

**GAS RIGHT DEED
28 LEASE
14,650 ACRES±
WELL NO.
WV 513072**

**BOTTOM HOLE
WELL NO. WV 513072
STATE PLANE COORDINATES
(SOUTH ZONE)**

N. 639,065
E. 2,240,563
LAT=(N) 38.76200
LONG=(W) 80.15649
UTM (NAD83)

N. 4,289,608
E. 573,313

**LANDING POINT
WELL NO. WV 513072
STATE PLANE COORDINATES
(SOUTH ZONE)**

N. 633,581
E. 2,242,451
LAT=(N) 38.73690
LONG=(W) 80.15004
UTM (NAD83)

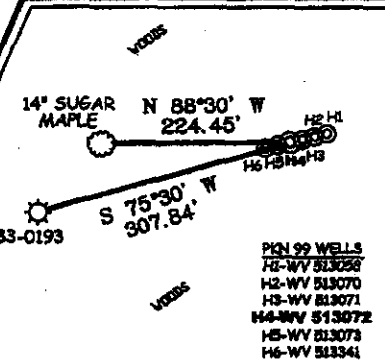
N. 4,287,935
E. 573,889

**WELL NO. WV 513072
STATE PLANE COORDINATES
(SOUTH ZONE)**

N. 633,375
E. 2,243,532
LAT=(N) 38.73630
LONG=(W) 80.14626
UTM (NAD83)

N. 4,287,873
E. 574,218

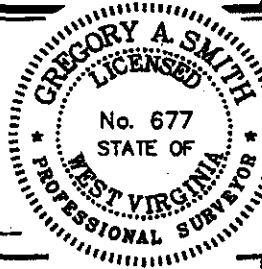
REFERENCES



- NOTES ON SURVEY**
1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE MAD '27.
 2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 03/31/10.
 3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 241 PAGE 408.
 4. SURFACE OWNER AND ADJOMER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF UPSHUR COUNTY IN MARCH, 2010.
 5. WELL LAT./LONG. (MAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE AUGUST 12, 20 10
OPERATORS WELL NO. WV 513072
API WELL NO. 47-083-01227H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 9885P613072R (298-05)
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 200'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 2,967 WATERSHED LEFT FORK BUCKHANNON RIVER
DISTRICT MIDDLE FORK COUNTY RANDOLPH QUADRANGLE PICKENS 7.5'

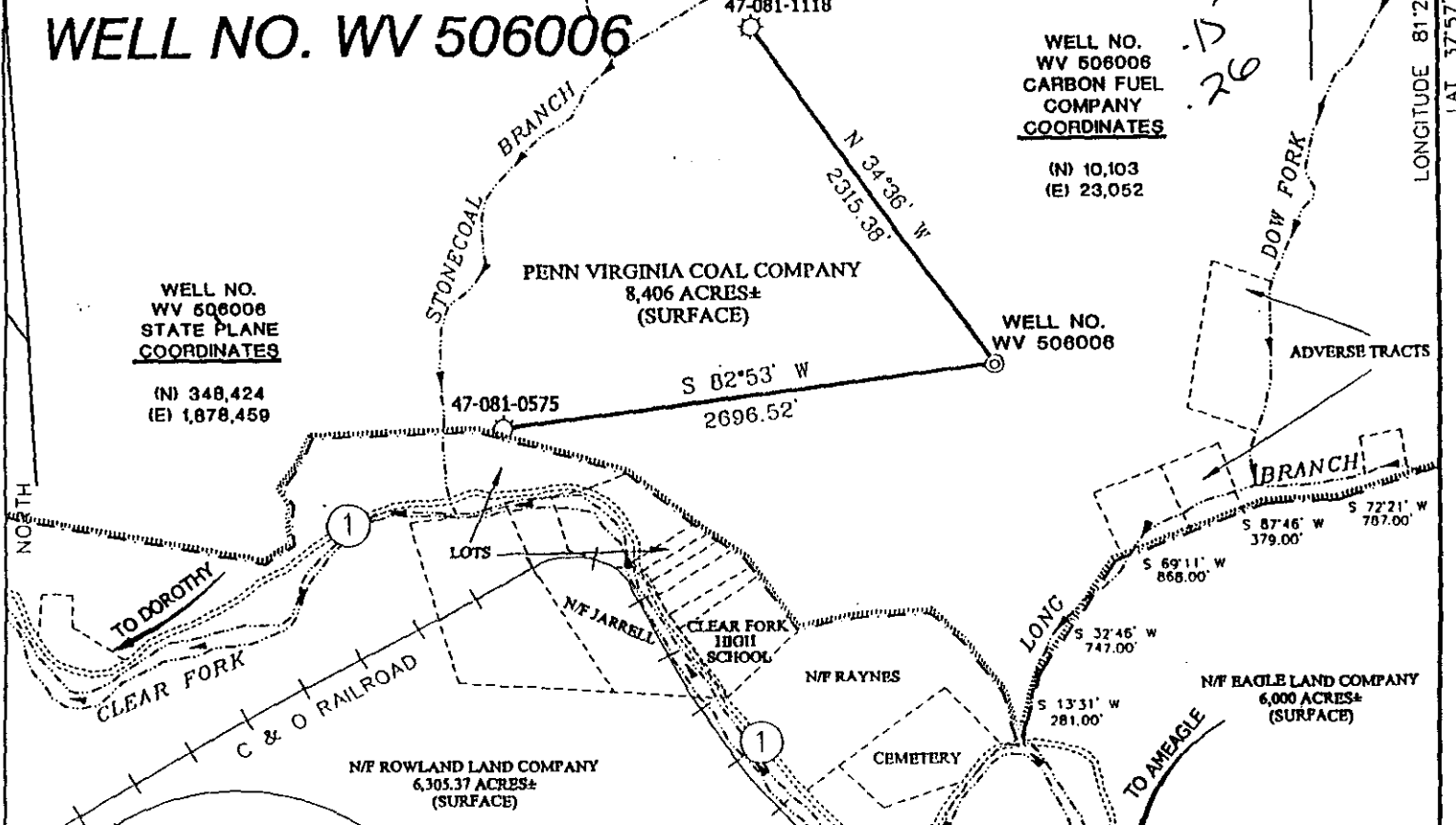
SURFACE OWNER COASTAL FOREST RESOURCES ACREAGE 12,070.04±
ROYALTY OWNER EQT PRODUCTION COMPANY LEASE ACREAGE 14,650±
PROPOSED WORK: LEASE NO. 190028
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD
FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH _____

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
ADDRESS 1710 PENNSYLVANIA AVENUE ADDRESS 1710 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302. CHARLESTON, WV 25302

CARBON FUEL COMPANY LEASE

8406 ACRES±

WELL NO. WV 506006



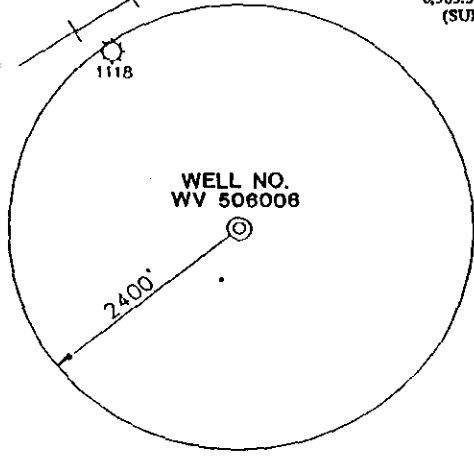
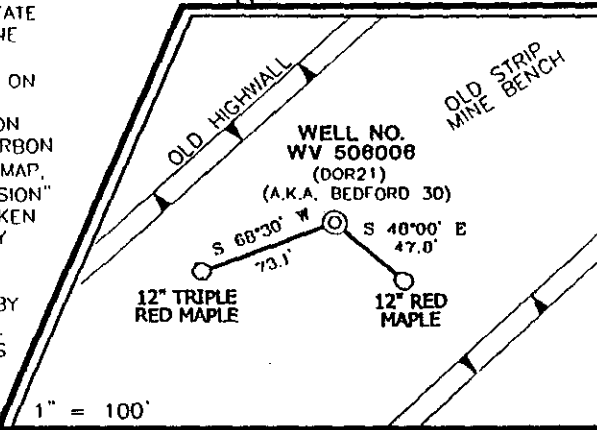
WELL NO. WV 506006
STATE PLANE COORDINATES
(N) 348,424
(E) 1,878,459

WELL NO. WV 506006
CARBON FUEL COMPANY COORDINATES
(N) 10,103
(E) 23,052

NOTES ON SURVEY

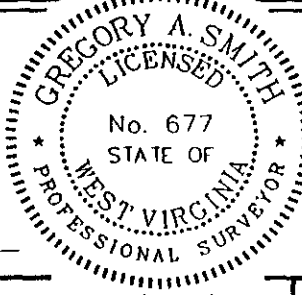
1. TIES TO WELLS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 1-17-01.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT SUPPLIED BY CARBON FUEL COMPANY ENTITLED "PROPERTY MAP, CARBON FUEL COMPANY, CARBON DIVISION"
4. SURFACE OWNER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN FEBRUARY, 2001.
5. WELL LAT./LONG. ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PROPOSED WELL SITE WAS PREVIOUSLY PERMITTED AS 47-081-1119.

REFERENCES



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 ENERGY.

P.S. *Gregory A. Smith*
677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE MARCH 6, 20 01
OPERATORS WELL NO. WV 506006
API WELL NO. 47-081-01227
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 3851P506006 (103-3)
PROVEN SOURCE OF ELEVATION CARBON FUEL COMPANY CONTROL POINT NO. 8483, ELEVATION 1493.6'
SCALE 1" = 1000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS



WELL TYPE : OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION :
ELEVATION 1585' WATERSHED LONG BRANCH OF CLEAR FORK
DISTRICT CLEAR FORK COUNTY RALEIGH QUADRANGLE DOROTHY 7.5'
SURFACE OWNER PENN VIRGINIA COAL COMPANY ACREAGE 8,406±
ROYALTY OWNER PENN VIRGINIA COAL COMPANY LEASE ACREAGE 8,406±
PROPOSED WORK : LEASE NO. 009965
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION DEVONIAN SHALE
ESTIMATED DEPTH 6,300'

WELL OPERATOR EQUITABLE PRODUCTION - EASTERN STATES, INC. DESIGNATED AGENT STEPHEN G. PERDUE
ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328 ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328

APR 20 2001

6-6 262

COUNTY NAME RALEIGH
PERMIT 1251

Reviewed ALP

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

Well Operator's Report of Well Work

Farm Name: Penn Virginia Coal Co.

Operator Well No.: 506006
(WV-506006-Bedford Land)

LOCATION: Elevation: 1585'

Quadrangle: Dorothy

District: Clear Fork

County: Raleigh

Latitude: 820' Feet South of
Longitude: 1400' Feet West of

37
81

Deg.
Deg.

Minutes 57
Seconds 30
25 0

Company: Equitable Production Company
P.O. Box 2347, 1710 Pennsylvania Avenue
Charleston, WV 25328

Agent: Stephen G. Perdue

Inspector: Carlos Hively

Permit Issued: Well work commenced: 09/19/01
Well work completed: 10/29/01

Verbal Plugging Permission granted on: _____

Rotary Rig X Cable Rig _____

Total Depth 3440 feet

Fresh water depths (ft) _____

Salt water depths (ft) 1637'

Is coal being mined in area? _____

Coal Depths (ft): _____

Casing & Tubing Size	Used In Drilling	Left In Well	Cement Fill Up Cu. Ft.
13 3/8"	33'	33'	grouted
9 5/8"	620.25'	620.25'	279.39 ft ³
7"	1858.28'	1858.28'	334.15 ft ³
4 1/2"	3451'	3451'	264.6 ft ³
2 3/8"		3211'	

RECEIVED
Office of Oil & Gas
Permitting
DEC 07 2001
WV Department of
Environmental Protection

OPEN FLOW DATA

Producing formation Gordon / Berea; Middle Weir; Big Lime

Pay Zone Depth (ft): _____

See Attach
for details

Gas: Initial open flow 59 MCF/d

Oil: Initial open flow _____ Bbl/d

Final open flow: 1404 MCF/d

Final open flow: _____

Time of open flow between initial and final tests _____ Hours

Static rock pressure 247 psig (surface pressure) after _____ Hours

Second producing formation _____

Pay Zone Depth (ft): _____

Gas: Initial open flow _____ MCF/d

Oil: Initial open flow _____ Bbl/d

Final open flow: _____ MCF/d

Final open flow: _____

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.

Kathy L. Conway
For: Equitable Production Company

By: [Signature]
Date: 11/3/01

RAL 1227

DEC 14 2001

**Equitable Production Company
WR-35 COMPLETION REPORT - Attachment
Well Treatment Summary**

Well: WV-506006-Bedford Land

API# 47-081-01227

Date	10/10/01	10/24/01	10/24/01			
Type Frac Acid, N ₂ , Foam, Water	85-80-75 Q Foam	85-80-75 Q Foam	65 Q Foamed Acid			
Zone Treated	Gordon Berea	Middle Weir	Big Lime			
# Perfs From - To:	40 3107' - 3330'	31 2737' - 2767'	43 2338' - 2606'			
BD Pressure @ psi	80	1210	760			
ATP psi	2958	2170	1572			
Avg. Rate, B=B/M, S= SCF/M	60 B (foam)	44 B (foam)	22.8 B (foam)			
Max. Treat Press psi	3210	2420	2250			
ISIP psi	0	0	270			
Frac Gradient	.43	.43	.57			
10 min S-I Pressure	1350 (2 min)		1110			
Material Volume						
Sand-sks	681	1004				
Water-bbl	234	351				
SCF N ₂	647,500	642,500	135,500			
Acid-gal	350 gal 15%	250 gal 14.8%	4000 gal 14.8%			
NOTES:						

RECEIVED
Office of Oil & Gas
Permitting

DEC 07 2001

WV Department of
Environmental Protection

TOP	BOTTOM	FORMATION	REMARKS
0	220'	Surface Rock	
220'	638'	Sand & Shale	
638'	668'	Salt Sand	
668'	820'	Salt Sand w/ Shale	
820'	1359'	Salt Sand	
1360'	1915'	Shale & Sand	Water @ 1637'
1915'	1960'	Upper Maxton	
1960'	2090'	Shale	GT @ 2002' = NS
2099'	2170'	Lower Maxton	
2188'	2270'	Little Lime	GT @ 2223' = NS
2280'	2610'	Big Lime	GT @ 2413' = NS GT @ 84 mcf/d
2640'	2660'	Big Injun	
2710'	2720'	Upper Weir	
2732'	2772'	Middle Weir	
2826'	2866'	Lower Weir	
3090'	3102'	Sunbury	GT @ 3011' = 230 mcf/d
3102'	3208'	Berea	
3312'	3331'	Gordon	
	3440'	TD	GT @ DC = 589 mcf/d