

8,700'

LATITUDE 37° 22' 30"

LONGITUDE 81° 50' 00"

REFERENCES N.T.S.

- REF. 1 - NAIL IN 17" BEECH N 82°57'41" W 135.09'
- REF. 2 - NAIL IN 9" POPLAR N 83°19'06" W 107.46'

6"x8" SET STONE w/ TACK

1/2" REBAR w/ YELLOW CAP FND.

PROPOSED CBM EREC WVC 3688

EREC 47-047-1282-C

POCA LAND CORP. COAL, OIL & GAS Tr 64

WILLIAM CODY ESTEP - SURF 90.64 Ac.

7.5" LOC.

Wm. KISSINGER SURF 3.31 Ac.

Wm. CODY ESTEP 5 Ac.

MARY ESTEP SURF 2 Ac.

Wm. CODY ESTEP SURF .5 Ac.

DWIGHT ESTEP SURF 6 Ac.

KEN LESTER SURF 5 Ac.

PROPOSED CBM EREC WVC 3689

LS #497880L POCAHONTAS LAND CORP. SURF, COAL, OIL & GAS Tr 67 295.92 Ac.

ALPINE DEVELOPMENT - COAL LESSEE

POCA LAND CORP. Tr 68 50.75 Ac.

ALBERT PAYNE - SURF 47 Ac.

POCA LAND CORP. Tr 89 81.93 Ac.

POCA LAND CORP. Tr 90 521.50 Ac.

WELL COORDINATES W. VA. STATE PLANE

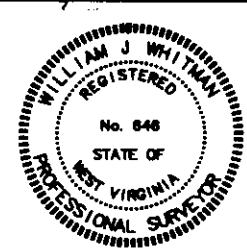
N 135510.3798 E 1749067.3450

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 9614-7  
 DRAWING No. EREC WVC 3688  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 : 2500  
 PROVEN SOURCE OF ELEVATION USGS BM 151 RHP, 1959, EL 2156

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.

(SIGNED) William J. Whitman R.P.S.  
 R.P.E. \_\_\_\_\_ R.P.S. 646



PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS  
 NITRO, WV



DATE JULY 5 19 97  
 OPERATOR'S WELL No. WVC 3688  
 API WELL No. \_\_\_\_\_

WELL TYPE: OIL  GAS  CBM  LIQUID INJECTION  WASTE DISPOSAL  STATE 47 COUNTY 047-0314C PERMIT  
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1534.93 WATER SHED MEATHOUSE FORK OF PANTHER CREEK  
 DISTRICT SANDY RIVER COUNTY McDOWELL  
 QUADRANGLE BRADSHAW, W. VA. - VA.

SURFACE OWNER WILLIAM CODY ESTEP ACREAGE 3±  
 OIL & GAS ROYALTY OWNER POCAHONTAS LAND CORP. LEASE ACREAGE 15,379.43  
 LEASE No. 497880L

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON  CLEAN OUT AND REPLUG   
 TARGET FORMATION PENNSYLVANIAN COALS ESTIMATED DEPTH 1730'  
 WELL OPERATOR EQUITABLE RESOURCES ENERGY CO. DESIGNATED AGENT DAVID DEAN 1997  
 ADDRESS 1989 EAST STONE DR. KINGSFORT, TN 37660 ADDRESS P.O. DRAWER 40 BUCHANNON, WV 26201

6-6-383

WR-35

19-Aug-97  
API # 47- 47-01314 C

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: ESTEP, WILLIAM CODY Operator Well No.: WVC-3688 GAS

LOCATION: Elevation: 1,534.93 Quadrangle: BRADSHAW

District: SANDY RIVER County: MCDOWELL  
Latitude: 2200 Feet South of 37 Deg. 22Min. 30 Sec.  
Longitude 8700 Feet West of 81 Deg. 50 Min. 0 Sec.

Company: EQUITABLE RESOURCES EXP.  
1989 E. STONE DR., P.O. BOX 1983  
KINGSPORT, TN 37662-1983

Agent: DAVID A. DEAN

Inspector: OFIE HELMICK  
Permit Issued: 08/28/97  
Well work Commenced: 10/6/97  
Well work Completed: 10/10/97  
Verbal Plugging  
Permission granted on: N/A  
Rotary  Cable Rig  
Total Depth (feet) LTD=1710 DTD=1713  
Fresh water depths (ft) 66' & 1050'

Salt water depths (ft)

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): 146-50, 1267-70,  
1340-44, 1452-57

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13 3/8	42	42	
8 5/8	320	320	145(171)
4 1/2	1701	1701	400(507)
2 3/8	1687	1687	

OPEN FLOW DATA

Producing formation COAL SEAMS \* Pay zone depth (ft) 1250.25-1522  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 47 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure 272 psig (surface pressure) after 48 Hours

Second producing formation COAL SEAMS\* Pay zone depth (ft) 905-1085.5  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow COMMINGLED MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

- \* BECKLEY POCO #7
- FIRECREEK POCO #5
- POCO #9 POCO #4
- POCO #3
- POCO #2
- POCO #1

For: MICHAEL P JASKOSKI  
EQUITABLE RESOURCES EXP. INC.

By: Michael P Jaskoski  
Date: 4-28-98

MCDOWELL 1314 C

API #: 47-047-01314 C  
 OPERATOR WELL #: WVC3688  
 FARM NAME: WILLIAM CODY ESTEP

WILLIAM CODY ESTEP  
 WVC3688  
 WVC3688

1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

1<sup>ST</sup> STAGE - PERFORATED POCO SEAMS #1,2,3,4,5 & 7 FROM 1250.25 - 1522 WITH 15 PERFORATIONS. FRACTURED ON 11/3/97 BY DOWELL WITH 70Q LE FOAM; 52600# 12/20 SAND, 480000 SCF N2, 374 TOTAL BBLs FLUID. BREAKDOWN PRESSURE 2033 PSI, MAX PRESSURE 4765 PSI, AVERAGE PRESSURE 3290 PSI, ISIP 4692 PSI, 1 MIN SIP 4459 PSI, 5 MIN SIP 3758 PSI. AVERAGE INJECTION RATE 12.8 (37) BPM (DH). SCREENED OUT; NO FLUSH

2<sup>ND</sup> STAGE - PERFORATED FIRE CREEK, BECKLEY & POCO #9 FROM 905 - 1085.5 WITH 14 PERFORATIONS. FRACTURED ON 12/1/97 BY DOWELL WITH 70Q LE FOAM; 61600# 12/20 SAND, 595,000 SCF N2, 406 TOTAL BBLs FLUID. BREAKDOWN PRESSURE 1753, MAX PRESSURE 3992 PSI, AVERAGE PRESSURE 3515 PSI, ISIP 1565 PSI, 1 MIN SIP 1556 PSI, 5 MIN SIP 1469 PSI., AVERAGE INJECTION RATE 14.3 BPM. F.G. = 2.6. PUMPED 24000# PROP NET SAND

2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

SAND, SHALE & THIN COALS	0	904	904
BECKLEY	904	907	3
SAND, SHALE & THIN COALS	907	1047	140
FIRE CREEK	1047	1050	3
SAND, SHALE & THIN COALS	1050	1085	35
POCO #9	1085	1086	1
SAND, SHALE & THIN COALS	1086	1250	164
POCO #7	1250	1251	1
SAND, SHALE & THIN COALS	1251	1330	79
POCO #5	1330	1333	3
SAND, SHALE & THIN COALS	1333	1397	64
POCO #4	1397	1398	1
SAND, SHALE & THIN COALS	1398	1430	32
POCO #3	1430	1432	2
SAND, SHALE & THIN COALS	1432	1475	43
POCO #2	1475	1476	1
SAND, SHALE & THIN COALS	1476	1521	45
POCO #1	1521	1523	2
SAND, SHALE & THIN COALS	1523	1710	187
LOGGER'S TOTAL DEPTH		1710	
DRILLER'S TOTAL DEPTH		1713	

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

- 1) Well Operator: Equitable Resources Energy Company 1615 <sup>1827</sup> 261
- Operator's Well Number: WVC 3688 3) Elevation: 1534.93
- Well type: (a) Oil    / or Gas X / CBM *Issued 08/28/97*  
 (b) If Gas: Production    / Underground Storage    /  
 Deep    / Shallow    *Expires 08/28/99*
- Proposed Target Formation(s): Pennsylvanian Coals <sup>209</sup>
- Proposed Total Depth: 1730 feet
- 7) Approximate fresh water strata depths: Unknown
- 8) Approximate salt water depths: Unknown
- 9) Approximate coal seam depths: See Attached Prognosis
- 10) Does land contain coal seams tributary to active mine? Yes    / No    /
- 11) Proposed Well Work: Drill - Stimulate - Complete

**RECEIVED**  
WV Division of  
Environmental Protection  
AUG 13 1997  
Permitting  
Office of Oil & Gas

**CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS			CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor	16.00	L.S.	65	20	20	D.P.
Fresh Water	8.625	L.S.	23	300	300	To Surface 80 ft <sup>3</sup>
Coal	Same As	Above				
Intermediate						
Production	4.50	M65	9.50		1710	To Surface 390 ft <sup>3</sup>
Tubing	2.375	L.S.	4.6		1650	
Liners <sup>if</sup> needed	10.00	J55	42	45	45	

PACKERS : Kind                       
 Sizes                       
 Depths set                     

For Office of Oil and Gas Use Only

Fee(s) paid:  Well Work Permit  Reclamation Fund  WPCP  
 Plat  WW-9  WW-2B  Bond                       Agent  
 (Type)

24151

Permitting  
Office of Oil & Gas

- 1) Date: August 8, 1997
- 2) Operator's well number  
WVC-3688
- 3) API Well No: 47 - 47 - 1314-C  
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

Surface Owner(s) to be served:  
(a) Name \*See Supplemental Sheets  
Address Attached.

(b) Name \_\_\_\_\_  
Address \_\_\_\_\_

(c) Name \_\_\_\_\_  
Address \_\_\_\_\_

Inspector Offie Helmick  
Address P.O. Box 398  
Brenton, WV 24818  
Telephone (304) - 759-0579

5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address \_\_\_\_\_

(b) Coal Owner(s) with Declaration  
Name Pocahontas Land Corporation  
Address P.O. Box 1517  
Bluefield, WV 24701

Name \_\_\_\_\_  
Address \_\_\_\_\_

(c) Coal Lessee with Declaration  
Name Alpine Development Company  
Address P.O. Box 303  
Welch, WV 24801

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR  
X Included is the information required by Chapter 22, Article 6, Section (d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:  
Personal Service (Affidavit attached)  
X Certified Mail (Postmarked postal receipt attached)  
Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.  
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Equitable Resources Energy Company  
By: Michael P. Jankowski  
Its: Manager-Drilling & Workover  
Address 1989 East Stone Drive, P.O. Box 1983  
Kingsport, Tennessee 37662-1983  
Telephone (423) 224-3800

Subscribed and sworn before me this 8th day of August, 1997

Deanne Swene Neuhel  
Notary Public

commission expires December 31, 2000

047-1314-C

**WEST VIRGINIA COALBED METHANE  
DRILLING PROGNOSIS DATA SHEET**

**RECEIVED**  
WV Division of  
Environmental Protection  
AUG 1 1997

Permitting  
Office of Oil & Gas  
Bradshaw - CBM

Well No	<u>WVC-3688</u>	Field Name	<u>Bradshaw - CBM</u>
Farm Name	<u>W.C. Estep</u>	Carter Coordinates	<u></u>
Lease/Fee No	<u>PLC - 497880L</u>	Longitude	<u>8,700' W 81 50' 00"</u>
Quadrangle	<u>Bradshaw</u>	Latitude	<u>2,200 S 37 22' 30"</u>
County	<u>McDowell</u>	Waters	<u></u>
State	<u>West Virginia</u>		

**DRILLING OBJECTIVES**

Primary: Pennsylvanian Coals  
 Secondary:   
 Proposed Geophysical Logging Suite: Enhanced Coal Log  
 Elevation: 1534.93

**ESTIMATED COAL TOPS**

Iager	<u>230</u>	Poco # 5	<u>1325</u>
Welch	<u>705</u>	Poco # 3	<u>1440</u>
Beckley	<u>905</u>	Poco # 2	<u>1480</u>
Fire Creek	<u>1035</u>	Poco # 1	<u>1530</u>
Poco # 9	<u>1095</u>	Red Rock	<u></u>
Poco # 6	<u>1300</u>	Total Depth	<u>1730'</u>

REMARKS: May encounter mined out Bradshaw seam at 123'. Well is located in close proximity to old workings.

**TENTATIVE CASING AND CEMENTING TECHNIQUES**

<u>Surface</u>	CSG OD	<u>11-3/4"</u>	CSG DEPTH	<u>20'</u>
	Lead in Cement System			
	Tail in Cement System			
<u>Intermediate</u>	CSG OD	<u>8-5/8"</u>	CSG DEPTH	<u>300'</u>
	Lead in Cement System			
	Tail in Cement System			
<u>Production</u>	CSG OD	<u>4-1/2"</u>	CSG DEPTH	<u>1710'</u>
	Lead in Cement			

047-1314-C

**WEST VIRGINIA COALBED METHANE  
DRILLING PROGNOSIS DATA SHEET**

**RECEIVED**  
WV Division of  
Environmental Protection  
AUG 1 1997

Permitting  
Office of Oil & Gas  
Bradshaw - CBM

Well No	<u>WVC-3688</u>	Field Name	<u>Bradshaw - CBM</u>
Farm Name	<u>W.C. Estep</u>	Carter Coordinates	<u></u>
Lease/Fee No	<u>PLC - 497880L</u>	Longitude	<u>8,700' W 81 50' 00"</u>
Quadrangle	<u>Bradshaw</u>	Latitude	<u>2,200 S 37 22' 30"</u>
County	<u>McDowell</u>	Waters	<u></u>
State	<u>West Virginia</u>		

**DRILLING OBJECTIVES**

Primary: Pennsylvanian Coals  
 Secondary:   
 Proposed Geophysical Logging Suite: Enhanced Coal Log  
 Elevation: 1534.93

**ESTIMATED COAL TOPS**

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**TENTATIVE CASING AND CEMENTING TECHNIQUES**

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	Tail in Cement System			
<u>Production</u>	CSG OD	<u>4-1/2"</u>	CSG DEPTH	<u>1710'</u>
	Lead in Cement			

STATEMENT OF NO OBJECTION / WAIVER TO WELL  
AND  
CONSENT TO STIMULATE

The undersigned hereby acknowledges receipt of a plat and other documents, if any, from Equitable Resources Energy Company, Eastern Region the applicant operator, concerning operation on the Pocahontas Land Corporation tract No. 54A, of 5.50 acres, more or less in Sandy River District of McDowell County, West Virginia.

Execution of this statement is to record the fact that the undersigned has no objection to the location, casing program and method of stimulation of CBM Well No. WVC-3688, located at West Virginia State Plane Coordinates N 135510.3798, E 1749067.3450, as indicated on attached Well Plat.

INFORMATION CONCERNING LOCATION OF DEEP MINE WORKINGS

When drilled at the above location the well bore either:

will not penetrate existing deep mine workings, or

will penetrate existing deep mine workings, in the following seams at approximately the following locations:

Additional Comments:

BLADSHAW SEAM

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named above. You are hereby notified that any objection you wish to make or are required to make by Code 22-6-15,16, or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the office.

WAIVER

The undersigned coal operator \_\_\_ / owner \_\_\_ / lessee X / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Alpine Development Company

By: Mona K. Quinn (Signature)

Its: PRESIDENT (Title)

Date: AUGUST 04, 1997



047-1314

CBM Well No: WVC-3688

**STATEMENT OF NO OBJECTION / WAIVER TO WELL  
AND  
CONSENT TO STIMULATE**

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Additional Comments:

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**WAIVER**

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Pocahontas Land Corporation

By: *Ronald E. Hoffman* (Signature)

Its: General Manager-Operations (Title)

Date: August 4, 1997