



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 06, 2015

CNX GAS COMPANY LLC
POST OFFICE BOX 1248
JANE LEW, WV 26378

Re: Permit Modification Approval for API Number 103288 , Well #: AUD3AHS

Extend Lateral

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,

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

47 00 103288 MOD



Carolinda Flanagan
Permitting Analyst
P.O. Box 1248
Jane Lew, WV 26378
(304) 884-2057



January 28, 2015

West Virginia Department of Environmental Protection
Office of Oil & Gas
Attn: Laura Adkins
601 57th Street, SE
Charleston, WV 25304-2345

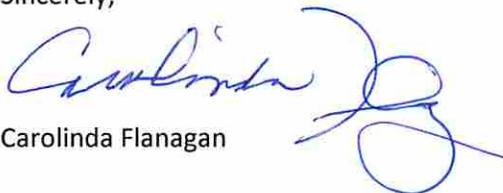
RE: **AUD3AHS - API# 47-001-03288 (Lateral Extension – extending 1195' more)**
AUD3BHS - API# 47-001-03289 (Lateral Extension – extending 2750' more)
AUD3CHS - API# 47-001-03290 (Lateral Extension – extending 1630' more)

Dear Laura,

Enclosed, please find modifications for the AUD3AHS-AUD3CHS to extend the laterals due to additional leasing being obtained. I have attached an updated casing plan, mylar plat, lease breakdown, and road letters where applicable.

Should you need any further information, please contact me at (304) 884-2057 or by email at carolindaflanagan@consolenergy.com. Thank you!

Sincerely,


Carolinda Flanagan

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

1) Well Operator: CNX Gas Company LLC 494458046 Barbour Philippi Audra
Operator ID County District Quadrangle

2) Operator's Well Number: AUD3AHS Well Pad Name: AUD3HS

3) Farm Name/Surface Owner: Mike Ross, Inc. Public Road Access: US Rt. 119

4) Elevation, current ground: 1537' Elevation, proposed post-construction: 1537'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target - Marcellus, Depth - 7505', Thickness - 90', Pressure - 4500#

8) Proposed Total Vertical Depth: 7695'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 17235'

11) Proposed Horizontal Leg Length: 8045

12) Approximate Fresh Water Strata Depths: 330', 370'

13) Method to Determine Fresh Water Depths: Reference offset wells (API #'s 47-001-00511 and 47-001-00358)

14) Approximate Saltwater Depths: None Anticipated

15) Approximate Coal Seam Depths: 270', 410', 450'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20	N	J-55	94	80	80	112.9/ CTS
Fresh Water	13.375	N	J-55	54.5	550	500	260.4/ CTS
Coal							
Intermediate	9.625	N	J-55	36	4200	4150	974.6/ CTS
Production	5.5	N	P-110	20	17235	17185	2516.3
Tubing	2.375	N	J-55	4.7	N/A	7550	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26	0.438	2110	0	Class A	1.18
Fresh Water	13.375	17.5	0.380	2730	0	Class A	1.39
Coal							
Intermediate	9.625	12.25	0.352	3520	1249.1	Class A	1.18
Production	5.5	8.75	0.361	14360	6249.1	Class A	1.26
Tubing	2.375	5.5" CSG	0.190	7700			
Liners							

PACKERS

Kind:	None		Received
Sizes:	None		FEB 11 2015
Depths Set:	None		

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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and stimulate new horizontal Marcellus well. Well to be drilled to a TMD of 17235'. Well to be drilled to a TVD of 7695', formation at TVD - Onondaga. The well bore will not be drilled any deeper than 100' beyond the Onondaga top, nor will there be any perforation, stimulation, or production of any formations below the target formation. Well will be plugged back to an approximate depth of 5000' (approximate due to exact kick off point being unknown). Plugging back will be done using the displacement method and Class A Type cement. A solid cement plug will be set from TD to KOP. If an unexpected void is encountered, plan will be to set casing at a minimum of 30' past void and cement to surface with approved Class A type cement.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals.
Max Pressure - 9500 psi. Max Rate - 100 bbl/min.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.2

22) Area to be disturbed for well pad only, less access road (acres): 8.42

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23) Describe centralizer placement for each casing string:

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Conductor - No centralizers used.
Surface - Rigid Bow spring centralizers on first joint then every third joint to surface.
Intermediate - Rigid Bow spring centralizers one on the first two joints and every third joint to surface.
Production - Rigid bow spring centralizer on first joint then every casing joint (free floating) through the lateral and every other joint in the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

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24) Describe all cement additives associated with each cement type:

Conductor - 2% CaCl₂.
Surface - 3% CaCl₂ & 1#/sk Celloflake LCM.
Intermediate - 3% CaCl₂ & 0.5#/sk Celloflake LCM.
Production - 2.6% Cement extender, 0.7% Fluid loss additive, 0.5% High Temperature Retarder, 0.2% Friction Reducer

25) Proposed borehole conditioning procedures:

Conductor - The hole is auger drilled w/ air and casing ran in air.
Surface - The hole is drilled w/ air and casing is ran in air. Once casing is on bottom, the casing string will be circulated w/ fresh water prior to cementing.
Intermediate - The hole is drilled w/ air and casing is ran in air. (Note: Drilling soap may be utilized if the hole gets wet/damp during the drilling of all air holes with the exception of the conductor).
Production - The hole will be drilled with synthetic oil base mud. At TD the hole is circulated at optimum pump rate until shale shaker deem the hole is clean. Once casing is ran the hole is circulated for a minimum of one hole volume prior to pumping cement.

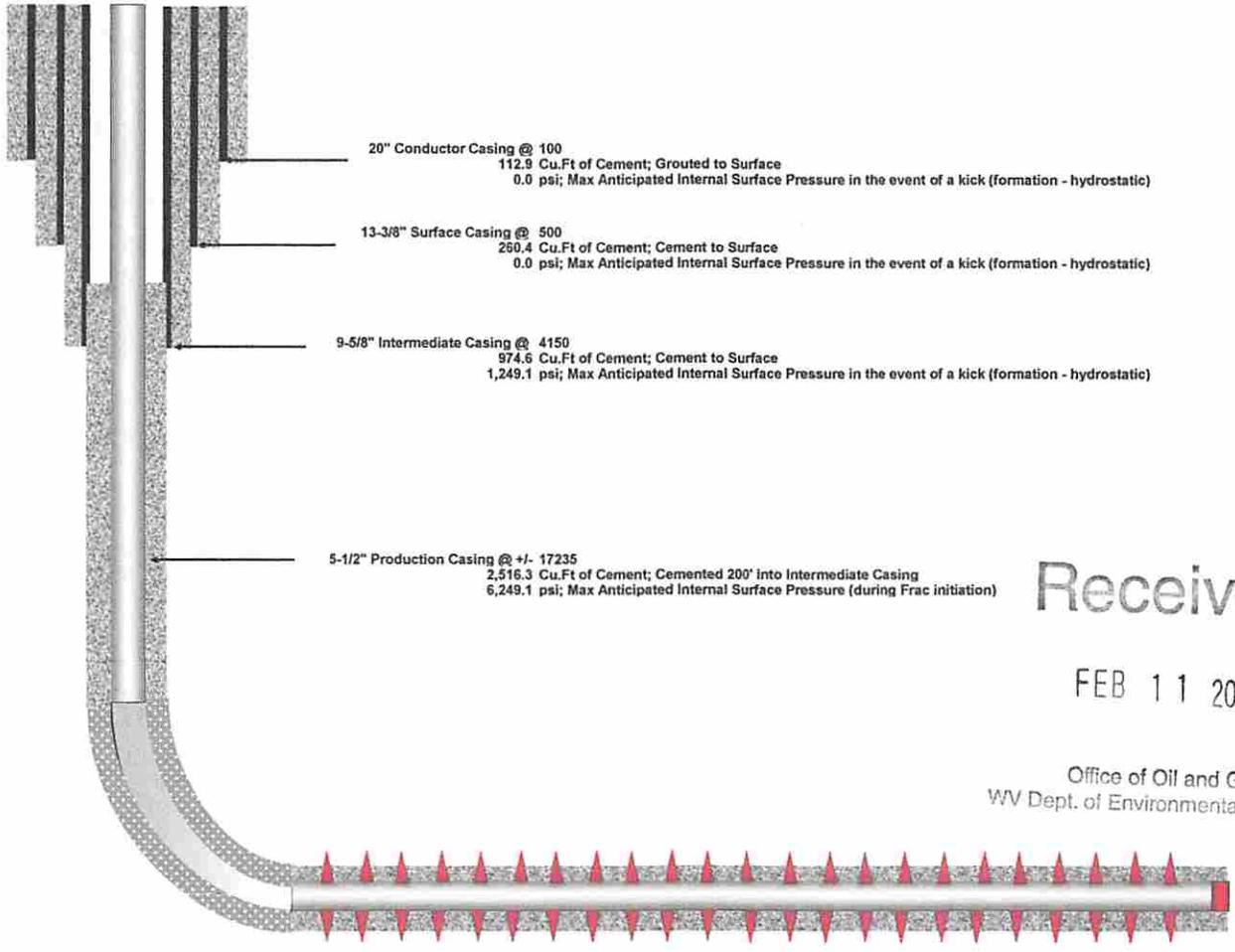
*Note: Attach additional sheets as needed.



AUD3AHS

Casing Schematic

SCHEMATIC NOT TO SCALE



20" Conductor Casing @ 100
112.9 Cu.Ft of Cement; Grouted to Surface
0.0 psi; Max Anticipated Internal Surface Pressure in the event of a kick (formation - hydrostatic)

13-3/8" Surface Casing @ 500
260.4 Cu.Ft of Cement; Cement to Surface
0.0 psi; Max Anticipated Internal Surface Pressure in the event of a kick (formation - hydrostatic)

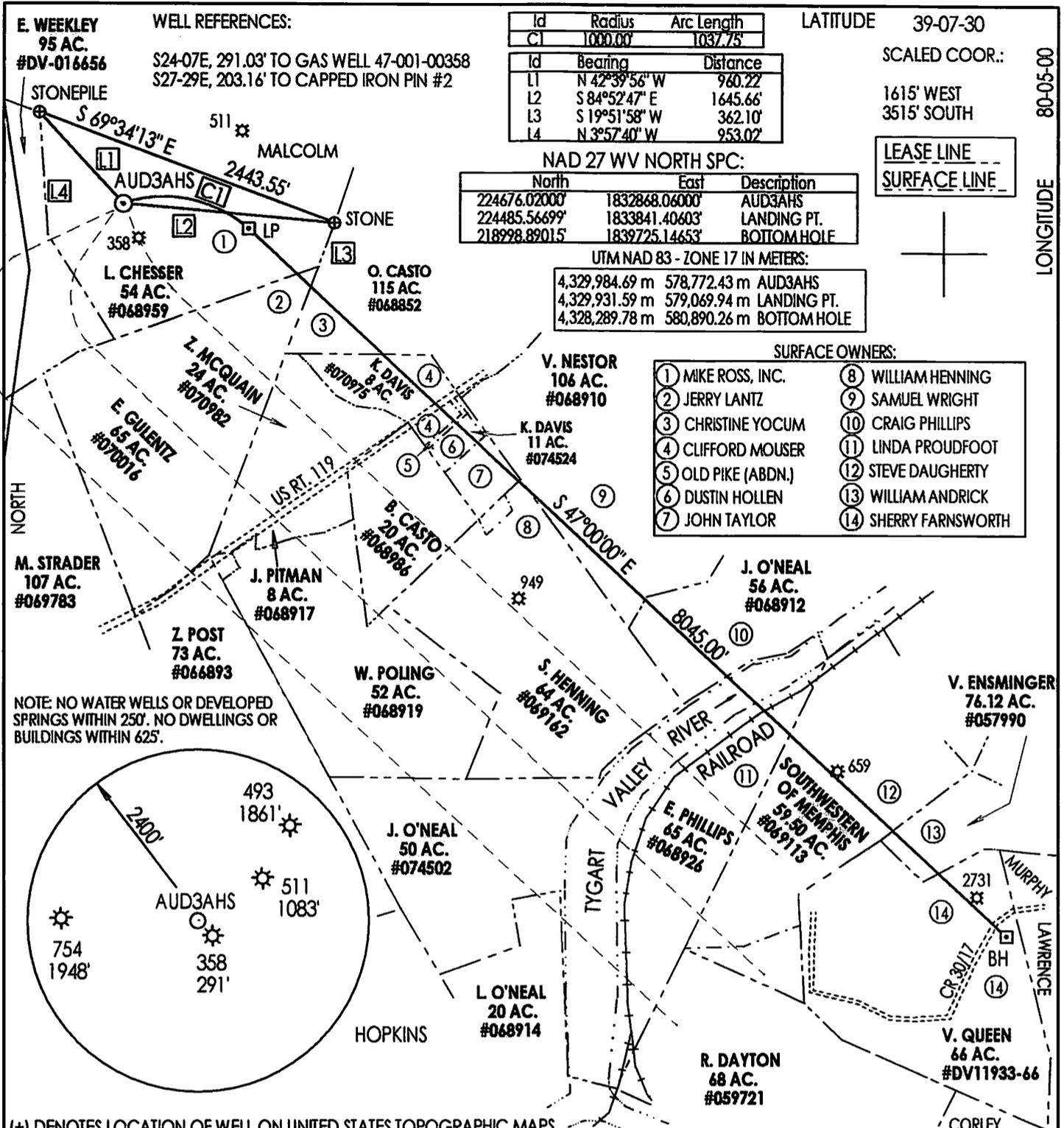
9-5/8" Intermediate Casing @ 4150
974.6 Cu.Ft of Cement; Cement to Surface
1,249.1 psi; Max Anticipated Internal Surface Pressure in the event of a kick (formation - hydrostatic)

5-1/2" Production Casing @ +/- 17235
2,516.3 Cu.Ft of Cement; Cemented 200' into Intermediate Casing
6,249.1 psi; Max Anticipated Internal Surface Pressure (during Frac initiation)

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Id	Radius	Arc Length
C1	1000.00'	1037.75'

LATITUDE 39-07-30

SCALED COOR.:

1615' WEST
3515' SOUTH

Id	Bearing	Distance
L1	N 42°39'56\" W	960.22'
L2	S 84°52'47\" E	1645.66'
L3	S 19°51'58\" W	362.10'
L4	N 3°57'40\" W	953.02'

NAD 27 WV NORTH SPC:

North	East	Description
224676.02000'	1832868.06000'	AUD3AHS
224485.56699'	1833841.40603'	LANDING PT.
218998.89015'	1839725.14653'	BOTTOM HOLE

UTM NAD 83 - ZONE 17 IN METERS:

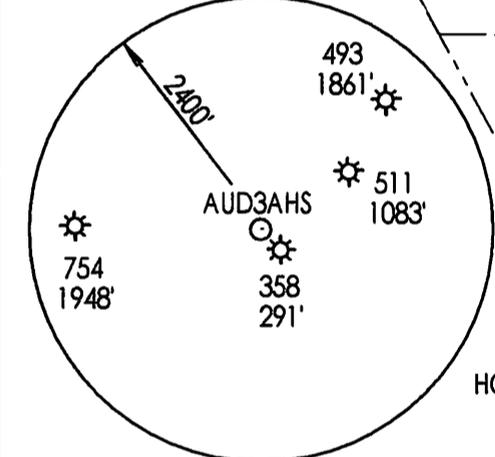
4,329,984.69 m	578,772.43 m	AUD3AHS
4,329,931.59 m	579,069.94 m	LANDING PT.
4,328,289.78 m	580,890.26 m	BOTTOM HOLE

LEASE LINE
SURFACE LINE

SURFACE OWNERS:

- | | |
|--------------------|----------------------|
| 1 MIKE ROSS, INC. | 8 WILLIAM HENNING |
| 2 JERRY LANTZ | 9 SAMUEL WRIGHT |
| 3 CHRISTINE YOCUM | 10 CRAIG PHILLIPS |
| 4 CLIFFORD MOUSER | 11 LINDA PROUDFOOT |
| 5 OLD PIKE (ABDN.) | 12 STEVE DAUGHERTY |
| 6 DUSTIN HOLLEN | 13 WILLIAM ANDRICK |
| 7 JOHN TAYLOR | 14 SHERRY FARNSWORTH |

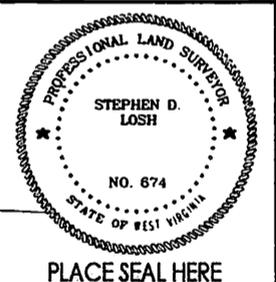
NOTE: NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250'. NO DWELLINGS OR BUILDINGS WITHIN 625'.



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

FILE NUMBER: _____
 DRAWING NUMBER: CNXAUD3AHSR4.PCS
 SCALE: 1" = 1100'
 MINIMUM DEGREE OF ACCURACY: SUBMETER
 PROVEN SOURCE OF ELEVATION: DGPS SURVEY
 RTK SYSTEM

I THE UNDERSIGNED, HEREBY STATE 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.
 (SIGNED) _____
 STEPHEN D. LOSH, P.S. #674



STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS
 #10 McJUNKIN ROAD
 NITRO, WV 25143-2506

LAND SURVEYING SERVICES
 21 CEDAR LANE, BRIDGEPORT, WV 26330
 PHONE: 304-842-2018 OR 842-5762

DATE: JANUARY 07, 2015
 OPERATORS WELL NO.: AUD3AHS
 API WELL NO. 47-001-03288 MOD

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION WASTE DISPOSAL ___ CBM ___
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 1537.31' WATERSHED ELK CREEK
 DISTRICT PHILIPPI COUNTY BARBOUR

QUADRANGLE AUDRA LEASE NUMBER AS SHOWN
 SURFACE OWNER MIKE ROSS, INC. ACREAGE 52.00 (19-05)
 OIL & GAS ROYALTY OWNER LUCILLE CHESSER, ET. AL. LEASE ACREAGE 1262.62

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

TARGET FORMATION MARCELLUS PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
 ESTIMATED DEPTH TVD = 7695' TMD = 17235'

WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT MATTHEW IMRICH
 ADDRESS P. O. BOX 1248 JANE LEW, WV 26378 ADDRESS P. O. BOX 1248 JANE LEW, WV 26378

LONGITUDE 80-05-00

COUNTY NAME BARBOUR
 PERMIT

Attachment - Form WW-6A1 for AUD3AHS:

4700103288 MOD

Lease	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
✓ 068959/ 132398000	Lucille & Page P.A. Chesser, H/W Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.13125	41/417 53/261 99/481 51/795 58/362 151/423 16/577 17/1
✓ 070016/ 132474000	Elmira Gulentz Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	42/326 53/261 99/481 51/795 58/362 151/423 16/577 17/1
✓ 068852/ 132369000	Orma & Carrie Casto, et al Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	41/90 53/261 99/481 51/795 58/362 151/423 16/577 17/1
✓ 070975/ 132527000	Kessel & Hattie Davis Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	44/271 53/261 99/481 51/795 58/362 151/423 16/577 17/1
✓ 074524/ 132692000	Kessel & Hattie Davis Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	53/307 53/261 99/481 51/795 58/362 151/423 16/577 17/1
✓ 069162/ 132429000	S. Henning Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company Consol Energy Holdings LLC XVI Consol Gas Company	Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC Consol Gas Company CNX Gas Company LLC	0.125	60/227 99/481 51/795 58/362 151/423 16/577 17/1 16/577 17/1
✓ 068910/ 245729000	V. Nestor	CNX Gas Company LLC	0.125	166/495

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Environmental Protection

Attachment - Form WW-6A1 for AUD3AHS:

Lease	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
✓ 068912/ 132377000	James O'Neal Consolidated Gas Supply Corp Consolidated Gas Transmission Corp Sulpetro Resources Inc Steaua Romana Inc AmBrit Energy Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company	Consolidated Gas Supply Corp Consolidated Gas Transmission Corp Sulpetro Resources Inc Steaua Romana Inc AmBrit Energy Corp CNG Transmission Corp CNG Transmission Corp Dominion Transmission INC Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	73/221 99/481 103/273 103/286 130/535 130/535 51/795 58/362 151/423 16/577 17/1
✓ 068926/ 132385000	Elizabeth Teter Phillips and C.O. Phillips Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company	Hope Natural Gas Company Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	41/276 53/261 99/481 51/795 58/362 151/423 16/577 17/1
251920002	Kevin A. and Gretchen H. Lyons	CNX Gas Company LLC	0.125	168/136
✓ 069113/ 132423000	Southwestern of Memphis Consolidated Gas Transmission Corp CNG Transmission Corp Consol Energy Holdings LLC XVI Consol Gas Company	Consolidated Gas Transmission Corp CNG Transmission Corp Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	99/481 51/795 151/423 16/577 17/1
✓ 057990/ 131616000	Verda A. Ensminger Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company	Consolidated Gas Supply Corp Consolidated Gas Transmission Corp CNG Transmission Corp Dominion Transmission Inc Consol Energy Holdings LLC XVI Consol Gas Company CNX Gas Company LLC	0.125	56/142 99/481 51/795 58/362 151/423 16/577 17/1
✓ DV11933-66/ 250483005 250483003 250483006 250483004 250483007 250483009 250483002 250483011 250483008 250483012 250483010 250483001 251468001 251476001 258089001 258089002 258089003 258089004 258089005 258089006	V. Queen Richard C Hopkins Millicent Canter Nancy B. Collins Anne H. Collins R. Holt Poling et ux Rachel Bocock Peggy C Hadley et al Suzanne C. Sandell Jack W. Canter Lucinda H. Rogers Betty Krifka Gerald M. Fogg, Special Receiver John A. Mosesso et ux Elsie Daugherty James S. Daugherty Agnes Saffie Shirley J. Shockey John R. Daugherty Ila Mae Foreman Henry M. Daugherty Petroleum Development Corp PDC Mountaineer, LLC	Petroleum Development Corp Petroleum Development Corp CNX Gas Company, LLC CNX Gas Company, LLC CNX Gas Company, LLC CNX Gas Company, LLC CNX Gas Company, LLC PDC Mountaineer, LLC CNX Gas Company, LLC	0.125	130/401 130/402 130/406 130/410 130/414 130/418 130/446 130/515 130/519 130/523 130/527 130/531 131/396 130/422 131/333 169/28 169/33 169/38 169/43 169/44 169/53 150/444 103/181

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WV Department of
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January 28, 2015

Ms. Laura Adkins
WV DEP Office of Oil & Gas
601 57th St., SE
Charleston, WV 25304

RE: CONSOL Energy's proposed AUD3AHS Well, in Barbour County, West Virginia
Drilling under State Route 119 and CR 30/17

Dear Laura:

CONSOL Energy, Inc. (CNX) is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to CNX's right to drill under State Route 119 and CR 30/17. Please be advised that according to the title information we have relied on in submitting this application, the State owns no oil and gas rights under said road(s) and/or railroad(s) that CNX has leased said rights from the appropriate parties as set forth on the accompanying Form WW-6A1.

Very truly yours,

A handwritten signature in blue ink that reads 'Kelly Eddy'.

Kelly Eddy
Supervisor - Permitting

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JAN 30 2015

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