	
3500.00	1.09	143.64	3496.21	28.74 S	117.35 E	0.17	120.81	
3600.00	1.35	139.85	3596.19	30.41 S	118.67 E	0.27	122.51	
3630.00	1.14	134.88	3626.18	30.89 S	119.11 E	0.79	123.05	GYRO F/ SURFACE F/ ORIENTATION

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 104.54 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

PETROLEUM DEVELOPMENT CORPORATION — SURVEY LISTING — Page 1
SAN ANDRES FIELD,WATFED4 — Your ref :
SECTION 6 T8S, R31E CHAVES COUNTY,CHAVES COUNTY — Last revised : 3-Jul-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/100Ft	Vert Sect	
3630.00	1.14	134.88	3626.18	30.89 S	119.11 E	0.00	-105.16	
3665.00	0.90	129.10	3661.17	31.31 S	119.57 E	0.74	-105.78	KOP W/ 40' SRAB ASSEMBLY.
3670.00	2.90	323.40	3666.17	31.23 S	119.52 E	75.57	-105.70	
3675.00	4.90	323.40	3671.16	30.96 S	119.32 E	40.00	-105.36	
3680.00	7.50	323.40	3676.13	30.52 S	119.00 E	52.00	-104.82	
3685.00	11.40	323.40	3681.06	29.87 S	118.51 E	78.00	-104.01	
3690.00	16.50	320.00	3685.91	28.92 S	117.76 E	103.26	-102.81	
3695.00	20.50	317.00	3690.65	27.74 S	116.70 E	82.21	-101.23	
3700.00	24.30	313.00	3695.28	26.40 S	115.36 E	81.84	-99.32	
3705.00	28.60	303.00	3699.75	25.04 S	113.60 E	123.56	-97.13	
3710.00	32.90	303.30	3704.05	23.64 S	111.46 E	86.05	-94.63	
3715.00	36.30	302.90	3708.16	22.10 S	109.08 E	68.15	-91.86	
3720.00	39.50	302.30	3712.11	20.44 S	106.49 E	64.42	-88.88	
3725.00	43.30	301.40	3715.86	18.70 S	103.68 E	76.92	-85.67	
3730.00	47.50	300.80	3719.37	16.86 S	100.64 E	84.43	-82.22	
3735.00	52.40	300.20	3722.59	14.92 S	97.34 E	98.43	-78.54	
3740.00	57.70	37.75	3725.96	11.77 S	96.84 E	1524.58	-75.94	
3750.00	67.00	299.80	3731.65	4.85 S	95.12 E	841.93	-69.77	
3755.00	71.60	300.00	3733.42	2.52 S	91.06 E	92.08	-65.27	
3760.00	76.60	305.50	3734.78	0.08 N	87.02 E	145.54	-60.59	
3765.00	81.60	304.80	3735.73	2.91 N	83.01 E	100.94	-55.76	
3770.00	86.30	304.30	3736.26	5.72 N	78.92 E	94.52	-50.89	
3775.00	89.00	304.00	3736.46	8.53 N	74.78 E	54.33	-46.00	
3780.00	89.70	303.20	3736.52	11.30 N	70.62 E	21.26	-41.11	
3785.00	89.80	302.30	3736.54	14.00 N	66.41 E	18.11	-36.24	
3790.00	89.60	301.60	3736.57	16.65 N	62.17 E	14.56	-31.39	
3795.00	89.70	301.20	3736.60	19.25 N	57.90 E	8.25	-26.54	
3805.00	90.70	300.80	3736.56	24.40 N	49.33 E	10.77	-16.88	
3815.00	91.50	300.80	3736.37	29.52 N	40.74 E	8.00	-7.22	
3825.00	90.40	299.10	3736.20	34.51 N	32.08 E	20.25	2.40	
3830.00	90.60	299.40	3736.16	36.96 N	27.72 E	7.21	7.19	
3835.00	89.90	298.50	3736.14	39.38 N	23.34 E	22.80	11.97	
3840.00	89.60	298.20	3736.16	41.75 N	18.94 E	8.48	16.74	
3845.00	89.40	297.70	3736.20	44.09 N	14.52 E	10.77	21.50	
3850.00	89.10	297.60	3736.27	46.41 N	10.10 E	6.32	26.25	
3855.00	88.20	297.60	3736.39	48.73 N	5.67 E	18.00	31.00	
3860.00	88.10	297.60	3736.55	51.04 N	1.24 E	2.00	35.74	
3865.00	87.90	297.40	3736.72	53.35 N	3.19 W	5.66	40.49	
3870.00	88.60	298.10	3736.88	55.68 N	7.62 W	19.79	45.24	
3875.00	89.30	298.70	3736.97	58.06 N	12.01 W	18.44	50.01	
3880.00	90.00	299.20	3737.00	60.48 N	16.39 W	17.20	54.79	
3885.00	90.60	299.60	3736.97	62.93 N	20.74 W	14.42	59.59	
3890.00	91.30	300.00	3736.89	65.42 N	25.08 W	16.12	64.40	
3895.00	91.90	300.30	3736.75	67.93 N	29.40 W	13.42	69.21	
3900.00	92.40	300.50	3736.56	70.46 N	33.72 W	10.77	74.02	
3905.00	93.70	301.00	3736.30	73.01 N	38.01 W	27.85	78.84	
3910.00	94.20	301.50	3735.95	75.60 N	42.27 W	14.12	83.67	
3915.00	94.50	302.10	3735.57	78.22 N	46.51 W	13.38	88.51	
3920.00	94.60	302.80	3735.18	80.90 N	50.71 W	14.10	93.36	
3925.00	94.60	303.10	3734.78	83.61 N	54.90 W	5.98	98.22	

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 315.82 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect	
3930.00	94.40	303.90	3734.38	86.36 N 59.05 W	16.44	103.09	
3935.00	94.20	304.60	3734.01	89.16 N 63.17 W	14.52	107.97	
3940.00	94.10	305.30	3733.65	92.02 N 67.26 W	14.10	112.87	
3945.00	93.90	305.90	3733.30	94.92 N 71.32 W	12.62	117.78	
3955.00	92.60	306.40	3732.73	100.82 N 79.38 W	13.92	127.62	
3965.00	91.10	308.40	3732.41	106.88 N 87.32 W	24.99	137.51	
3975.00	89.30	308.90	3732.37	113.13 N 95.13 W	18.68	147.43	
3985.00	89.10	310.10	3732.51	119.49 N 102.84 W	12.16	157.36	
3995.00	89.20	311.60	3732.66	126.03 N 110.40 W	15.03	167.33	
4005.00	88.70	313.00	3732.84	132.76 N 117.80 W	14.86	177.30	
4015.00	87.60	314.00	3733.17	139.64 N 125.05 W	14.86	187.29	
4025.00	86.60	315.30	3733.67	146.66 N 132.16 W	16.39	197.28	
4035.00	85.80	316.80	3734.34	153.84 N 139.08 W	16.97	207.25	
4045.00	86.20	319.00	3735.03	161.24 N 145.77 W	22.31	217.22	
4055.00	86.70	319.70	3735.65	168.81 N 152.27 W	8.59	227.18	
4065.00	87.20	321.00	3736.18	176.50 N 158.64 W	13.91	237.14	
4075.00	87.70	322.40	3736.63	184.34 N 164.83 W	14.85	247.08	
4085.00	88.10	324.00	3737.00	192.34 N 170.82 W	16.48	256.99	
4095.00	87.20	324.40	3737.41	200.45 N 176.66 W	9.85	266.87	
4105.00	87.00	324.80	3737.91	208.59 N 182.45 W	4.47	276.74	
4115.00	87.00	323.90	3738.44	216.70 N 188.27 W	8.99	286.62	
4125.00	86.50	323.40	3739.00	224.74 N 194.19 W	7.06	296.51	
4135.00	85.30	322.30	3739.72	232.69 N 200.21 W	16.26	306.41	
4145.00	84.70	320.90	3740.59	240.50 N 206.40 W	15.18	316.32	
4155.00	84.30	319.50	3741.55	248.15 N 212.77 W	14.50	326.24	
4165.00	83.50	317.90	3742.61	255.62 N 219.33 W	17.81	336.17	
4175.00	82.90	316.20	3743.79	262.89 N 226.10 W	17.91	346.10	
4185.00	82.40	314.90	3745.07	269.97 N 233.04 W	13.83	356.02	
4195.00	81.90	313.20	3746.44	276.85 N 240.16 W	17.57	365.92	
4205.00	82.20	311.70	3747.82	283.54 N 247.47 W	15.16	375.80	
4215.00	82.80	310.40	3749.13	290.05 N 254.94 W	14.22	385.68	
4225.00	83.60	309.20	3750.31	296.40 N 262.57 W	14.35	395.56	
4235.00	83.90	308.10	3751.40	302.61 N 270.34 W	11.34	405.42	
4245.00	84.90	307.40	3752.38	308.71 N 278.21 W	12.19	415.28	
4255.00	85.70	307.80	3753.20	314.79 N 286.10 W	8.94	425.14	
4265.00	86.60	307.30	3753.87	320.87 N 294.01 W	10.29	435.01	
4290.00	88.90	307.20	3754.85	335.99 N 313.90 W	9.21	459.71	PROJECTED F/ PREVIOUS SURVEY

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 315.82 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

BAKER HUGHES INTEQ

2105 Market Street Midland, Texas 79703
915-694-9517 Fax 915-694-5648

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Ron Collins, in the employ of Baker Hughes *INTEQ* did on the days of May 13, , 19 93 thru May 18, , 19 93 conduct or supervise the taking of a Steering Tool survey by the method of magnetic orientation from a depth of 3665 feet to 4145 feet, with recordings of inclination and direction being obtained at approximate intervals of 5 feet.

This survey was conducted at the request of Petroleum Development Corporation for their Wattam Federal # 4, Chaves County, State of New Mexico.

The data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Baker Hughes *INTEQ* and is true and correct to the best of my knowledge.

Ronald L. Collins

Directional Supervisor/Surveyor

BAKER HUGHES INTEQ

2105 Market Street Midland, Texas 79703
915-694-9517 Fax 915-694-5648

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Ralph Rice, in the employ of Baker Hughes *INTEQ* did on the days of May 13, , 19 93 thru May 13, , 19 93 conduct or supervise the taking of a Gyroscopic survey by the method of magnetic orientation from a depth of 0 feet to 3665 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Petroleum Development Corporation for their Wattam Federal # 4 , Chaves County, State of New Mexico .

The data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Baker Hughes *INTEQ* and is true and correct to the best of my knowledge.

Ralph E. Rice

Directional Supervisor/Surveyor

Survey File: PDC2

30-005-20813

Date: 5-13-93
Time: 11:04:40

PETROLEUM DEVELOPMENT CORP.

CHAVES COUNTY, NEW MEXICO
WATTAM FEDERAL WELL #4 2060/N & 598/E

SRG SURVEY
SURVEYOR R. RICE

Survey Reference Point : 237.0
Local Grid Offset : 0.0

Drift Correction Method: Constant Rate from initial to final sighting
Survey Computation Method: Minimum Curvature

Target Direction: 315.82

FINAL DATA (INRUN)

Measured Depth (feet)	Course Inclination	Course Direction	Vertical Depth (feet)	Rectangular Coordinates N/S	Rectangular Coordinates E/W	Vertical Section	Dogleg Severity (per100)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.28	23.02	100.00	0.22	0.09	0.10	0.28
200.00	0.85	24.81	199.99	1.12	0.50	0.45	0.58
300.00	1.09	15.10	299.98	2.71	1.06	1.20	0.29
400.00	1.50	28.22	399.95	4.77	1.92	2.08	0.50
500.00	1.43	41.70	499.92	6.85	3.37	2.56	0.35
600.00	1.61	40.16	599.89	8.85	5.10	2.79	0.18
700.00	1.79	38.06	699.84	11.16	6.97	3.15	0.20
800.00	1.93	40.02	799.79	13.68	9.02	3.52	0.15
900.00	2.24	53.00	899.72	16.15	11.67	3.45	0.57
1000.00	2.31	66.93	999.64	18.12	15.08	2.49	0.55
1100.00	2.13	64.74	1099.57	19.70	18.62	1.15	0.19
1200.00	1.96	89.23	1199.51	20.52	22.01	-0.62	0.88
1300.00	1.88	89.38	1299.45	20.56	25.36	-2.93	0.08
1400.00	2.14	70.59	1399.39	21.20	28.77	-4.85	0.70
1500.00	2.50	44.61	1499.31	23.37	32.06	-5.58	1.10
1600.00	2.65	73.73	1599.21	25.56	35.81	-6.63	1.30
1700.00	2.13	78.03	1699.12	26.60	39.85	-8.70	0.56
1800.00	3.12	98.87	1799.01	26.56	44.35	-11.86	1.36
1900.00	3.54	107.92	1898.85	25.19	49.98	-16.77	0.67
2000.00	3.75	116.07	1998.64	22.80	55.86	-22.58	0.56
2100.00	3.75	122.35	2098.43	19.61	61.56	-28.84	0.41
2200.00	3.97	120.70	2198.20	16.09	67.30	-35.36	0.25
2300.00	4.12	121.78	2297.95	12.43	73.34	-42.20	0.17
2400.00	4.27	125.61	2397.68	8.37	79.42	-49.35	0.32
2500.00	4.35	131.73	2497.40	3.68	85.27	-56.79	0.47
2600.00	4.09	133.38	2597.13	-1.29	90.69	-64.13	0.28
2700.00	3.62	131.22	2696.90	-5.82	95.66	-70.84	0.49
2800.00	3.26	131.87	2796.72	-9.79	100.15	-76.82	0.37
2900.00	3.15	132.65	2896.57	-13.55	104.29	-82.40	0.12
3000.00	2.60	133.68	2996.44	-16.98	107.95	-87.41	0.54

Measured Depth (feet)	Course Inclination	Course Direction	Vertical Depth (feet)	Rectangular Coordinates N/S	Rectangular Coordinates E/W	Vertical Section	Dogleg Severity (per100)
3100.00	2.14	131.67	3096.35	-19.79	110.99	-91.54	0.47
3200.00	1.82	146.36	3196.30	-22.35	113.26	-94.96	0.60
3300.00	1.68	148.61	3296.25	-24.93	114.91	-97.96	0.15
3400.00	1.23	148.18	3396.22	-27.09	116.24	-100.44	0.45
3500.00	1.09	143.64	3496.20	-28.77	117.37	-102.43	0.17
3600.00	1.35	139.85	3596.17	-30.44	118.69	-104.55	0.28
3630.00	1.14	134.88	3626.17	-30.92	119.13	-105.20	0.81

Final Closure - Direction: 104.55 degrees
- Distance: 123.08 feet

JUN 14 1993

OCD HOBBS OFFICE

30-005-20813

NAUTICAL (Version 2.0)

WELL: WATTAM FED #4

Target AZ: 315.82 Closure Direction: 316

Target TVD: 3750

MD	INC	AZ	TVD	Vert. Section	Coordinates N-S	Coordinates E-W	Closure	Build Rate	Walk Rate	Tool Face
3665	0.9	129.1	3661.2	-106.0	-31.5	119.6	123.7			
3670	2.9	323.4	3666.2	-106.0	-31.6	119.5	123.6	0.40	38.86	0
3675	4.9	323.4	3671.2	-105.6	-31.3	119.3	123.4	0.40	0.00	0
3680	7.5	323.4	3676.1	-105.1	-30.9	119.0	122.9	0.52	0.00	0
3685	11.4	323.4	3681.1	-104.3	-30.2	118.5	122.3	0.78	0.00	0
3690	16.5	320.0	3685.9	-103.1	-29.3	117.8	121.3	1.02	-0.68	0
3695	20.5	317.0	3690.7	-101.5	-28.1	116.7	120.0	0.80	-0.60	0
3700	24.3	313.0	3695.3	-99.6	-26.7	115.4	118.4	0.76	-0.80	0
3705	28.6	303.0	3699.7	-97.4	-25.4	113.6	116.4	0.86	-2.00	0
3710	32.9	303.3	3704.0	-94.9	-24.0	111.5	114.0	0.86	0.06	0
3715	36.3	302.9	3708.2	-92.1	-22.4	109.1	111.4	0.68	-0.08	0
3720	39.5	302.3	3712.1	-89.1	-20.8	106.5	108.5	0.64	-0.12	0
3725	43.3	301.4	3715.9	-85.9	-19.0	103.7	105.4	0.76	-0.18	0
3730	47.5	300.8	3719.4	-82.5	-17.2	100.6	102.1	0.84	-0.12	0
3735	52.4	300.2	3722.6	-78.8	-15.2	97.3	98.5	0.98	-0.12	0
3740	57.7	300.0	3725.4	-74.8	-13.2	93.8	94.7	1.06	-0.04	0
3745	62.5	299.8	3727.9	-70.7	-11.0	90.0	90.7	0.96	-0.04	0
3750	67.0	299.8	3730.1	-66.3	-8.8	86.1	86.6	0.90	0.00	0
3755	71.6	300.0	3731.8	-61.8	-6.5	82.1	82.3	0.92	0.04	0
3760	76.6	305.5	3733.2	-57.1	-3.9	78.0	78.1	1.00	1.10	0
3765	81.6	304.8	3734.2	-52.3	-1.0	74.0	74.0	1.00	-0.14	0
3770	86.3	304.3	3734.7	-47.4	1.8	69.9	69.9	0.94	-0.10	0
3775	89.0	304.0	3734.9	-42.5	4.6	65.8	65.9	0.54	-0.06	30 L
3780	89.7	303.2	3734.9	-37.7	7.4	61.6	62.0	0.14	-0.16	60 L
3785	89.8	302.3	3735.0	-32.8	10.1	57.4	58.3	0.02	-0.18	60 L
3790	89.6	301.6	3735.0	-27.9	12.7	53.2	54.7	-0.04	-0.14	60 L
3795	89.7	301.2	3735.0	-23.1	15.3	48.9	51.2	0.02	-0.08	60 L
3805	90.7	300.8	3735.0	-13.4	20.5	40.3	45.2	0.10	-0.04	60 L
3815	91.5	300.8	3734.8	-3.8	25.6	31.7	40.8	0.08	0.00	60 L
3825	90.4	299.1	3734.6	5.9	30.6	23.1	38.3	-0.11	-0.17	60 L
3830	90.6	299.4	3734.6	10.6	33.0	18.7	38.0	0.04	0.06	60 L
3835	89.9	298.5	3734.6	15.4	35.4	14.3	38.2	-0.14	-0.18	60 L
3840	89.6	298.2	3734.6	20.2	37.8	9.9	39.1	-0.06	-0.06	60 L
3845	89.4	297.7	3734.6	25.0	40.2	5.5	40.5	-0.04	-0.10	60 R
3850	89.1	297.6	3734.7	29.7	42.5	1.1	42.5	-0.06	-0.02	60 R
3855	88.2	297.6	3734.8	34.5	44.8	-3.3	44.9	-0.18	0.00	60 R
3860	88.1	297.6	3735.0	39.2	47.1	-7.8	47.8	-0.02	0.00	60 R
3865	87.9	297.4	3735.1	43.9	49.4	-12.2	50.9	-0.04	-0.04	60 R
3870	88.6	298.1	3735.3	48.7	51.8	-16.6	54.4	0.14	0.14	60 R
3875	89.3	298.7	3735.4	53.5	54.1	-21.0	58.1	0.14	0.12	60 R
3880	90.0	299.2	3735.4	58.3	56.5	-25.4	62.0	0.14	0.10	60 R
3885	90.6	299.6	3735.4	63.1	59.0	-29.8	66.1	0.12	0.08	60 R
3890	91.3	300.0	3735.3	67.9	61.5	-34.1	70.3	0.14	0.08	60 R
3895	91.9	300.3	3735.2	72.7	64.0	-38.4	74.6	0.12	0.06	60 R
3900	92.4	300.5	3735.0	77.5	66.5	-42.7	79.1	0.10	0.04	60 R

* * * N A U T I C A L (V e r s i o n 2 . 0) * * *

WELL: WATTAM FED #4

Target Az: 315.82 Closure Direction: 316

Target TVD: 3750

MD	INC	AZ	TVD	Vert. Section	Coordinates N-S	E-W	Closure	Build Rate	Walk Rate	Tool Face
3905	93.7	301.0	3734.7	82.3	69.1	-47.0	83.6	0.26	0.10	60 R
3910	94.2	301.5	3734.4	87.1	71.7	-51.3	88.1	0.10	0.10	60 R
3915	94.5	302.1	3734.0	92.0	74.3	-55.5	92.7	0.06	0.12	60 R
3920	94.6	302.8	3733.6	96.8	77.0	-59.7	97.4	0.02	0.14	80 R
3925	94.6	303.1	3733.2	101.7	79.7	-63.9	102.1	0.00	0.06	90 R
3930	94.4	303.9	3732.8	106.5	82.4	-68.1	106.9	-0.04	0.16	100 R
3935	94.2	304.6	3732.4	111.4	85.2	-72.2	111.7	-0.04	0.14	100 R
3940	94.1	305.3	3732.1	116.3	88.1	-76.3	116.5	-0.02	0.14	110 R
3945	93.9	305.9	3731.7	121.2	91.0	-80.3	121.4	-0.04	0.12	120 R
3955	92.6	306.4	3731.2	131.1	96.9	-88.4	131.1	-0.13	0.05	150 R
3965	91.1	308.4	3730.8	141.0	103.0	-96.3	141.0	-0.15	0.20	100 R
3975	89.3	308.9	3730.8	150.9	109.2	-104.1	150.9	-0.18	0.05	100 R
3985	89.1	310.1	3730.9	160.8	115.6	-111.9	160.8	-0.02	0.12	105 R
3995	89.2	311.6	3731.1	170.8	122.1	-119.4	170.8	0.01	0.15	105 R
4005	88.7	313.0	3731.3	180.8	128.8	-126.8	180.8	-0.05	0.14	130 R
4015	87.6	314.0	3731.6	190.8	135.7	-134.1	190.8	-0.11	0.10	130 R
4025	86.6	315.3	3732.1	200.7	142.7	-141.2	200.7	-0.10	0.13	100 R
4035	85.8	316.8	3732.8	210.7	149.9	-148.1	210.7	-0.08	0.15	100 R
4045	86.2	319.0	3733.5	220.7	157.3	-154.8	220.7	0.04	0.22	75 R
4055	86.7	319.7	3734.1	230.6	164.9	-161.3	230.7	0.05	0.07	75 R
4065	87.2	321.0	3734.6	240.6	172.6	-167.7	240.6	0.05	0.13	75 R
4075	87.7	322.4	3735.1	250.5	180.4	-173.8	250.5	0.05	0.14	90 R
4085	88.1	324.0	3735.4	260.5	188.4	-179.8	260.5	0.04	0.16	90 R
4095	87.2	324.4	3735.8	270.3	196.5	-185.7	270.4	-0.09	0.04	90 R
4105	87.0	324.8	3736.3	280.2	204.7	-191.5	280.3	-0.02	0.04	90 R
4115	87.0	323.9	3736.9	290.1	212.8	-197.3	290.2	0.00	-0.09	80 L
4125	86.5	323.4	3737.4	300.0	220.8	-203.2	300.1	-0.05	-0.05	80 L
4135	85.3	322.3	3738.1	309.9	228.8	-209.2	310.0	-0.12	-0.11	80 L
4145	84.7	320.9	3739.0	319.8	236.6	-215.4	320.0	-0.06	-0.14	80 L
4155	84.3	319.5	3740.0	329.7	244.2	-221.8	329.9	-0.04	-0.14	80 L
4165	83.5	317.9	3741.0	339.6	251.7	-228.3	339.8	-0.08	-0.16	80 L
4175	82.9	316.2	3742.2	349.6	259.0	-235.1	349.8	-0.06	-0.17	45 L
4185	82.4	314.9	3743.5	359.5	266.0	-242.1	359.7	-0.05	-0.13	45 L
4195	81.9	313.2	3744.9	369.4	272.9	-249.2	369.6	-0.05	-0.17	45 L
4205	82.2	311.7	3746.2	379.3	279.6	-256.5	379.4	0.03	-0.15	15 L
4215	82.8	310.4	3747.5	389.2	286.1	-264.0	389.3	0.06	-0.13	15 L
4225	83.6	309.2	3748.7	399.0	292.5	-271.6	399.1	0.08	-0.12	15 L
4235	83.9	308.1	3749.8	408.9	298.7	-279.4	409.0	0.03	-0.11	10 R
4245	84.9	307.4	3750.8	418.7	304.8	-287.2	418.8	0.10	-0.07	15 R
4255	85.7	307.8	3751.6	428.6	310.9	-295.1	428.6	0.08	0.04	15 R
4265	86.6	307.3	3752.3	438.5	316.9	-303.0	438.5	0.09	-0.05	15 R
4290	88.9	307.2	3753.3	463.2	332.1	-322.9	463.2	0.09	-0.00	15 R