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west virginia department of environmental protection

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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](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

June 03, 2014

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

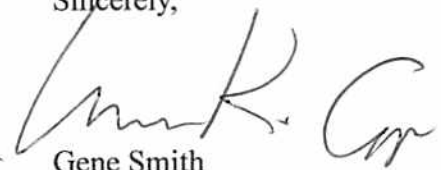
Re: Permit Modification Approval for API Number 5101727 , Well #: ROBERT YOUNG MSH 3  
*Extended surface casing*

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

51-01727 MOD



Danielle Southall  
Regulatory Analyst II

February 26, 2014

**VIA UPS**

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

Re: Modification to Well Robert Young MSH 3H API# 47-051-01727

Dear Ms. Cooper:

Enclosed please find a revised WW-6B for the above captioned well. We would like to run the ~~9.5/8"~~ casing past the coal. This well is situated on the Robert Young property, in Webster District, Marshall 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

  
Danielle Southall

Enclosure(s)

Received

FEB 27 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

06/06/2014

WW-6B  
(9/13)

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

1) Well Operator: Chesapeake Appalachia, LLC 49447757 51-Marshall 9-Webster 486-Moundsville  
Operator ID County District Quadrangle

2) Operator's Well Number: Robert Young MSH 3H Well Pad Name: Robert Young MSH Pad

3) Farm Name/Surface Owner: Robert L. Young Public Road Access: Stull Run Road

4) Elevation, current ground: 1235' Elevation, proposed post-construction: 1235'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow \_\_\_\_\_ Deep \_\_\_\_\_

Horizontal

6) Existing Pad: Yes or No \_\_\_\_\_

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target formation- Marcellus Target top TVD- 6470' Target base TVD-6522' Anticipated thickness- 55' Associated Pressure- 4141

8) Proposed Total Vertical Depth: 6,502'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 14,000'

11) Proposed Horizontal Leg Length: 7,003'

*UKC*  
*6-3-14*

12) Approximate Fresh Water Strata Depths: 272'

13) Method to Determine Fresh Water Depths: From analysis of nearby water wells

14) Approximate Saltwater Depths: 1375'

15) Approximate Coal Seam Depths: 710'

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

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

RECEIVED  
Office of Oil and Gas

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Office of Oil and Gas

JUN 03 2014

JUN 03 2014

WV Department of  
Environmental Protection

WV Department of  
Environmental Protection

WW-6B  
(9/13)

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling</b>	<b>INTERVALS: Left in Well</b>	<b>CEMENT: Fill-up (Cu. Ft.)</b>
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	760'	760'	360 sx/CTS
Coal	9 5/8"	New	J-55	40#	2,500'	2,500'	970 sx/CTS
Intermediate	7"	New	P-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	P-110	20#	14,000'	14,000'	Lead 850x Tail 1750x100' holes in
Tubing	2 3/8"	New	N-80	4.7#	Approx. 6,775'	Approx. 6,775'	
Liners							

JIN 2/25/2014

GJK 2/25/14

<b>TYPE</b>	<b>Size</b>	<b>Wellbore Diameter</b>	<b>Wall Thickness</b>	<b>Burst Pressure</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
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"	0.317	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'			

# Received

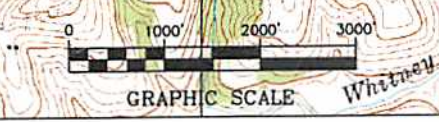
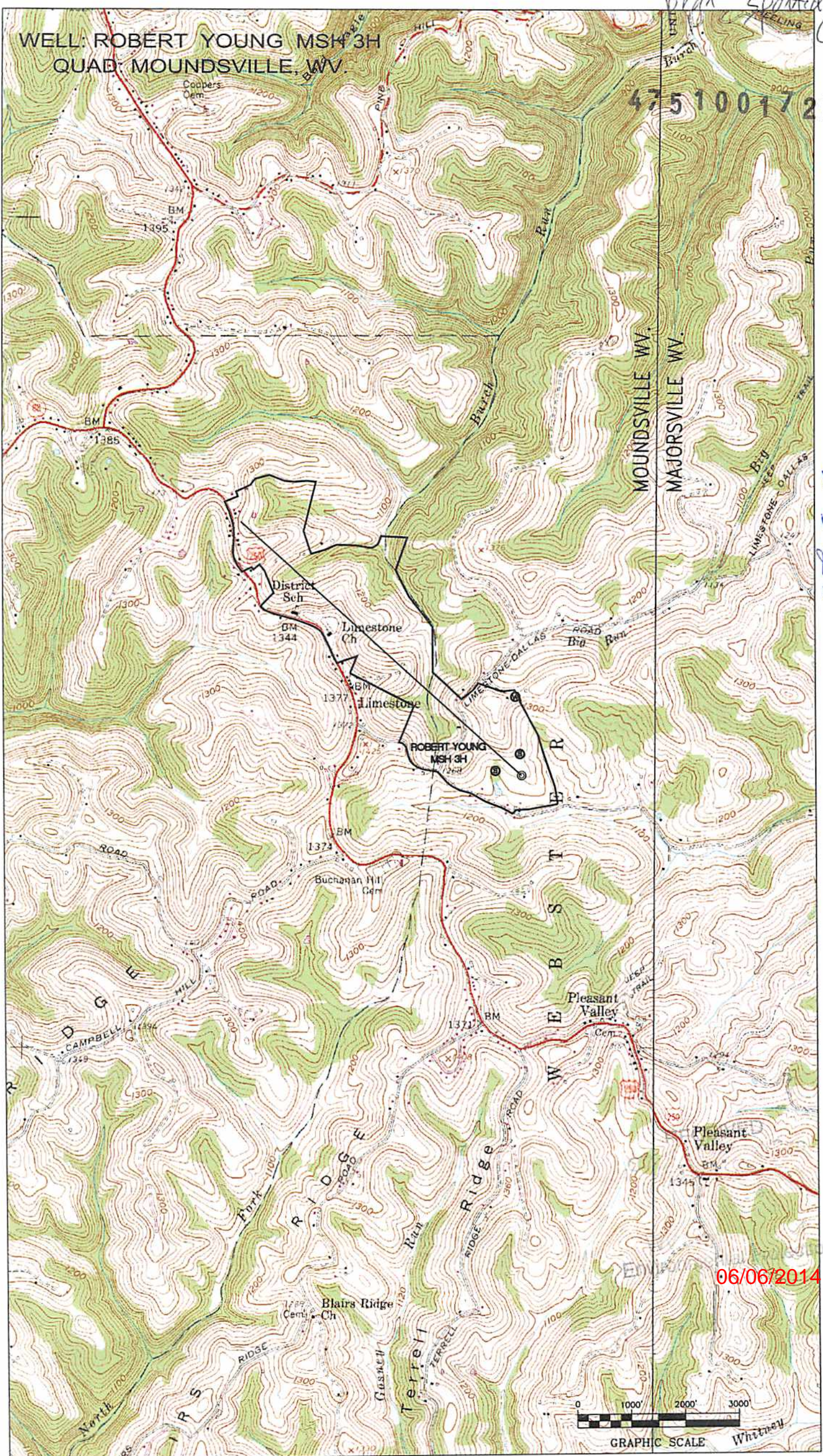
FEB 27 2014

WELL: ROBERT YOUNG MSH 3H  
QUAD: MOUNDSVILLE, WV.

plat spotted  
civ

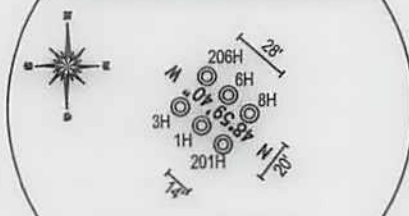
4751001727

MSK  
10/7/200  
PL  
10/7/12



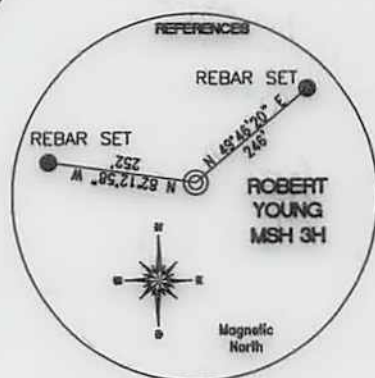
06/06/2014

REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS



8H API# = 051-01493

TH (UTM-NAD 83)	
N)	4420114.4
E)	531311.5
BOTTOM HOLE (UTM-NAD 83)	
N)	4421525.8
E)	529711.1



NTS

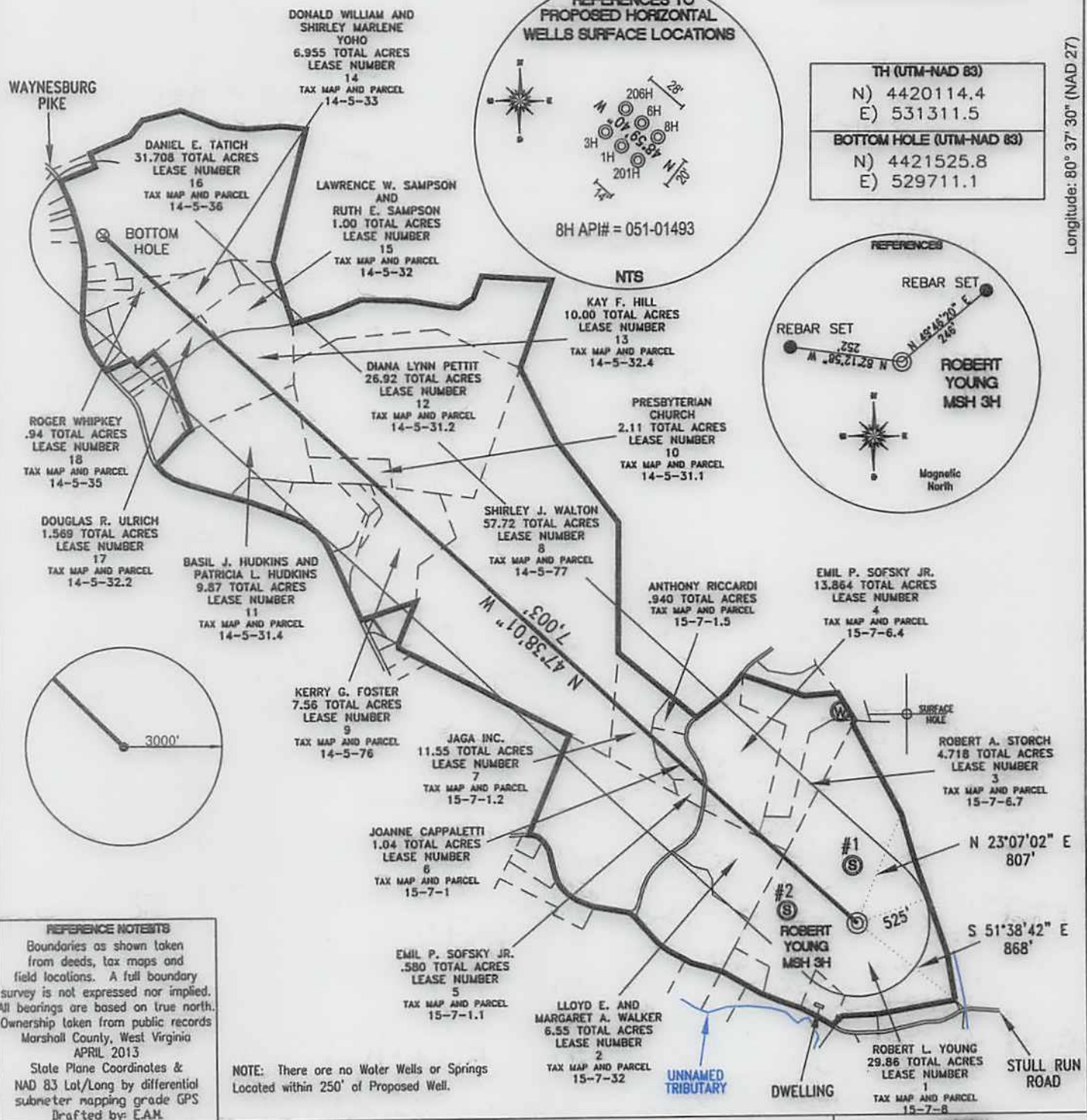
KAY F. HILL  
10.00 TOTAL ACRES  
LEASE NUMBER 13  
TAX MAP AND PARCEL 14-5-32.4

PRESBYTERIAN CHURCH  
2.11 TOTAL ACRES  
LEASE NUMBER 10  
TAX MAP AND PARCEL 14-5-31.1

EMIL P. SOFSKY JR.  
13.864 TOTAL ACRES  
LEASE NUMBER 4  
TAX MAP AND PARCEL 15-7-6.4

ROBERT A. STORCH  
4.718 TOTAL ACRES  
LEASE NUMBER 3  
TAX MAP AND PARCEL 15-7-6.7

ROBERT L. YOUNG  
29.86 TOTAL ACRES  
LEASE NUMBER 1  
TAX MAP AND PARCEL 15-7-8



**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 Marshall County, West Virginia APRIL 2013  
State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS  
Drafted by: E.A.M.

NOTE: There are no Water Wells or Springs Located within 250' of Proposed Well.

FILE #: CHE 059  
DRAWING #: 2202  
SCALE: Plat - 1"=1000'  
Tick Mark - 1"=2000'  
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:   
L.L.S. #2124 : Ernest J. Benchek III



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

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

WATERSHED: WHEELING CREEK  
COUNTY/DISTRICT: MARSHALL/WEBSTER  
SURFACE OWNER: ROBERT L. YOUNG  
OIL & GAS ROYALTY OWNER: ROBERT L. YOUNG  
LEASE NUMBERS:

DATE: SEPTEMBER 26, 2013  
OPERATOR'S WELL #: ROBERT YOUNG MSH 3H  
API WELL #: 47 STATE 51 COUNTY 01727 PERMIT H6A  
ELEVATION: 1235'  
QUADRANGLE: MOUNDSVILLE, WV.  
ACREAGE: 29.86 +/-  
ACREAGE: 195.445 +/- 06/06/2014

TARGET FORMATION: MARCELLUS  
WELL OPERATOR: CHESAPEAKE APPALACHIA, LLC.  
ADDRESS: PO BOX 18496  
CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496

ESTIMATED DEPTH: TVD: 6,502' TMD: 13,301'  
DESIGNATED AGENT: ERIC B. GILLESPIE  
ADDRESS: PO BOX 6070  
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

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