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

September 28, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101853, issued to SWN PRODUCTION COMPANY, LLC, 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: OE BURGE U MSH 501 H
Farm Name: MASON DIXON FARMS LLC
API Well Number: 47-5101853
Permit Type: Horizontal 6A Well
Date Issued: 09/28/2015

Promoting a healthy environment.

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

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

September 9, 2015

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-01853

COMPANY: SWN Production Co LLC

FARM: O. E. Burge U MSH 501H

COUNTY: Marshall DISTRICT: Liberty QUAD: Glen Easton

The deep well review of the application for the above company is **APPROVED TO DRILL TO UTICA WITH A UTICA COMPLETION.** *Revised unit from what was originally submitted at hearing (Docket 234-224)*

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? none

2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners; yes

3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells, well name, and the name and address of the operator; none

4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Cindy Raines

Cindy Raines
Executive Assistant

WW-6B
(10/14)

API NO. 47- 51 - 05101853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

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

1) Well Operator: SWN Production Co., LLC

Operator ID	County	District	Quadrangle
494512924	51-Marshall	Liberty	Glen Easton

2) Operator's Well Number: OE Burge U MSH 501H Well Pad Name: OE Burge MSH Pad

3) Farm Name/Surface Owner: Mason Dixon Farms, LLC Public Road Access: 92/1

4) Elevation, current ground: 1342' Elevation, proposed post-construction: 1342'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow _____ Deep X
Horizontal x

JW 9/4/15

6) Existing Pad: Yes or No yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation- Utica, Target Top TVD- 12,270', Target Base TVD- 12,338', Anticipated Thickness- 220', Associated Pressure- 11,000#

8) Proposed Total Vertical Depth: 12,306'

9) Formation at Total Vertical Depth: Utica Shale

10) Proposed Total Measured Depth: 21,169'

11) Proposed Horizontal Leg Length: 7800'

12) Approximate Fresh Water Strata Depths: 104'

13) Method to Determine Fresh Water Depths: from nearby water wells

14) Approximate Saltwater Depths: 360'

15) Approximate Coal Seam Depths: 1113'

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 X

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

WW-6B
(10/14)

API NO. 47-05-101853
OPERATOR WELL NO. [illegible]
Well Pad Name: [illegible]

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	30"	New	J-55	234#	~~300'~~ 100'	~~300'~~ 100	CTS
Fresh Water	20"	New	J-55	94#	300'	300'	635 sx/CTS
Coal	13 3/8"	New	L-80	68#	2613'	2613'	2300 sx/CTS
Intermediate	9 5/8"	New	P110	53.5#	10,300'	10,300'	1139 sx/CTS
Production	5 1/2"	New	HCP-110	23#	21,169'	21,169'	[illegible]
Tubing							
Liners							

GCS 9/28/15

JW 9/15/15

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	30"	30"	0.75	2780	81	Class A	1.19/50% Excess
Fresh Water	20"	24"	0.438	2110	633	Class A	1.19/50% Excess
Coal	13 3/8"	17.5"	0.33	2730	1768	Class A	1.19/50% Excess
Intermediate	9 5/8"	12 1/4"	0.395	5750	3898	Class A	1.68/1.25
Production	5 1/2"	8 3/4"	0.415	14520	9918	Class A	1.68/1.25
Tubing							
Liners							

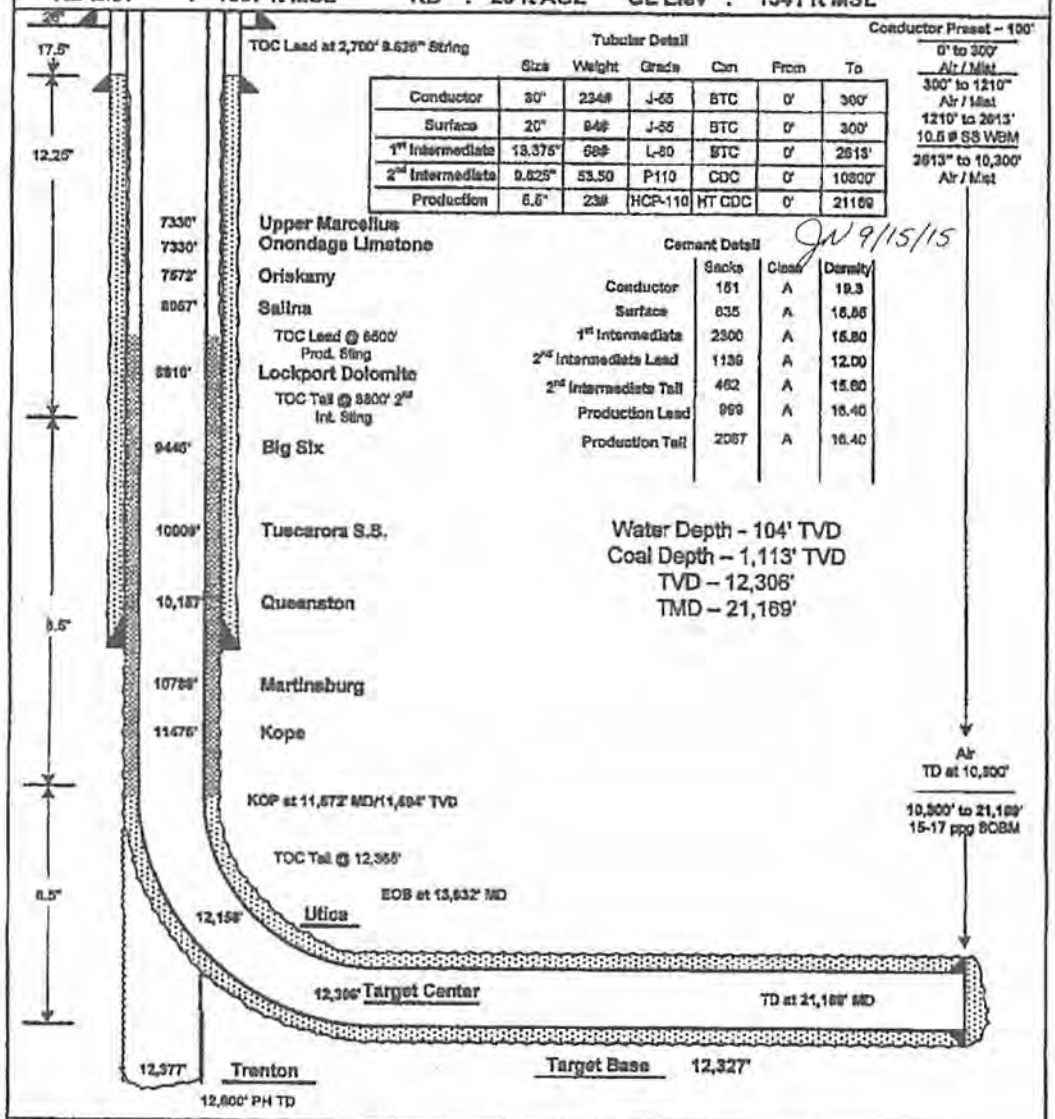
PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:				

05101853

Southwestern Energy Company		Proposed Drilling Program
Well	: O E BURGE U MSH 501H	Re-entry Rig : SDC 40
Field	: PANHANDLE FIELD	Prospect : PANHANDLE
County	: MARSHALL	State : WV
SHL	: 39.750845 Latitude -80.631555 Longitude	
BHL	: 39.761919 Latitude -80.657424 Longitude	
KB Elev	: 1367 ft MSL KB : 26 ft AGL	GL Elev : 1341 ft MSL

SWN Southwestern Energy



Tubular Detail

	Size	Weight	Grade	Con	From	To
Conductor	30"	234#	J-55	BTC	0'	300'
Surface	20"	94#	J-55	BTC	0'	300'
1st Intermediate	13.375"	68#	L-80	BTC	0'	2613'
2nd Intermediate	9.625"	53.50	P110	CDC	0'	10800'
Production	5.5"	23#	HCP-110	HT CDC	0'	21169

Cement Detail

	Sacks	Class	Density
Conductor	151	A	19.3
Surface	635	A	15.60
1st Intermediate	2300	A	15.60
2nd Intermediate Lead	1139	A	12.00
2nd Intermediate Tail	462	A	15.60
Production Lead	969	A	15.40
Production Tail	2067	A	15.40

JN 9/15/15

Water Depth - 104' TVD
Coal Depth – 1,113' TVD
TVD – 12,306'
TMD – 21,169'

Data source: K:\EandP\W\D\Team Data\Wells\New Well Folder Template\Drilling Program\Master SWN Well Input Sheet v E-0-1.xlsm

API NO. 47-051 - 01853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

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

Drill to the Trenton and then plug back with solid cement from TD to the kick off point and then drill horizontally into the Utica.. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface. Run casing not less than 20' below void nor more than 50'-75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50'-75' below and cts.)

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

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, vertical separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 80 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 13.4

22) Area to be disturbed for well pad only, less access road (acres): 7.6

23) Describe centralizer placement for each casing string:

All casing strings will be ran with a centralizer at a minimum of 1 per every 3 joints of casing.

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

See Attachment ***

25) Proposed borehole conditioning procedures:

All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

Revised
7/14/2015

*Note: Attach additional sheets as needed.

05101853

Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
Intermediate	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	propriatary
	D047	antifoam	polypropylene glycol	25322-69-4
Production-Lead	D167	fluid loss	aliphatic amide polymer	propriatary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	propriatary
	D202	dispersant	sulphonated synthetic polymer	propriatary
			formaldehyde (impurity)	propriatary
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	propriatary
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
			sodium sulfate	7757-82-6
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	propriatary
	D153	anti-settling	chrystalline silica	14808-60-7

WW-9
(9/13)

API Number 47 - 51 - 051 - 1855
Operator's Well No. OE Burge U MSH 501H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 49447757

Watershed (HUC 10) Laurel Run Quadrangle Glen Easton

Elevation 1342' County 51-Marshall District Liberty

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: closed loop system in place at this time- cuttings will be taken to a permitted landfill.

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.?

Proposed Disposal Method For Treated Pit Wastes:

- ____ Land Application
- ■ Underground Injection (UIC Permit Number 2D0072539/ 2D0413175/ 2D0610306/ 2D0610317)
- ■ Reuse (at API Number at next anticipated well, API# will be included with the WR-34/DDMR &/or permit addendum.)
- ____ Off Site Disposal (Supply form WW-9 for disposal location)
- ■ Other (Explain flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility.

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air drill to KOP, Fluid drill with SOBM from KOP to TD

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? see attached sheets

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)

-Landfill or offsite name/permit number? meadow SWF- 1032, SS Grading SWF- 4902, Northwestern SWF- 1025, Short Creek 1034/WV0109517/CID28726, Carbon Limestone 28726/CID28726
Arden Landfill 100172, American 02-12954, Country Wide 38390/CID38390, Pine Grove 13688

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

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JUN 18 2015
WV Department of Environmental Protection

Company Official Signature

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 11th day of June, 2015

Brittany R Woody Notary Public

My commission expires 11/27/22

OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

05101853

Form WW-9

Operator's Well No. OE Burge U MSH 501H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 13.4 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
White Grove	15	White Grove	15
Red Top	15	Red Top	15
Orchard Grass	20	Orchard Grass	20

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: James Nicholson

Comments:

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JUN 18 2015

WV Department of
Environmental Protection

Title: Oil and Gas Inspector Date: 6/10/15

Field Reviewed? (✓) Yes ( ) No

05101853

Utica Well Drilling Procedures
And Site Safety Plan

SWN Production Co., LLC

47 - 051 -
Well name: OE Burge U MSH 501H
Glen Easton, Quad
Liberty, District
Marshall County, West Virginia

Submitted by:

Danielle Southall Date: 6/2/2015

Title Regulatory Supervisor SWN Production Co., LLC

Approved by:

Date: 6/10/15

Title: Oil & Gas Inspector

Approved by:

Date:

Title:

SWN Production Co., LLC – Confidential

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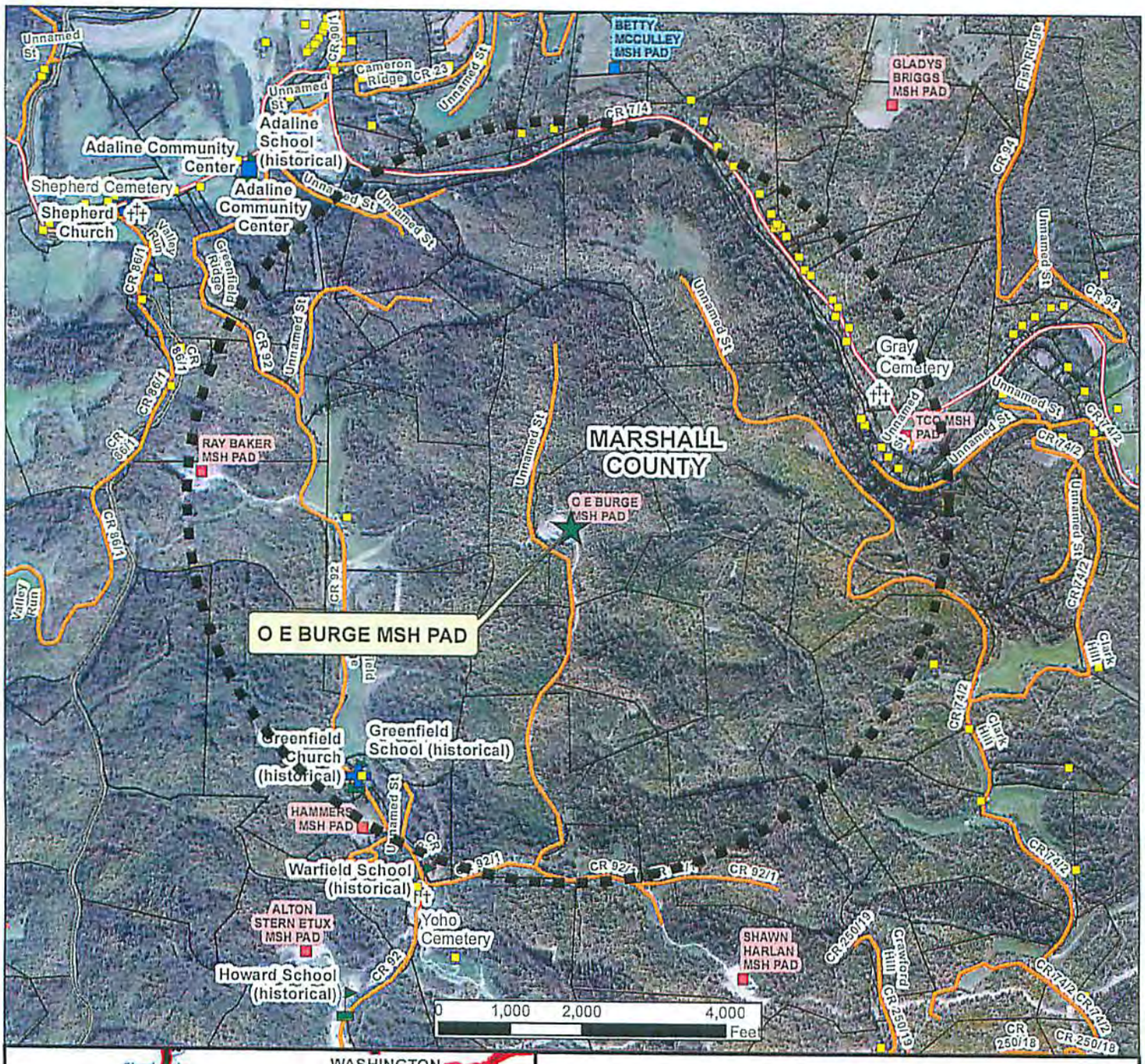
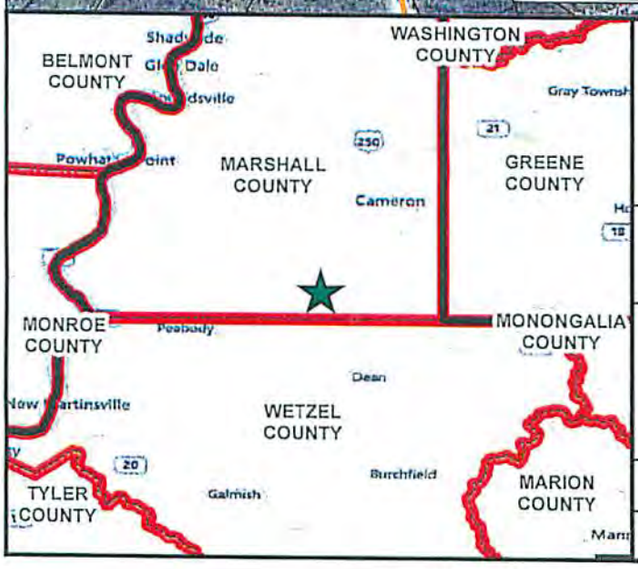
JUN 18 2015

Attachment #4





Legend

CHK Pad Site
- ACTIVE
- PROPOSED

- Commercial Building
- County Line
- 1 Mile Radius

N

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JUN 18 2015
WV Department of Environmental Protection

O E BURGE MSH PAD

MARSHALL COUNTY, WEST VIRGINIA

Pad Site Entry Coordinates: N 4400173.9 m, E 531552.6 m (UTM 17N)

Access Road Coordinates: N 4399706.4 m, E 531541.0 m (UTM 17N)

Scale: 1:24,000	Coordinate System: NAD 1983 UTM Zone 17N
Date: 9/3/2014	

Document Path: X:\GIS_Management\Field_Support\Sayre\Maps\West Virginia\West Virginia Map Book2.mxd

FORM WW-6

LATITUDE 39-47-30 N

Surface Hole Location 1,842'

Bottom Hole Location 9,304'

References
22" Sycamore
S12°57'W 281.7'
S40°52'W 218.2'
Location

Note: This cabin is the only dwelling within 625' of the center of the pad.

Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

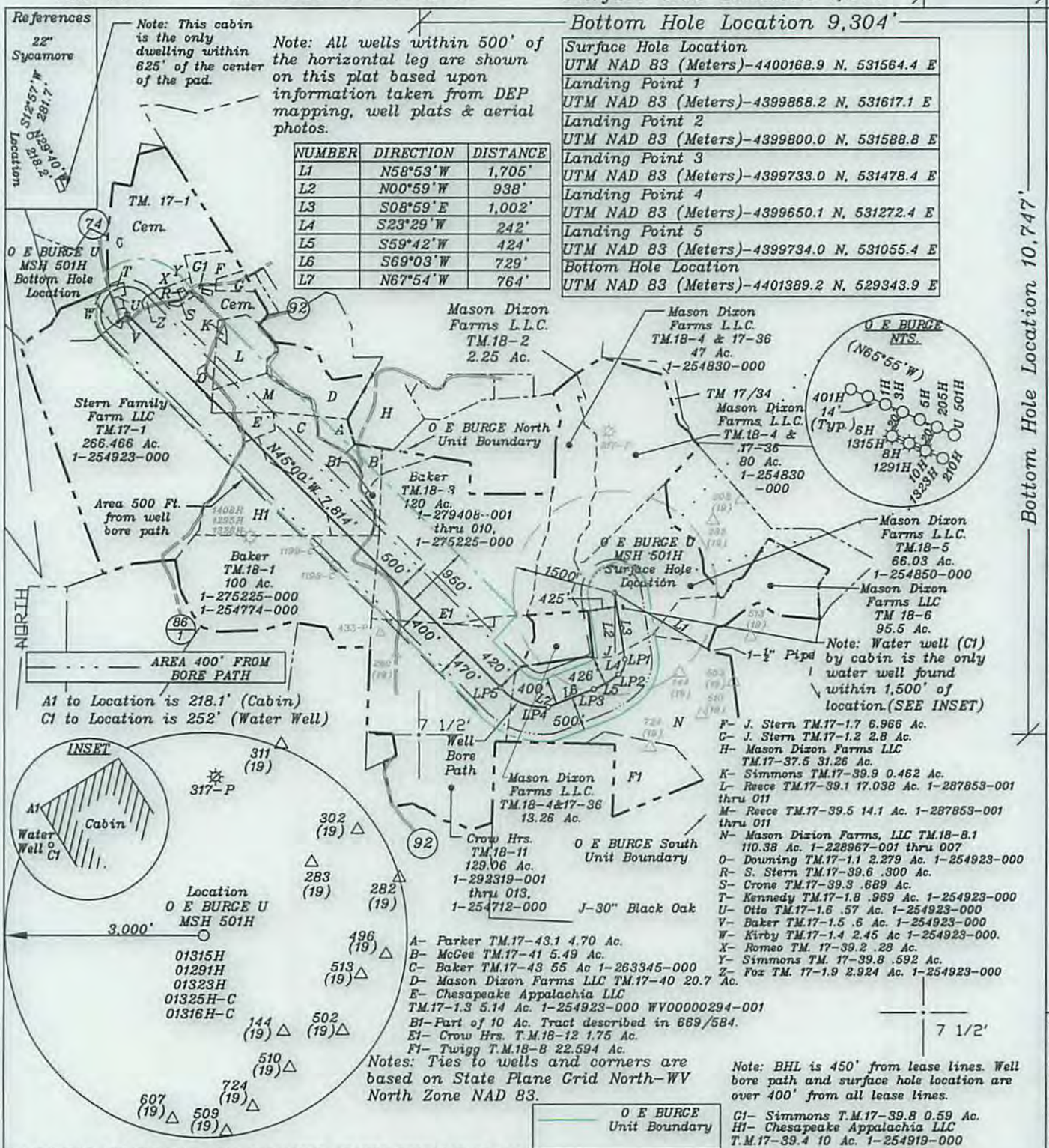
NUMBER	DIRECTION	DISTANCE
L1	N58°53'W	1,705'
L2	N00°59'W	938'
L3	S08°59'E	1,002'
L4	S23°29'W	242'
L5	S59°42'W	424'
L6	S69°03'W	729'
L7	N67°54'W	764'

Surface Hole Location UTM NAD 83 (Meters)-4400168.9 N, 531564.4 E
Landing Point 1 UTM NAD 83 (Meters)-4399868.2 N, 531617.1 E
Landing Point 2 UTM NAD 83 (Meters)-4399800.0 N, 531588.8 E
Landing Point 3 UTM NAD 83 (Meters)-4399733.0 N, 531478.4 E
Landing Point 4 UTM NAD 83 (Meters)-4399650.1 N, 531272.4 E
Landing Point 5 UTM NAD 83 (Meters)-4399734.0 N, 531055.4 E
Bottom Hole Location UTM NAD 83 (Meters)-4401389.2 N, 529343.9 E

Bottom Hole Location 10,747'

Surface Hole Location 14,873'

LONGITUDE 80-37-30 W



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

FILE NO.
DRAWING NO. 1
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY 1 in 200
PROVEN SOURCE OF ELEVATION GPS submeter unit

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIROMENTAL PROTECTION.

(SIGNED) David L Jackson

R.P.E. _____ L.L.S. 708

DAVID JACKSON LICENSED No. 708 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

STATE OF WEST VIRGINIA
Division of Environmental Protection
OFFICE OF OIL AND GAS

DATE September 17, 2015
OPERATOR'S WELL NO. O E BURGE U MSH 501H
API WELL NO.
47 — 051 — 01853H6A
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 1,342' WATER SHED Laurel Run
DISTRICT Liberty COUNTY Marshall
QUADRANGLE Glen Easton 7 1/2'

SURFACE OWNER Mason Dixon Farms L.L.C. ACREAGE 66.03 ac.
OIL & GAS ROYALTY OWNER O. E. Burge et al LEASE ACREAGE 869.055 ac
LEASE NO. See Above

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

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___

TARGET FORMATION Utica ESTIMATED DEPTH TMD= 21,169'; TVD= 12,306'

WELL OPERATOR SWN Production Co. LLC DESIGNATED AGENT Dee Southall

ADDRESS P.O. Box 1300 Jane Lew, WV 26378 ADDRESS P.O. Box 1300 Jane Lew, WV 26378

WW-6A1
(5/13)

Operator's Well No. O. E. Burge U MSH 501H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page

See "Exhibit A"

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: SWN Production Company, LLC.
By: Brandi Williams
Its: Sr. Landman

			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-005	Nicoletta Milicia Bloodworth	Chesapeake Appalachia, LLC	12.50%	694/1
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-006	Twila Ora Whipkey, a widow	Chesapeake Appalachia, LLC	12.50%	694/318
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-007	Dewey A. Milicia	Chesapeake Appalachia, LLC	12.50%	694/361
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-009	Paul F. Hammers	Chesapeake Appalachia, LLC	12.50%	700/86
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-010	Jack R. Hammers	Chesapeake Appalachia, LLC	12.50%	700/78
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-011	Erica M. Mason	Chesapeake Appalachia, LLC	18.75%	713/611
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-012	Toni Jo Mason	Chesapeake Appalachia, LLC	18.75%	716/630
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-292319-013	Betty Yoho, a widow	Chesapeake Appalachia, LLC	18.00%	716/156
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
4	7-18-12	Lease # Pending	Chestnut Holdings, Inc.	SWN Production Company, LLC	20.00%	Sent for Recording
5	7-18-3	1-279408-001	Linda L. Montgomery Welch	Chesapeake Appalachia, LLC	12.50%	683/329
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-002	Helen Evelyn Ackerman	Chesapeake Appalachia, LLC	12.50%	683/45
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-003	Jo Ann Davis	Chesapeake Appalachia, LLC	12.50%	683/42
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-004	Lavonda L. Montgomery, a widow	Chesapeake Appalachia, LLC	12.50%	683/17
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-005	Mildred M. Laherty	Chesapeake Appalachia, LLC	12.50%	683/14
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110

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JUN 18 2015
WV Department of
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		1-279408-006	Karen M. Wolfe	Chesapeake Appalachia, LLC	12.50%	683/11
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-007	R.G. Montgomery	Chesapeake Appalachia, LLC	12.50%	683/7
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-008	Betty L. Montgomery	Chesapeake Appalachia, LLC	12.50%	683/4
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-009	Michelle L. Mayer	Chesapeake Appalachia, LLC	12.50%	685/633
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-279408-010	Mariah D. McCarty	Chesapeake Appalachia, LLC	12.50%	687/158
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-254778-000	Clarence Yoho and Anna Yoho	The Manufacturers Light and Heat Co.	12.50%	353/99
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
6	7-18-1	1-254774-000	George N. Yoho, widower	The Manufacturers Light and Heat Co.	12.50%	353/91
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
7	7-17-43	1-263345-000	Clarence Yoho and Anna Yoho	The Manufacturers Light and Heat Co.	12.50%	353/87
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110

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JUN 18 2015
WV Department of
Environmental Protection

05 10 18 53

8	7-17-1.3	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
9	7-17-39.5	1-287853-001	Christi Y. Reece	Chesapeake Appalachia, LLC	12.50%	690/232
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-002	Elnore Yeater Haberbosch	Chesapeake Appalachia, LLC	12.50%	690/183
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-003	Patricia A. Gulutz	Chesapeake Appalachia, LLC	12.50%	692/242
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-004	Catherine Maxine Cook	Chesapeake Appalachia, LLC	12.50%	690/248
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-005	Sharon L. Smith	Chesapeake Appalachia, LLC	12.50%	692/333
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-006	Donald Brooks Wesley	Chesapeake Appalachia, LLC	12.50%	690/125
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-007	Diana S. Grafton	Chesapeake Appalachia, LLC	12.50%	692/336
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-008	Fredrick M. Yeater	Chesapeake Appalachia, LLC	12.50%	691/491
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-009	Page D. Hunt, a widower	Chesapeake Appalachia, LLC	12.50%	691/481
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
		1-287853-010	Carole G. Rosenberry	Chesapeake Appalachia, LLC	12.50%	694/67
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
10	7-17-39.4	1-254919-000	Hermit R. Yeater; C.T. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/451
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204

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JUN 18 2015
WV Department of
Environmental Protection

05 10 18 53

			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
11	7-17-1.1	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
12	7-17-1	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
13	7-17-1.4	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
14	7-17-1.5	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110

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JUN 18 2015
WV Department of
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15	7-17-1.6	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
16	7-17-1.8	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110
17	7-17-1.9	1-254923-000	Hermit R. Yeater	The Manufacturers Light and Heat Co.	12.50%	363/459
			The Manufacturers Light and Heat Co.	Columbia Gas Transmision Corporation		422/204
			Columbia Gas Transmision Corporation	Columbia Natural Resources, LLC		642/281
			Columbia Natural Resources, LLC	Chesapeake Appalachia, LLC		650/63
			Columbia Gas Transmision Corporation	Chesapeake Appalachia, LLC		662/322
			Chesapeake Appalachia, LLC	SWN Production Company, LLC		33/110

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 4/17/15

API No. 47- 51 - 05101853
Operator's Well No. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

Notice has been given:
Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	WV	UTM NAD 83	Easting:	4400168.9
County:	51-Marshall		Northing:	531564.4
District:	Liberty	Public Road Access:		92/1
Quadrangle:	Glen Easton	Generally used farm name:		Mason Dixon Farms,LLC
Watershed:	Laurel Run			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY or ■ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/ NOT REQUIRED
☐ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ■ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
■ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	☐ RECEIVED/ NOT REQUIRED
■ 4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
■ 5. PUBLIC NOTICE	☐ RECEIVED
■ 6. NOTICE OF APPLICATION	☐ RECEIVED

Required Attachments:
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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Certification of Notice is hereby given:

THEREFORE, I _____, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	SWN Production Co., LLC	Address:	P.O. Box 1300
By:	Dee Southall		Jane Lew, WV 26378
Its:	Regulatory Supervisor	Facsimile:	304-471-2479
Telephone:	304-884-1610	Email:	Dee_Southall@swn.com

NOTARY SEAL
OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this 11th day of June 2015.

Brittany R Woody Notary Public

My Commission Expires 11/27/2022

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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JUN 18 2015

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Landowner	Landowner2	Address	Address2	Parcel ID	ACRESLEGAL	ACRES
ALEXANDER JACK P JR ET UX		ALEXANDER JACK POWELL & JOANN	CAMERON, WV 26033	07 17003400010000	0	0.962442
BAKER DONALD RAY		1422 GREENFIELD RIDGE RD	CAMERON, WV 26033	07 17004300000000	0	70.68537
BAKER DONALD RAY		1422 GREENFIELD RIDGE RD	CAMERON, WV 26033	07 18000100000000	0	103.8252
BAKER DONALD RAY		1422 GREENFIELD RIDGE RD	CAMERON, WV 26033	07 18000300000000	0	96.88439
BARKER JAMES STEPHEN		2208 MARSHALL ST	MC MECHEN, WV 26040	07 17003000000000	0	0.262313
BARTSCH DAVID		32 5TH ST	MCMECHEN, WV 26040	07 17001200000000	0	1.552222
BLAIR C MICHAEL		1 ARCADIAN AC	GLEN DALE, WV 26038	07 17003700040000	0	37.36012
BLAIR C MICHAEL		1 ARCADIAN AC	GLEN DALE, WV 26038	07 17004100000000	0	8.977024
BLAIR ZACHARY M		3 ARCADIAN AC	GLEN DALE, WV 26038	07 18000900000000	0	149.8392
BOARD OF EDUCATION		2700 4TH ST	MOUNDSVILLE, WV 26041	07 29000300000000	0	0.582928
BUKOSKY THOMAS A & KAREN S		10 N HIGHLAND AVE	MOUNDSVILLE, WV 26041	07 19000800060000	0	0.852224
BUKOSKY THOMAS A & KAREN S		10 N HIGHLAND AVE	MOUNDSVILLE, WV 26041	07 19000900000000	0	2.050026
CHAMBERS LAWRENCE PAUL		621 TEWKESBURY LN	SEVERNA PARK, MD 21146	07 19003900000000	0	0.378587
CHAMPION KAREN K		326 BEAMS LN	MOUNDSVILLE, WV 26041	07 17002600010000	0	0.334704
COTTRELL SAMUEL L ET UX		6346 CAMERON RIDGE RD	CAMERON, WV 26033	07 17001000000000	0	58.65435
CROW HOY GLENN ET UX		1738 GREEN FIELD RDG	CAMERON, WV 26033	07 18001100000000	0	124.1149
CROW HOY GLENN ET UX		1738 GREEN FIELD RDG	CAMERON, WV 26033	07 18001200000000	0	1.859879
DERROW NORMAN L ET UX		97 OLD HOMESTEAD LN	MOUNDSVILLE, WV 26041	07 17002600020000	0	0.652288
EVICK G DAVID		22 16TH ST	MCMECHEN, WV 26040	07 29000400000000	0	127.2632
FRANCIS CAROLYN RUTH		RD 1 BOX 362	MOUNDSVILLE, WV 26041	07 19000700000000	0	2.432882
GRIMM MARY ESTHER - LIFE		36 SOUTH HIGHLAND AVE	MOUNDSVILLE, WV 26041	07 19001000010000	0	4.630417
GUZEK WALTER A JR ET AL		4418 DRAGON HWY	CAMERON, WV 26033	07 19004100000000	0	0.957729
HARLAN SCOTT L & SHAWN D		HC 60 BOX 300	NEW MARTINSVILL, WV 26155	07 28000100000000	0	132.4515
HORNER JOHN M & TERESA L		1048 CLARK HILL RD	NEW MARTINSVILL, WV 26155	07 19003200000000	0	99.43412
KARR LLOYD A ET UX		7349 GIRDLE ROAD	W FARMINGTON, WV 44491	07 19003300000000	0	18.78663
LEACH KATHRYN L		POPECK TERESA	CANONSBURG, PA 15317	07 19000200000000	0	0.636136
LOGSDON PHILLIP L		2004 MARSHALL ST	MC MECHEN, WV 26040	07 17002400000000	0	0.265573
LOGSDON PHILLIP L		2004 MARSHALL ST	MC MECHEN, WV 26040	07 17002500000000	0	0.257233
MANUFACTURERS LIGHT & HEAT		TAX DEPT	FAIRFAX, VA 22030	07 19001000000000	0	31.52618
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 16000600000000	0	71.40[illegible]
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 16000700000000	0	83.1[illegible]
MASON DIXON FARMS LLC		P O BOX 360911	MELBOURNE, FL 32936	07 17001600010000	0	1.428345
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17001900010000	0	19.23649
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17002000000000	0	1.167449
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003300000000	0	173.[illegible]
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003300000000	0	24.4[illegible]
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003500000000	0	52.84[illegible]
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003600000000	0	105.2571
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003700000000	0	71.08735
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003700050000	0	28.63512
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17003800000000	0	22.16551
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07 17004000000000	0	21.29856

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MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	18000200000000	0	5.571369
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	18000500000000	0	71.26675
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	18000600000000	0	87.93692
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	18000700000000	0	99.72156
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	18001300000000	0	143.6591
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	19000100000000	0	160.3807
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	19000600000000	0	1.3021
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	19000800080000	0	35.56772
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	19000800090000	0	5.615713
MCCULLEY BETTY TAYLOR ET VIR		6340 CAMERON RIDGE RD	CAMERON, WV 26033	07	17000800000000	0	1.129647
MCELWEE KEVIN B		RR 5 BOX 95A	CAMERON, WV 26033	07	17002200000000	0.4169	0.323831
MCELWEE KEVIN B		RR 5 BOX 95A	CAMERON, WV 26033	07	17002300000000	0	0.507214
MCMILLEN MARY ET AL		RD 4 BOX 67	CAMERON, WV 26033	07	18001400000000	0	105.9653
MCPEEK SCOTT ALLEN		109 S 7TH ST	PADEN CITY, WV 26159	07	17002700000000	0	0.264892
MCPEEK SCOTT ALLEN		109 S 7TH ST	PADEN CITY, WV 26159	07	17002800000000	0	0.113825
MORRIS CAROLYN JO & DENNY R		2301 CENTER ST	MOUNDSVILLE, WV 26041	07	19000500000000	0	1.4364
NEELY RONALD K		404 VICTOR ST	NEW MARTINSVILL, WV 26155	07	18001000000000	0	26.79981
OLDFIELD CHARLES D ET AL		RD 1 BOX 496	MOUNDSVILLE, WV 26041	07	17003700010000	0	2.327759
PARKER PETER		PO BOX 5065	FAIRMONT, WV 26555	07	17003700010000	0	2.327759
REECE CHRISTI		132 PLEASANT RIDGE RD	CAMERON, WV 26033	07	17003900050000	0	13.37771
RICHARDS MICHAEL & DONNA		PO BOX 5065	FAIRMONT, WV 26555	07	19000800020000	0	1.240724
RICHARDS MICHAEL E & DONNA D		1814 PENN ST	MOUNDSVILLE, WV 26041	07	19000300000000	0	0.692326
RICHMOND CHRISTINA Y		THORNE RICHMOND CHRISTINA	LENOIR, NC 28645	07	17002100000000	0	0.581312
ROMACK DONALD Z ET UX		290 GILLMER RD	LEAVITTSBURG, OH 44430	07	19003600000000	0	107.5258
STERN JERRY GLENN & DONNA	KAY KIRBY	17463 FISH CREEK RD	CAMERON, WV 26033	07	17003900000000	0	19.16818
STERN WARREN ET UX - LIFE		1101 HYDE SHAFFER RD NW	BRISTOLVILLE, OH 44402	07	29000400020000	0	20.29293
TAYLOR RALPH MARTIN		PO BOX 62	MCMECHEN, WV 26040	07	17002900000000	0	0.496944
TWIGG BERNARD P		204 12TH ST	GLEN DALE, WV 26038	07	18000800000000	0	127.3834
WALLACE RODNEY J & DIANNA L		1066 FORK RIDGE RD	MOUNDSVILLE, WV 26041	07	17003700030000	0	38.09784
WALLACE RODNEY J ET UX		1066 FORK RIDGE RD	MOUNDSVILLE, WV 26041	07	19004000000000	0	0.647521
WARREN JAMES ROBERT & TIMOTHY	JUSTIN BRIAN	RD 5 BOX 599 B	CAMERON, WV 26033	07	17003400000000	0	4.957091
WHITTEMORE MICHAEL T & CARLA M	ALLEY	668 CONGRESS AVE	MORGANTOWN, WV 26505	07	19000800070000	0	2.28775
WHORTON JERRY & CYNTHIA C		3167 DOWLER RD	MOUNDSVILLE, WV 26041	07	17003200000000	0	0.285099
WHORTON JERRY ET UX		3167 DOWLER RD	MOUNDSVILLE, WV 26041	07	16000700010000	0	0.337444
WHORTON JERRY S & CYNTHIA C		3167 DOWLER RD	MOUNDSVILLE, WV 26041	07	17003100000000	0	0.235964
YOHO EDWARD		905 PARRIOTT AVE	MOUNDSVILLE, WV 26041	07	17002600000000	0	0.275227
OLDFIELD CHARLES D ET AL		RD 1 Box 496	MOUNDSVILLE, WV 26041	07	17003700010000	0	19.05
PARKER PETER		PO BOX 5065	FAIRMONT, WV 26555	07	17003700030000	0	5.588
BLAIR ZACHARY M		3 ARCADIAN AC	GLEN DALE, WV 26038	07	18000900000000	0	247.059
GRIMM MARY ESTHER - LIFE		36 SOUTH HIGHLAND AVE	MOUNDSVILLE, WV 26041	07	19001000010000	0	5
MASON DIXON FARMS LLC		PO BOX 360911	MELBOURNE, FL 32936	07	29000200000000	0	50

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Office of Oil and Gas
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WV Department of
Environmental Protection

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05101853

SWN Production Company

SWN Production Company, LLC
P O Box 12359
Spring, Texas 77391-2359
www.swn.com

May 27, 2015

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

RE: SWN's proposed O E Burge MSH 501HU in Marshall County, West Virginia, Drilling under Greenfield Ridge Road, Valley Run Road, and Fish creek Road.

Dear Ms. Adkins:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Greenfield Ridge Road, Valley Run Road, and Fish Creek Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you and should you have any questions please feel free to contact the undersigned at (832) 796-6162 or by email at Brandi_Williams@swn.com.

Sincerely,

Brandi Williams

Brandi Williams
Senior Landman
SWN Production Company, LLC

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Office of Oil and Gas

JUN 18 2015

WV Department of
Environmental Protection

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WW-6A
(9-13)

API NO. 47- 51 - 05101853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 6/17/15 **Date Permit Application Filed:** 6/17/15

Notice of:

☑ PERMIT FOR ANY WELL WORK ☐ CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

☐ PERSONAL SERVICE ☑ REGISTERED MAIL ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

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JUN 18 2015
WV Department of Environmental Protection

☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to:

☑ SURFACE OWNER(s)
Name: Mason Dixon Farms, LLC
Address: PO Box 360911
Melbourne, FL 32936
Name:
Address:

☑ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Zachary Blair
Address: 3 Arcadian AC
Glen Dale, WV 26038
Name:
Address:

☐ SURFACE OWNER(s) (Impoundments or Pits)
Name:
Address:

☑ COAL OWNER OR LESSEE
Name: Consolidated Coal Company
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

☐ COAL OPERATOR
Name:
Address:

☑ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: Mason Dixon Farms, LLC
Address: PO Box 360911
Melbourne, FL 32936

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name:
Address:

*Please attach additional forms if necessary

WW-6A
(8-13)

API NO. 47-051-01853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:
Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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Environmental Protection

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions
Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:
Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:
Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

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JUN 1 8 2015
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Environmental Protection

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

WW-6A
(8-13)

API NO. 47- 51 - 05101853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

(1) The proposed well work will constitute a hazard to the safety of persons;
(2) The plan for soil erosion and sediment control is not adequate or effective;
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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Office of Oil and Gas
JUN 18 2015
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 51 - 05101853
OPERATOR WELL NO. OE Burge U MSH 501H
Well Pad Name: OE Burge MSH Pad

Notice is hereby given by:

Well Operator: SWN Production Co., LLC
Address: P.O. Box 1300
Jane Lew, WV 26378
Telephone: 832-796-1610
Email: Dee_Southall@swn.com
Facsimile: 304-471-2479

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.

OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this 11th day of June 2015.

Brittany R Woody Notary Public

My Commission Expires 11/27/2022

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Office of Oil and Gas
JUN 18 2015
WV Department of
Environmental Protection

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WW-6A4
(1/12)

Operator Well No. O.E. Burge MSH 501H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 05/28/2015 **Date Permit Application Filed:** 6/17/15

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided,* That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however,* That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Zachary M. Blair
Address: 3 Arcadian AC
Glen Dale, WV 26038

Name:
Address:

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	West Virginia	UTM NAD 83	Easting:	531564.4
County:	Marshall		Northing:	4400168.9
District:	Liberty	Public Road Access:		CR 92/1
Quadrangle:	Glen Easton	Generally used farm name:		
Watershed:	Laurel Run			

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator:	SWN Production Co, LLC	Authorized Representative:	Danielle Southall
Address:	PO Box 1300, 179 Innovation Drive	Address:	PO Box 1300, 179 Innovation Drive
	Jane Lew, WV 26378		Jane Lew, WV 26378
Telephone:	304-884-1611	Telephone:	304-884-1614
Email:	micah.feather@swn.com	Email:	Danielle.Southall@swn.com
Facsimile:	304-472-4225	Facsimile:	

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas
JUN 18 2015
WV Department of
Environmental Protection

WW-6A4
(1/12)

Operator Well No. O.E. Burge MSH 501H

05101853

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 05/28/2015 **Date Permit Application Filed:** 6/17/15

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided,* That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however,* That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Mason Dixon Farms LLC
Address: PO Box 360911
Melbourne, FL 32936

Name:
Address:

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Marshall
District: Liberty
Quadrangle: Glen Easton
Watershed: Laurel Run

UTM NAD 83 Easting: 531564.4
Northing: 4400168.9
Public Road Access: CR 92/1
Generally used farm name:

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN Production Co, LLC
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-884-1611
Email: micah.feather@swn.com
Facsimile: 304-472-4225

Authorized Representative: Danielle Southall
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-884-1614
Email: Danielle.Southall@swn.com
Facsimile:

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil & Gas
JUN 18
WV Department of Environmental Protection

WW-6A5
(1/12)

Operator Well No. O.E. Burge MSH 501H

05101853

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**
Date of Notice: 05/28/2015 **Date Permit Application Filed:** 6/17/15

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Mason Dixon Farms LLC
Address: PO Box 360911
Melbourne, FL 32936

Name:
Address:

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Marshall
District: Liberty
Quadrangle: Glen Easton
Watershed: Laurel Run

UTM NAD 83 Easting: 531564.4
Northing: 4400168.9
Public Road Access: CR 92/1
Generally used farm name:

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1)A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: SWN Production Co, LLC
Telephone: 304-884-1611
Email: micah.feather@swn.com

Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Facsimile: 304-472-4225

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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JUN 18 2015
WV Department of
Environmental Protection

WW-6A5
(1/12)

Operator Well No. O.E. Burge MSH 501H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

05-10-1853

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**
Date of Notice: 05/28/2015 **Date Permit Application Filed:** 6/17/15

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Zachary M. Blair
Address: 3 Arcadian AC
Glen Dale, WV 26038

Name:
Address:

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	West Virginia	UTM NAD 83	Easting:	531564.4
County:	Marshall		Northing:	4400168.9
District:	Liberty	Public Road Access:		CR 92/1
Quadrangle:	Glen Easton	Generally used farm name:		
Watershed:	Laurel Run			

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1)A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator:	SWN Production Co, LLC	Address:	PO Box 1300, 179 Innovation Drive
Telephone:	304-884-1611		Jane Lew, WV 26378
Email:	micah.feather@swn.com	Facsimile:	304-472-4225

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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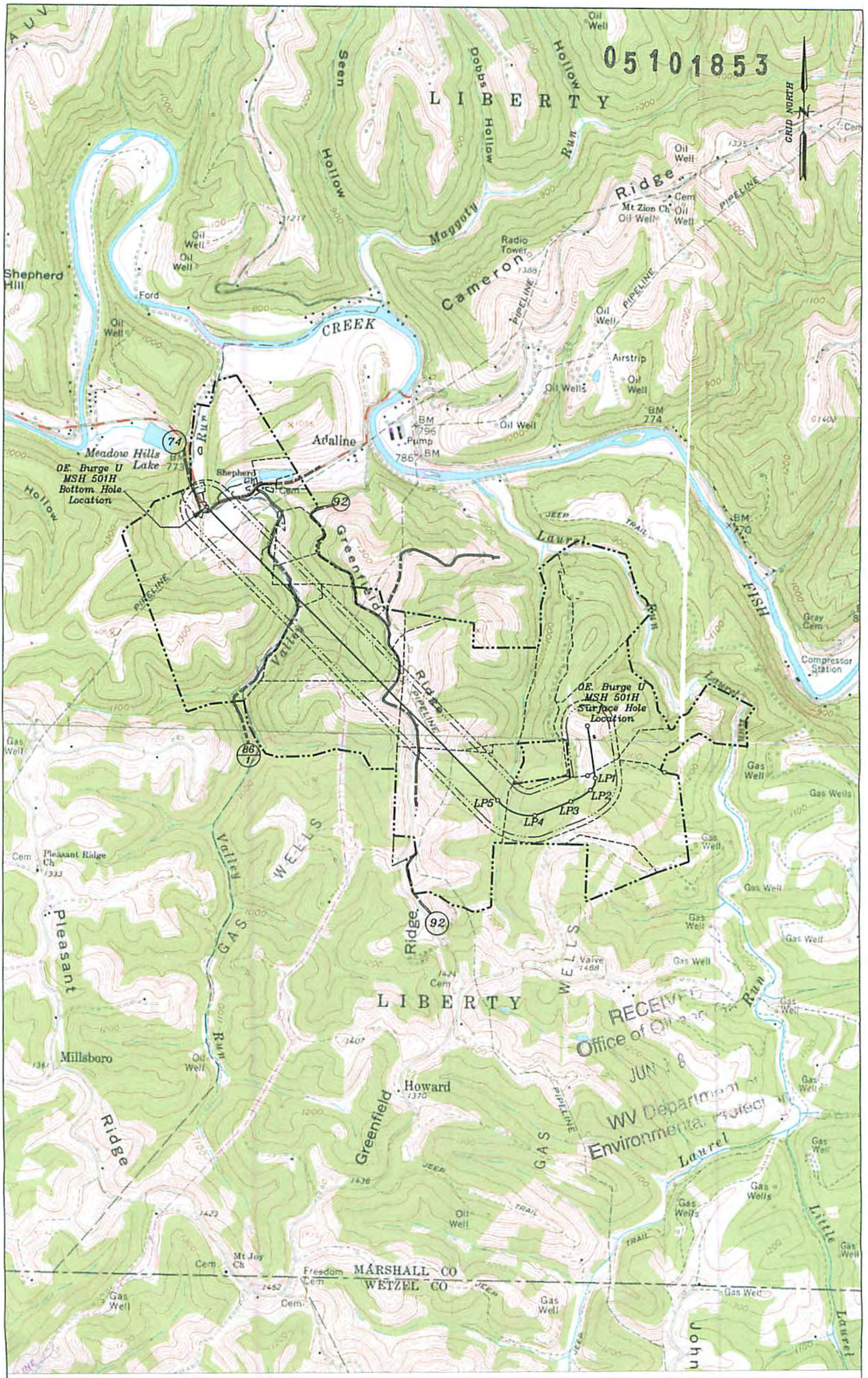
JUN 18 2015
WV Department of
Environmental Protection



Well: O. E. Burge MSH U 501H
Quad: Glen Easton 7 1/2'
District: Liberty
County: Marshall

0 1,000' 2,000' 4,000'
Scale: 1"=2,000'

05101853

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

June 1, 2015

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the O.E. Burge Pad U MSH 501H Well Site, Marshall County

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #06-2015-0114 for the subject site Southwestern Energy for access to the State Road for the well site located off of Marshall County Route 92/1 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton

Gary K. Clayton
Regional Maintenance Engineer
Central Office Oil &Gas Coordinator

Cc: Brittany Woody
Southwestern Energy
CH, OM, D-6
File

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Office of Oil and Gas
JUN 18 2015
WV Department of
Environmental Protection

05101853

Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
BAKER HUGHES	ALPHA 1427	Biocide	Didecyl Dimethyl Ammonium Chloride	007173-51-1
			Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compound	068424-85-1
			Water	007732-18-5
	BF-7L	Buffer	Potassium Carbonate	000584-08-7
	ClayCare	Clay Stabilizer	Choline Chloride	000067-48-1
			Water	007732-18-5
	Enzyme G-I	Breaker	No Hazardous Components	NONE
	ENZYME G-NE	Breaker	No Hazardous Components	NONE
	FRW-18	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8
	GW-3LDF	Gel	Petroleum Distillate Blend	N/A-014
			Polysaccharide Blend	N/A-021
	SCALETROL 720	Scale Inhibitor	Diethylene Glycol	000111-46-6
			Ethylene Glycol	000107-21-1
	XLW-32	Crosslinker	Boric Acid	010043-35-3
			Methanol (Methyl Alcohol)	000067-56-1
FRAC TECH SERVICES	APB01 (AMMONIUM PERSUFATE BREAKER)	Breaker	Ammonium Persulfate	007727-54-0
	B05 (LOW PH BUFFER)	Buffer	Acetic acid	000064-19-7
	BXL03 Borate XL Delayed High Temp	Crosslinker	No Hazardous Components	NONE
	FRW-200	Friction Reducer	No Hazardous Components	NONE
	HVG01 (TURQUOISE-1 BULK)	Gelling Agent	Petroleum Distillate Hydrotreated Light	064742-47-8
	KCLS-4	Clay Stabilizer	No Hazardous Components	NONE
	LTB-1	Breaker	Ammonium Persulfate	N/A

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Office of Oil and Gas
JUN 18 2015
WV Department of
Environmental Protection

05101853

Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
NALCO ONESOURCE	EC6110A	Biocide	Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compounds	N/A-063
	EC6629A	Biocide	No Hazardous Components	NONE
WEATHERFORD	WBK-133 OXIDIZER	Breaker	Ammonium Persulfate	007727-54-0
	WBK-134	Breaker	Ammonium Persulfate	007727-54-0
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7
	WCS-631LC	Clay Stabilizer	Proprietary Non Hazardous Salt	N/A-229
			Water	007732-18-5
	WFR-55LA	Friction Reducer	No Hazardous Components	NONE
	WGA-15L	Gel	Petroleum Distillate Hydrotreated Light	064742-47-8
	WPB-584-L	Buffer	Potassium Carbonate	000584-08-7
			Potassium Hydroxide	001310-58-3
	WXL-101LE	Corsslinker	No Hazardous Components	NONE
	WXL-101LM	Crosslinker	Petroleum Distillate Hydrotreated Light	064742-47-8
	WXL-105L	Crosslinker	Water	007732-18-5
			Ethylene Glycol	000107-21-1
			Boric Acid	010043-35-3
			Ethanolamine	000141-43-5
SCHLUMBERGER	B244 Green-Cide 25G	Biocide	Glutaraldehyde	111-30-8
	L071 Temporary Clay Stabilizer	Clay Stabilizer	Cholinium Chloride	67-48-1
	Breaker J218	Breaker	Diammonium Peroxidisulphate	7727-54-0
	EB-Clean* J475 Breaker		Diammonium Peroxidisulphate	7727-54-0
	Friction Reducer B315	Friction Reducer	Distillates (petroleum), Hydrotreated light Aliphatic	64742-47-8
			Alcohol Glycol Ether	Proprietary
	Friction Reducer J609		Ammonium Sulfate	7783-20-2
Supplier Name	Product Name	Product Use	Chemical Name	CAS Number

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JUN 18 2015
WV Department of
Environmental Protection

SCHLUMBERGER	Water Gelling Agent J580	Gel	Carbohydrate Polymer	Proprietary
	Scale Inhibitor B317	Scale Inhibitor	Trisodium ortho phosphate Ethane-1, 2-diol	7601-54-9 107-21-1
	Borate Crosslinker J532	Crosslinker	Aliphatic polyol Sodium tetraborate decahydrate	Proprietary 1303-96-4
	Crosslinker J610		Aliphatic polyol Potassium hydroxide	Proprietary 1310-58-3

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WV Department of
Environmental Protection

O.E. Burge MSH Well Pad
As-Built Site Plan Modification

LIBERTY DISTRICT, MARSHALL COUNTY, WV

Prepared for:
Southwestern Energy

Date: June 09, 2015

WVDEP OOG
ACCEPTED AS-BUILT
9/23/2015

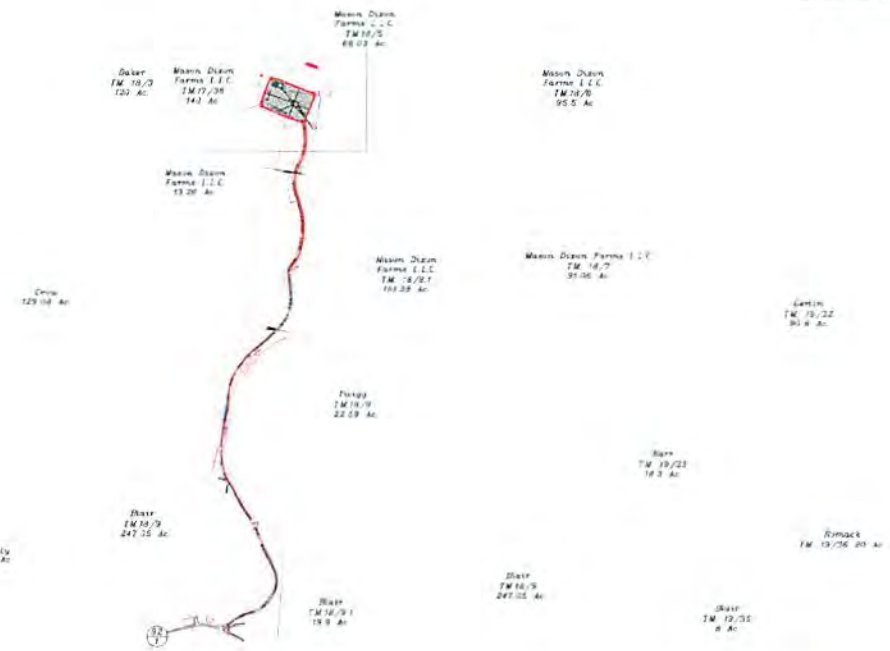
GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

Sheet	Description
1	Cover
2	Pad Plan
3	Road Plan & Profile
4	Road Plan & Profile
5	Road Plan & Profile
6	Road Plan & Profile
7	Evacuation Route
8	Reclamation Plan

MODIFIED LOD		
ROAD		
Owner	Tax Map	Acres
Zachary Blair	18-9.1	0.58
Zachary M. Blair	18-9	1.88
Bernard P. Twigg	18-8	0.04
Mason Dixon Farms LLC	18-8.1	2.02
Mason Dixon Farms LLC	18-5	1.38

PAD		
Owner	Tax Map	Acres
Mason Dixon Farms LLC	18-5	7.6
	TOTAL LOD:	14.50 Ac



CENTER PAD
Geographic NAD 83
Latitude: 39.750915
Longitude: 80.631891
Geographic NAD 27
Latitude: 39.750835
Longitude: 80.632085
UTM, NAD 83 (METERS)
North: 4400176.6
East: 531535.6

WELL ENTRANCE INT.
Geographic NAD 83
Latitude: 39.738109
Longitude: 80.633689
Geographic NAD 27
Latitude: 39.738029
Longitude: 80.633883
UTM, NAD 83 (METERS)
North: 4398754.7
East: 531387.3

GATHERING AREA
Geographic NAD 83
Latitude: 39.738141
Longitude: 80.633325
Geographic NAD 27
Latitude: 39.738061
Longitude: 80.633519
UTM, NAD 83 (METERS)
North: 4398758.4
East: 531418.5

Revisions:
Ramp Detail 09-21-15

*Note: There was no LOD shown on the original permit

TOTAL DISTURBED AREA 13.4 ACRES
ROAD DISTURBED AREA 5.8 ACRES
PAD DISTURBED AREA 7.6 ACRES

0 250' 500' 1000'
Scale 1" = 500'

swn Southwestern Energy

WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
www.WV811.com

This well pad was designed by Kelly Land Surveying in June, 2015. This certification is for the as-built survey of the pad and road to show the well location(s), pad geometry, road location, culvert location, drainage features and erosion & sediment control.

Dennis L. Fisher RPE 8684 — 09-21-2015 Date

DLF.
Dennis L. Fisher, RPE
PO Box 281
Philippi, WV 26416
Cell: 304-677-4129
E-Mail: Fisher.Engineering@gmz.com

Jackson Surveying Inc.
677 W. Main St.
Clarksburg, WV 26301
304-623-5851

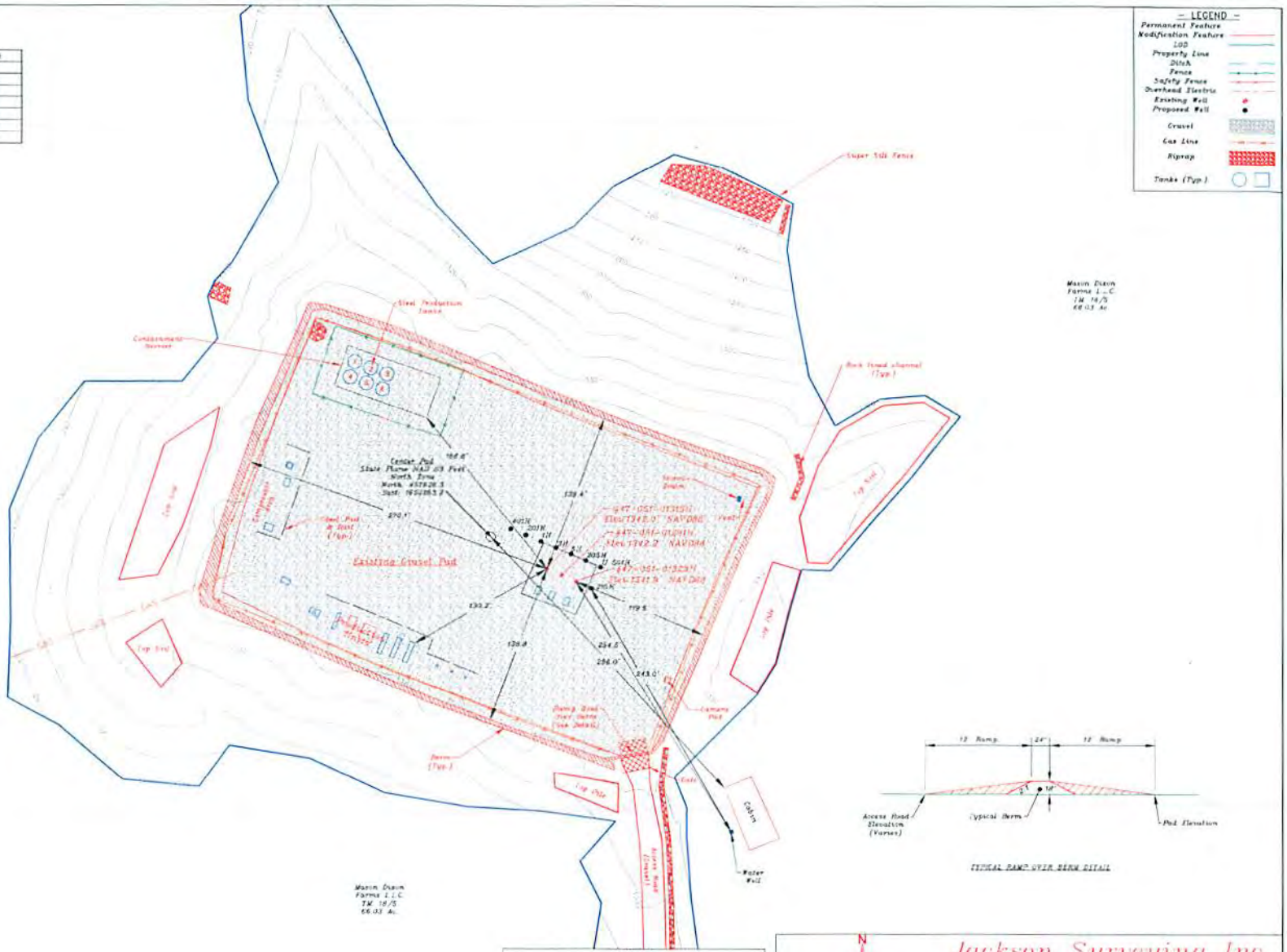
Cover
Sheet 1 of 8
O.E. Burge MSH Well Pad
As-Built Site Plan/ Modification

GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

PRODUCTION TANKS (UTM Nad 83, Meters)		
Tank #	Northing	Easting
1	4400222.2	531499.1
2	4400220.7	531503.3
3	4400219.2	531507.6
4	4400218.3	531459.0
5	4400216.7	531507.2
6	4400215.2	531506.5

WVDEP OOG
ACCEPTED AS-BUILT
VAJ 9/23/2016



DLF.
Dennis L. Fisher, RPE
PO Box 281
Philippi, WV 26416
Cell: 304-677-4129
E-Mail: Fisher.Engineering@gmx.com

Jackson Surveying Inc.
677 W. Main St.
Clarksburg, Wv 26301
304-623-5851

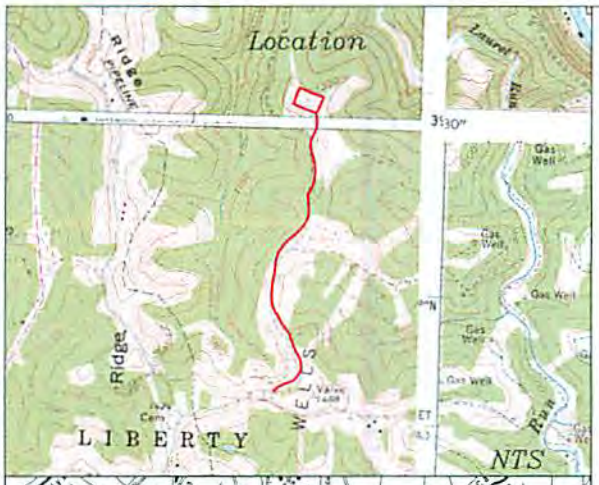
Well Pad Plan

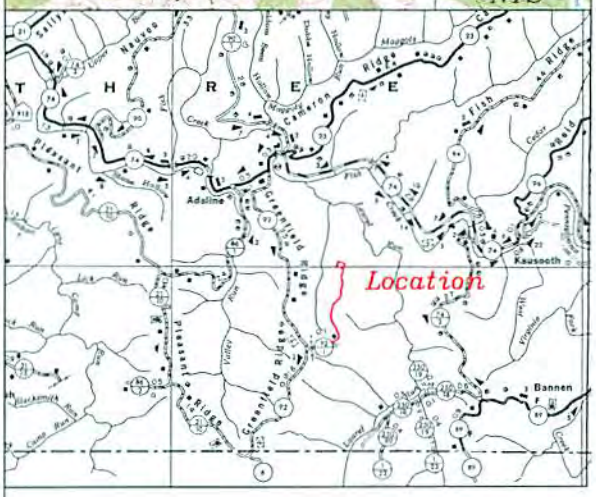
Sheet 2 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification

SWN
Southwestern Energy





O.E. Burge I
As-Built Site P

LIBERTY DISTRICT, M

Prepa
Southwest

Date: Jun

MODIFIED LOD		
ROAD		
Owner	Tax Map	Acres
Zachary Blair	18-9.1	0.58
Zachary M. Blair	18-9	1.88
Bernard P. Twigg	18-8	0.04
Mason Dixon Farms LLC.	18-8.1	2.02
Mason Dixon Farms LLC.	18-5	1.38
PAD		
Owner	Tax Map	Acres
Mason Dixon Farms LLC.	18-5	7.6
	TOTAL LOD:	13.50 Ac.

Baker
TM. 18/3
120 Ac.

Mason Dixon
Farms L.L.C.
TM.17/36
140 Ac.

Mason Dixon
Farms L.L.C.
13.26 Ac.

Crow
129.08 Ac.

Blair
TM.18/9
247.05 Ac.

Neely
30 Ac.

Revisions:

*Note: There was no LOD shown on the original permit.

TOTAL DISTURBED AREA: 13.4 ACRES
ROAD DISTURBED AREA: 5.8 ACRES
PAD DISTURBED AREA: 7.6 ACRES

This well pad was designed by Kelly Land Surveying in June 2010. certification is for the as-built survey of the pad and road to show well location(s), pad geometry, road location, culvert location, drainag features and erosion & sediment control.

DENNIS L. FISHER
REGISTERED
No. 8684
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

Dennis L. Fisher RPE 8684

6-09
Date

SWN
Southwestern Energy®

WEST VIRGINIA 811
CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
www.WV811.com

MSH Well Pad
lan Modification

ARSHALL COUNTY, WV

red for:
ern Enegry

e 09, 2015

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JUN 1 8 2015

WV Department of
Environmental Protection

GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

Sheet	Description
1	Cover
2	Pad Plan
3	Road Plan & Profile
4	Road Plan & Profile
5	Road Plan & Profile
6	Road Plan & Profile
7	Evacuation Route
8	Reclamation Plan

6/10/15

CENTER PAD

Geographic NAD 83
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Longitude: 80.631891

Geographic NAD 27
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UTM, NAD 83 (METERS)
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North: 4398758.4
East: 531418.5

DLF.
Dennis L. Fisher, RPE
PO Box 281
Philippi, WV 26416
Cell: 304-677-4129
E-Mail: Fisher.Engineering@gmx.com

N
W E
S

677 W. Main St.
Clarksburg, WV 26301
304-623-5851

Jackson Surveying Inc.

Cover
Sheet 1 of 8
O.E. Burge MSH Well Pad
As-Built Site Plan/ Modification

GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

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Tank #	Northing	Easting
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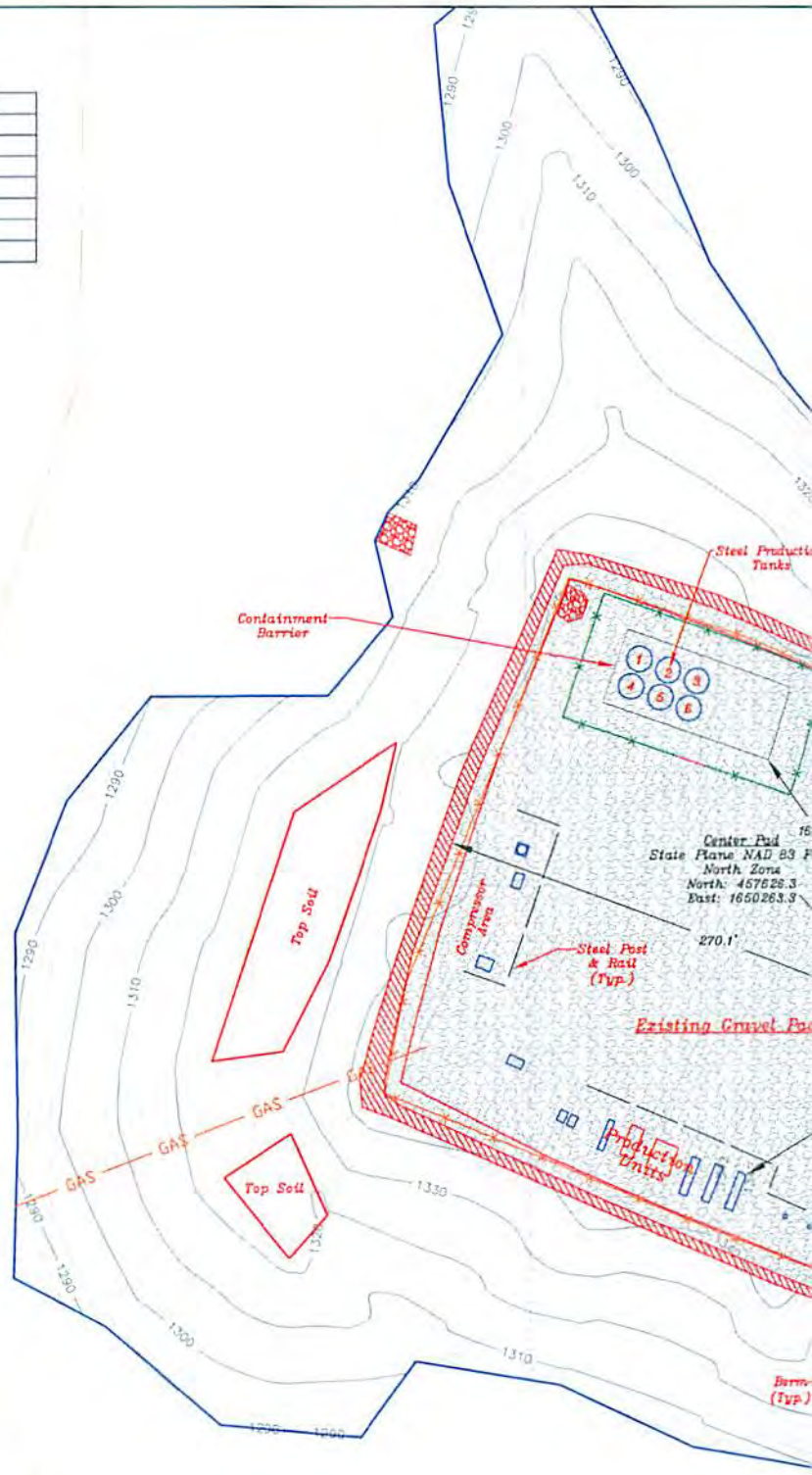
5	4400216.7	531502.2
6	4400215.2	531506.5



Mason Dixon
Farms L.L.C.
TM. 17/36
140 Ac.

Mason Dixon
Farms L.L.C.
TM. 18/5
66.03 Ac.

Mason Dixon
Farms L.L.C.
13.26 Ac.

swn
Southwestern Energy®

0 20' 40' 80
Scale: 1" = 40'

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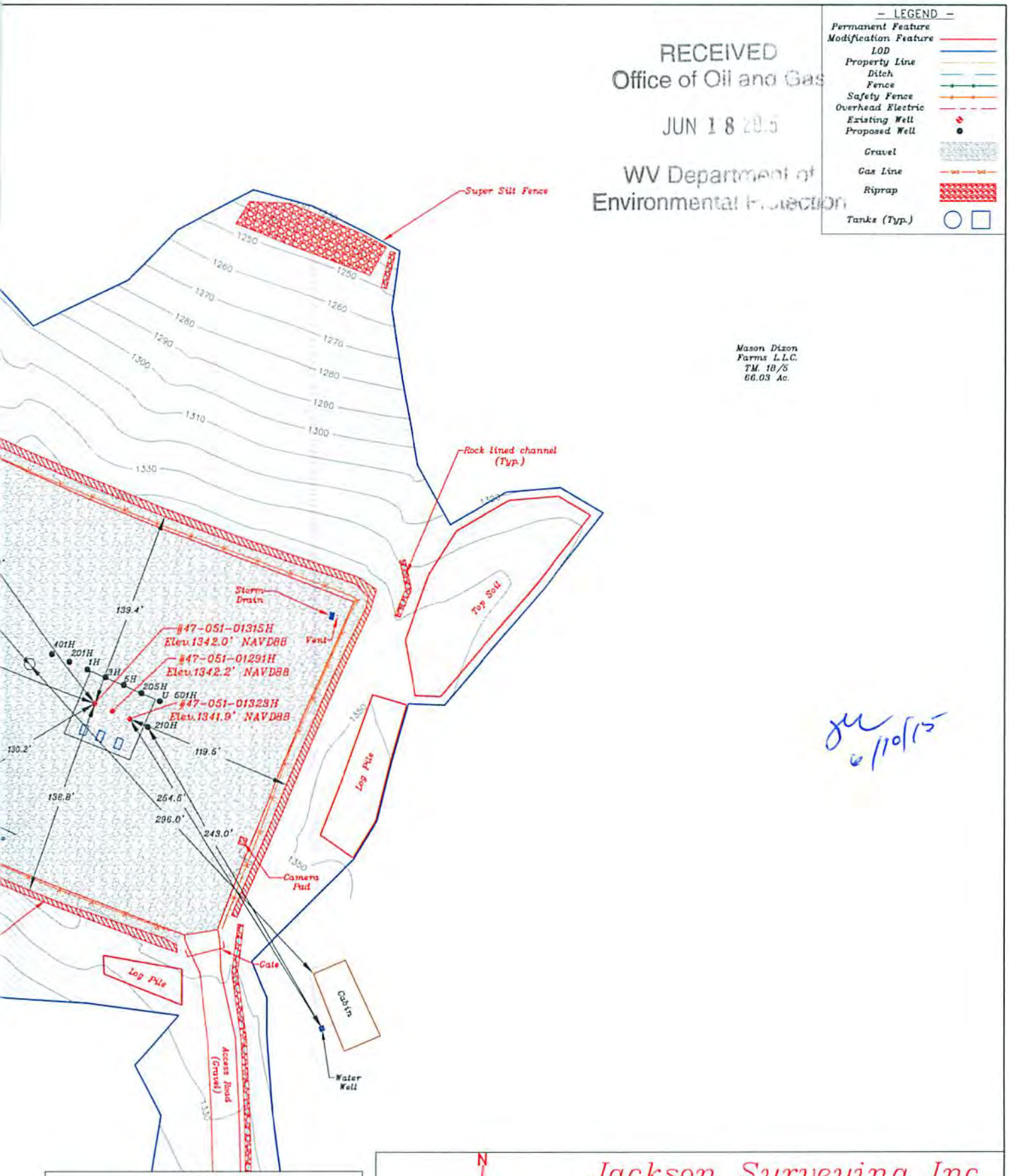


JL 6/10/15

DLF.
Dennis L. Fisher, RPE
PO Box 281
Philippi, WV 26416
Cell: 304-677-4129
E-Mail: Fisher.Engineering@gmx.com

Jackson Surveying Inc.
677 W. Main St.
Clarksburg, Wv 26301
304-623-5851

Well Pad Plan

Sheet 2 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification

GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

WELL ENTRANCE INT.
State Plane NAD 83 Feet
North Zone
North: 452968.5
East: 1649698.9

WV Sec. Rte 92/1

Emergency Evacuation Gathering Area

Driveway

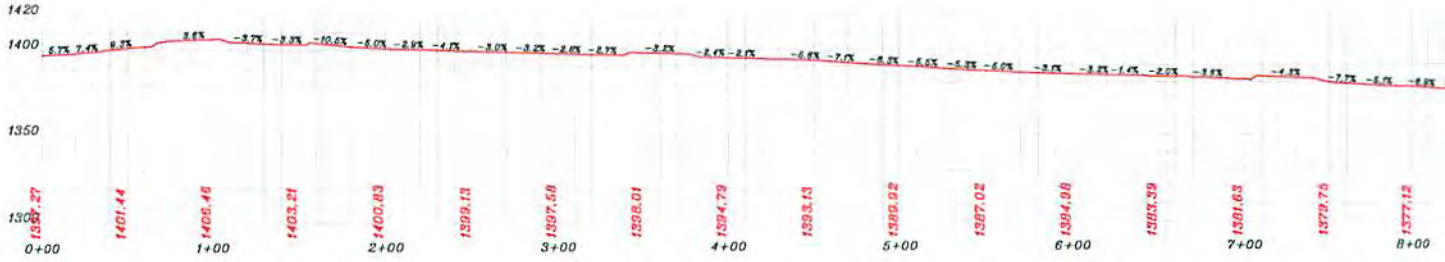
Blair
TM. 18/9
247.05 Ac.

Blair
TM. 18/9.1
19.9 Ac.

Existing Well (Gravel)

- LEGEND -

- Permanent Feature
- Modification Feature
- LOD
- Property Line
- Ditch
- Fence
- Safety Fence
- Overhead Electric
- Existing Well
- Proposed Well
- Gravel
- Gas Line
- Riprap
- Tanks (Typ.)



Vert. 1"= 50'
Horz. 1"= 50'

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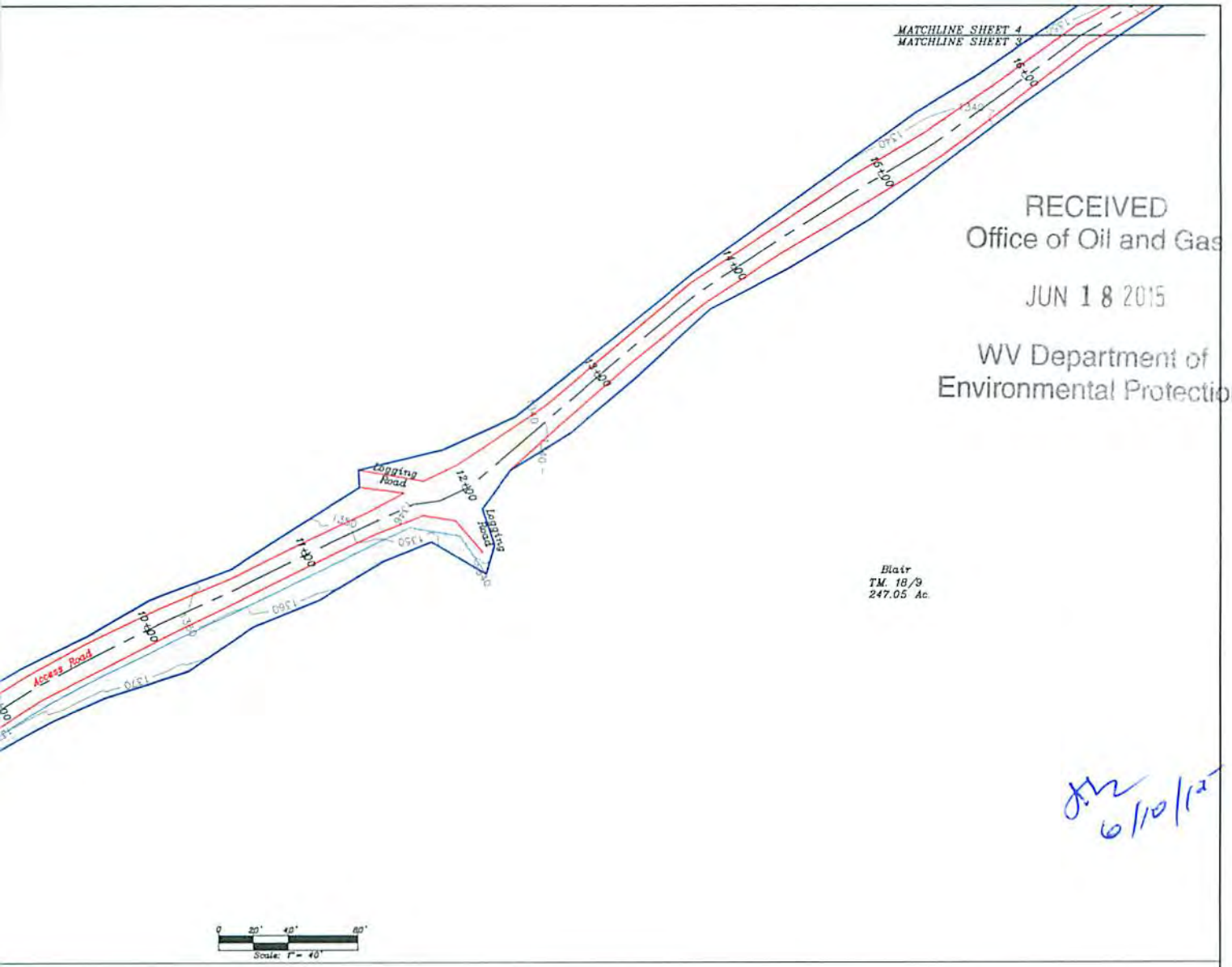

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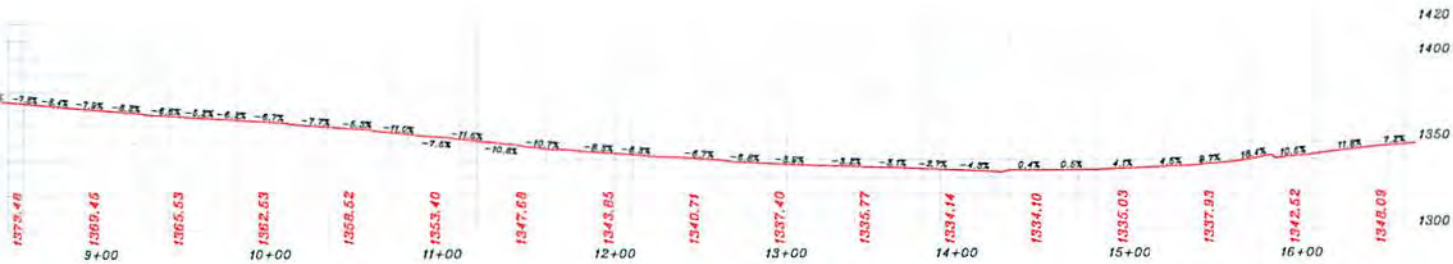
WV Department of
Environmental Protection

6/10/15



Profile

DLF.
Dennis L. Fisher, RPE
PO Box 281
Philippi, WV 26416
Cell: 304-677-4129
E-Mail: Fisher.Engineering@gmx.com

JACKSON SURVEYING, INC.
PROFESSIONAL SURVEYORS
N W E S
677 W. Main St.
Clarksburg, Wv 26301
304-623-5851

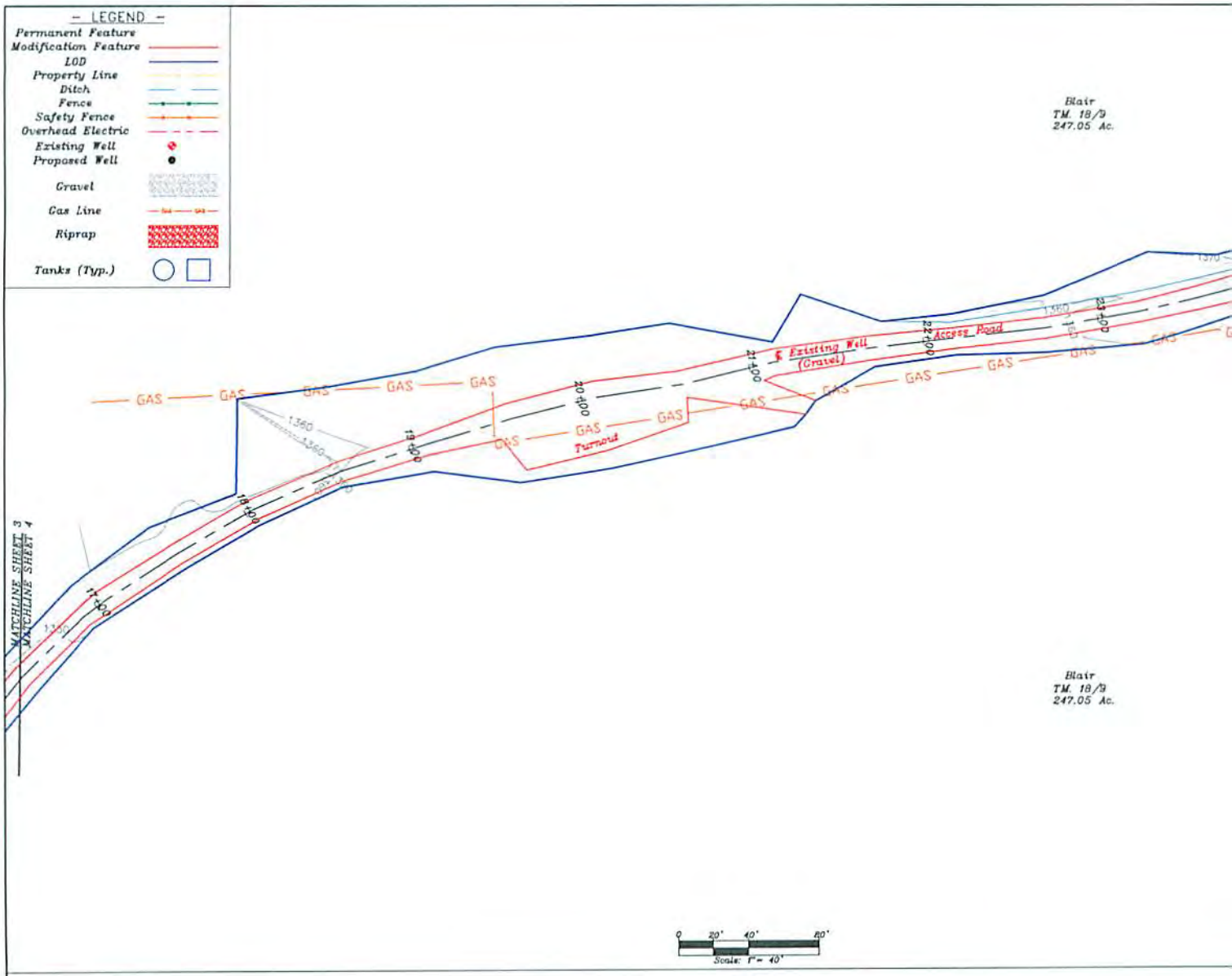
Jackson Surveying Inc.

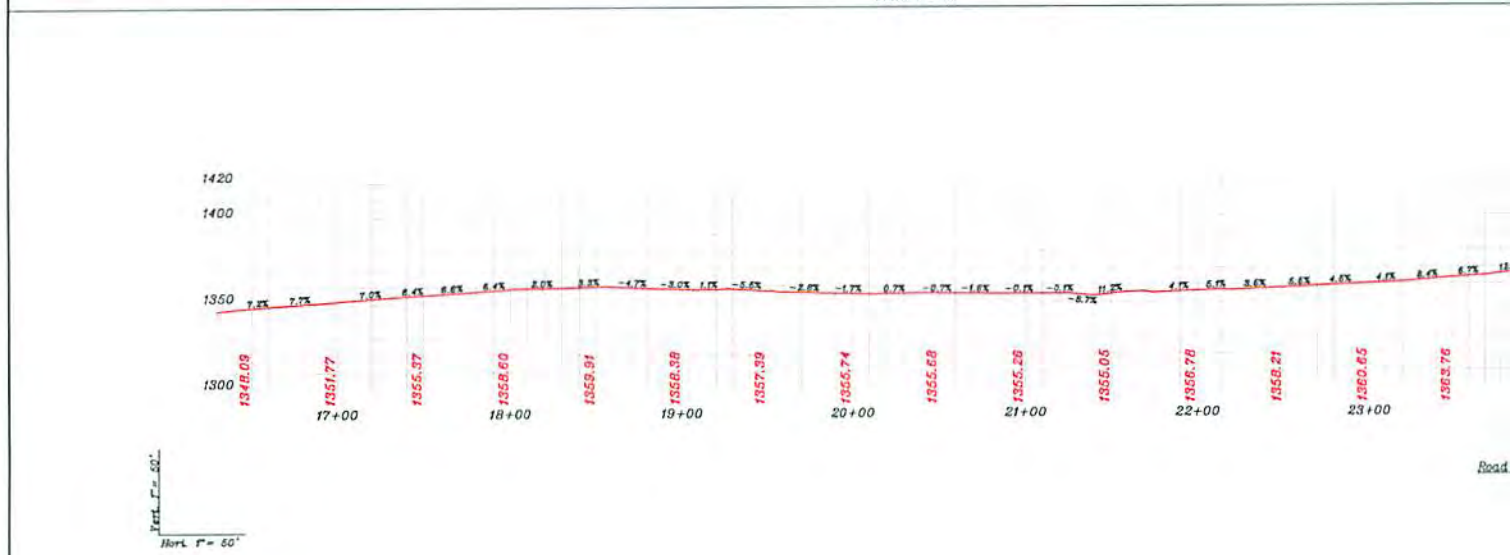
Access Road Plan & Profile

Sheet 3 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification





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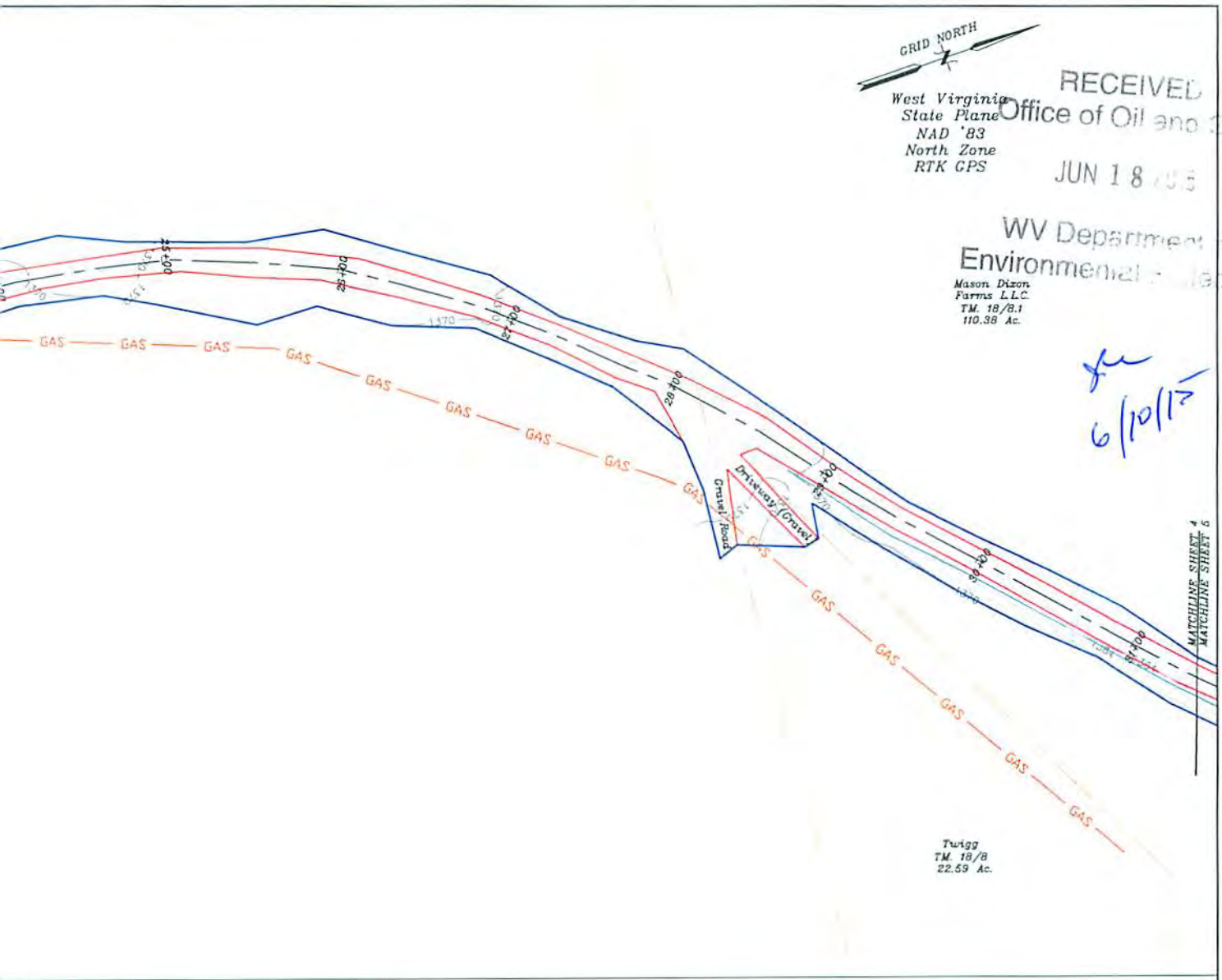

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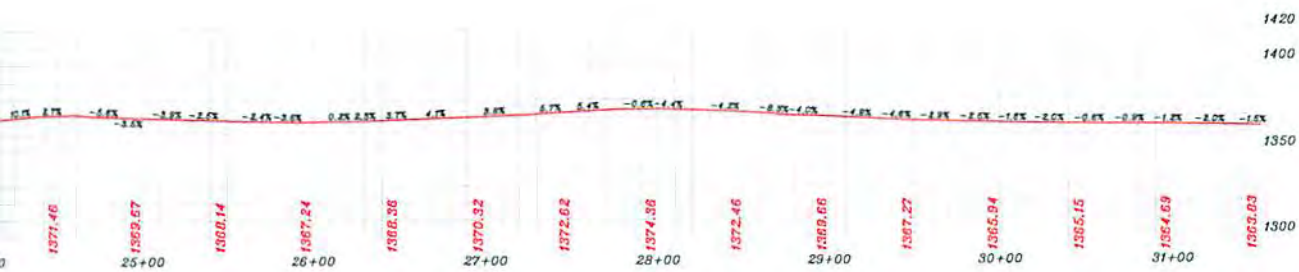

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Jackson Surveying Inc.

Access Road Plan & Profile

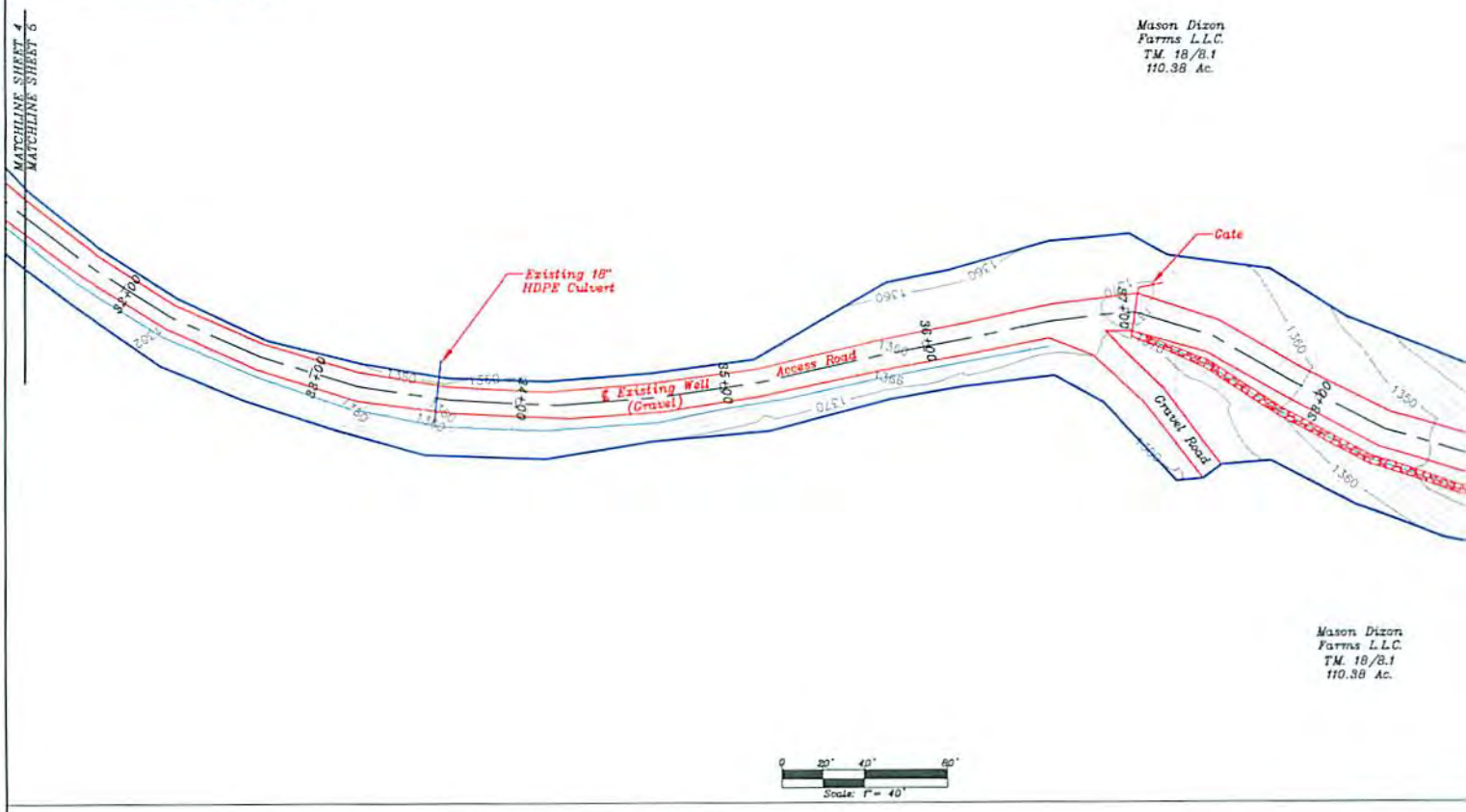
Sheet 4 of 8

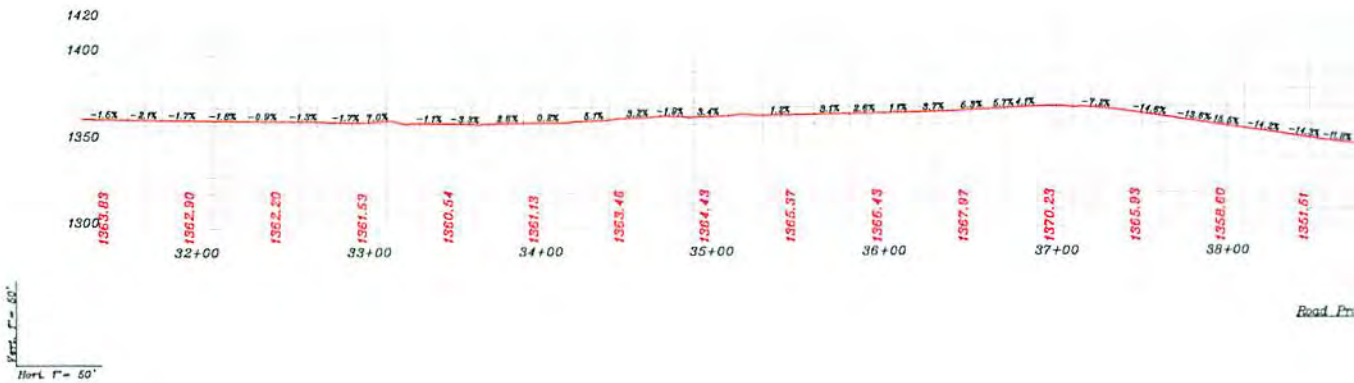
O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification

- LEGEND -

- Permanent Feature
- Modification Feature
- LOD
- Property Line
- Ditch
- Fence
- Safety Fence
- Overhead Electric
- Existing Well
- Proposed Well
- Gravel
- Gas Line
- Riprap
- Tanks (Typ.)





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GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

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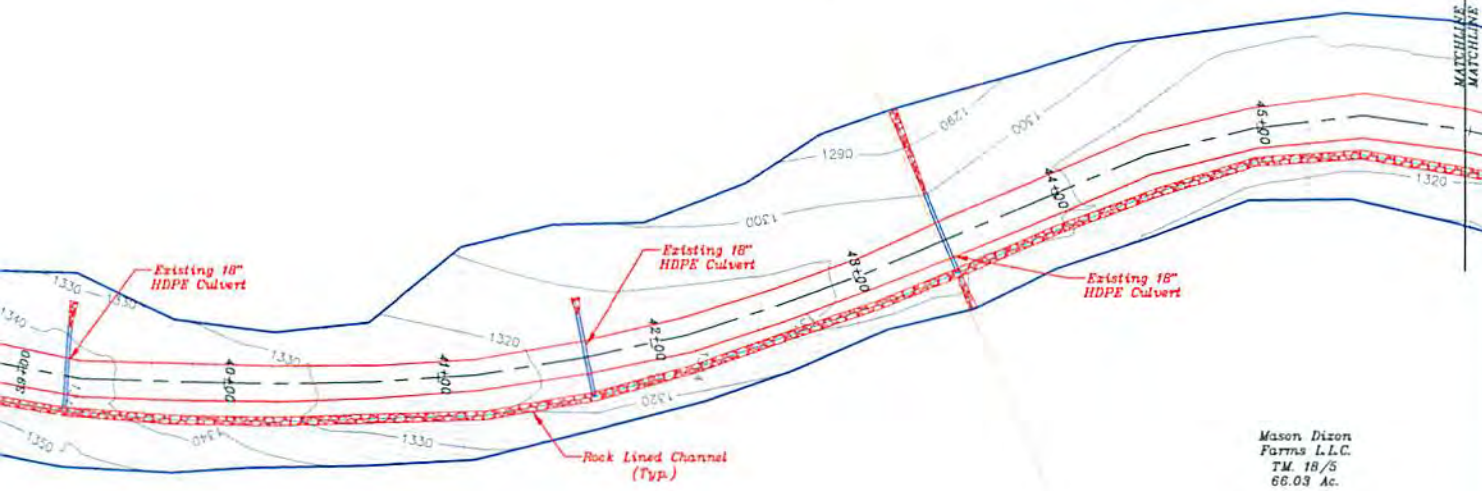

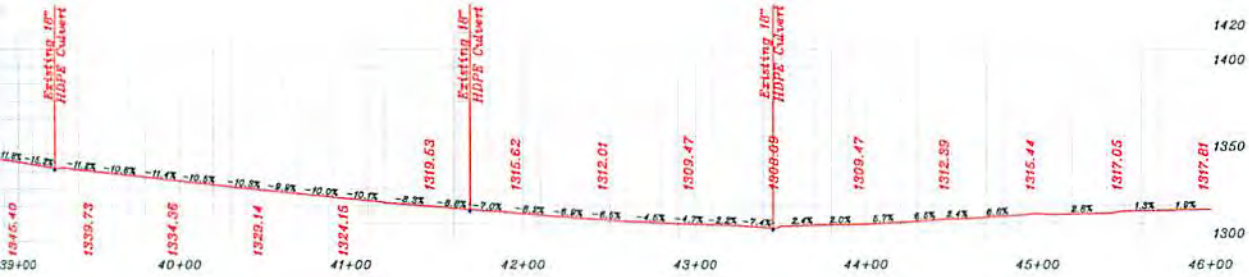

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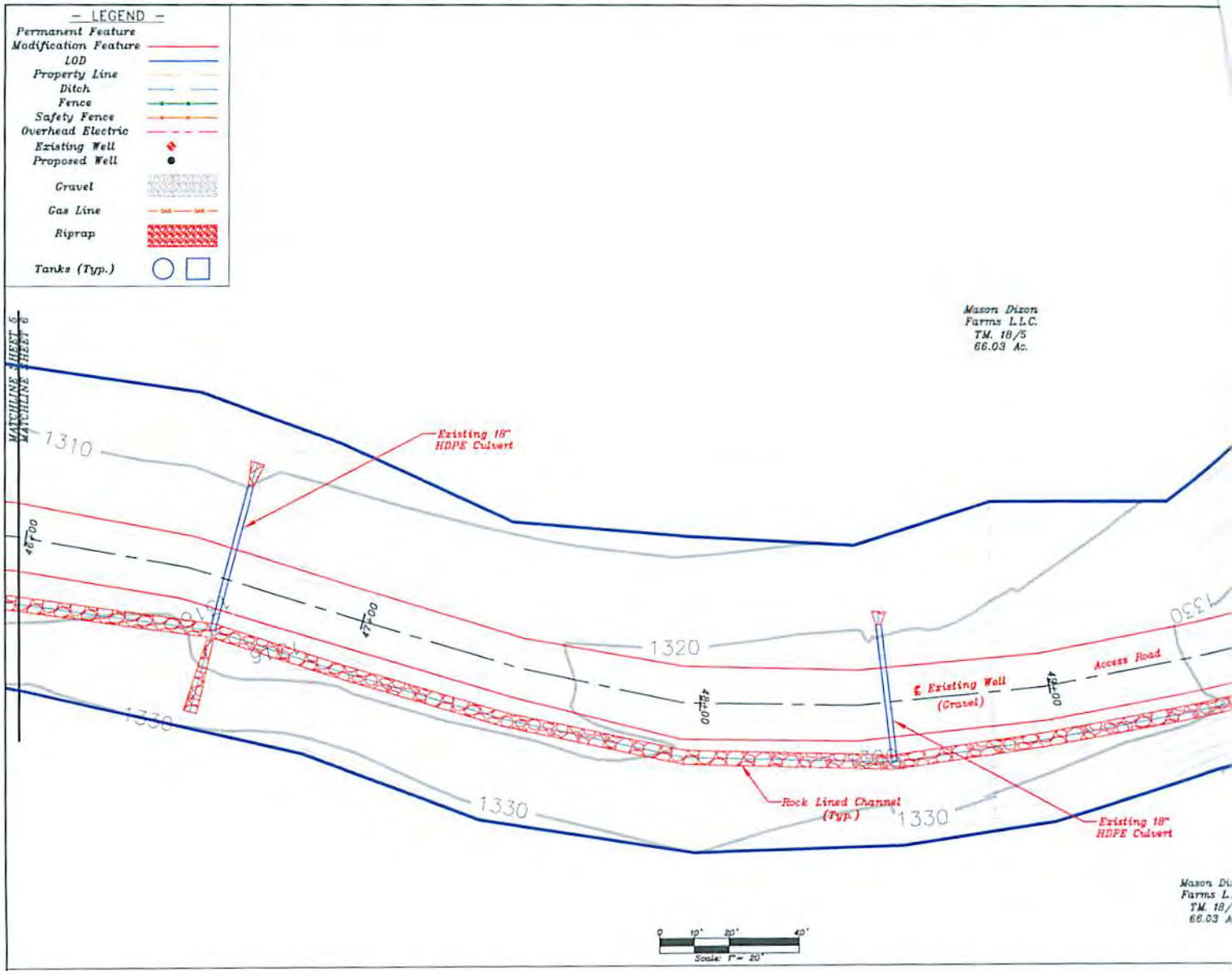
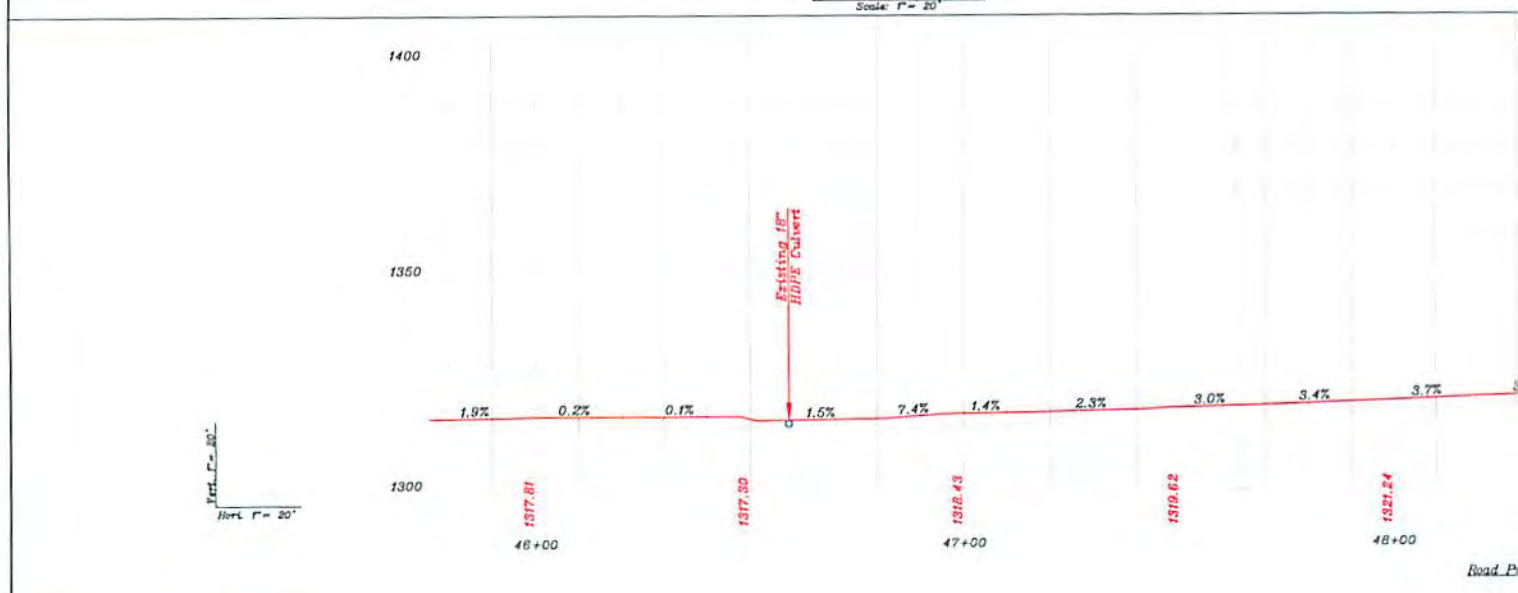
Access Road Plan & Profile

Sheet 5 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification





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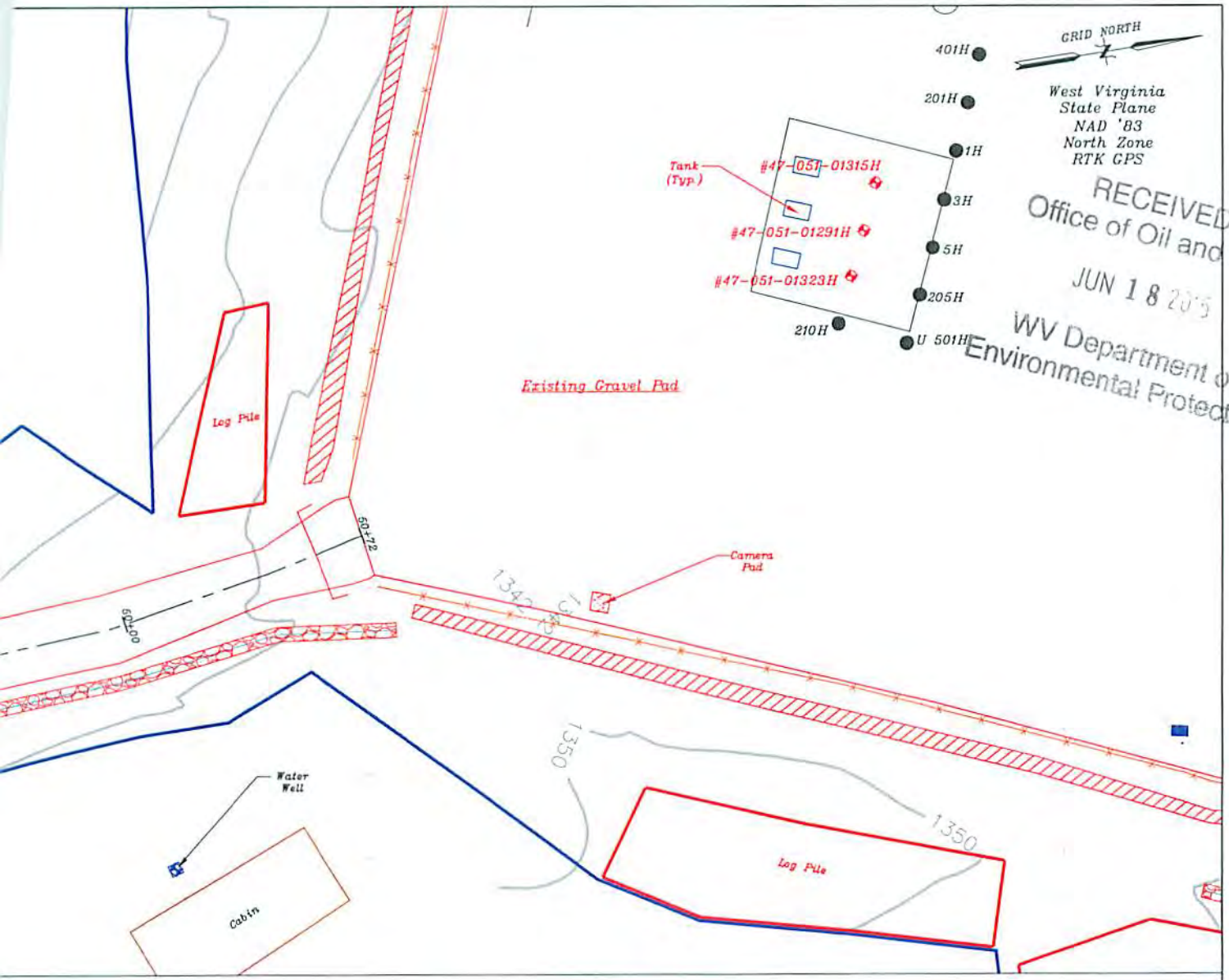

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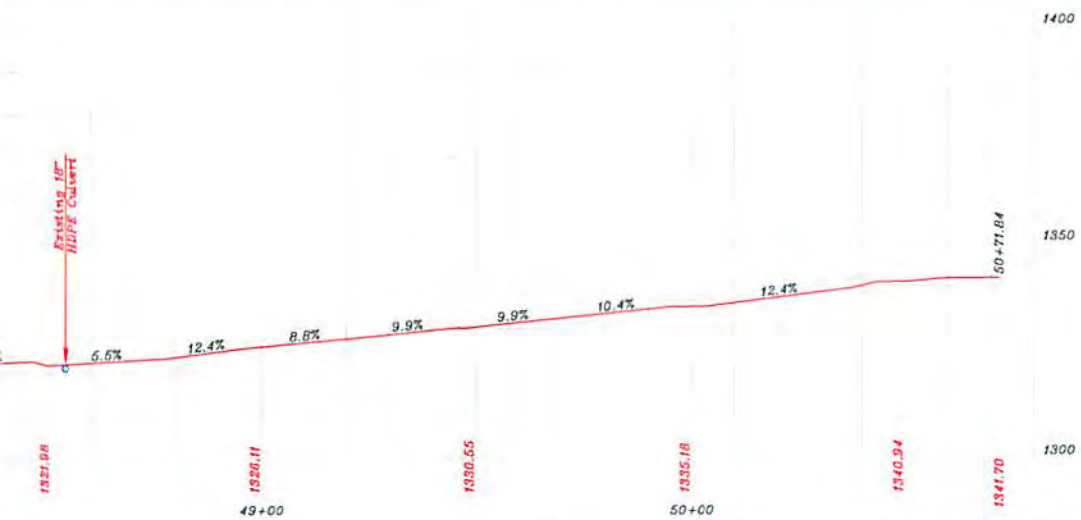

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Access Road Plan & Profile

Sheet 6 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification

- LEGEND -

Permanent Feature
Modification Feature
LOD
Property Line
Ditch
Fence
Safety Fence
Overhead Electric
Existing Well
Proposed Well
Gravel
Gas Line
Riprap
Tanks (Typ.)

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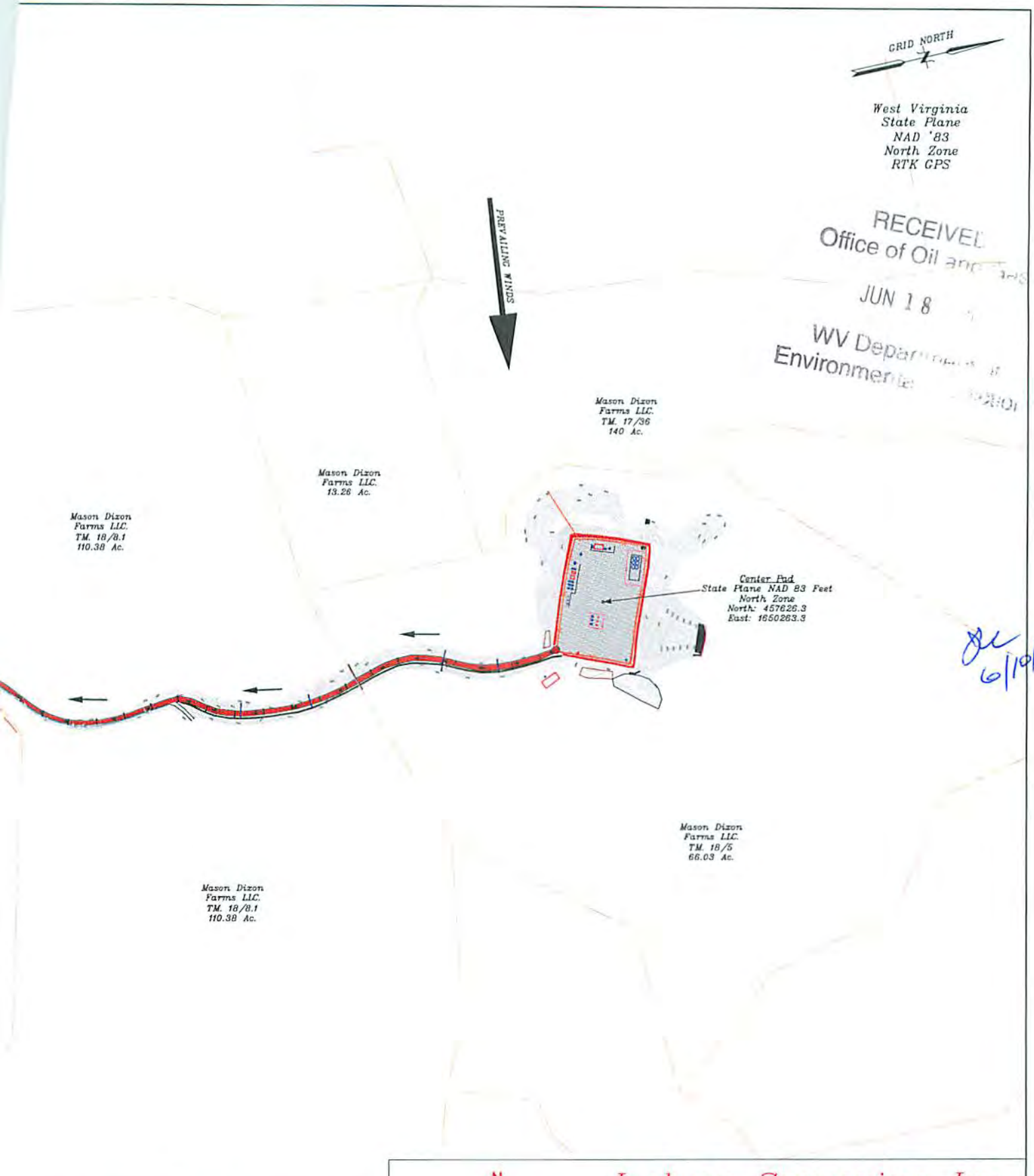
Evacuation Route

0 100' 200' 400'
Scale: 1" = 200'



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Evacuation Route/ Prevailing Winds

Sheet 7 of 8

O.E. Burge MSH Well Pad

As-Built Site Plan/ Modification

GRID NORTH

West Virginia
State Plane
NAD '83
North Zone
RTK GPS

WELL SITE RECLAMATION (GENERAL)

1. Drilling Pit Reclamation

a. All fluid must be removed from the pit prior to backfilling and disposed of in an approved manner or recycled.

b. Drill cuttings, drilling mud and liner, for wells permitted under WV Code 22-6A and 35CSR-8, must be removed from site and disposed of at an approved solid waste facility.

c All pits and impoundments that are not required or allowed by state or federal law or rule or agreement between the operator and the surface owner must be backfilled. Use a maximum of two foot thick lifts with 90% compaction to the standard proctor density (ASTM D-698).

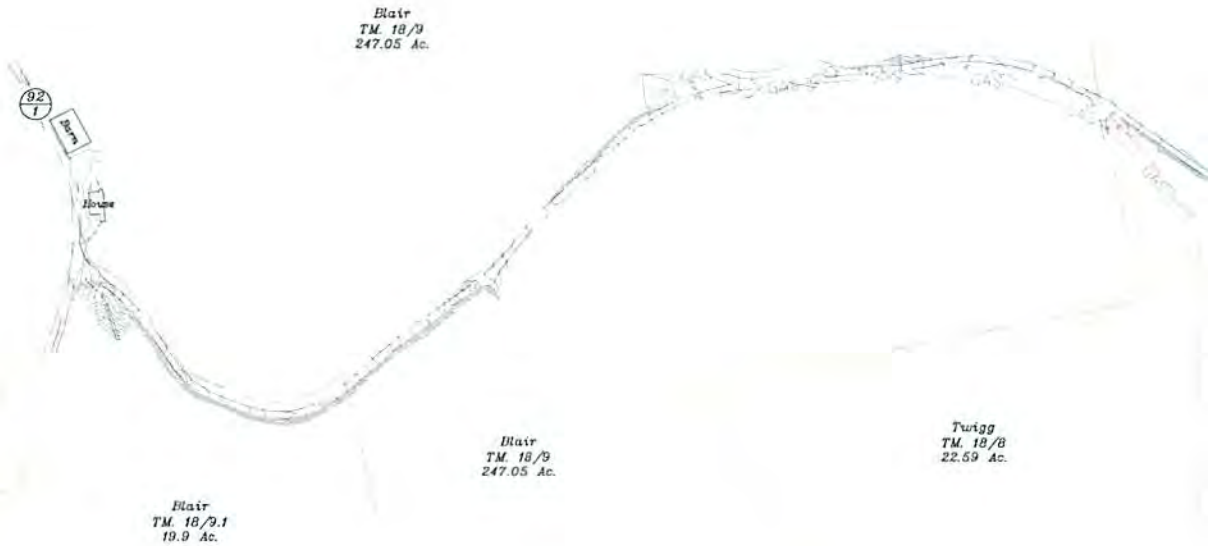
2. The operator shall grade or terrace and plant, seed or sod the area disturbed that is not required in production of the well in accordance with the erosion and sediment control control plan.

3. Install all permanent water drainage and diversion ditches. In areas of long slopes, it may be desirable to install angled diversion ditches to aid in controlling water runoff and erosion.

4. Stockpiled topsoil should be re-spread over disturbed area. Topsoil should not be added to slopes steeper than 2:1 unless good bonding to the subsoil can be achieved.

5. Prior to seeding, soil should be loosened by disking, bulldozer tracking, etc. Note that bulldozer tracking can compact wet clay soils and restrict establishment of vegetation.

6. Maintaining sediment barriers is critical until vegetation is re-established. Temporary sediment control devices such as silt fencing shall be removed along with sediment after at least a 70% vegetative cover is established.



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0 100' 200' 400'
Scale: 1" = 200'

- LEGEND -

Permanent Feature	
Modification Feature	
LOD	
Property Line	
Ditch	
Fence	
Safety Fence	
Overhead Electric	
Existing Well	
Proposed Well	
Gravel	
Gas Line	
Riprap	
Tanks (Typ.)	

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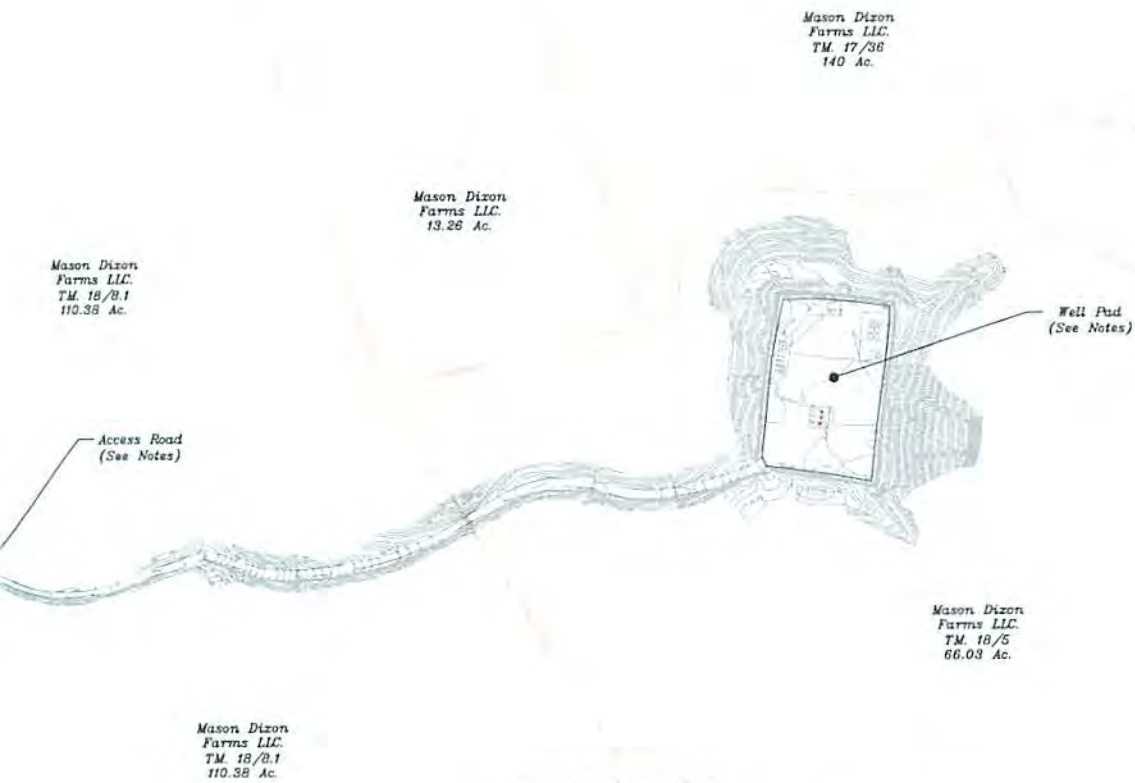
WELL SITE RECLAMATION (SPECIFIC)

1. For this pad the reclamation will consist of the berm removal, spreading the stockpiled topsoil over the 2:1 slope areas & reseeding. The pad area will remain gravel.

2. Use reinforced silt fence downslope of areas of topsoil placement as required.



ACCESS ROAD RECLAMATION

1. Road surfaces shall be stabilized and/or reseeded.

2. Permanent side ditches will be installed where needed and where the site will allow.

3. Permanent culverts, cross drains and broad-based dips shall be installed.

4. Side slopes of excavated cuts and outslopes shall be maintained, where the site allows.

5. Sediment barriers shall be maintained until vegetation is re-established. Temporary sediment control devices such as ditch line checks and silt fencing shall be removed along with collected sediment after at least a 70% vegetation cover is established.

GENERAL NOTES REGARDING RECLAMATION

1. Pipelines: any disturbed areas created by pipeline installation shall be reclaimed in accordance with state requirements.

2. Tank batteries, power lines: any disturbed area created by the installation of tank batteries or power lines, even if out of the immediate construction site shall be reclaimed in accordance with state requirements, as these operations are used in connection with the "permitted" operation.

3. Well maintenance: disturbed areas created due to well maintenance, shall be reclaimed, mulched and seeded to reduce erosion and sedimentation.

4. API Numbers: API identification numbers shall be displayed at the well in accordance with state requirements.

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Reclamation Plan
Sheet 8 of 8
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As-Built Site Plan/ Modification