



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

April 15, 2013

WELL WORK PERMIT

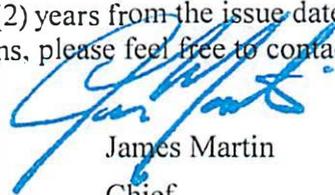
Horizontal 6A Well

This permit, API Well Number: 47-6900161, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: CHARLES FRYE OHI IH
Farm Name: FRYE, CHARLES AND DOROTHY

API Well Number: 47-6900161

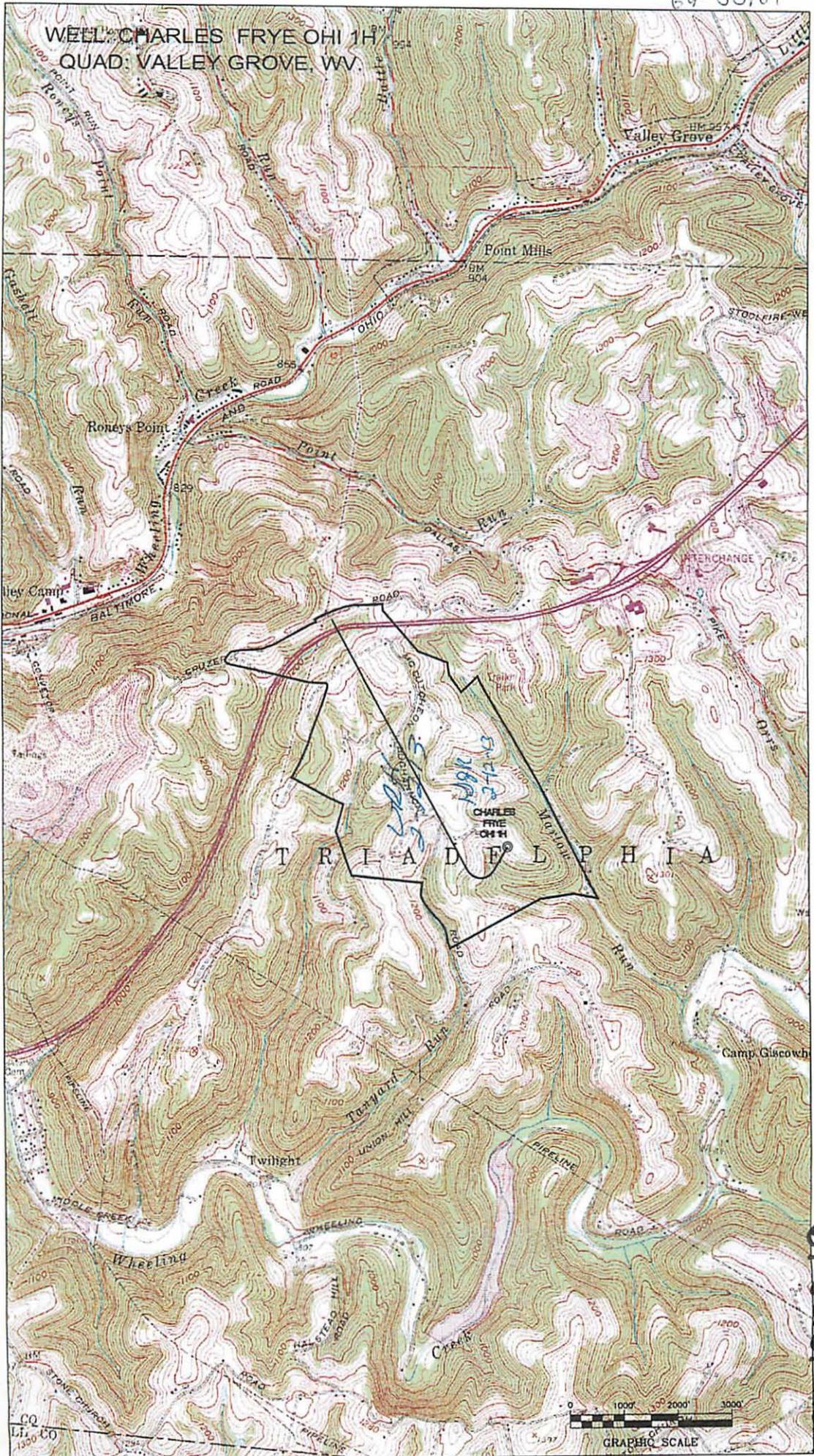
Permit Type: Horizontal 6A Well

Date Issued: 04/15/2013

Promoting a healthy environment.

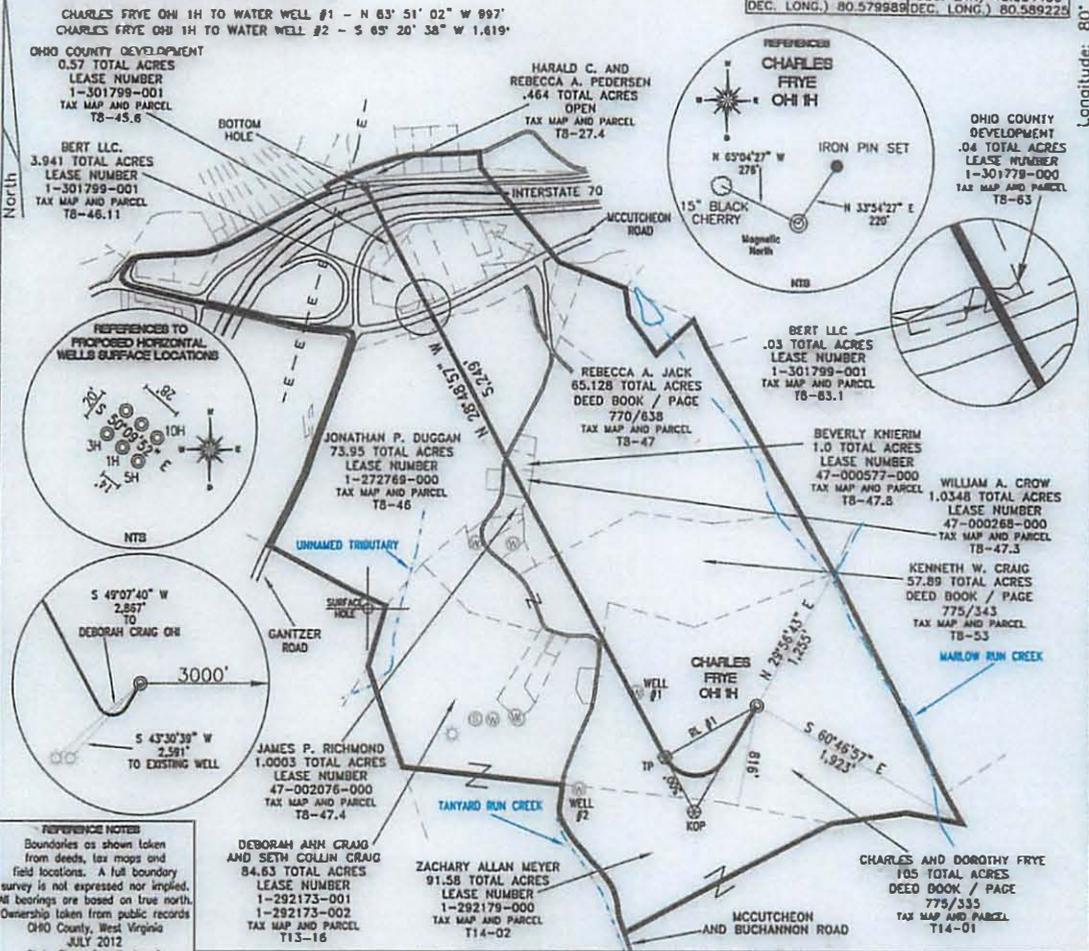
69-00161

WELL: CHARLES FRYE OHI 1H
QUAD: VALLEY GROVE, WV.



69-00161 H6A

TOP HOLE (NAD 83) N) 567504.9 E) 1666984.9 LAT.) 40°03'11.2" LONG.) 80°34'37.6" DEC. LAT.) 40.053102 DEC. LONG.) 80.577107	KOP (NAD 83) N) 566651.8 E) 1666471.4 LAT.) 40°03'02.7" LONG.) 80°34'44.1" DEC. LAT.) 40.050744 DEC. LONG.) 80.578905	TH (UTM-NAD 83) N) 4433736.8 E) 536070.0	REFERENCE LINES RL #1 S 61°11'03" W 861'	TP (NAD 83) N) 567089.9 E) 1666230.4 LAT.) 40°03'07.0" LONG.) 80°34'47.2" DEC. LAT.) 40.051938 DEC. LONG.) 80.579784	BOTTOM HOLE (NAD 83) N) 571695.1 E) 1663700.3 LAT.) 40°03'52.1" LONG.) 80°35'20.5" DEC. LAT.) 40.064479 DEC. LONG.) 80.589021
TOP HOLE (NAD 27) N) 567468.0 E) 1698419.4 LAT.) 40°03'10.9" LONG.) 80°34'38.3" DEC. LAT.) 40.053029 DEC. LONG.) 80.577312	KOP (NAD 27) N) 566614.8 E) 1697906.0 LAT.) 40°03'02.4" LONG.) 80°34'44.8" DEC. LAT.) 40.050670 DEC. LONG.) 80.579109	TH (UTM-NAD 27) N) 4434994.8 E) 535048.0		TP (NAD 27) N) 567052.9 E) 1697665.0 LAT.) 40°03'06.7" LONG.) 80°34'48.0" DEC. LAT.) 40.051865 DEC. LONG.) 80.579989	BOTTOM HOLE (NAD 27) N) 571652.2 E) 1695134.9 LAT.) 40°03'51.9" LONG.) 80°35'21.2" DEC. LAT.) 40.064406 DEC. LONG.) 80.589228



REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS

NTS

S 49°07'40" W 2,867'
TO DEBORAH CRAIG OHI

S 43°30'39" W 2,591'
TO EXISTING WELL

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 JULY 2012
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS Drafted by EAM

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



FILE #: CHE 046

DRAWING #: 2089

SCALE: 1" = 1200'

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

DATE: AUGUST 6, 2012

OPERATOR'S WELL #: CHARLES FRYE OHI 1H

API WELL #: 47 69 0016146A

STATE COUNTY PERMIT

WELL TYPE: Oil Waste Disposal Production Deep Gas Liquid Injection Storage Shallow

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,260'

COUNTY/DISTRICT: OHIO / TRIADDELPHIA QUADRANGLE: VALLEY GROVE, WV.

SURFACE OWNER: CHARLES AND DOROTHY FRYE ACREAGE: 105.00 +/-

OIL & GAS ROYALTY OWNER: CHARLES AND DOROTHY FRYE ACREAGE: 368.8581 +/-

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: 6,500' TMD: 12,145'

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

Longitude: 80° 32' 30" (NAD 27)

SURFACE HOLE DEC. LAT: 40.053029 SURVEYED LAT: 40° 03' 10.9"



west virginia department of environmental protection

● Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

April 15, 2013

WELL WORK PERMIT

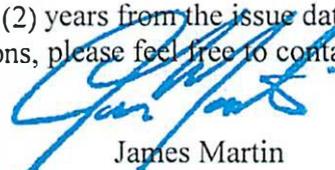
Horizontal 6A Well

This permit, API Well Number: 47-6900156, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: HOWARD SHACKELFORD OHI 1
Farm Name: SHACKELFORD, HOWARD L. AN

API Well Number: 47-6900156

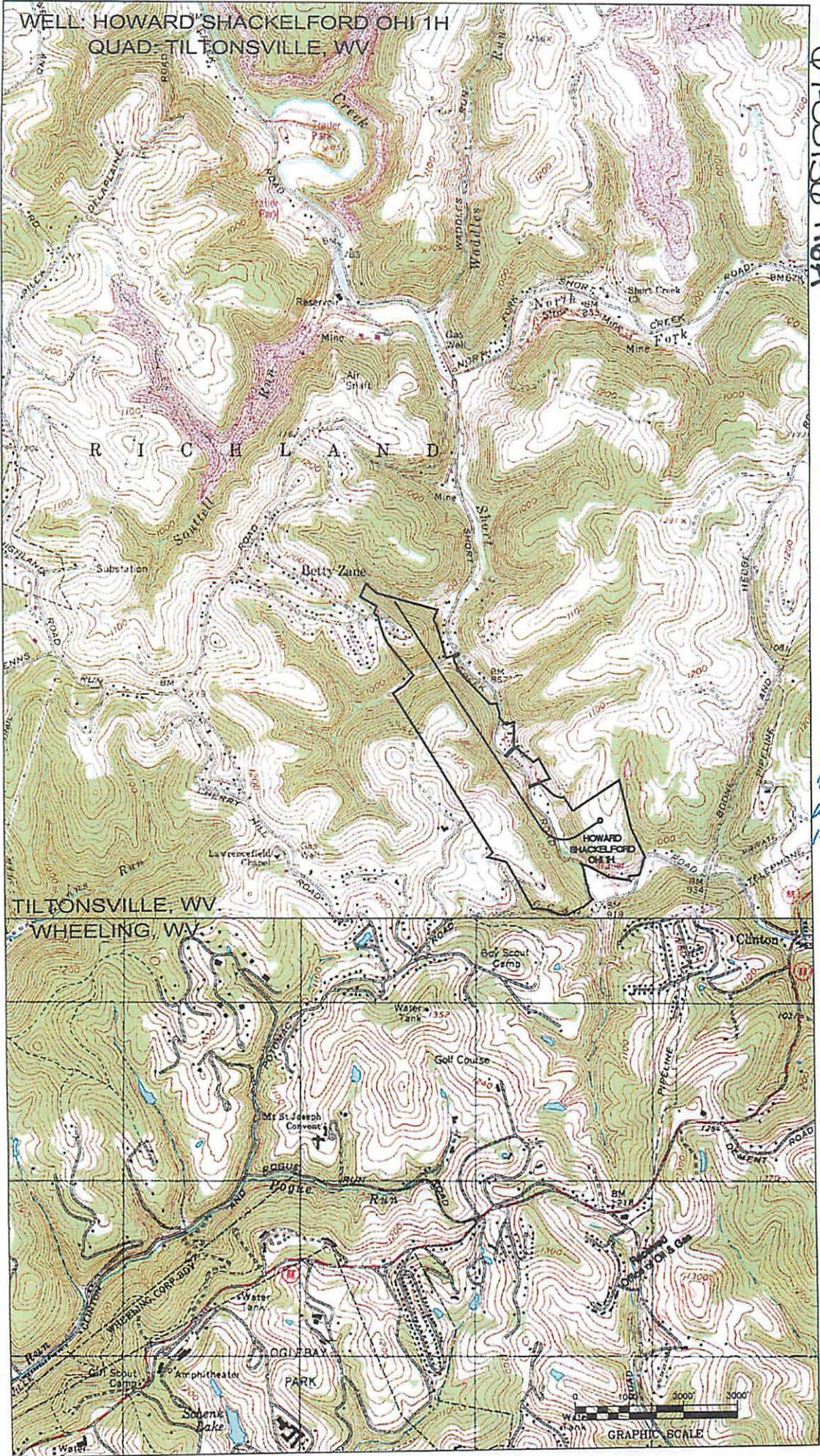
Permit Type: Horizontal 6A Well

Date Issued: 04/15/2013

Promoting a healthy environment.

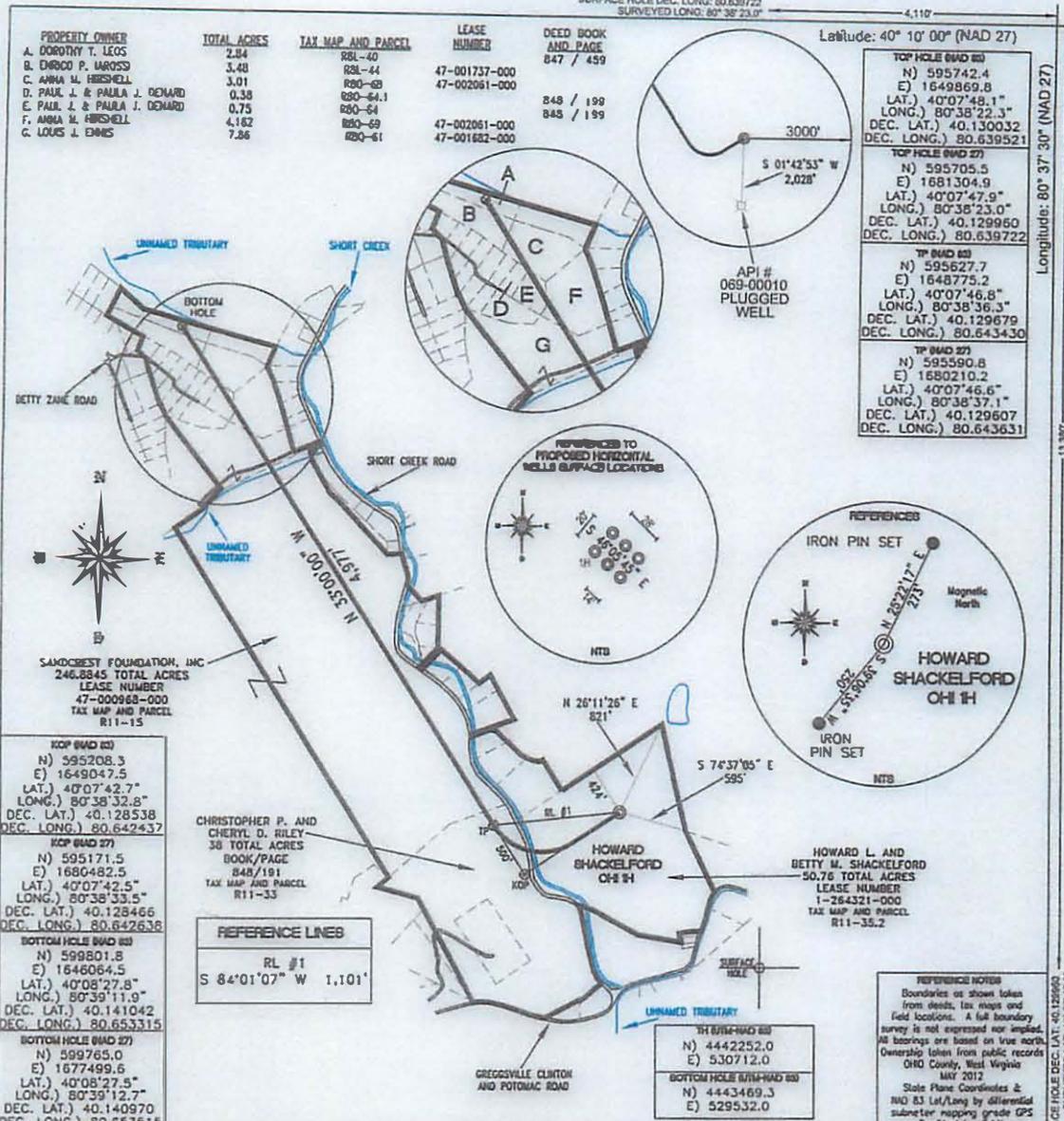
WELL: HOWARD SHACKELFORD OHI 1H
QUAD: TILTONSVILLE, WV

69-00156 H6A



BOK
1/8/2013
6:28 PM
1-8-13

GRAPHIC SCALE



PROPERTY OWNER	TOTAL ACRES	TAX MAP AND PARCEL	LEASE NUMBER	DEED BOOK AND PAGE
A. DOROTHY T. LEOS	2.84	R8L-40		
B. DERRICK P. HARROSS	3.48	R2L-44	47-001737-000	847 / 459
C. ANNA M. HIRSHMELL	3.01	R80-68	47-002061-000	
D. PAUL J. & PAULA J. DENARD	0.38	R20-64.1		848 / 199
E. PAUL J. & PAULA J. DENARD	0.75	R20-64		845 / 199
F. ANNA M. HIRSHMELL	4.162	R80-69	47-002061-000	
G. LOUIS J. EMMS	7.86	R20-61	47-001682-000	

Latitude: 40° 10' 00" (NAD 27)

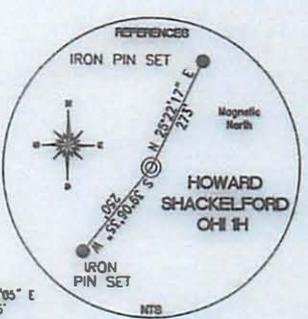
Longitude: 80° 37' 30" (NAD 27)

TOP HOLE GRID #	N	E	LONG.	DEC. LAT.	DEC. LONG.
TOP HOLE GRID #0	595742.4	1649869.8	80°38'22.3"	40°07'48.1"	80.639521
TOP HOLE GRID #1	595705.5	1681304.9	80°38'23.0"	40°07'47.9"	80.639722
TOP HOLE GRID #2	595627.7	1648775.2	80°38'36.3"	40°07'46.8"	80.643430
TOP HOLE GRID #3	595590.8	1680210.2	80°38'37.1"	40°07'46.6"	80.643631

TOP GRID #0	N	E	LONG.	DEC. LAT.	DEC. LONG.
TOP GRID #0	595208.3	1649047.5	80°38'32.8"	40°07'42.7"	80.642437
TOP GRID #1	595171.5	1680482.5	80°38'33.5"	40°07'42.5"	80.642638
BOTTOM HOLE GRID #0	599801.8	1646064.5	80°39'11.0"	40°08'27.8"	80.653515
BOTTOM HOLE GRID #1	599765.0	1677499.6	80°39'12.7"	40°08'27.5"	80.653515

REFERENCE LINES

RL #	Bearing	Distance
RL #1	S 84°01'07" W	1,101'



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 MAY 2012
State Plane Coordinates ± NAD 83 Lat/Long by differential submeter mapping grade GPS Drafted by EAM

FILE #: CHE 104
DRAWING #: 2070
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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. Benckek III



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

OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WY 25304

DATE: DECEMBER 07, 2012

OPERATOR'S WELL #: HOWARD SHACKELFORD OHI 1

API WELL #: 47 69 00156 H6A
STATE COUNTY PERMIT

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,090'

COUNTY/DISTRICT: OHIO / RICHLAND QUADRANGLE: TILTONSVILLE, WV.

SURFACE OWNER: HOWARD L. AND BETTY M. SHACKELFORD ACREAGE: 50.76 +/-

OIL & GAS ROYALTY OWNER: HOWARD L. AND BETTY M. SHACKELFORD ACREAGE: 358.1265 +/-

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: 5,855' TMD: 11,200'

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



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

April 15, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101621, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

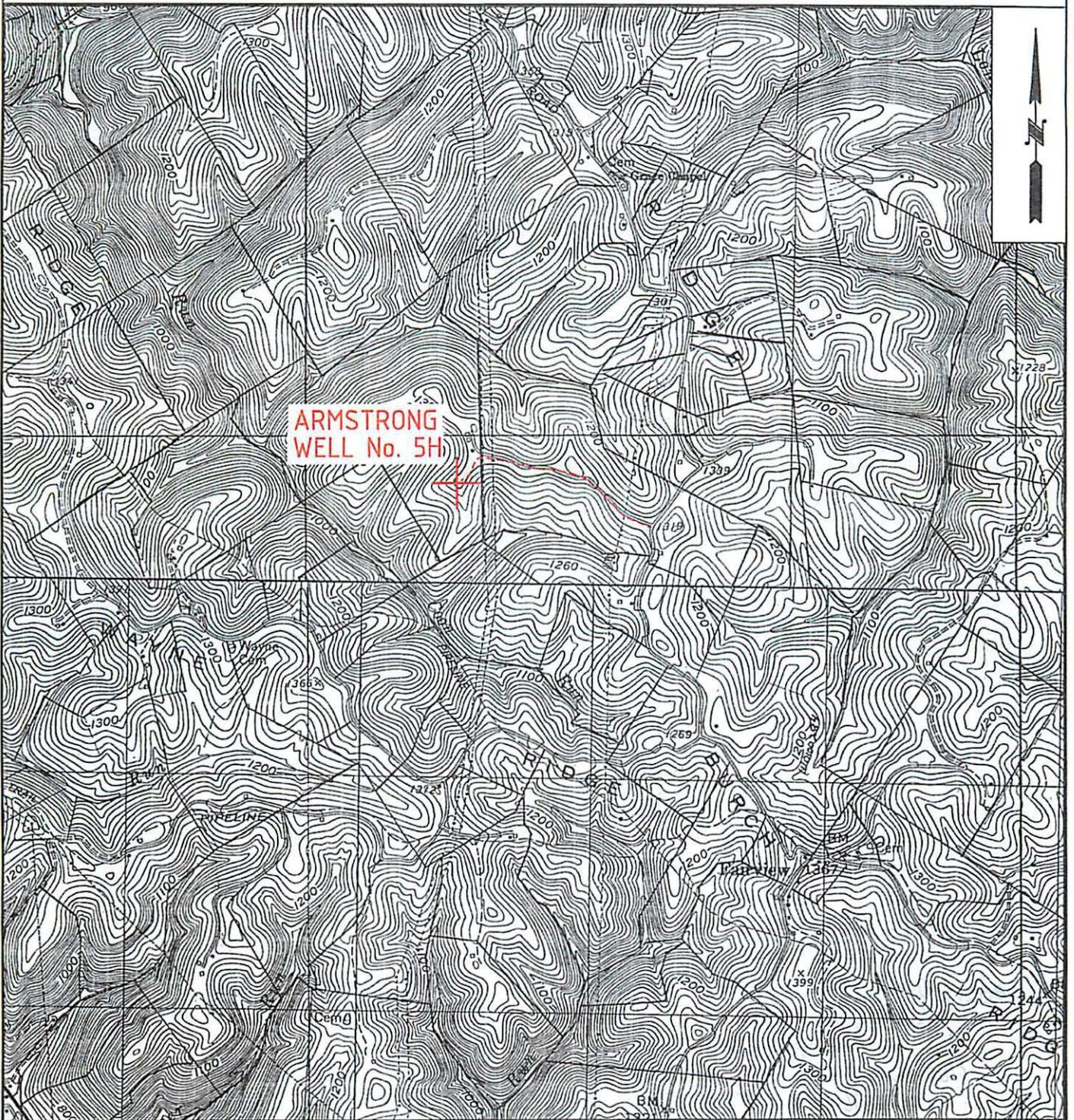
Operator's Well No: ARMSTRONG NO. 51
Farm Name: CNX GAS COMPANY
API Well Number: 47-5101621
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.

WW-9

PROPOSED ARMSTRONG WELL No. 5H

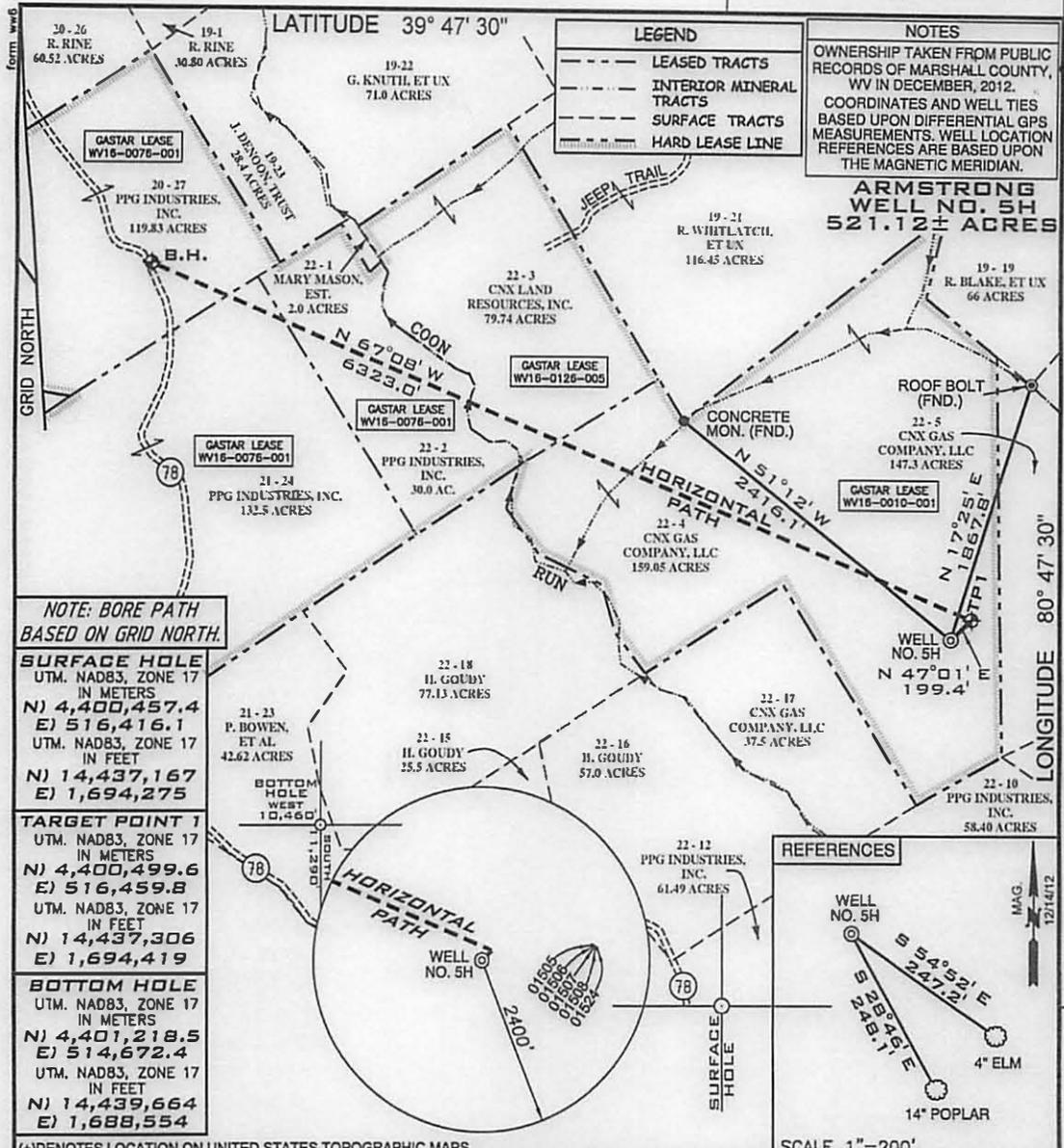
SUPPLEMENT PG 2



ARMSTRONG
WELL No. 5H



<p><i>Case</i> 1-25-13</p> <p><i>DMH</i> 1-25-13</p>	<p>OPERATOR</p> <p>GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301</p>	<p>TOPO SECTION</p> <p>POWHATAN POINT 7.5'</p>	<p>LEASE NAME</p> <p>ARMSTRONG</p>
	<p>WO120316</p>	<p>SCALE:</p> <p>1"=2000'</p>	<p>DATE:</p> <p>DATE: 12/27/12</p>

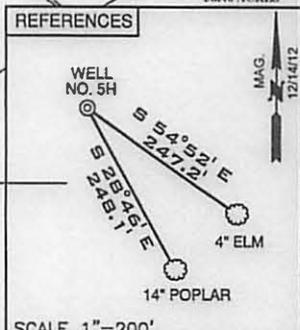


NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,457.4
 E) 516,416.1
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,167
 E) 1,694,275

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,499.6
 E) 516,459.8
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,306
 E) 1,694,419

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,218.5
 E) 514,672.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,439,664
 E) 1,688,554



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_5H

SCALE 1" = 1000'

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

P.S. Jonathan N. White
 2122



WVDEP
 OFFICE OF OIL & GAS
 601 5TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARM TRONG NO. 5H

API WELL NO. 47-051-1621 H6A

STATE WV COUNTY MARSHALL PERMIT 1621 H6A

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

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER WV16-0010-001, WV16-0076-001, WV16-0126-005

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 521.12

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

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301

COUNTY NAME
 PERMIT



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

April 15, 2013

WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-5101620, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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James Martin
Chief

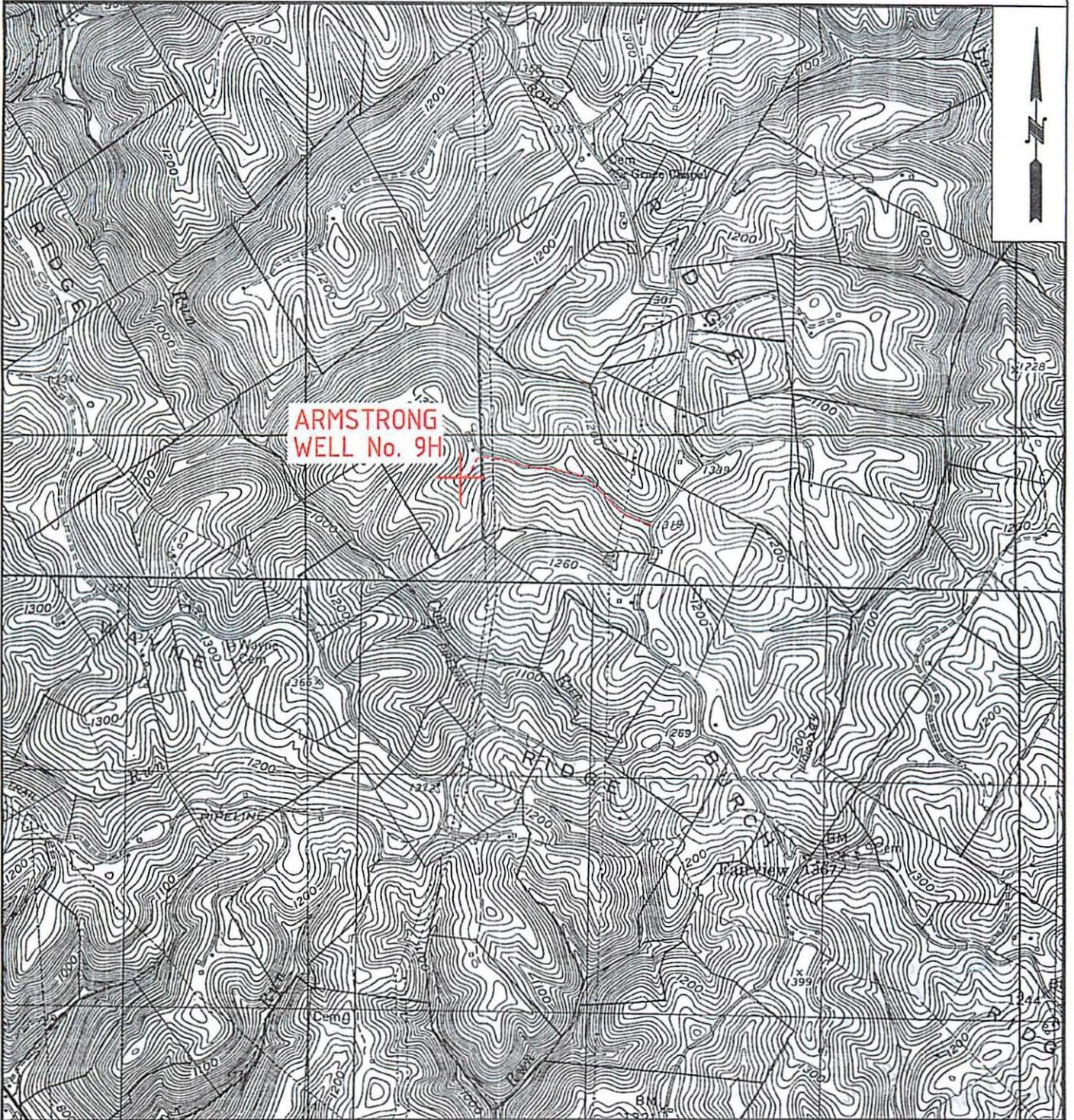
Operator's Well No: ARMSTRONG NO. 9H
Farm Name: CNX GAS COMPANY
API Well Number: 47-5101620
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.

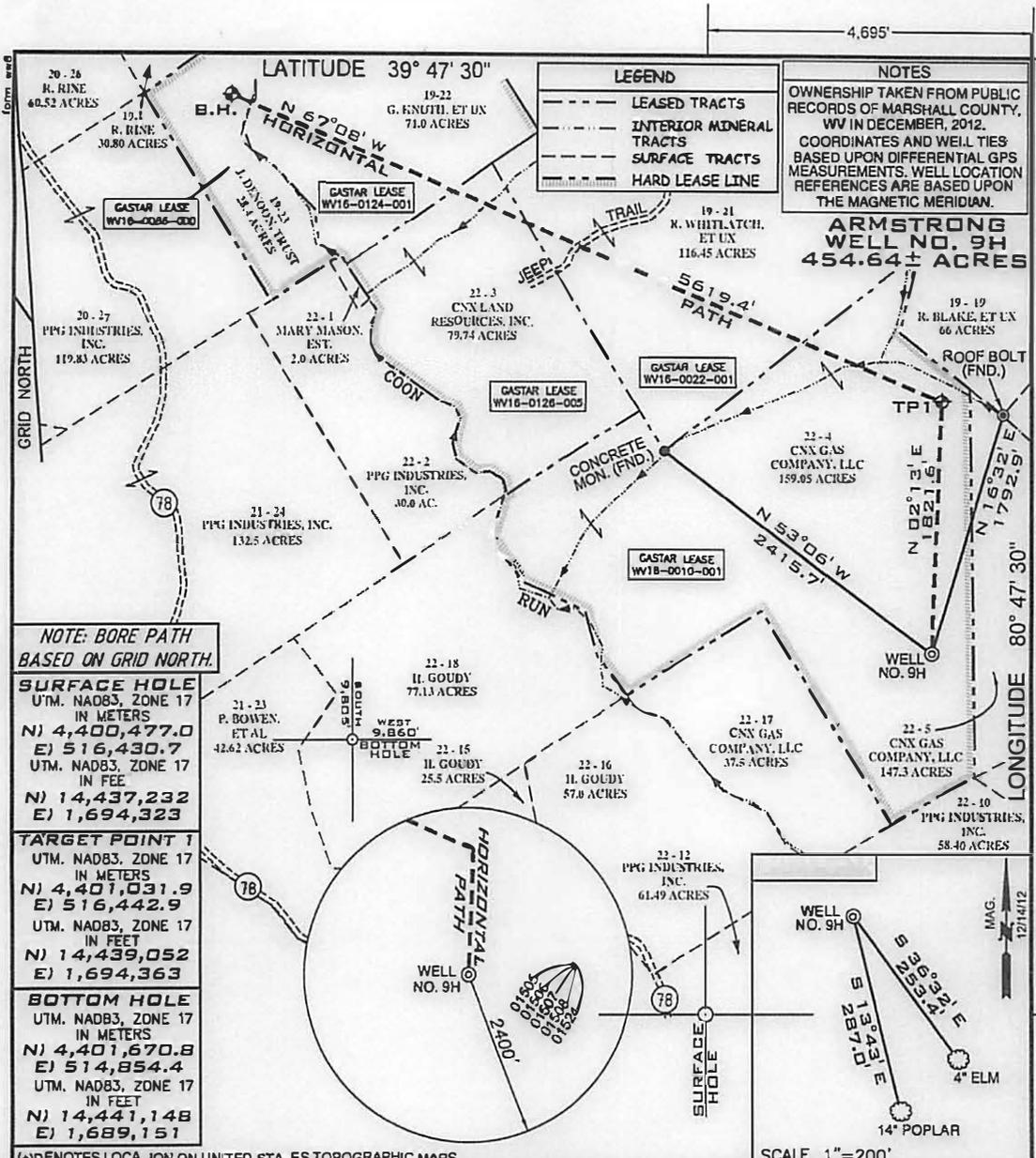
WW-9

PROPOSED ARMSTRONG WELL No. 9H

SUPPLEMENT PG 2



<p><i>Case 1-25-13</i></p> <p><i>DMH 1-25-13</i></p>	<p>OPERATOR GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301</p>	<p>TOPO SECTION POWHATAN POINT 7.5'</p>	<p>LEASE NAME ARMSTRONG</p>
		<p>SCALE: 1"=2000'</p>	<p>DATE: DATE: 12/27/12</p>
<p>W0120316</p>			



NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,477.0
 E) 516,430.7
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,232
 E) 1,694,323

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,031.9
 E) 516,442.9
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,439,052
 E) 1,694,363

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,670.8
 E) 514,854.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,441,148
 E) 1,689,151

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_9H

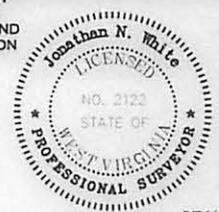
SCALE 1" = 1000'

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

P.S. Jonathan N. White
 2122



WVDEP
 OFFICE OF OIL & GAS
 601 5TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 9H
 API WELL NO. _____

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

STATE 47 COUNTY 051 PERMIT 01620 H6A

LOCATION ELEVATION 1278' WATERSHED _____ TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER WV16-0086-000, WV16-0124-001, WV16-0010-001, WV16-0022-001, WV16-0126-005

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 454.64

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
 PERFORATE NEW FOR ATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS PLUG & ABANDON ___ CLEAN OUT & REPLUG ___ ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN
 ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301

COUNTY NAME
 PERMIT



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. Huflihan, Cabinet Secretary
www.dep.wv.gov

April 15, 2013

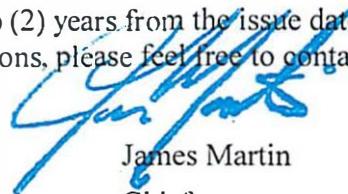
WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-5101619, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: ARMSTRONG NO. 8H
Farm Name: CNX GAS COMPANY, LLC

API Well Number: 47-5101619

Permit Type: Horizontal 6A Well

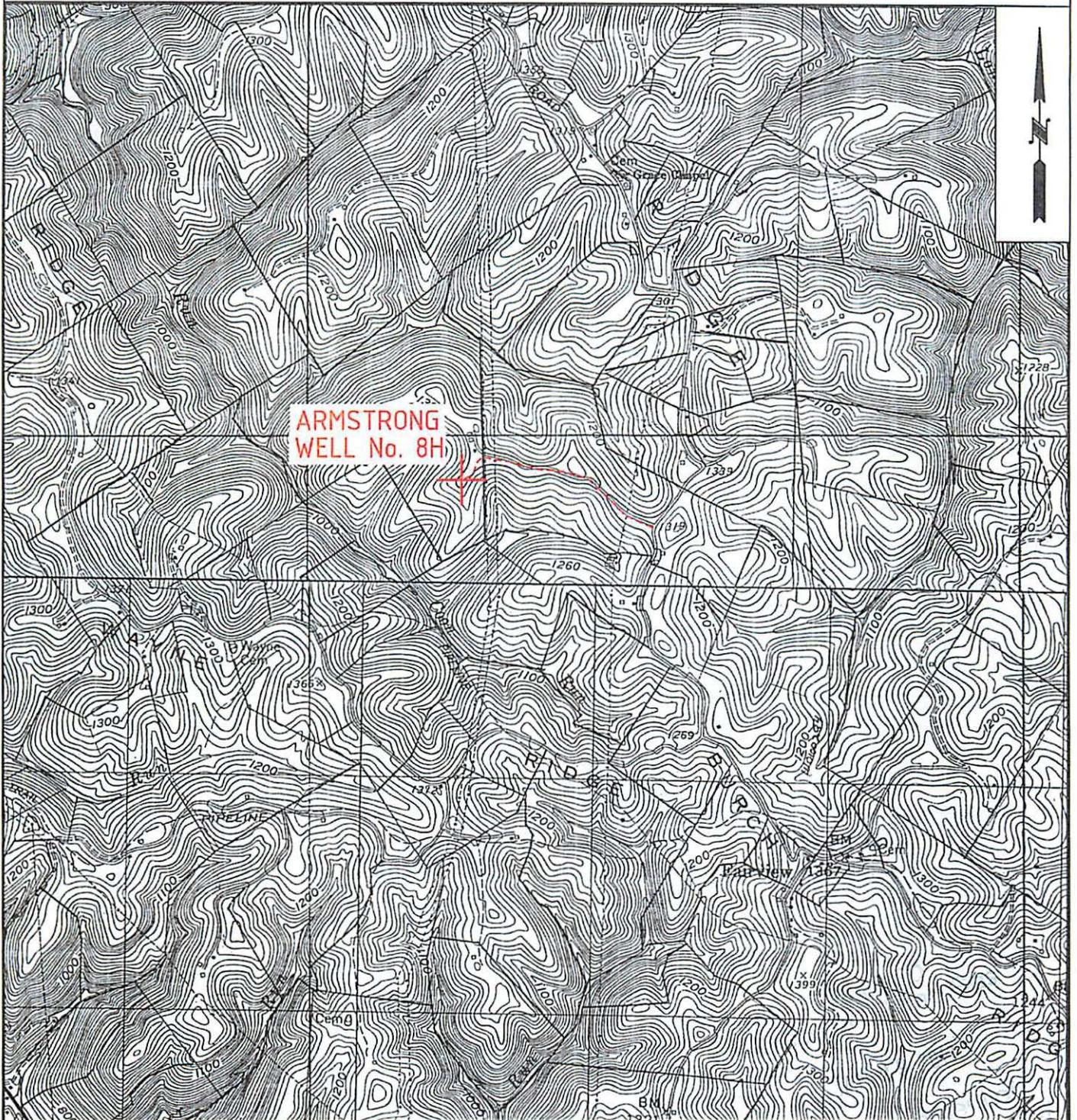
Date Issued: 04/15/2013

Promoting a healthy environment.

WW-9

PROPOSED ARMSTRONG WELL No. 8H

SUPPLEMENT PG 2



ARMSTRONG
WELL No. 8H

Cell
1-25-13

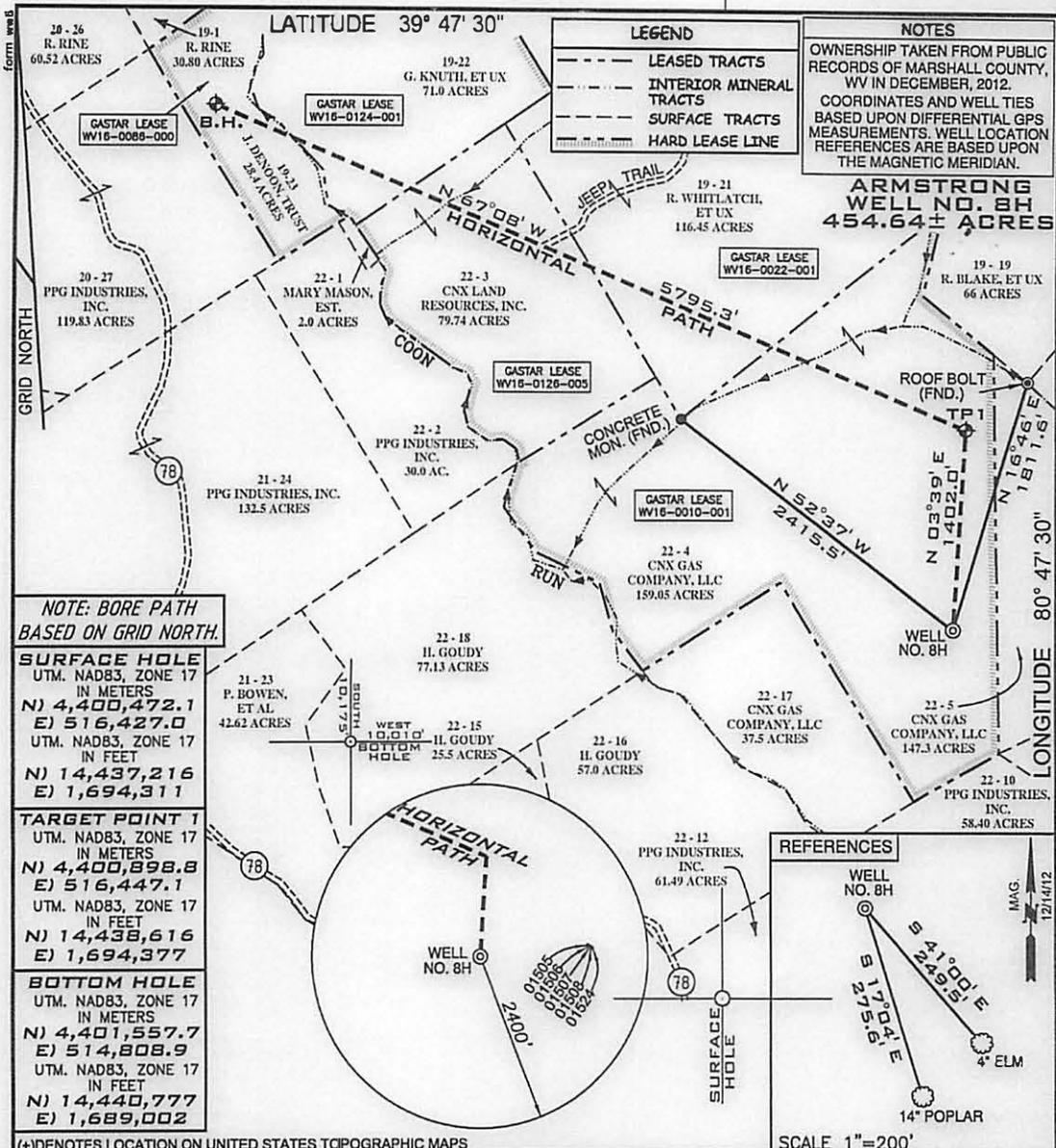
PMH
1-25-13

W0120316

OPERATOR
GASTAR EXPLORATION
USA, Inc.
229 W Main Street, Suite 301
Clarksburg, WV 26301

TOPO SECTION
POWHATAN POINT 7.5'
SCALE:
1" = 2000'

LEASE NAME
ARMSTRONG
DATE:
DATE: 12/27/12

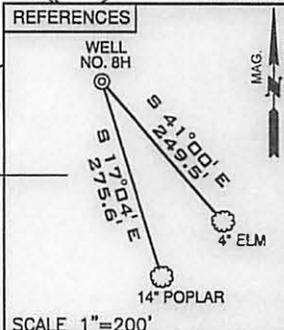


NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,472.1
 E) 516,427.0
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,216
 E) 1,694,311

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,898.8
 E) 516,447.1
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,438,616
 E) 1,694,377

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,557.7
 E) 514,808.9
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,440,777
 E) 1,689,002



(*) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_8H

SCALE 1" = 1000'

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

P.S. Jonathan N. White

Jonathan N. White
 LICENSED
 NO. 2122
 STATE OF WEST VIRGINIA
 PROFESSIONAL SURVEYOR

SCALE 1" = 200'

WVDEP
 OFFICE OF OIL & GAS
 601 5TH STREET
 CHARLESTON, WV 25304

DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 8H

API WELL NO. 47-051-01619 H6A

STATE WV COUNTY MARSHALL PERMIT PERMIT

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

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT RANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER WV16-0088-000, WV16-0124-001, WV16-0010-001, WV16-0022-001, WV16-0126-005

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 454.64

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHY ICAL CHANGE (SPECIFY) _____

TARGET FOR ATION MARCELLUS ESTI ATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301 ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301



SEAL

COUNTY NAME
 PERMIT



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

April 15, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101618, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: ARMSTRONG NO. 7H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101618
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.

WW-9

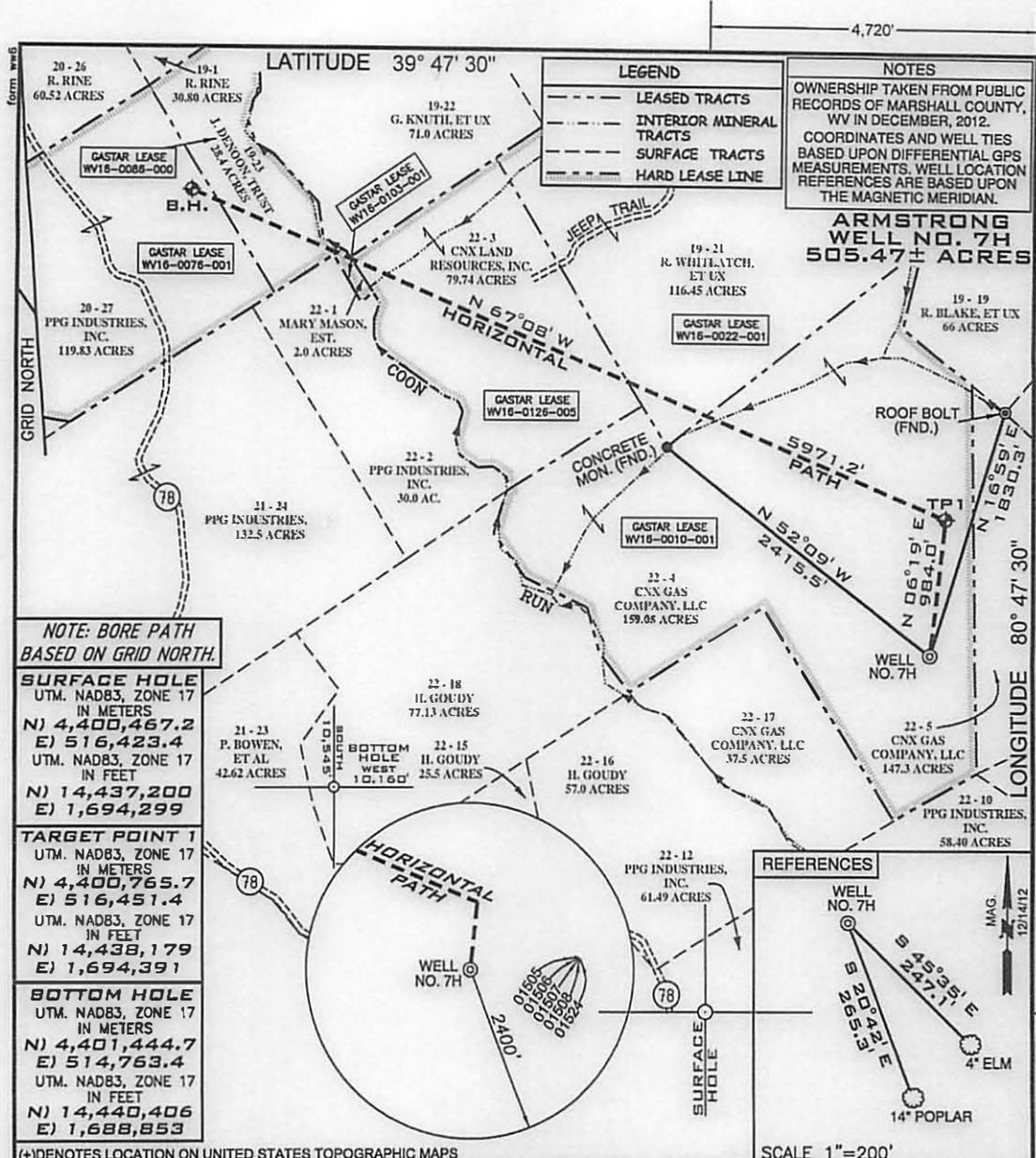
PROPOSED ARMSTRONG WELL No. 7H

SUPPLEMENT PG 2



<p><i>Clave</i> 1-25-17</p> <p><i>DMH</i> 1-25-13</p>	<p>OPERATOR GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301</p>	<p>TOPO SECTION POWHATAN POINT 7.5'</p>	<p>LEASE NAME ARMSTRONG</p>
	<p>SCALE: 1"=2000'</p>	<p>DATE: DATE: 12/27/12</p>	

W0120316



NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,467.2
 E) 516,423.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,200
 E) 1,694,299

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,765.7
 E) 516,451.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,438,179
 E) 1,694,391

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,444.7
 E) 514,763.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,440,406
 E) 1,688,853

REFERENCES

WELL NO. 7H
 5 45°35' E
 247.7'

5 26°51' E
 204.2'

4' ELM
 14" POPLAR

SCALE 1"=200'

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_7H

SCALE 1" = 1000'

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

P.S. Jonathan N. White



WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 7H

API WELL NO. 47-051-01618 H6A

STATE WEST VIRGINIA COUNTY MARSHALL PERMIT PERMIT

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

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT RANKLIN COUNTY MARSHALL

QUADRANGLE POWATAN POINT 7.5' LEASE NUMBER WV16-0086-000, WV16-0103-001, WV16-0022-001, WV16-0010-001, WV16-0076-001, WV16-0126-005

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 505.47

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

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301 ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301



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

April 15, 2013

WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-5101617, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

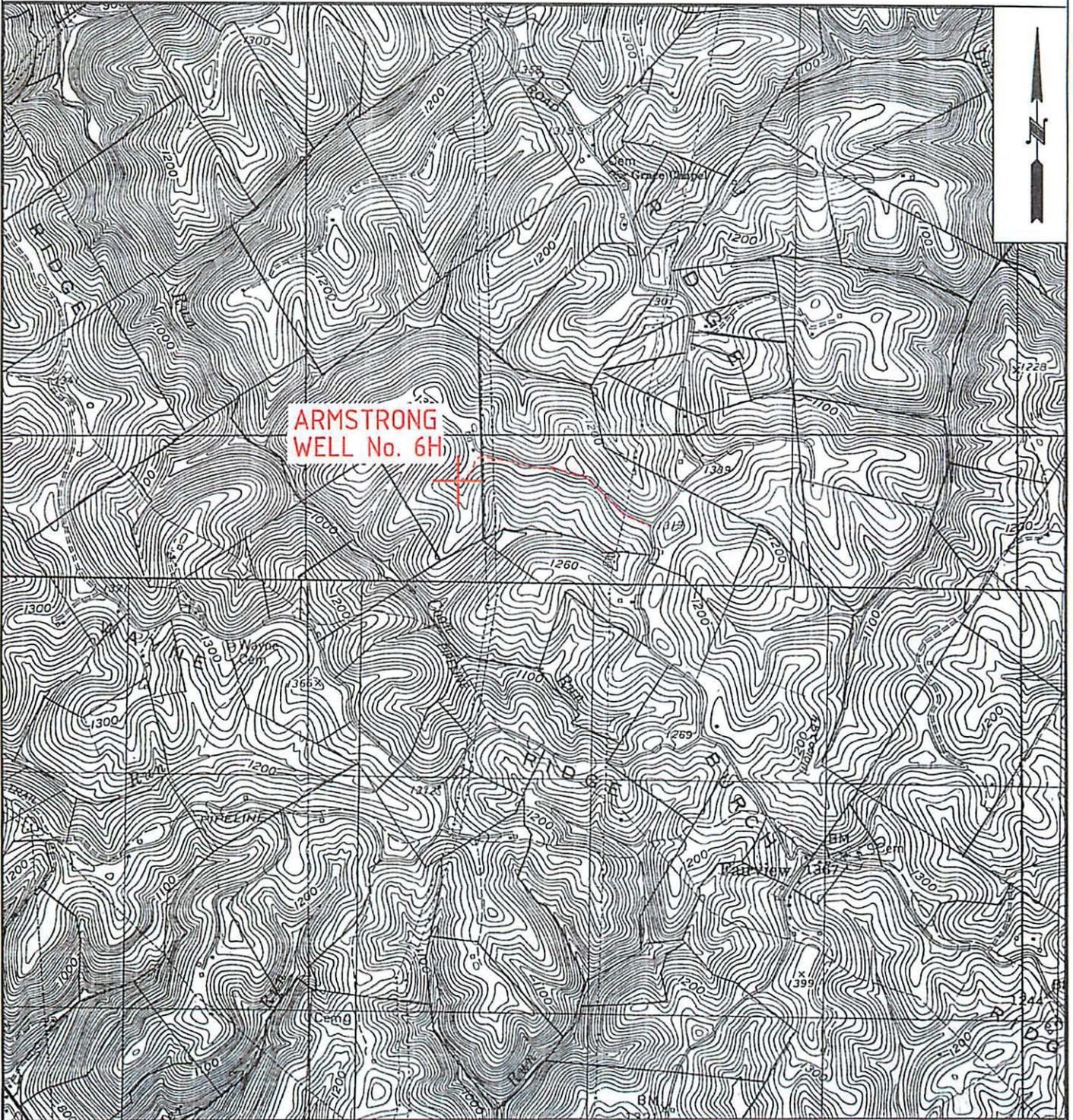
Operator's Well No: ARMSTRONG NO. 6H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101617
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.

WW-9

PROPOSED ARMSTRONG WELL No. 6H

SUPPLEMENT PG 2



ARMSTRONG
WELL No. 6H

Case
1-25-13

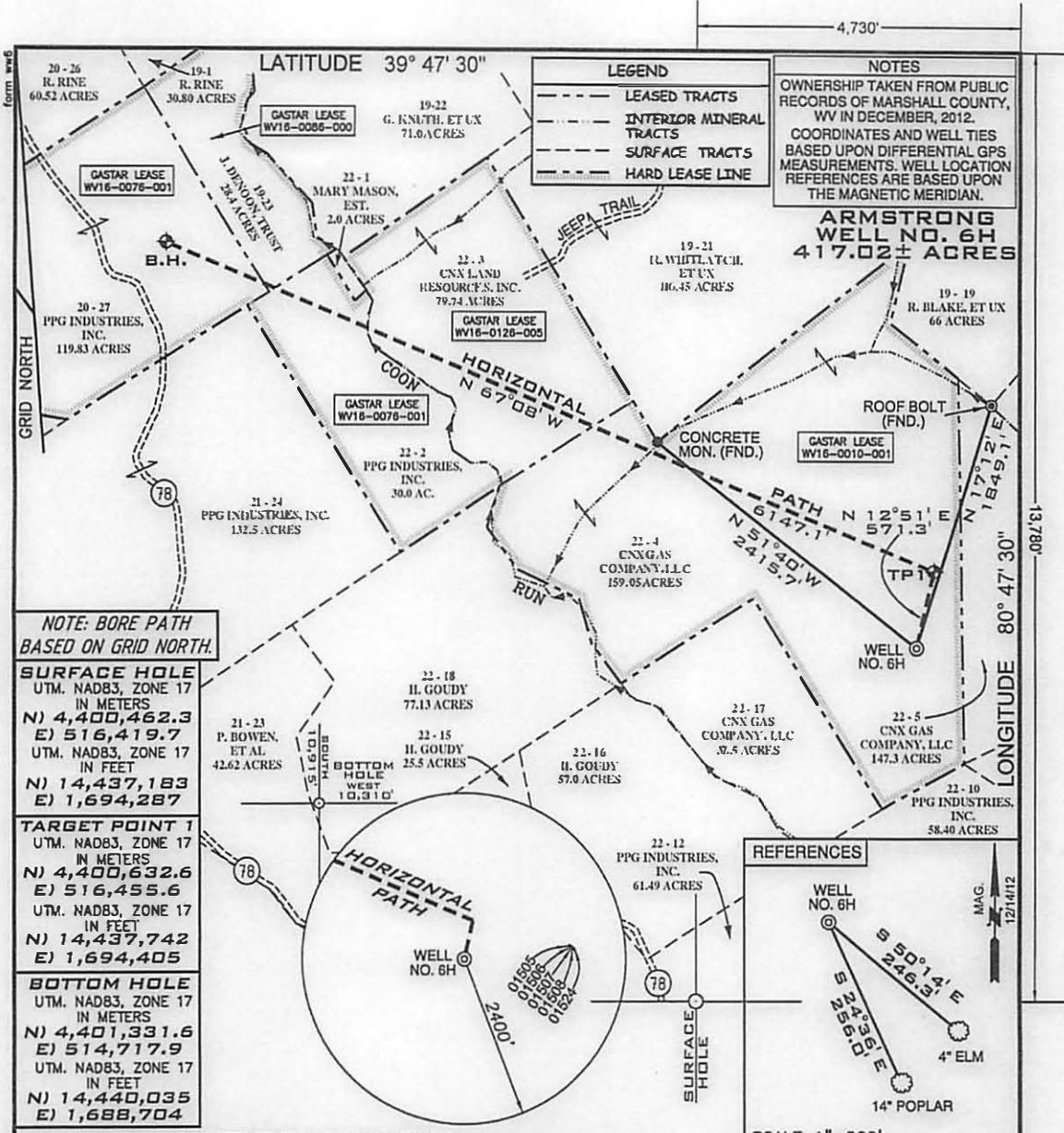
DMH
1-25-13

W0120316

OPERATOR
GASTAR EXPLORATION
USA, Inc.
229 W Main Street, Suite 301
Clarksburg, WV 26301

TOPO SECTION
POWHATAN POINT 7.5'
SCALE:
1"=2000'

LEASE NAME
ARMSTRONG
DATE:
DATE: 12/27/12



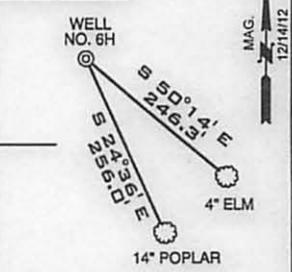
NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,462.3
 E) 516,419.7
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,183
 E) 1,694,287

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,632.6
 E) 516,455.6
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,742
 E) 1,694,405

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,331.6
 E) 514,717.9
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,440,035
 E) 1,688,704

REFERENCES



SCALE 1"=200'

(*) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)
 DRAWING NUMBER ARMSTRONG_WP_6H
 SCALE 1" = 1000'
 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

P.S. Jonathan N. White
 2122



SEAL

WVDEP
 OFFICE OF OIL & GAS
 801 57TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 6H
 API WELL NO.

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

47-051-01617-H6A
 STATE COUNTY PERMIT

LOCATION ELEVATION 1278' WATERSHED _____ TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE POWATAN POINT 7.5' LEASE NUMBER WV16-0086-000, WV16-0010-001, WV16-0076-001, WV16-0126-005

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 417.02

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

TARGET FORMATION MARCELLUS PLUG & ABANDON CLEANOUT & REPLUG

ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301 ADDRESS 229 W MAIN STREET, SUITE 301 CLARKSBURG WV, 26301

COUNTY NAME
 PERMIT



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

April 15, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101616, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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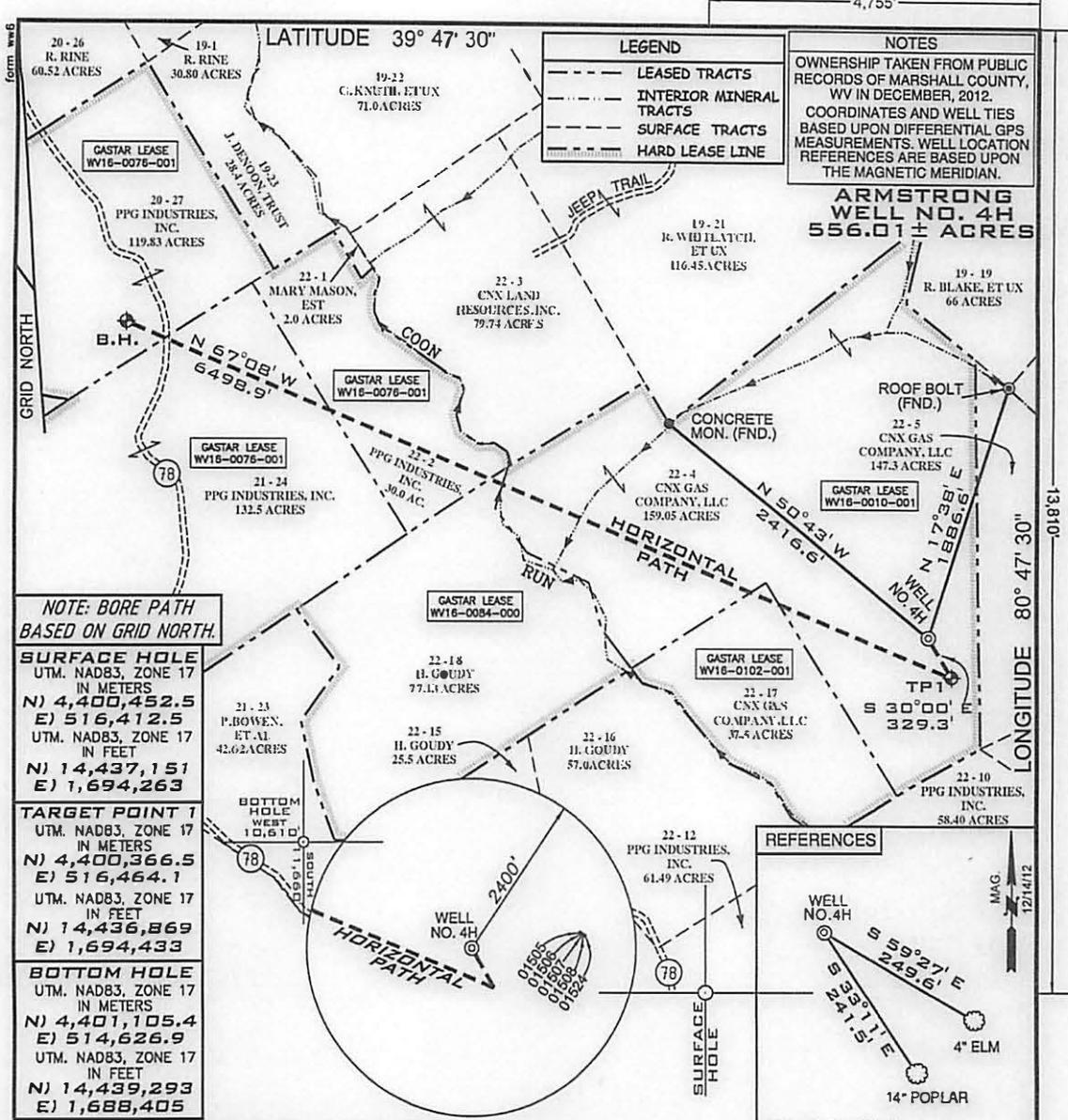
In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: ARMSTRONG NO. 4H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101616
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.



NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,452.5
 E) 516,412.5
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,151
 E) 1,694,263

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,366.5
 E) 516,464.1
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,436,869
 E) 1,694,433

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,401,105.4
 E) 514,626.9
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,439,293
 E) 1,688,405

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)
 DRAWING NUMBER ARMSTRONG_WP_4H
 SCALE 1" = 1000'
 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

P.S. Jonathan N. White

Jonathan N. White
 LICENSED
 NO. 2122
 STATE OF WEST VIRGINIA
 PROFESSIONAL SURVEYOR

SCALE 1"=200'

WVDEP
 OFFICE OF OIL & GAS
 601 5TH STREET
 CHARLESTON, WV 25304

DATE: DECEMBER 27, 2012
 OPERATORS WELL NO. ARMSTRONG NO. 4H
 API/WELL NO. 47-051-01616 HGA
 STATE WV COUNTY MARSHALL PERMIT 01616 HGA

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

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN
 DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE POWHATAN POI T 7.5' LEASE NUMBER WV16-0102-001
WV16-0010-001, WV16-0076-001, WV16-0084-000

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05
 OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 556.01
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERF RATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____
 PLUG & ABANDON CLEANOUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN
 ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301



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

April 15, 2013

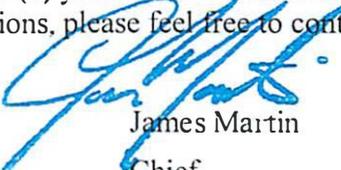
WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-5101615, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

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Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: ARMSTRONG NO. 3H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101615
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

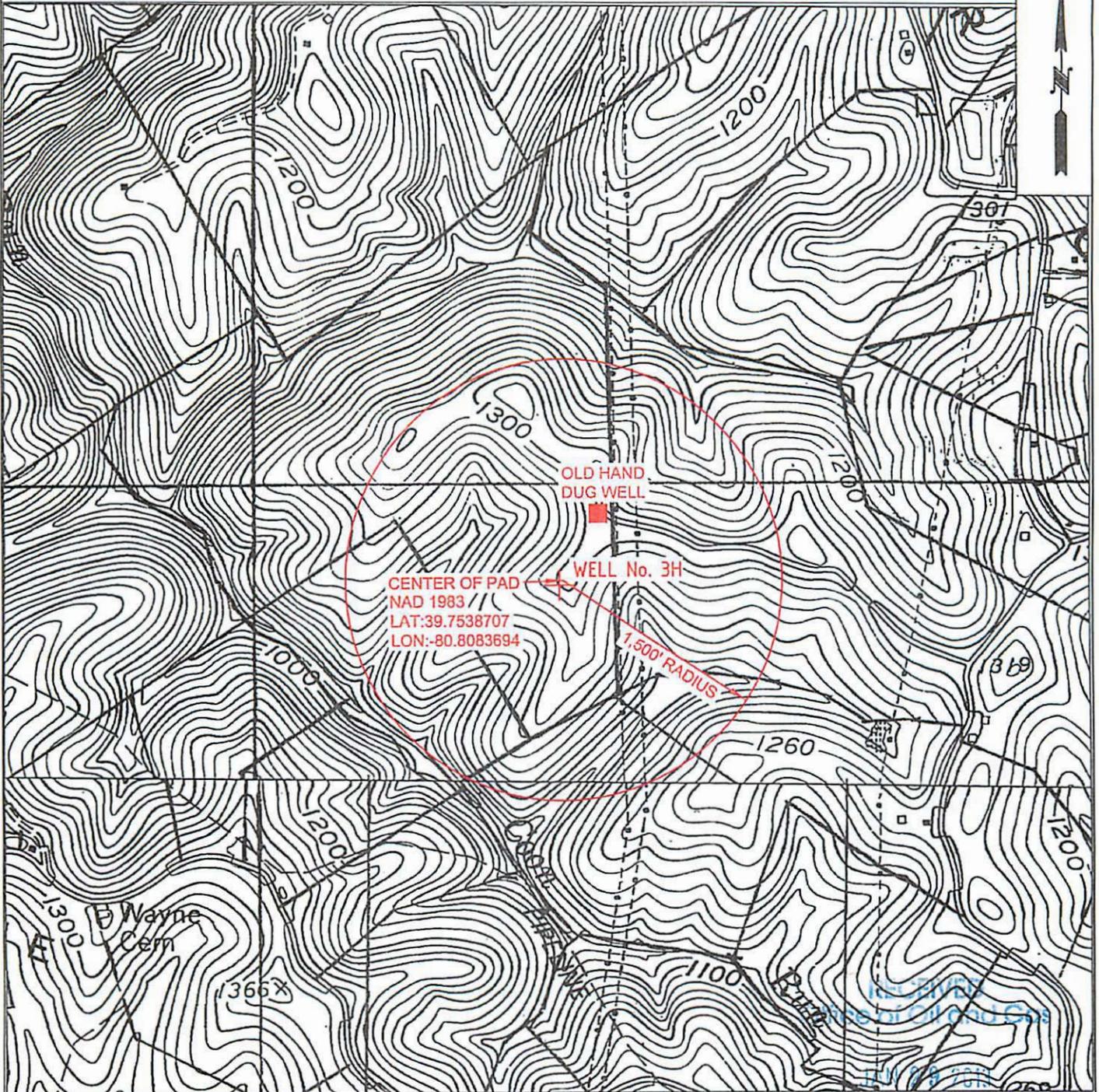
Promoting a healthy environment.

WW-6A

PROPOSED ARMSTRONG
WELL No. 3H

SUPPLEMENT PG 2

There appears to be one (1) water source within 1,500'.



CENTER OF PAD
NAD 1983
LAT:39.7538707
LON:-80.8083694

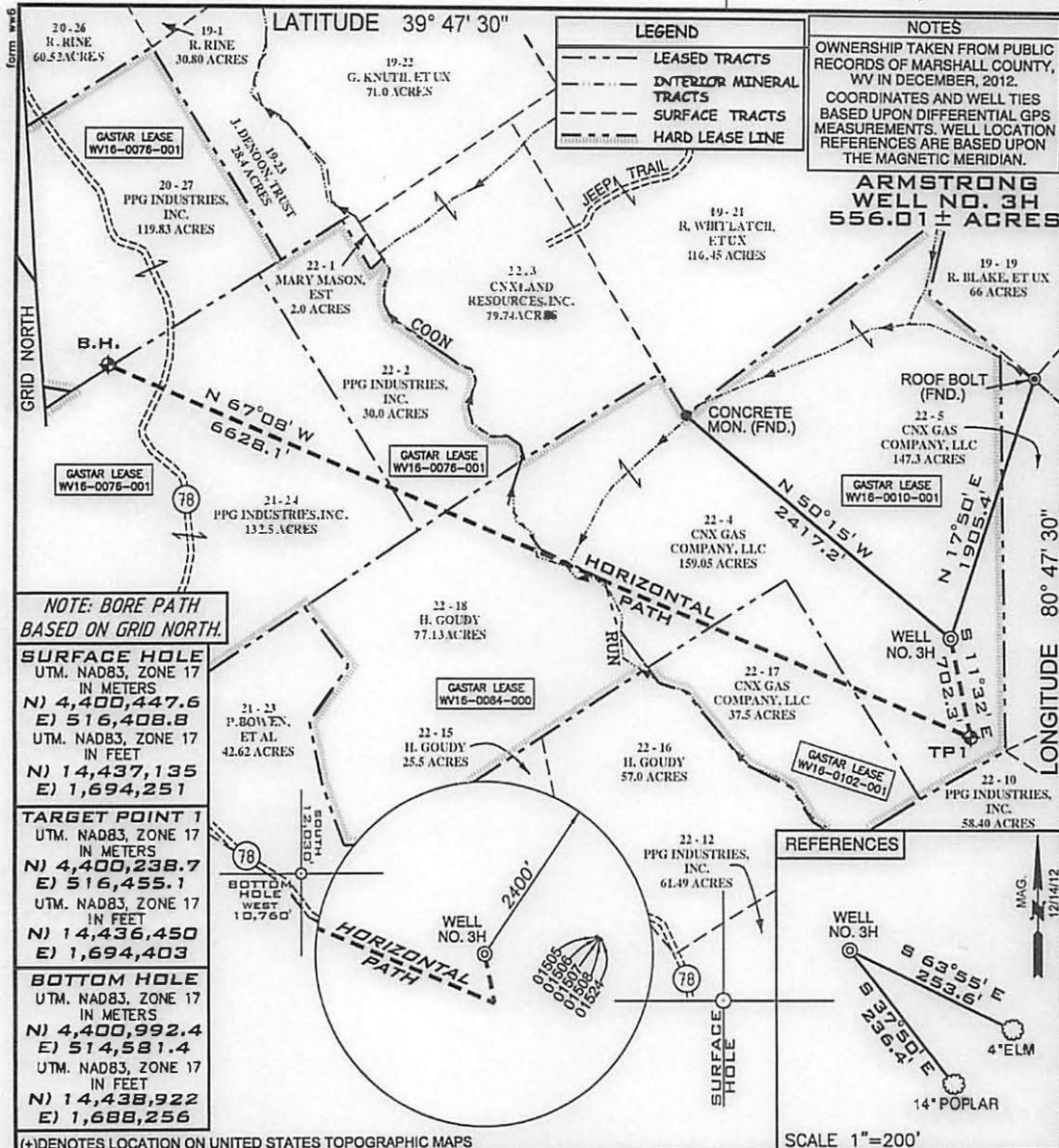
OLD HAND
DUG WELL

WELL No. 3H

1,500' RADIUS

Wayne
Cern

W0120316	OPERATOR	TOPO SECTION	LEASE NAME
	GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301	POWHATAN POINT 75'	ARMSTRONG
	SCALE: 1"=1000'	DATE: DATE: 12/27/12	

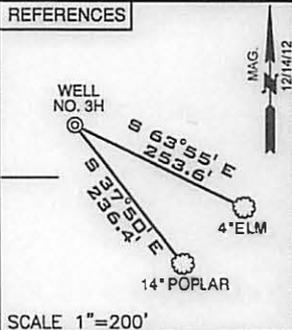


NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,447.6
 E) 516,408.8
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,135
 E) 1,694,251

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,238.7
 E) 516,455.1
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,436,450
 E) 1,694,403

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,992.4
 E) 514,581.4
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,438,922
 E) 1,688,256



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_3H

SCALE 1" = 1000'

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

P.S. Jonathan N. White
 2122



WVDEP
 OFFICE OF OIL & GAS
 801 57TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 3H

API WELL NO. 47-051-1615 H6A

STATE COUNTY PERMIT

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

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POI T 7.5' LEASE NUMBER WV16-0102-001
WV16-0010-001, WV16-0076-001, WV16-0084-000

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 556.01

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

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301

COUNTY NAME

PERMIT



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

April 15, 2013

WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-5101614, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: ARMSTRONG NO. 2H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101614
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

Promoting a healthy environment.

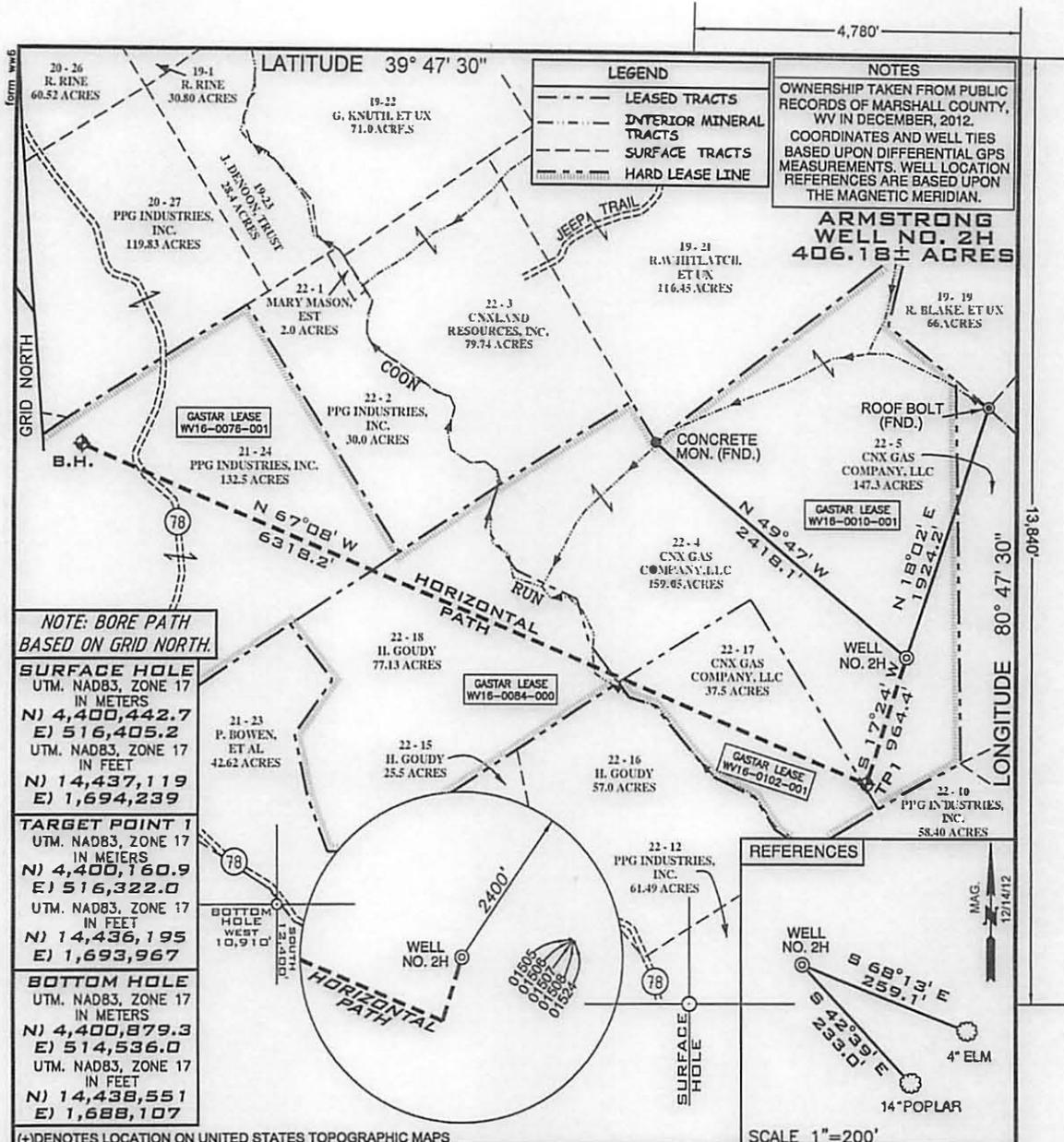
WW-9

PROPOSED ARMSTRONG WELL No. 2H

SUPPLEMENT PG 2



DMH 1-25-13 W0120316	OPERATOR GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301	TOPO SECTION POWHATAN POINT 75	LEASE NAME ARMSTRONG
	SCALE: 1"=2000'	DATE: DATE: 12/27/12	

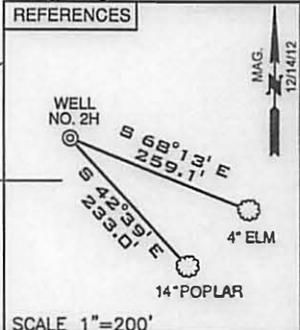


NOTE: BORE PATH BASED ON GRID NORTH.

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,442.7
E) 516,405.2
UTM. NAD83, ZONE 17
IN FEET
N) 14,437,119
E) 1,694,239

TARGET POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,160.9
E) 516,322.0
UTM. NAD83, ZONE 17
IN FEET
N) 14,436,195
E) 1,693,967

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,879.3
E) 514,536.0
UTM. NAD83, ZONE 17
IN FEET
N) 14,438,551
E) 1,688,107



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER W0120316 (WB1-56)

DRAWING NUMBER ARMSTRONG_WP_2H

SCALE 1" = 1000'

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

P.S. 2122 *Jonathan N. White*

Jonathan N. White
LICENSED
NO. 2122
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARMSTRONG NO. 2H

API WELL NO. 47-051-01614 H6A

STATE WEST VIRGINIA COUNTY MARSHALL PERMIT

LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER WV16-0102-001
WV16-0010-001, WV16-0076-001, WV16-0084-000

SURFACE OWNER CNX GAS COMPANY, LLC ACREAGE 159.05

OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 406.18

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

TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN

ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301

ESTIMATED DEPTH 6458 + Horizontal Leg



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

April 15, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101613, issued to GASTAR EXPLORATION USA, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

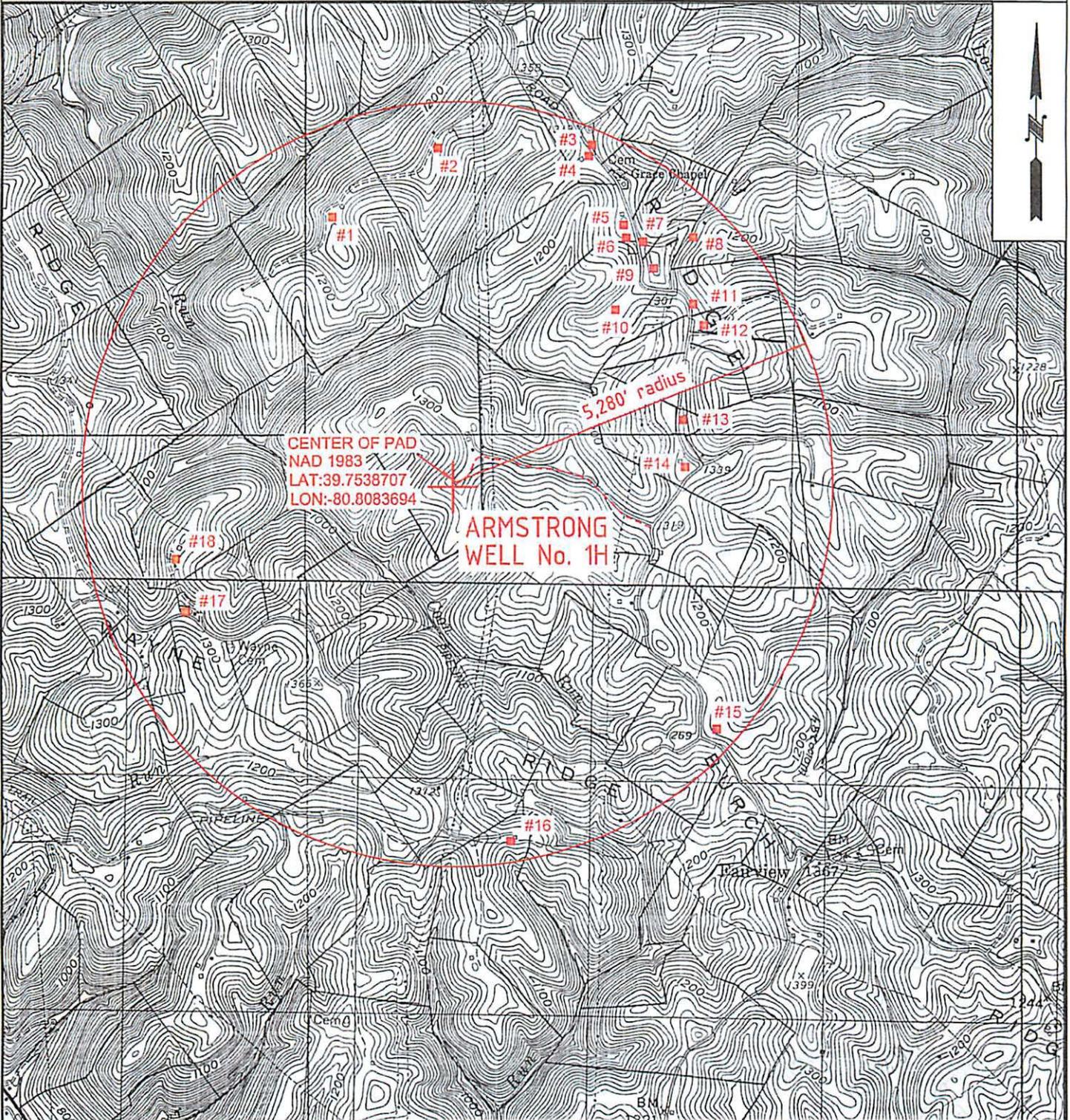
James Martin
Chief

Operator's Well No: ARMSTRONG NO. 1H
Farm Name: CNX GAS COMPANY, LLC
API Well Number: 47-5101613
Permit Type: Horizontal 6A Well
Date Issued: 04/15/2013

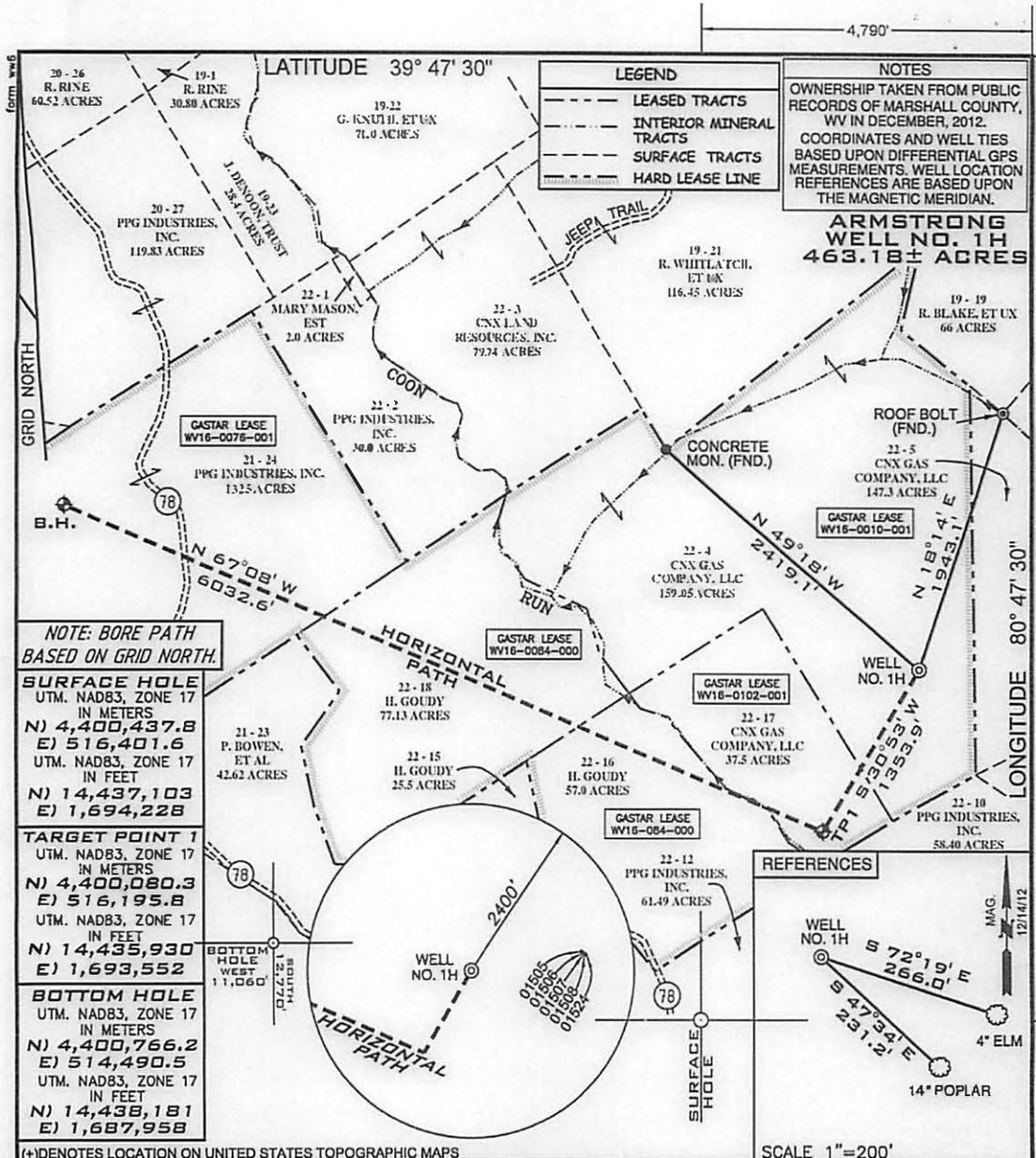
Promoting a healthy environment.

PROPOSED ARMSTRONG WELL No. 1H

There are Eighteen (18) residences within 5,280'.



	OPERATOR	TOPO SECTION	LEASE NAME
	GASTAR EXPLORATION USA, Inc. 229 W Main Street, Suite 301 Clarksburg, WV 26301	POWHATAN POINT 7.5'	ARMSTRONG
		SCALE: 1"=2000'	DATE: DATE: 12/27/12
W0120316			



NOTE: BORE PATH BASED ON GRID NORTH.

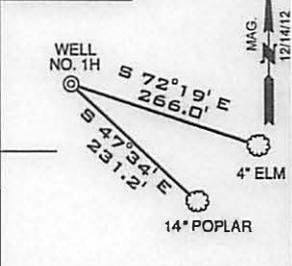
SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,437.8
 E) 516,401.6
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,437,103
 E) 1,694,228

TARGET POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,080.3
 E) 516,195.8
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,435,930
 E) 1,693,552

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,766.2
 E) 514,490.5
 UTM. NAD83, ZONE 17
 IN FEET
 N) 14,438,181
 E) 1,687,958

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

REFERENCES



SCALE 1"=200'

FILE NUMBER W0120316 (WB1-56)
 DRAWING NUMBER ARMSTRONG_WP_1H
 SCALE 1" = 1000'
 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

P.S. 2122
Jonathan N. White



SEAL

WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 27, 2012

OPERATORS WELL NO. ARM TRONG NO. 1H

API WELL NO. 47-051-01613 H6A

STATE WV COUNTY MARSHALL PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCT ON X STORAGE DEEP SHALLOW
 LOCATION ELEVATION 1278' WATERSHED TRIBUTARY OF COON RUN

DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER WV16-0102-001
WV16-0010-001, WV16-0076-001, WV16-0084-000

SURFACE OWNER CNX GA COMPAN, LLC ACREAGE 159.05
 OIL & GAS ROYALTY OWNER CNX GAS COMPANY, LLC LEASE ACREAGE 463.18
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY)

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6458 + Horizontal Leg

WELL OPERATOR GASTAR EXPLORATION USA, INC. DESIGNATED AGENT MICHAEL McCOWN
 ADDRESS 229 W MAIN STREET, SUITE 301 ADDRESS 229 W MAIN STREET, SUITE 301
CLARKSBURG WV, 26301 CLARKSBURG WV, 26301

COUNTY NAME
 PERMIT



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

April 18, 2013

**WELL WORK PERMIT
Horizontal 6A Well**

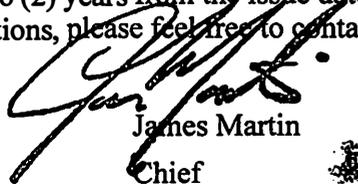
This permit, API Well Number: 47-8510031, issued to NOBLE ENERGY, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto.

Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.


James Martin
Chief

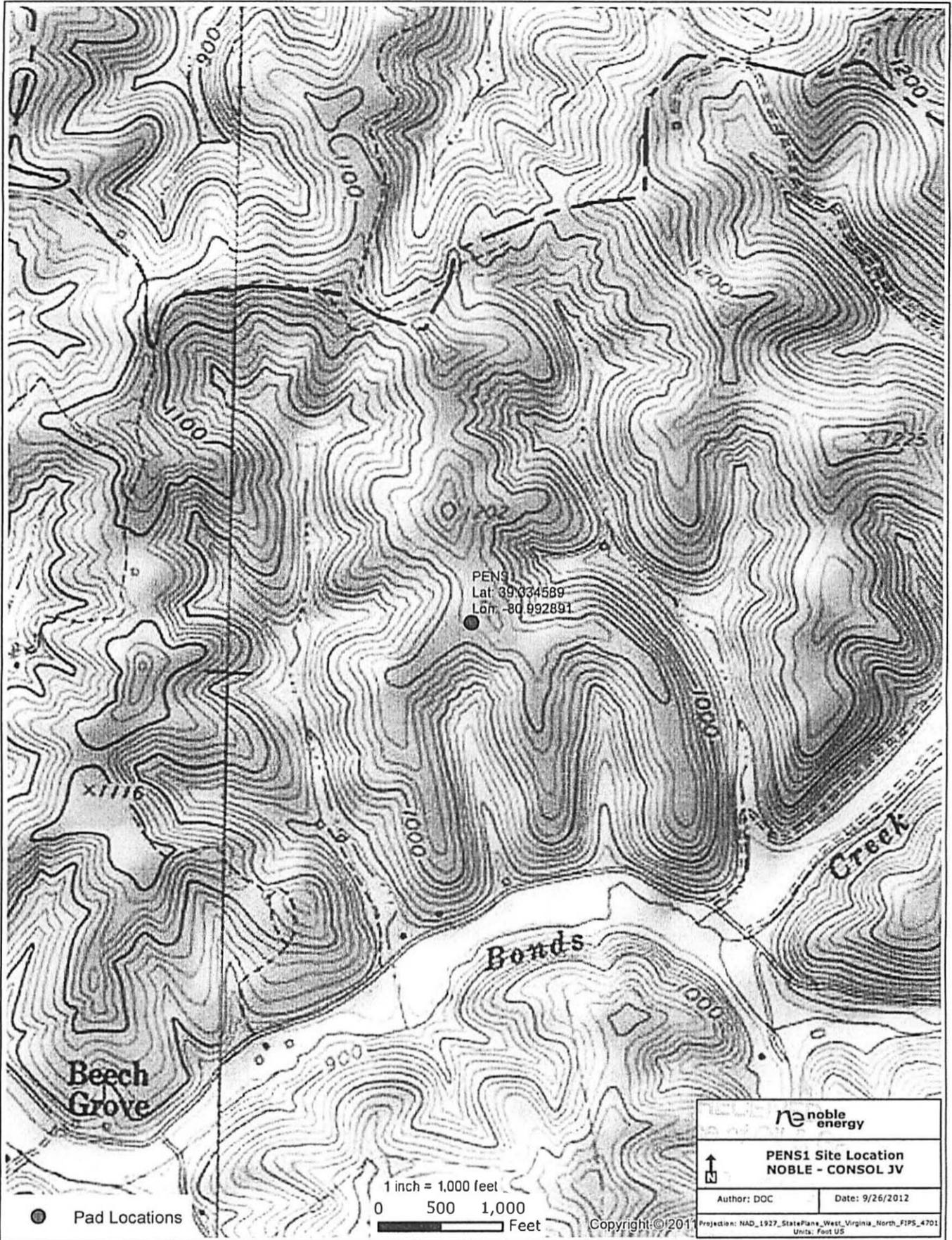
Operator's Well No: PENS 1 FHS
Farm Name: NOBLE ENERGY, INC.

API Well Number: 47-8510031

Permit Type: Horizontal 6A Well

Date Issued: 04/18/2013

Promoting a healthy environment.



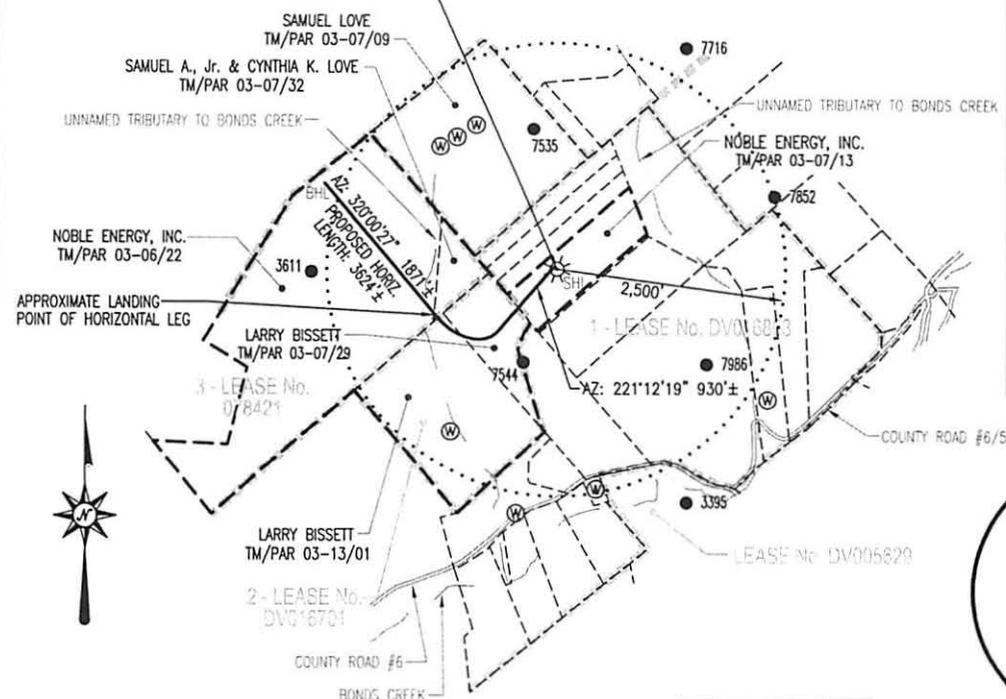
AppalachiaBU\Marcellus\Maps\Majorsville\PENS1_Site_Location_DC

Disclaimer: All data is licensed for use by Noble Energy Inc. use only

Well is located on topo map 14,612' feet south of Latitude: 39°22'30"

Well is located on topo map 9,829' feet west of Longitude: 80°57'30"

WELL PENS1FHS

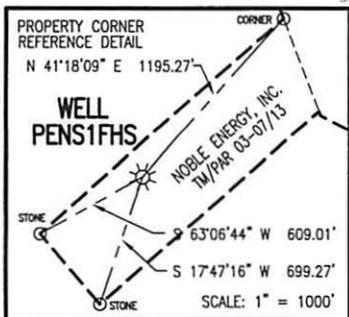
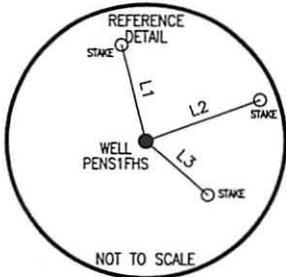


LEGEND

- TOPO MAP POINT
- PROPOSED GAS WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- WATER SOURCE
- SURFACE BOUNDARY
- LEASE BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 3000'

- EXISTING WELLS
- PLUGGED WELLS



SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83
N:4353949.073
E:500612.699
LAT/LOG DATUM: NAD27
N:307591.67
E:1577698.16

LINE	BEARING	DISTANCE
L1	N 14°14'26" W	217.46'
L2	N 69°23'15" E	261.56'
L3	S 48°39'04" E	177.91'

APPROX. LANDING POINT

UTM 17-NAD83
N:4353790.01
E:500212.21
NAD27, WV NORTH
N:307091.70
E:1576375.23

BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4354220.54
E:499838.63
NAD27, WV NORTH
N:308524.97
E:1575172.89

NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- There are no existing buildings within 625' of proposed well.
- Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
- There are no native trout streams within 300' of proposed well.
- Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
- It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Blue Mountain Engineering
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: PENS1FHS
DRAWING #: PENS1FHS
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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]
R.P.E.: _____ L.L.S.: P.S. No. 2000

PLACE SEAL HERE

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



DATE: MARCH 1, 2013
OPERATOR'S WELL #: PENS1FHS
API WELL #: 47 85 10031 H6A
STATE COUNTY PERMIT

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

WATERSHED: BONDS CREEK ELEVATION: 1116.40'
COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: PENNSBORO, WV 7.5'
SURFACE OWNER: NOBLE ENERGY, INC. ACREAGE: 19.759±
OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 225.831±
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,359'± TMD: 8,900'±
WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
Address 333 TECHNOLOGY DRIVE, SUITE 110 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 1001
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301