

BERWIND-WINIFREDE LEASE 11,377.10 ACRES ± BERWIND-WINIFREDE # 1

BERWIND-WINIFREDE #1
STATE PLANE
COORDINATES

(N) 415,774
(E) 1,798,998

N/A
HARPER

PENN VIRGINIA OPERATING LLC
P/O 4,301.22 AC.±
(SURFACE)

PENN VIRGINIA OPERATING LLC
P/O 4,301.22 AC.±
(SURFACE)

STONE
(FOUND)

S 75°30' E
2029.50

N 05°38' W
7310.90

N 71°00' W
7062.58

N 02°00' W
8312.73

N 27°30' E
3793.70

N 62°30' E
8761.50

N 00°00' E
108.8'

N 02°00' W
74.6'

N 00°00' E
108.8'

(SLOPE 112.6)

74.6'

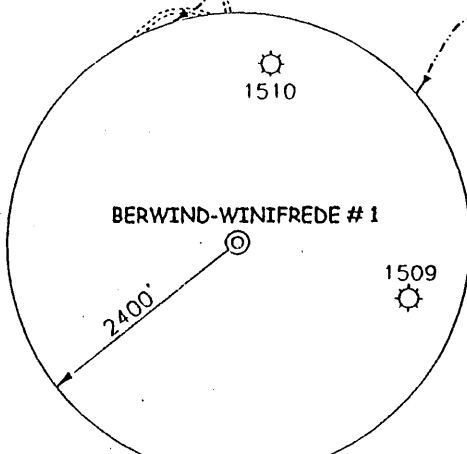
1" = 100'

NORTH

LONGITUDE 81°35'00"

9.640'

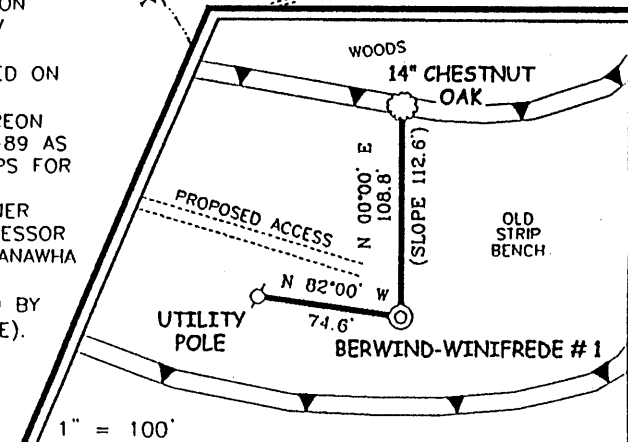
LAT. 38°08'24.8"



NOTES ON SURVEY

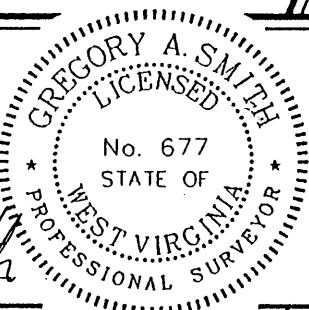
1. TIES TO WELLS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '83.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 12/30/02.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT DATED 2-18-89 AS PREPARED BY GREGORY A. SMITH, PS FOR A.P.I. NO. 47-039-4633.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN DECEMBER, 2002.
5. WELL LAT./LONG. ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

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 DIVISION OF ENVIRONMENTAL PROTECTION

P.S. 677 *Gregory A. Smith*



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

DATE JANUARY 2, 20 02
OPERATORS WELL NO. BERWIND-WINIFREDE #1
API WELL NO. 47 - 005 - 01882
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 4242API (140-8)
PROVEN SOURCE OF ELEVATION JUNCTION OF ROADS ELEVATION = 695' SCALE 1" = 2000'

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 1,404' WATERSHED TRACE FORK
DISTRICT SHERMAN COUNTY BOONE QUADRANGLE BELLE 7.5'

SURFACE OWNER PENN VIRGINIA OPERATING LLC ACREAGE P/O 4,301.22
ROYALTY OWNER CLAY COUNTY BERWIND LIMITED PARTNERSHIP LEASE ACREAGE 11,377.10

PROPOSED WORK : LEASE NO. _____
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 BEREA
ESTIMATED DEPTH 3,500'

WELL OPERATOR NORTHSTAR ENERGY CORPORATION DESIGNATED AGENT W. THOMAS WHITE
ADDRESS 1 MEADOW ROAD, DUNBAR, WV 25064 ADDRESS 1 MEADOW ROAD, DUNBAR, WV 25064

COUNTY NAME

PERMIT

Boone

1882

6-6(239)

801 1 2 3 4

11-12-2003

MIRU Fisher Well Surveys, run GR/CCL. Logger's TD - 2910'. Calc TOC - 1850'. MIRU Universal Well Services, Inc. to conduct 3-stage completion. 250 gals. 15% HCl in hole. Break on fluid.

1st Stage - Berea/Stray Sand (2880-2882', 8 holes) 75Q Foam Frac
 (250 gals) 15% HCl, 20,000 lbs. 20/40 sand, 1-3 ppg, 142 Bbls. Twtr, 239 Mscf, N2
 BKDN - 1780 psi, ATP - 2628 psi, AIR - 20 BPM, ISIP - 1850 psi

3 5/16" baffle at 2696'. Dropped frac ball in 12Bbls. (500 gals) 15% HCl, followed by N2 breakdown.

2nd Stage - Upper Weir (2554-2558', 12 holes) 75Q Foam Frac
 12 Bbls. (500 gals) 15% HCl, 25,000 lbs. 20/40 sand, 1-3 ppg, 102 Bbls. Twtr, 174 Mscf, N2
 BKDN - 2650 psi, ATP - 1867 psi, AIR - 20 BPM, ISIP - 1741 psi

3 9/16" baffle at 2480'. Dropped frac ball in 12 Bbls. (500 gals) 15% HCl, followed by N2 breakdown.

3rd Stage - Big Injun (2437-2453', 17 holes) 75Q Foam Frac
 12 Bbls. (500 gals) 15% HCl, 44,000 lbs. 20/40 sand, 1-4 ppg, 128 Bbls. Twtr, 296 Mscf, N2
 BKDN - 2707 psi, ATP - 2140 psi, AIR - 20 BPM, ISIP - 1950

RDMO Universal Well Services, Inc. and Fisher Well Surveys. RU flowback and open well on 1/4" choke.

Formation Depths taken from Drillers Log Book

Sub Base	0	-	10'
Dirt	10	-	14'
Sand & Shale	14	-	256'
Coal	256	-	260'
Sand & Shale	260	-	339'
Coal	339	-	343'
Sand & Shale	343	-	408'
Coal	408	-	412'
Sand & Shale	412	-	466'
Coal	466	-	469'
Sand & Shale	469	-	593'
Coal	593	-	596'
Sand & Shale	596	-	723'
Coal	723	-	726'
Sand & Shale	726	-	879'
Open Mine	879	-	883'
Sand & Shale	883	-	1115'
Shale	1115	-	

RECEIVED
 Office of the Registrar

OCT 23 2004

Enrollment Services

Boo 1882

**Formation Depths taken from Gamma Ray Log**

Shale	-	1190'	
Sand	1190	-	1225'
Salt Sand	1225	-	1395'
Shale	1395	-	1502'
Salt Sand	1502	-	1675'
			Water at 1536', 2" stream
Shale	1675	-	1725'
			Lost circulation at 1689'
Upper Maxton	1725	-	1740'
Sand & Shale	1740	-	1825'
Middle Maxton	1825	-	1933'
Shale	1933	-	2080'
Lower Maxton	2080	-	2130'
Shale	2130	-	2140'
Little Lime	2140	-	2197'
Shale	2197	-	2210'
Big Lime	2210	-	2406'
Shale	2406	-	2430'
Big Injun	2430	-	2459'
Silt & Shale	2459	-	2514'
Weir	2514	-	2654'
Shale	2654	-	2803'
Siltstone	2803	-	2822'
Shale	2822	-	2862'
Sunbury Shale	2862	-	2878'
Berea	2878	-	2883'
Shale	2883	-	TD
			Gas Check at TD - No show

RECEIVED
Office of Oil & Gas

OCT 28 2004

PA Department of
Environmental Protection

Total Depth**2967'**

Well logged by Allegheny Wireline Services, Inc.

DEC 30 2004