



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

March 25, 2014

CHESAPEAKE APPALACHIA, L.L.C.
POST OFFICE BOX 6070
CHARLESTON, WV 25362

Re: Permit Modification Approval for API Number 6900171 , Well #: CARL ROTTER OHI 1H
Casing Plan Modified

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

for
Gene Smith

Regulatory/Compliance Manager
Office of Oil and Gas



069 00171
MOD

Danielle Southall
Regulatory Analyst II

December 12, 2013

VIA UPS

Ms. Laura Cooper
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

Re: Modification to Carl Rotter OHI 1H API# 47-069-00171


Dear Ms. Cooper:

Enclosed please find a modification for the above captioned well. We would like to modify the 13 3/8" casing due to updated water depth, and the 5 1/2" casing due to directional work. The BHL will remain the same. This well is situated on the Rotter's property, in Liberty District, Ohio County, West Virginia.

If you have any questions or require additional information, please contact me at 304-517-1416 ext 86024.

Sincerely,

Chesapeake Appalachia, LLC


Dee Southall

Enclosure(s)

RECEIVED
Office of Oil & Gas
December 13, 2013
E. Southall

03/28/2014

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: Chesapeake Appalachia, LLC 494477557 69-Ohio 3-Liberty 648-Valley Grove
Operator ID County District Quadrangle
API# 47-069-00171

2) Operator's Well Number: Carl Rotter OHI 1H Well Pad Name: Carl Rotter OHI Pad

3 Elevation, current ground: 1340' Elevation, proposed post-construction: 1334'

4) Well Type: (a) Gas Oil
Other
(b) If Gas: Shallow Deep
Horizontal

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation-Marcellus, Target top TVD- 6550', Target base TVD- 6620', Anticipated thickness- 70', Associated Pressure -4038

MOK 12/11/2013

7) Proposed Total Vertical Depth: 6,492'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 16,200'

10) Approximate Fresh Water Strata Depths: 622'

11) Method to Determine Fresh Water Depth: Data was gathered from e-logs, drillers logs and from wells within a 2500' radius

12) Approximate Saltwater Depths: 830'

13) Approximate Coal Seam Depths: 742'

14) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

15) Does land contain coal seams tributary or adjacent to, active mine? No

16) Describe proposed well work:
Drill and stimulate any potential zones between and including the Benson to the Marcellus. **If we should encounter a void, place basket above and below void area - balance cement to bottom of void and grout from basket to surface. Run casing not less than 20' below void nor more than 50' below void.
(*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts)

17) Describe fracturing/stimulating methods in detail:
Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface.
The well is produced through surface facilities consisting of high pressure production units, vertical separation units, water and oil storage tanks.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 14.0

19) Area to be disturbed for well pad only, less access road (acres): 9.0

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DEC 18 2013
WV Department of Environmental Protection
03/28/2014

20)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft.</u>	<u>FOOTAGE: For Drilling</u>	<u>INTERVALS: Left in Well</u>	<u>CEMENT: Fill -up (Cu. Ft.)</u>
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	792'	792'	710 SX/CTS
Coal	9 5/8"	New	J-55	40#	2250'	2250'	900 SX/CTS
Intermediate	7"	New	P-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	P-110	20#	16,200'	16,200'	Lead 929 sx Tail 2329 sx/100' inside intermediate
Tubing	2 3/8"	New	N-80	4.7#	Approx. 7125'	Approx. 7125'	
Liners							

MGK 12/1/13

<u>TYPE</u>	<u>Size</u>	<u>Wellbore Diameter</u>	<u>Wall Thickness</u>	<u>Burst Pressure</u>	<u>Cement Type</u>	<u>Cement Yield</u>
Conductor	20"	30"	0.25	2120	15.6 ppg	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	15.6 ppg	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	15.6 ppg	1.19/50% Excess
Intermediate	7"	8 3/4"	.0317	4360	15.6 ppg	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	15.6 ppg	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190			
Liners						

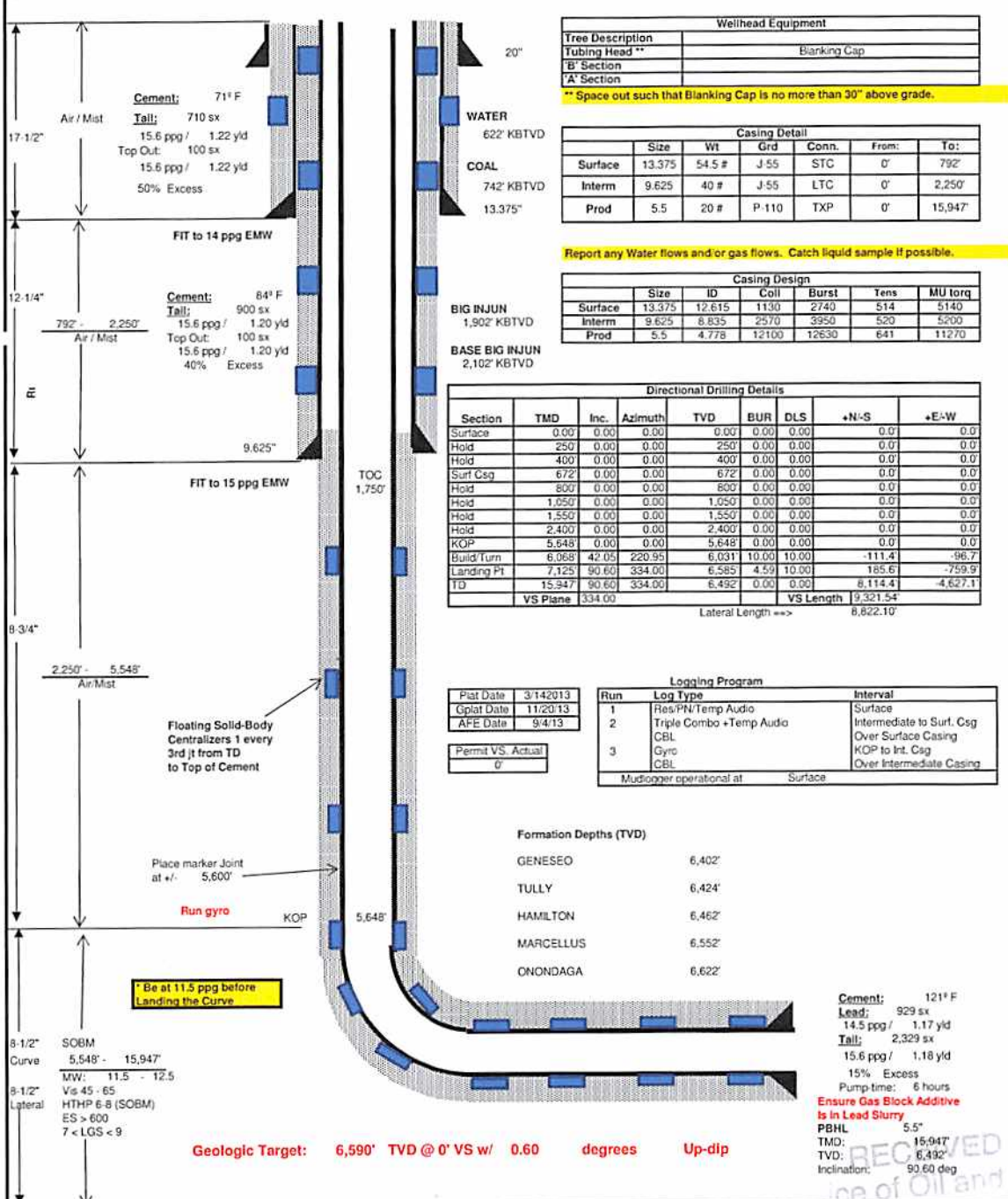
PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:	Approx. 6,197'			

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Department of Oil and Gas
DEC 13 2013
WV Department of Environmental Protection

03/28/2014

		Well Name: Carl Rotter OHI 1H	Drilling Rig: Nomac 337
Drilling Engineer: Jeremy Pye Superintendent: R. Harless / J. Melville Asset Manager: Shawn Jackson Geologist: Nick Downs Land: Bryan Lohoff		Formation: Marcellus County, State: Ohio, WV Surface Latitude: 40.101504 Surface Longitude: -80.542628 BH Latitude: 40.123629 BH Longitude: -80.559509 KB Elevation: 1362' Ground Elevation: 1340'	Directional Drilling: Weatherford Drilling Mud: NOVA Cement Surface: BJ Cement Longstrings: BJ Wellhead: Sweco AFE #: 174151 Well #: 837750

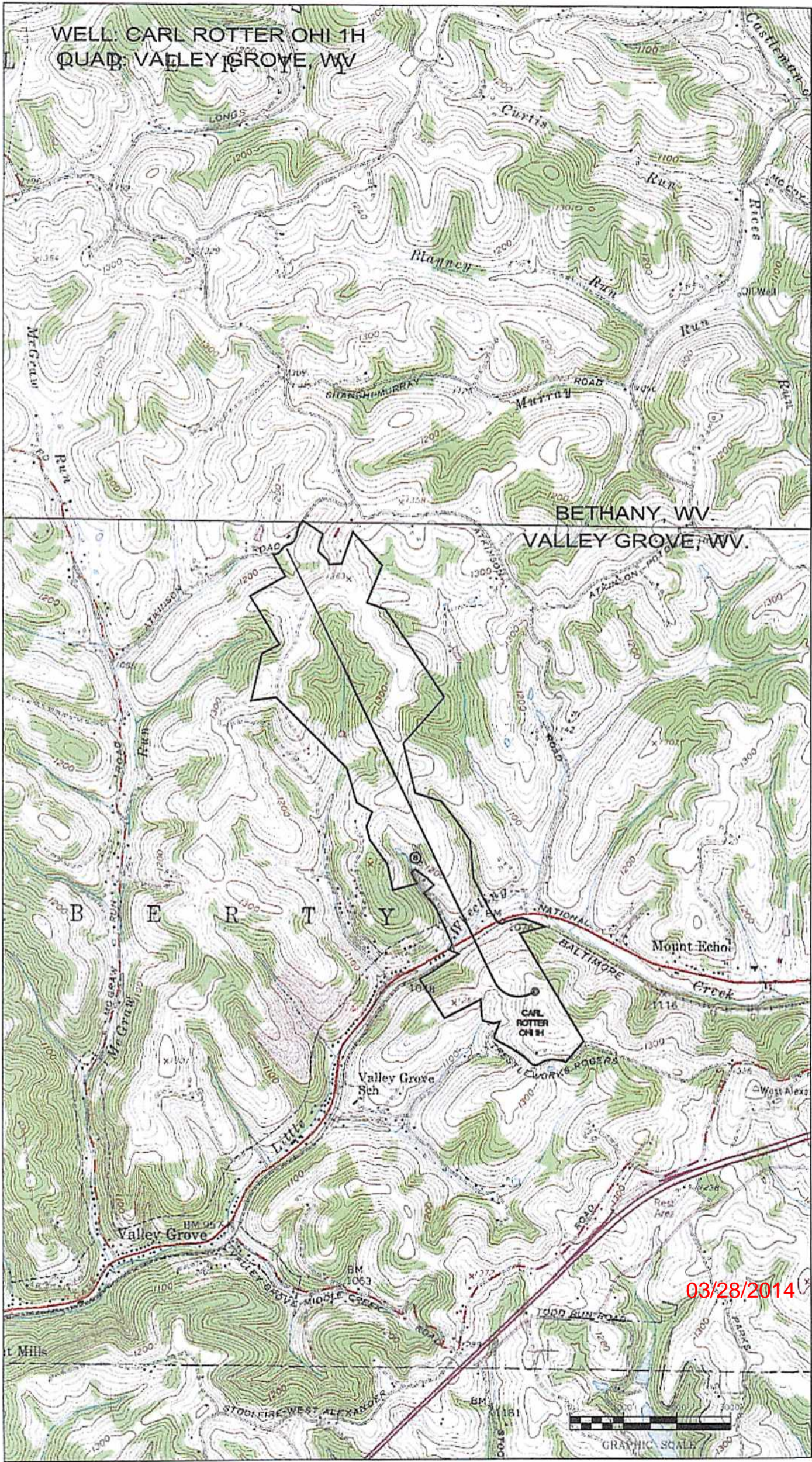


Drawn by: Jeremy Pye
 Date: 12/5/13

Gyro the 1st well on the pad at KOP. Ensure all Surveys are referenced to Grid North!!

RECEIVED
 Dept of Oil and Gas
 DEC 13 2013
 WV Department of Environmental Protection
 03/28/2014

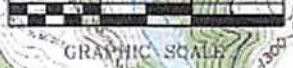
WELL: CARL ROTTER OH 1H
QUAD: VALLEY GROVE, WV

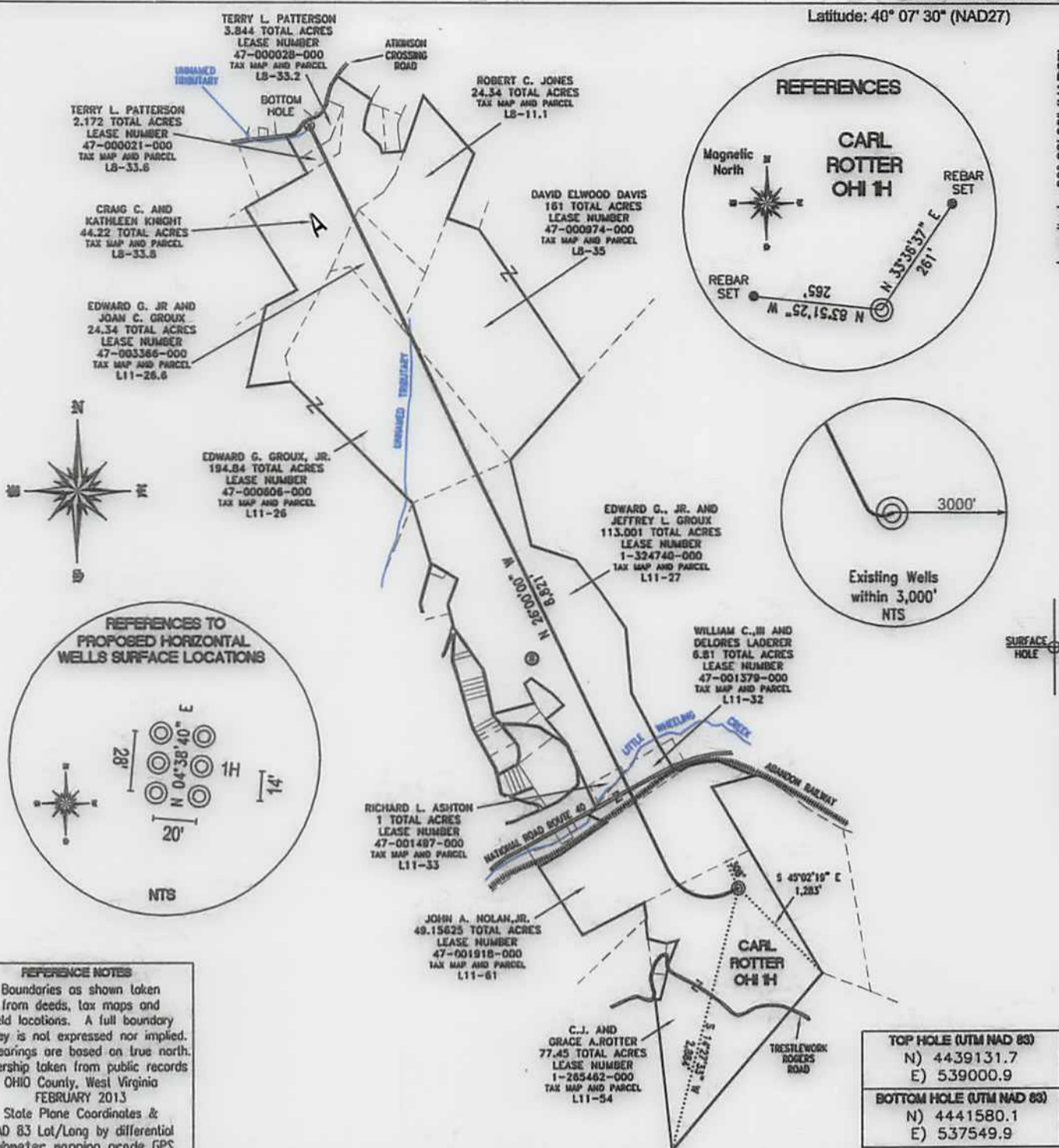


BETHANY, WV
VALLEY GROVE, WV.

B E R T Y

03/28/2014





REFERENCE NOTES:
 Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records OHIO County, West Virginia FEBRUARY 2013
 State Plane Coordinates & NAD 83 Lot/Long by differential submeter mapping grade GPS
 Drafted by: E.A.H.

TOP HOLE (UTM NAD 83)
N) 4439131.7
E) 539000.9
BOTTOM HOLE (UTM NAD 83)
N) 4441580.1
E) 537549.9

FILE #: CHE 113
 DRAWING #: 2159
 SCALE: 1" = 1,600'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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 ENVIRONMENTAL PROTECTION.
 Signed: *[Signature]*
 L.L.S. #2124: Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

DATE: MARCH 19, 2013
 OPERATOR'S WELL #: CARL ROTTER OHI 1H
 API WELL #: 47 69 00171 HGA
 STATE COUNTY PERMIT

Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,340'
 COUNTY/DISTRICT: OHIO / LIBERTY QUADRANGLE: VALLEY GROVE, WV
 SURFACE OWNER: CARL J. AND GRACE A. ROTTER ACREAGE: 77.45 +/-
 OIL & GAS ROYALTY OWNER: CARL J. AND GRACE A. ROTTER ACREAGE: 733.156
 LEASE NUMBERS: _____

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,580' TMD: 15,787'
 WELL OPERATOR: CHESAPEAKE APPALACHIA, LLC DESIGNATED AGENT: ERIC GILLESPIE
 ADDRESS: PO BOX 18496 ADDRESS: PO BOX 6070
 CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

03/28/2014