

WELL LOGS

K Z

API number:	30-025-38845		
OGRID:		Operator:	CHESAPEAKE OPERATING INC
		Property:	OSUDO 22 STATE # 1

surface	ULSTR:	K	22	T	21S	R	35E
			1980	FSL	1309	FWL	

BH Loc	ULSTR:	K	22	T	21S	R	35E
			1980	FSL	1309	FWL	

Ground Level:	3608	DF:	3630	KB:	3631	
Datum:	KB			TD:	12721	

Land: STATE

Completion Date: (1) 9/9/2008

Date Logs Received: 9/25/2008

Date Logs Due in: (2) 9/29/2008

Confidential:	NO			Date out:		
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Confidential period: 90 Days for State & Fee, 1 Year for federal

Date Due In: (1) is equal to Completion Date (1) + 20 days

Logs	Depth interval		
TD LD CN/GR	10510	12700	Three Detector Litho-Density
HRLA	10510	12675	High Resolution Laterolog
	5444	10504	Array Induction Tool

K Z

OCD TOPS

Rustler		Strawn			
Tansill		Atoka	10588		
Yates		Morrow	11852		
7 rvrs					
		Austin			
		Chester			
Queen		Miss Lime			
Penrose					
Grayburg					
San Andres					
Delaware Sd	5447				
Bone Spring	7650				
1st Sd	9325				
2nd Carb	9703				
2nd Sd					
3rd Carb					
3rd Sd	10306				
Wolfcamp	10411				

Directional Survey

30-025-38845

Chesapeake Operating, Inc.

Well ID: 819535

Well Name: Osudo 22 State 1

Field: Grama Ridge

Unit K, 1990/s & 1309/w

Sect: 22 Town: 21S Rng: 35E County: Lea State: NM

Survey Type	Measured Depth	Inclination	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
Wellbore:	Original Well Bore:			Plane of Vertical Section:			0.0		
** Tieln	0.0	0.00	0.0	0.0	N 0.0	E 0.0		0.0	
INC	266.0	0.50	0.0	266.0	N 1.2	E 0.0	1.2	1.2	0.188
INC	715.0	0.50	0.0	715.0	N 5.1	E 0.0	5.1	5.1	0.000
INC	1,057.0	0.25	0.0	1,057.0	N 7.3	E 0.0	7.3	7.3	0.073
INC	1,428.0	0.25	0.0	1,428.0	N 8.9	E 0.0	8.9	8.9	0.000
INC	1,939.0	0.75	0.0	1,938.9	N 13.4	E 0.0	13.4	13.4	0.098
INC	2,441.0	0.75	0.0	2,440.9	N 20.0	E 0.0	20.0	20.0	0.000
INC	2,899.0	0.50	0.0	2,898.9	N 25.0	E 0.0	25.0	25.0	0.055
INC	3,255.0	2.00	0.0	3,254.8	N 32.7	E 0.0	32.7	32.7	0.421
INC	3,381.0	2.25	0.0	3,380.7	N 37.4	E 0.0	37.4	37.4	0.198
INC	3,526.0	1.75	0.0	3,525.6	N 42.5	E 0.0	42.5	42.5	0.345
INC	3,619.0	1.75	0.0	3,618.6	N 45.3	E 0.0	45.3	45.3	0.000
INC	3,769.0	1.25	0.0	3,768.5	N 49.2	E 0.0	49.2	49.2	0.333
INC	3,863.0	1.25	0.0	3,862.5	N 51.3	E 0.0	51.3	51.3	0.000
INC	4,054.0	1.50	0.0	4,053.4	N 55.9	E 0.0	55.9	55.9	0.131
INC	4,351.0	2.00	0.0	4,350.3	N 64.9	E 0.0	64.9	64.9	0.168
INC	4,766.0	1.25	0.0	4,765.1	N 76.7	E 0.0	76.7	76.7	0.181
INC	5,205.0	1.50	0.0	5,204.0	N 87.2	E 0.0	87.2	87.2	0.057
INC	5,653.0	1.50	0.0	5,651.8	N 99.0	E 0.0	99.0	99.0	0.000
INC	6,000.0	1.75	0.0	5,998.7	N 108.8	E 0.0	108.8	108.8	0.072
INC	6,659.0	0.50	0.0	6,657.6	N 121.7	E 0.0	121.7	121.7	0.190
INC	7,128.0	1.00	0.0	7,126.5	N 127.9	E 0.0	127.9	127.9	0.107
INC	7,600.0	1.75	0.0	7,598.4	N 139.2	E 0.0	139.2	139.2	0.159
INC	7,760.0	1.50	0.0	7,758.3	N 143.7	E 0.0	143.7	143.7	0.156
INC	8,050.0	2.00	0.0	8,048.2	N 152.6	E 0.0	152.6	152.6	0.172
INC	8,142.0	2.00	0.0	8,140.1	N 155.8	E 0.0	155.8	155.8	0.000
INC	8,234.0	2.00	0.0	8,232.1	N 159.0	E 0.0	159.0	159.0	0.000
INC	8,300.0	1.25	0.0	8,298.0	N 160.9	E 0.0	160.9	160.9	1.136
INC	8,396.0	2.25	0.0	8,394.0	N 163.8	E 0.0	163.8	163.8	1.042
INC	8,493.0	2.75	0.0	8,490.9	N 168.1	E 0.0	168.1	168.1	0.515
INC	8,588.0	3.00	0.0	8,585.8	N 172.8	E 0.0	172.8	172.8	0.263
INC	8,683.0	3.00	0.0	8,680.7	N 177.8	E 0.0	177.8	177.8	0.000
INC	8,747.0	2.50	0.0	8,744.6	N 180.9	E 0.0	180.9	180.9	0.781
INC	8,841.0	2.50	0.0	8,838.5	N 185.0	E 0.0	185.0	185.0	0.000
INC	8,905.0	3.00	0.0	8,902.4	N 188.0	E 0.0	188.0	188.0	0.781
MWD	9,011.0	2.00	166.0	9,008.4	N 189.0	E 0.4	189.0	189.0	4.683
MWD	9,107.0	1.20	249.8	9,104.4	N 187.0	W 0.1	187.0	187.0	2.311
MWD	9,171.0	1.00	260.0	9,168.3	N 186.7	W 1.3	186.7	186.7	0.436
MWD	9,235.0	1.10	268.4	9,232.3	N 186.6	W 2.4	186.6	186.6	0.286
MWD	9,425.0	1.50	4.9	9,422.3	N 189.0	W 4.0	189.1	189.0	1.030
MWD	9,489.0	1.80	14.3	9,486.3	N 190.8	W 3.7	190.9	190.8	0.630

MWD	9,584.0	1.30	357.7	9,581.2	N 193.4	W 3.4	193.4	193.4	0.702
MWD	9,648.0	1.60	8.6	9,645.2	N 195.0	W 3.3	195.0	195.0	0.635
MWD	9,712.0	1.20	6.7	9,709.2	N 196.5	W 3.1	196.5	196.5	0.629
MWD	9,837.0	1.60	16.2	9,834.2	N 199.5	W 2.4	199.5	199.5	0.369
MWD	9,997.0	1.90	6.8	9,994.1	N 204.3	W 1.5	204.3	204.3	0.259
MWD	10,093.0	2.30	21.0	10,090.0	N 207.6	W 0.6	207.6	207.6	0.681
MWD	10,221.0	1.40	352.5	10,218.0	N 211.6	E 0.1	211.6	211.6	0.985
MWD	10,349.0	2.20	348.4	10,345.9	N 215.6	W 0.6	215.6	215.6	0.633
MWD	10,455.0	1.50	10.2	10,451.8	N 218.9	W 0.8	218.9	218.9	0.925
INC-T	10,635.0	3.00	0.0	10,631.7	N 225.9	W 0.4	225.9	225.9	0.859
INC-T	10,765.0	4.00	0.0	10,761.4	N 233.9	W 0.4	233.9	233.9	0.769
MWD	10,842.0	2.40	49.1	10,838.3	N 237.6	E 0.9	237.6	237.6	3.936
MWD	10,874.0	2.00	51.7	10,870.3	N 238.4	E 1.8	238.4	238.4	1.288
MWD	10,968.0	0.40	104.1	10,964.3	N 239.3	E 3.4	239.4	239.3	1.898
MWD	11,063.0	0.60	139.9	11,059.3	N 238.9	E 4.1	238.9	238.9	0.381
MWD	11,158.0	0.20	169.1	11,154.3	N 238.3	E 4.4	238.4	238.3	0.459
MWD	11,254.0	0.20	241.4	11,250.3	N 238.1	E 4.3	238.1	238.1	0.246
INC-T	11,493.0	1.25	0.0	11,489.3	N 240.5	E 3.9	240.5	240.5	0.568
INC-T	11,621.0	2.00	0.0	11,617.2	N 244.1	E 3.9	244.2	244.1	0.586
INC-T	11,747.0	1.25	0.0	11,743.2	N 247.7	E 3.9	247.7	247.7	0.595
INC-T	11,818.0	1.75	0.0	11,814.1	N 249.6	E 3.9	249.6	249.6	0.704
INC-T	11,906.0	1.75	0.0	11,902.1	N 252.2	E 3.9	252.3	252.2	0.000
INC-T	12,032.0	1.50	0.0	12,028.0	N 255.8	E 3.9	255.8	255.8	0.198
INC-T	12,162.0	2.00	0.0	12,158.0	N 259.8	E 3.9	259.8	259.8	0.385
INC-T	12,450.0	4.00	0.0	12,445.6	N 274.9	E 3.9	274.9	274.9	0.694
INC-T	12,669.0	4.75	0.0	12,663.9	N 291.6	E 3.9	291.6	291.6	0.342

Calculations use Minimum Curvature Method.