

Commonwealth of Virginia Department of Mines, Minerals, and Energy Division of Gas and Oil

P.O. Box 1416; Abingdon, VA 24212

Telephone: (276) 676-5423

Tracking Number:	704
Company:	CNX Gas Company LLC
File Number:	BU-3409
Operations Name:	CBM E21 W/PL
Operation Type:	Coalbed/Pipeline

Drilling Report Type: Coalbed/
Original

# **DRILLING REPORT (DGO-GO-14)**

Depth	(in feet)		Rate	Unit of Measure
Salt Water At:				
	35		Damp	GPM
	1,185		1-2	GPM
Depth	(in feet)		Rate	Unit of Measure
Fresh Water At:				
3. Geological Data				
Pla	t			E21 Plat.pdf
Descrip				FileName
List of Attached Items:				
☐ Plat Previously Submitted	Or			
Permitted State Plane Y: 358		Fin	al Plat State Plan	e Y: <u>358,292</u>
Permitted State Plane X 983	<u> </u>		al Plat State Plan	<del></del>
•			,	- V- 000 040
2. Final Location Plat (as rec	uirod by 4 V	/AC25_150	360 C )	
Log Total Depth (feet):	1,612	Co	al Seam At Total	Depth PARDEE
Driller's Total Depth (feet):	1,630			
Date drilling completed:	7/10/2007		Rig Type:	: ☑ Rotary ☐ Cable Tool
Date drilling commenced:	6/29/2007	D	rilling Contractor:	Noah Horn
1. Drilling Data				

Form DGO-GO-14-E Rev. 1/2007

#### Coal Seams

List of Attached Items:

Description	FileName
Exhibit A	E21 Exhibit A.pdf

#### Gas and Oil Shows

List of Attached Items:

Description	FileName
Gas Show	E21 Gas Show.xls

## **4. Electric Logs** (As required by 4VAC25-150-280.A.)

List all logs run: Caliper, Gamm, Density, Temp, Deviation

Did logs disclose vertical locations of a coal seam? ☐ Yes ✓ No

## **5. Survey Results** (As required by 4VAC25-150-280.B.2)

List of Attached Items:

Description	FileName
Deviation	E21 Deviation.pdf

## 6. Casing and Tubing Program

List of Attached Items:

Description	FileName
Casting	E21 Casing.xls

#### 7. Remarks

Use this space to note any conditions or occurrences, such as lost circulation, fishing jobs, junk left in hole, sidetracks, squeeze jobs, etc., not shown above. Include data and depth of condition/occurence.

#### 8. Drillers Log

Compiled By: Noah Horn

List of Attached Items:

Description	FileName
Drill Data	E21 Drill Data.pdf

## 9. Comments

10. Signature

Permitee: CNX Gas Company LLC Date: 10/10/2007 (Company)

Signed By: Leslie K. Arrington Title: Manager (Signature)

INTERNAL USE ONLY

Submit Date: 10/10/2007

Status: Inspr Approved Date: 10/11/2007

Final PDF Date: 10/11/2007

Form DGO-GO-14-E

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Rev. 1/2007

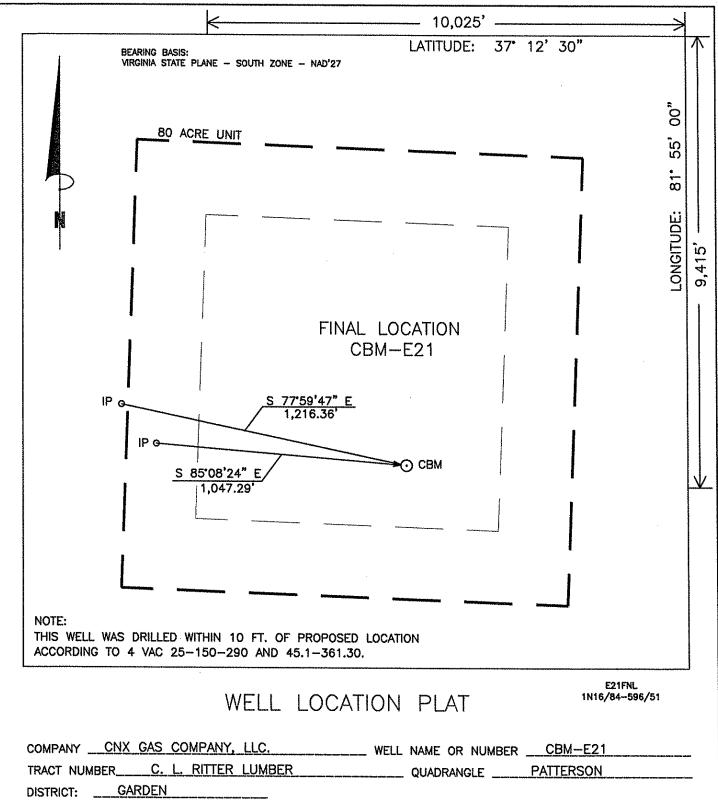


Exhibit A

Well Name: 07 CBM E21

SURFACE ELEV: 1363.54 EASTING: 983818.06 NORTHING: 358292.36

SEAM	DEPTH FROM (FT)	DEPTH TO (FT)	ELEVATION (TOSE)	THK. (FT)	REMARKS
JB1	113.00	116.00	1250.54	3.00	~~~~~
JB3	116.00 138.00 140.00	138.00 140.00 173.60	1247.54 1225.54 1223.54	22.00 2.00 33.60	
Т2	173.60 175.20	175.20 200.80	1189.94 1188.34	1.60 25.60	
TI	200.80	201.80	1162.74	1.00	
COAL	201.80 470.60	470.60 470.80	1161.74 892.94	268.80	
GC2	470.80 471.20 471.80	471.20 471.80 508.70	892.74 892.34 891.74	0.40 0.60 36.90	
COAL	508.70 508.90	508.90 547.50	854.84 854.64	0.20 38.60	
SE2	547.50 548.50	548.50 667.80	816.04 815.04	1.00 119.30	
*UH1	667.80 668.20	668.20 668.90	695.74 695.34	0.40 0.70	
*COAL	668.90 669.00	669.00 712.70	694.64 694.54	0.10 43.70	
*UH2	712.70 713.30	713.30 713.80	650.84 650.24	0.60 0.50	
*COAL	713.80 714.10	714.10 736.30	649.74 649.44	0.30 22.20	
*MH1	736.30 737.60	737.60 737.90	627.24 625.94	1.30 0.30	
*COAL	737.90 738.00	738.00 832.10	625.64 625.54	0.10 94.10	
*P11	832.10 834.00	834.00 858.50	531.44 529.54	1.90 24.50	
*P10	858.50 859.40	859.40 983.10	505.04 504.14	0.90 123.70	
*P91	983.10 983.30	983.30 985.00	380.44 380.24	0.20	
*COAL	985.00 985.10	985.10 985.60	378.54 378.44	0.10 0.50	
*P91	985.60 985.80	985.80 986.50	377.94 377.74	0.20	
*P92	986.50 987.90	987.90 1046.70	377.04 375.64	1.40 58.80	
*P81	1046.70 1047.10	1047.10 1047.70	316.84 316.44	0.40	
*P81	1047.70 1048.20	1048.20 1292.30	315.84 315.34	0.50 244.10	
*P42	1292.30 1292.80	1292.80 1293.80	71.24	0.50	
*COAL	1293.80 1293.90	1293.90 1366.50	69.74 69.64	0.10 72.60	

*P3	1366.50	1370.42	-2.96	3.92
	1370.42	1445.60	-6.88	75.18
*P01	1445.60	1445.70	-82.06	0.10
	1445.70	1513.30	-82.16	67.60
*SJ3	1513.30	1514.90	-149.76	1.60
	1514.90	1630.00	-151.36	115.10

COAL SEAMS TO BE STIMULATED WERE ADJUSTED DUE TO THE GAS WELL'S PROXIMITY TO DISMAL CREEK AND A WATER WELL OF UNKNOWN DEPTH (100 FT WAS ASSUMED).

GAMMA-CALIPER LOG FROM 0 TO 311.00

GAMMA-DENSITY LOG FROM 311.00 TO 1611.50

NOTE: FOOTAGE NOT ADJUSTED FOR DEVIATION

DATE: 07/26/07

Well: E21

# Oil & Gas Show

Formation	Тор	Bottom	Thickness	IPF	Pressure	Hours
				(MCFD/BOPD)		Tested
Lee/Norton	736	987	251			
Pocahontas	1371	1515	144			
Total IPF				Not Taken		

CLIENT: CNX-GAS LOCATION: -

HOLE ID: 07-CNX-E-21 DATE OF LOG: 07/10/07 PROBE: 9136CH 1244

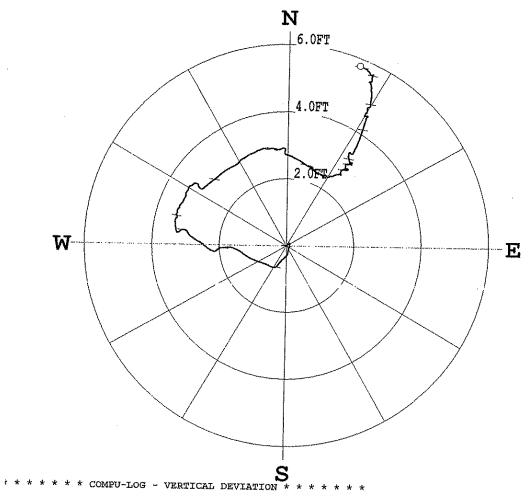


MAG DECL: -7.1

SCALE: 2 FT/IN

TRUE DEPTH: 1611.47 F AZIMUTH: 21.3 DISTANCE: 5.8 FT

+ = 100 FT INCR
O = BOTTOM OF HOLE



CLIENT : CNX-GAS HOLE ID. : 07-CNX-E-21
FIELD OFFICE : 0'DRISCOLL DATE OF LOG : 07/10/07
DATA FROM : FROBE : 9136CH , 1244
MAG. DECL. : -7.100 DEPTH UNITS : FEET
LOG: 07-CNX-E-21\_07-10-07\_21-27\_9136CH\_.10\_0.00\_1611.60\_DEVI.log

				_		-	
BLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG S	SANGB
0.50	0.50	0.00	0.00	0.0	0.0	0.0	0.0
10.00	10.00	-0.01	-0.01	0.0	220.4	0.5	228.0
20,00	20.00	0.06	0.04	0.1	32.8	0.6	20.3
30.00	30.00	0.06	0.10	0.1	61.7	0.5	160.0
40.00	40.00	-0.03	0.08	0.1	109.5	0.7	239.3
50.00	50.00	-0.14	0.05	0.2	159.9	0.7	178.8
60.00	60.00	-0.25	0.04	0.2	171.8	0.6	196.6
70.00	70.00	-0.34	-0.04	0.3	186.1	0.8	235.6
80.00	79.99	-0.47	-0.17	0.5	199.6	0.9	225.4
90.00	89.99	-0.58	-0.25	0.6	203.4	0.7	208.3
100.00	99.99	~0.64	-0.31	0.7	205.9	0.5	245.8
110.00	109.99	~0.65	-0.41	0.8	212.5	0.6	281.0
120.00	119.99	-0.59	-0.53	0.8	222.1	0.8	
130.00	129.99	-0.52	-0.71	0.9	233.7	1.2	297.1 289.1
140.00	139.99	-0.45	-0.90	1.0	243.3	1.6	
150.00	149.99	-0.38	-1.07	1.1	250.3	1.0	287.1
160.00	159.98	-0.30	-1.21	1.2	250.3 259.9	0.6	299.8
170.00	169.98	-0.23	-1.31	1.3	260.2	0.6	302.3
180,00	179.98	-0.14	-1.47	1.5	264.7		307.2
190.00	189.98	-0.07	-1.68	1.7	267.5	1.4	294.1
200.00	199.98	-0.08	-1.87	1.9		1.1	267.4
210.00	209.98	-0.14	-2.03	2.0	267.4	1.2	261.1
220.00	219.97	-0.19	-2.11	2.1	266.2	0.5	225.8
230.00	229.97	-0.19	-2.17	2.2	264.8	0.4	267.3
240.00	239.97	-0.13	-2.30		265.0	0.8	298.6
250.00	249.97	-0.05	-2.41	2.3	266.6	0.9	294.8
260.00	259.97	0.07	-2.57	2.4	268.9	0.8	310.5
270.00	269.97	0.20	-2.37 -2.78	2.6	271.6	1.5	299.1
280.00	279.97	0.31	-2.91	2.8	274.1	1.3	301.7
290.00	289.97	0.41	-2.91	2.9	276.2	0.8	324.3
		0.41	-Z 90	* "	3.77 13	^ =	~~~

170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00	169.98 179.98 189.98 199.98 209.98 219.97 229.97 239.97 249.97		-0.23 -0.14 -0.07 -0.08 -0.14 -0.19 -0.19 -0.13	-0.14 -1.47 -0.07 -1.68 -0.08 -1.87 -0.14 -2.03 -0.19 -2.11 -0.19 -2.17 -0.13 -2.30 -0.05 -2.41	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-0.14 -1.47 1.5 264.7 -0.07 -1.68 1.7 267.5 -0.08 -1.87 1.9 267.4 -0.14 -2.03 2.0 266.2 -0.19 -2.11 2.1 264.8 -0.19 -2.17 2.2 265.0 -0.13 -2.30 2.3 266.6 -0.05 -2.41 2.4 268.9
260.00 270.00 280.00 290.00 310.00 320.00 330.00 340.00 350.00	259.97 269.97 279.97 289.97 299.96 309.96 319.96 329.96 339.96	0.07 0.20 0.31 0.41 0.43 0.39 0.37 0.35 0.39	-2.57 -2.78 -2.98 -3.09 -3.15 -3.20 -3.25 -3.27 -3.28		2.6 2.8 2.9 3.1 3.2 3.3 3.3	2.8 274.1 2.9 276.2 3.0 277.9 3.1 278.0 3.2 277.1 3.2 276.5 3.3 276.2 3.3 276.8 3.3 277.8
360.00 370.00 380.00 390.00 400.00 410.00 420.00 430.00 440.00	359.96 369.96 379.96 389.96 399.96 409.96 419.96 429.95	0.52 0.59 0.68 0.77 0.85 0.98 1.10 1.24 1.41	-3.29 -3.31 -3.31 -3.29 -3.26 -3.25 -3.18 -3.10 -2.96		3.3 3.4 3.4 3.4 3.3 3.3 3.3	3.4 280.2 3.4 281.6 3.4 283.2 3.4 284.7 3.4 286.7 3.4 289.0 3.3 291.8 3.3 295.1
460.00 470.00 480.00 490.00 500.00 510.00 520.00 530.00 540.00	459.95 469.95 479.95 489.94 499.94 509.94 519.93 529.93	1.75 1.79 1.67 1.81 1.94 2.08 2.21 2.31	-2.84 -2.65 -2.50 -2.33 -2.16 -2.00 -1.84 -1.67 -1.48		3.3 3.2 3.0 3.0 2.9 2.9 2.8 2.8	3.3 301.6 3.2 304.0 3.0 303.7 3.0 307.8 2.9 311.9 2.9 316.1 2.9 320.3 2.8 324.2 2.8 328.5
550.00 560.00 570.00 590.00 600.00 610.00 620.00 630.00	549.93 559.92 569.92 579.92 589.92 609.92 619.91	2.61 2.72 2.81 2.88 2.88 2.90 2.87 2.87	-1.28 -1.09 -0.92 -0.75 -0.61 -0.33 -0.38		2.9 2.0 3.0 2.9 2.9 2.9 2.9	2.9 338.1 3.0 341.9 3.0 345.4 2.9 348.0 2.9 350.4 2.9 353.4 2.9 352.4 2.9 355.9
640.00 650.00 660.00 670.00 680.00 700.00 710.00 720.00	639.91 649.91 659.91 669.91 689.91 699.91 709.90 719.90	2.88 2.73 2.68 2.63 2.57 2.50 2.43 2.37 2.35 2.33	-0.07 -0.06 0.08 0.19 0.32 0.43 0.54 0.66 0.70		2.77665555 2.2.22222222222222222222222222222	2.7 358.6 2.7 1.6 2.6 4.2 2.6 7.0 2.5 9.9 2.5 12.5 2.5 15.6 2.5 16.6
730.00 740.00 750.00 760.00 770.00 780.00 800.00 810.00	729.90 739.90 749.90 759.90 769.90 779.90 789.90 799.90 809.90	2.33 2.24 2.19 2.16 2.13 2.10 2.10 2.12 2.06 2.08	0.74 0.80 0.87 0.94 1.00 1.05 1.05 1.11		2.4 2.4 2.4 2.3 2.3 2.3 2.4 2.4	2.4 19.6 2.4 21.6 2.4 23.5 2.3 25.2 2.3 26.5 2.3 26.5 2.4 27.6 2.4 29.9
820.00 830.00 840.00 850.00 860.00 870.00 880.00 990.00	819.90 829.90 839.90 849.90 859.90 869.90 879.90 889.90	2.10 2.13 2.14 2.16 2.14 2.18 2.24 2.28	1.27 1.34 1.42 1.49 1.55 1.58 1.56 1.58		2.56 2.66 2.77 2.77 2.78 2.9	2.5 32.7 2.6 33.7 2.6 34.7 2.7 35.8 2.7 36.4 2.7 35.7 2.7 35.1 2.8 35.4
910.00 920.00 930.00 940.00 950.00 960.00 980.00 990.00	919.90 919.90 929.90 939.90 949.90 959.90 969.90 989.90	2.31 2.31 2.32 2.29 2.29 2.32 2.36 2.42 2.46	1.72 1.76 1.78		2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9 3.0	2.9 36.6 2.9 37.2 2.9 37.8 2.9 37.7 2.9 36.7 2.9 36.7 3.0 35.3
1010.00 1020.00 1030.00 1040.00 1050.00 1060.00 1070.00 1080.00 1090.00	1009.90 1019.90 1029.90 1039.90 1049.90 1059.89 1069.89	2.46 2.48 2.51 2.49 2.47 2.48 2.48 2.52	1.83 1.87 1.90 1.69 1.87 1.85 1.83 1.83		3.1 3.1 3.1 3.1 3.1 3.1 3.1	3.1 36.3 3.1 36.7 3.1 37.4 3.1 37.4 3.1 36.8 3.1 36.8
1100.00 1110.00 1120.00 1130.00	1099.89 1109.89 1119.89 1129.89	2.62 2.69 2.76 2.78	1.80 1.79 1.80 1.86		3.2 3.3 3.3	3.2 33.7 3.3 33.1

1040.00	1039.90	2.47	1.89	3.1	37.4	Ü.Z	244.9
1050.00	1049.90	2.47	1.87	3.1	37.1	0.1	251.7
	1059.89	2.48	1.85	3.1	36.8	0.1	74.2
1060.00				3,1	36.3	0.2	346.0
1070.00	1069.89	2,49	1.83			0.2	8,1
1080.00	1079.89	2.52	1.83	3,1	36.0		
1090.00	1089.89	2.57	1.82	3.1	35.3	0.4	353.5
1100.00	1099.89	2.62	1.80	3.2	34.5	0.3	338.4
1110.00	1109.89	2.69	1.79	3,2	33.7	0.5	355.4
	1119.89	2.76	1.80	3.3	33.1	0.6	18.8
1120.00		2.78	1.86	3.3	33.7	0.9	151.1
1130.00	1129.89					0.7	26.1
1140.00	1139.89	2.82	1.95	3.4	34.6		
1150.00	1149.89	2.93	2,00	3.5	34.2	0.7	31.7
1160.00	1159.89	3.03	2.04	3.7	34.0	0.7	44.3
1170.00	1169.89	3.14	2.09	3.8	33.6	0.7	28.9
1180.00	1179.89	3,26	2.12	3.9	33.1	0.7	15.8
		3.38	2.16	4.0	32.6	0.7	20.0
1190.00	1189.89			4.1	32.2	0.7	20.8
1200.00	1199.89	3.50	2.20				
1210.00	1209.89	3.60	2.23	4.2	31.8	0.7	26.5
1220.00	1219.89	3.71	2.27	4.4	31.4	0.7	12.0
1230.00	1229.89	3.82	2.30	4.5	31.0	0.7	31.6
	1239.89	3.89	2.34	4.5	31.0	0.5	199.3
1240.00		3.89	2.33	4.5	31.0	0.2	125.7
1250.00	1249.88					0.6	314.8
1260.00	1259.88	3.91	2.25	4.5	30.0		
1270.00	1269.88	3.98	2.28	4.6	29.8	0.7	7.4
1280.00	1279.88	4.07	2.33	4.7	29.8	0.7	1.1
1290.00	1289.88	4.16	2.36	4.8	29.6	0.6	81.9
1300.00	1299.88	4.25	2.42	4.9	29.7	0.8	355.0
		4.37	2.43	5.0	29.1	0.7	275.8
1310.00	1309.88		2.44	5.1	28.5	0.7	2.1
1320.00	1319.88	4.48				0.6	5.0
1330.00	1329.88	4.59	2.44	5.2	28.0		
1340.00	1339.88	4.70	2.44	5.3	27.4	0.6	2.6
1350.00	1349.88	4.81	2.43	5.4	26.8	0.7	337.6
1360.00	1359.88	4.92	2.41	5.5	26.1	0.6	6.3
		4.91	2.37	5.5	25.8	0.7	117.7
1370.00	1369.88		2.45	5.6	26.2	0.5	6.7
1380.00	1379.88	4.99				0.4	31.5
1390.00	1389.88	5.05	2.45	5.6	25.8		
1400.00	1399.88	5.10	2.47	5.7	25.8	0.2	3.9
1410.00	1409.88	5.13	2.48	5.7	25.9	0.1	191.2
1420.00	1419.88	5.13	2.46	5.7	25.6	0.4	280.2
	1429.88	5.14	2.42	5.7	25.2	0.4	269.5
1430.00		5.18	2.39	5.7	24.7	0.4	327.2
1440.00	1439.88			5.7	24.4	0.3	335.1
1450.00	1449.87	5.22	2.37				
1460.00	1459.87	5,25	2.33	5.7	24.0	0.3	346.7
1470.00	1469.87	5.28	2.30	5,8	23.5	0.4	315.0
1480.00	1475.87	5.30	2.30	5.8	23.4	0.2	261.0
	1489.87	5.31	2.26	5.8	23.1	0.3	290.5
1490.00			2.21	5.8	22.5	0.4	307.4
1500.00	1499.87	5.34			22.1	0.3	305.3
1510.00	1509.87	5.36	2.17	5.8			
1520.00	1519.87	5.39	2.15	5.8	21.7	0.1	306.1
1530.00	1529.87	5,42	2.14	5.8	21.6	0.2	53.1
1540.00	1539.87	5.40	2.16	5.8	21.8	0.2	156.8
	1549.87	5.37	2.17	5.8	22.0	0.4	179.0
1550.00		5.33	2.14	5.7	21.9	0.3	248.8
1560.00	1559.87			5.7	21.6	0.2	332.4
1570.00	1569.87	5.32	2.11				
1580.00	1579.87	5.36	2.09	5.8	21.3	0.3	334.4
1590.00	1589.87	5.36	2.08	5.8	21.2	0.3	208.5
		5.37	2.08	5.8	21.2	0.1	49.8
1600 00	1599.87						
1600.00	1599.87					0.2	354.5
1600.00 1610.00 1611.60	1609.87 1611.47	5.38 5.39	2.10 2.10	5.8 5.8	21.3 21.3	0.2 0.2	354.5 13.4

Well: E21
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# Casing & Tubing Program

	Casing	Casing	Hole	Cement	Cemer	nted	Date	Packers or
		Interval	Size	used in cu/ft	to Surf	face	Cemented	Bridge Plugs
					Yes	No		Kind/Size/Set
Conductor	13 3/8"	30'	15"			Χ	6/29/2007	
Surface	7"	310'	8 7/8"	72	Х		7/9/2007	bskt @ 88'
Water Protection	4 1/2"	1449'	6 1/2"	231.8	Х		7/10/2007	
Coal Protection	4 1/2"	1449'	6 1/2"	231.8	Х		7/10/2007	
Other Casing & Tubing								
Other Casing & Tubing								
Liners								

# DRILL DATA HOLE-NOAH HORN WELL DRILLING, INC

COMPANY:

CNX

HOLE #: E-21

LOCATION: DISMAL

DRILL RIG#: 17

DATE STARTED: 06-29-07

DATED COMPLETED: 07-10-07

ELECTRIC LOGGED:YES

GROUTED:YES

DEPTH	THICKNESS		STRATA REMARKS	
FROM	ТО	FT	DESCRIPTION, VOIDS ETC	
0	30	30	OVERBURDEN	
30	60	30	SHALE/COAL	
60	90	30	SHALE/SANDY SHALE	
90	120	30	SANDY SHALE/COAL/SANDY SHALE	
120	150	30	SAND STONE/SANDY SHALE/SHALE	
150	180	30	SAND STONE/COAL/SHALE	
180	210	30	SANDY SHALE/SHALE	
210	270	60	SAND STONE	
270	300	30	SANDY SHALE	
300	330	30	SHALE/SANDY SHALE	
330	390	60	SAND STONE	
390	450	60	SAND STONE SANDY SHALE	
450	480	30	SANDY SHALE/COAL/SANDY SHALE	
480	510	30	SANDY SHALE SANDY SHALE	
510	540	30		
540	570	30	SAND STONE/COAL/SANDY SHALE SAND STONE/SANDY SHALE	
570	600	30	SANDY SHALE	
600	660	60	SANDY SHALE SANDY SHALE/SHALE	
660	690	30	SANDI SHALE/SHALE SAND STONE	
690	750	60		
750	780	30	SAND STONE/COAL/SANDY SHALE SHALE	
780	810	30		
810	840	30	SHALE/SANDY SHALE	
340	870	30	SANDY SHALE/COAL/SAND STONE	
870	900	30	SAND STONE/SANDY SHALE	
900	960	60	SAND STONE	
960	990	30	SANDY SHALE/SHALE	
990	1020	30	SANDY SHALE/COAL/SHALE	
1020	1050	30	SANDY SHALE	
1050	1080	30	SANDY SHALE/COAL/SANDY SHALE	
1080	1110		SANDY SHALE/SHALE	
1110	1140	30	SHALE/SANDY SHALE	
140	1170	30	SANDY SHALE/SHALE	
170	1200	30 30	SAND STONE	
200		30	SAND STONE/SANDY SHALE	
.230	1230	30	SAND STONE/SANDY SHALE/SHALE	
.230	1290	60	SANDY SHALE	
.320	1320	30	SANDY SHALE/SHALE	
	1350	30	SAND/SANDY SHALE	
350	1358	8	SANDY SHALE	
358	1362	4	COAL P-3	
362	1410	48	SANDY SHALE	
410	1440	30	SANDY SHALE/COAL/SAND	

1440	1470	30	SANDY SHALE
1470	1500	30	SANDY SHALE/COAL/SANDY SHALE
1500	1530	30	SAND STONE
1530	1560	30	SAND/SANDY SHALE
1560	1620	60	SANDY SHALE
1620	1630	10	RED SHALE

1630' - TOTAL DEPTH 30' - 13 3/8" CASING 310.80' - 7" CASING 1448.35' - 4 ½" CASING