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

October 28, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-6900201, 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: G W RENTALS LLC OHI 605H
Farm Name: G W RENTALS LLC
API Well Number: 47-6900201
Permit Type: Horizontal 6A Well
Date Issued: 10/28/2015

Promoting a healthy environment.

API Number 47 0 6 9 0 0 2 0 1

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

Southwestern Energy®
PO Box 1300
Jane Lew, WV 26378
PHONE: (832) 796-1610

September 23, 2015

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

4706900201

RE: Proposed New Well G W Rentals LLC OHI 605H

Dear Ms. Adkins

Enclosed please find the Well Work Permit Application for the above captioned well. This well is situated on the G W Rentals' property, in Liberty District, Ohio County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,

Dee Southall
Regulatory Supervisor
Southwestern Energy Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

Received
Office of Oil & Gas
SEP 24 2015

$\frac{R^2}{A} \rightarrow V+$®
The Right People doing the Right Things, wisely Investing the cash flow from our underlying Assets, will create Value+

WW-6B
(10/14)

API NO. 47- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI Pad

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

4706900201

1) Well Operator: SWN Production Co., LLC | 494512924 (Operator ID) | 69- Ohio (County) | 7-Triadelphia (District) | 648- Valley Grove (Quadrangle)

2) Operator's Well Number: G W Rentals LLC OHI 605H Well Pad Name: G W Rentals LLC OHI Pad

3) Farm Name/Surface Owner: G W Rentals LLC Public Road Access: West Alexander Road

4) Elevation, current ground: 1246' Elevation, proposed post-construction: 1246'

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

6) Existing Pad: Yes or No yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation- Marcellus, Target Top TVD- 6508', Target Base TVD- 6544', Anticipated Thickness- 36', Associated Pressure- 3900'

8) Proposed Total Vertical Depth: 6533'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,608'

11) Proposed Horizontal Leg Length: 6552'

12) Approximate Fresh Water Strata Depths: 510'

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

14) Approximate Saltwater Depths: 1339'

15) Approximate Coal Seam Depths: 606-629'

16) Approximate Depth to Possible Void (coal mine, karst, other): Void Expected from approximately 606'-629'

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: _____

E. Bleo
9.21.15

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WW-6B
(10/14)

API NO. 47- 69 -
OPERATOR WELL NO. [redacted]
Well Pad Name: G W Rentals LLC OHI Pad

4706900201

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	660'	660'	600 sx/CTS
Coal	9 5/8"	New	J-55	40#	2081'	2081'	775 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	15,608'	15,608'	[redacted]
Tubing	2 3/8'	New	P-110	4.7#	Approx. 8380'	Approx. 8380'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

PACKERS

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

9-21-15

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(10/14)

API NO. 47- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI Pad

4706900201

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

Drill and stimulate any potential zones between and including the Benson to Marcellus. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface. Run casing not less than 20' below void nor more than 50'-70' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50'-70' 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): 10.8

22) Area to be disturbed for well pad only, less access road (acres): 3.9

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.

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*Note: Attach additional sheets as needed.

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

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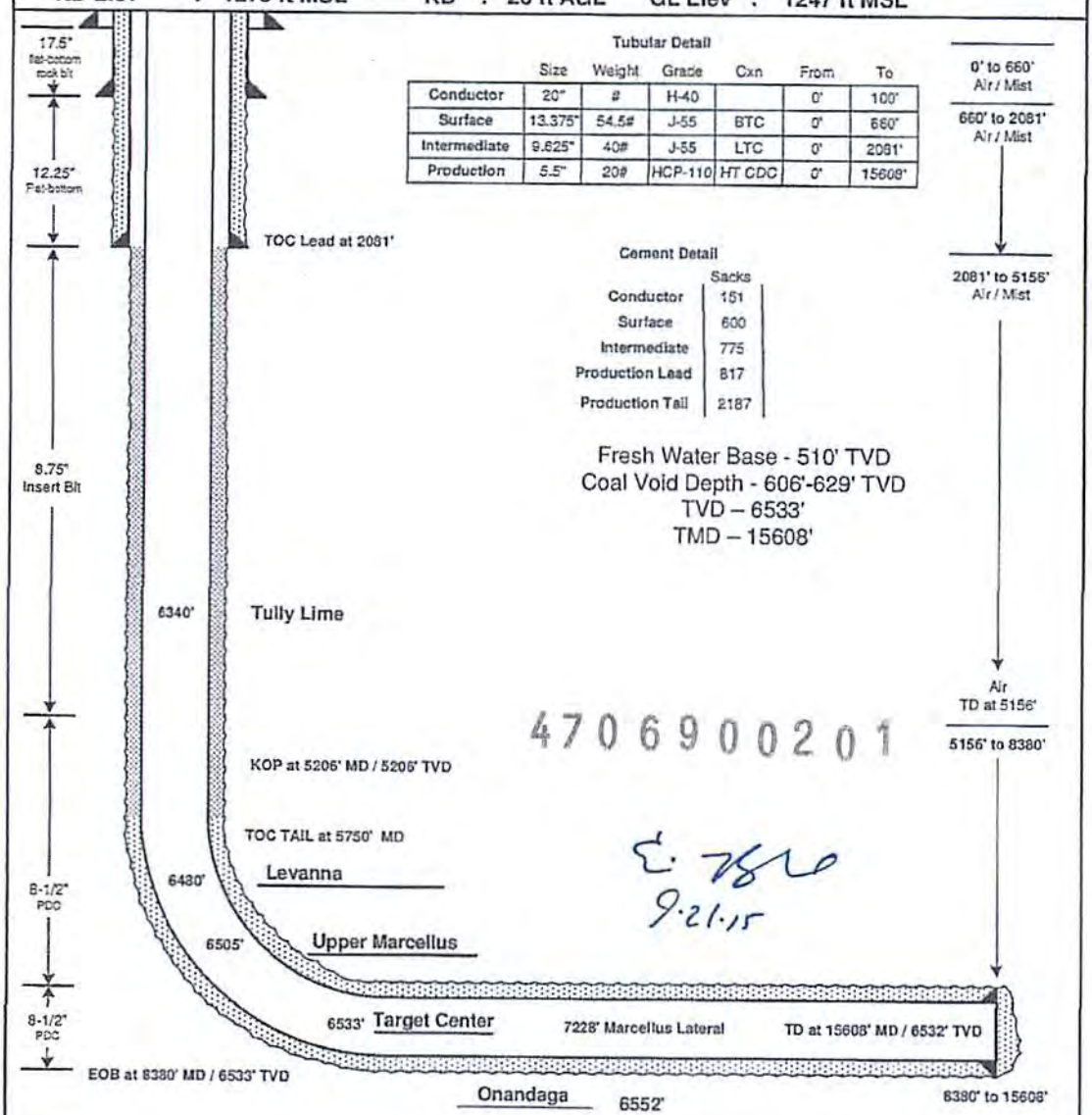
Southwestern Energy Company		Proposed Drilling Program
Well	: G W RENTALS LLC OHI 605	Re-entry Rig : TBD
Field	: PANHANDLE FIELD	Prospect : PANHANDLE
County	: OHIO	State : WV
SHL	: 40.074378 Latitude -80.565528 Longitude	
BHL	: 40.096027 Latitude -80.567468 Longitude	
KB Elev	: 1273 ft MSL KB : 26 ft AGL	GL Elev : 1247 ft MSL

SWN Southwestern Energy



Tubular Detail

	Size	Weight	Grade	Cxn	From	To
Conductor	20"	#	H-40		0'	100'
Surface	13.375"	54.5#	J-55	BTC	0'	660'
Intermediate	9.625"	40#	J-55	LTC	0'	2081'
Production	5.5"	20#	HCP-110	HT CDC	0'	15608'

Cement Detail

	Sacks
Conductor	151
Surface	600
Intermediate	775
Production Lead	817
Production Tail	2187

Fresh Water Base - 510' TVD
Coal Void Depth - 606'-629' TVD
TVD – 6533'
TMD – 15608'

4706900201

E. Taylor 9.21.15

Data source: K:\Eand P\WVD\Team Data\Drilling\Wells\GW Rentals LLC Pad\GW Rentals LLC OHI 605H\Drilling Program\Master SWN Well Input Sheet v E-0-1.xlsm

NOTE: This drawing was created for the Reentry Rig. The depths and lengths shown in the plat are referenced to Reentry Rig RKB.

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Southwestern Energy Company	Proposed Drilling Program

Well : G W RENTALS LLC OHI 605 Re-entry Rig : TBD

Field : PANHANDLE FIELD Prospect : PANHANDLE

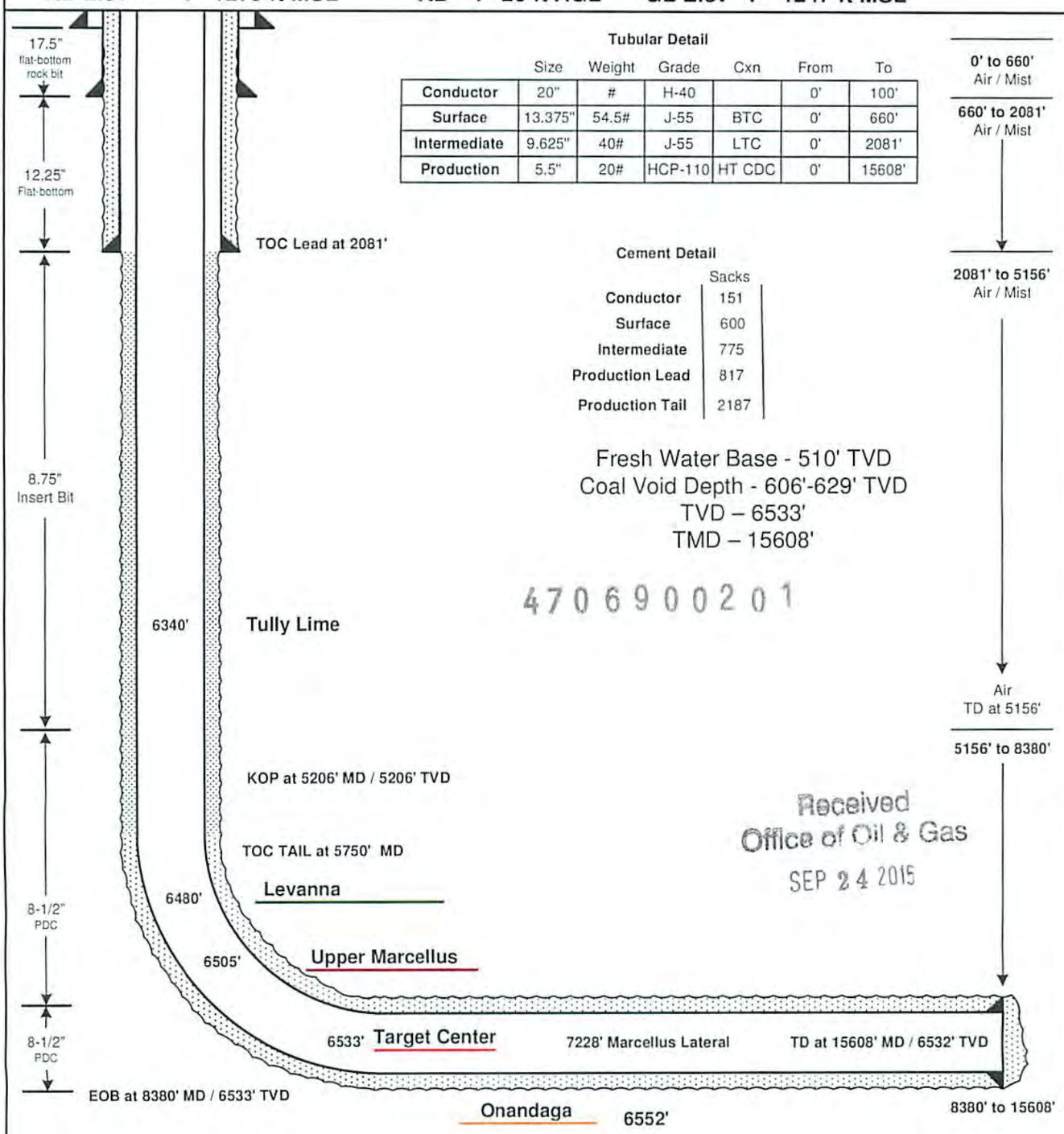
County : OHIO State : WV

SHL : 40.074378 Latitude -80.565528 Longitude

BHL : 40.096027 Latitude -80.567468 Longitude

KB Elev : 1273 ft MSL KB : 26 ft AGL GL Elev : 1247 ft MSL

swn Southwestern Energy



Tubular Detail

	Size	Weight	Grade	Cxn	From	To
Conductor	20"	#	H-40		0'	100'
Surface	13.375"	54.5#	J-55	BTC	0'	660'
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Data source: K:\EandP\WVD\Team Data\Drilling\Wells\GW Rentals LLC Pad\GW Rentals LLC OHI 605H\Drilling Program\Master SWN Well Input Sheet v E-0-1.xlsm

NOTE: This drawing was created for the Reentry Rig. The depths and lengths shown in the plat are referenced to Reentry Rig RKB.

WW-9
(9/13)

API Number 47 - 69 -
Operator's Well No. G W Rentals LLC OHI 605H

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 494512924

Watershed (HUC 10) Little Wheeling Creek Quadrangle 648- Valley Grove

Elevation 1246' County 69- Ohio District 7- Triadelphia

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 4706900201

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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Company Official Signature

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 20th day of April, 20 15

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

Form WW-9

Operator's Well No. G W Rentals LLC OHI 605H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 10.8 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: [signature] 4/22/15

Comments: _____

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Title: Oil and Gas Inspector Date: 4/22/15

Field Reviewed? (✓) Yes ( ) No

Marcellus Well Drilling Procedures
And Site Safety Plan

SWN Production Co., LLC

47 - 051 -
Well name: G W Rentals LLC OHI 605H
Valley Grove, Quad
Triadelphia, District
Ohio County, West Virginia

Submitted by:

Danielle Southall Date: 4/20/2015

Title Regulatory Supervisor SWN Production Co., LLC

Approved by:

Date: 4/22/15

Title: Oil + Gas Inspector

Approved by:

Date:

Title:

SWN Production Co., LLC – Confidential

4706900201

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WW-6A1
(5/13)

Operator's Well No. GW RENTALS LLC OHI 605H

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"				

4706900201

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:

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- 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

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 L.L.C
By:
Its: Robert Walter, Landman

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BOOK/PAGE
1)	6-T9-5	1-256014-000	Lee J. Glessner, a married man dealing in his sole and separate property; and Gary W. Glessner, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C.	12.5%	788/704
				SWN Production Company, L.L.C.		885/470
2)	6-T9-5.1	1-256014-000	Lee J. Glessner, a married man dealing in his sole and separate property; and Gary W. Glessner, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C.	12.5%	788/704
				SWN Production Company, L.L.C.		885/470
		47-003371-01	James Z. Chambers, a/k/a Jimmy Chambers, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C.	16.7%	854/267
				SWN Production Company, L.L.C.		885/440
		47-003371-02	Jeffrey S. Chambers, a/k/a Jeff Chambers, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C.	16.7%	853/746
				SWN Production Company, L.L.C.		885/440
		47-003371-03	Judy Lynn Chambers, a/k/a Judy Chambers, a single woman	Chesapeake Appalachia, L.L.C.	16.7%	853/741
				SWN Production Company, L.L.C.		885/440
3)	6-T9-57	Pending	Samuel Lee Harris Sr., Trustee of the Robert Edward Lee Harris and Samuel Lee Harris Jr., Irrevocable Trust	Chesapeake Appalachia, L.L.C.	18.0%	813/105
				SWN Production Company, L.L.C.		883/228
4)	6-T4-4.30	1-385578-000	Victor A. Wood and Jenna P. Wood, his wife	NPAR, LLC	18.0%	803/657
				Chevron U.S.A., Inc.		827/254
				Chesapeake Appalachia, L.L.C.		867/713
				SWN Production Company, L.L.C.		885/320
5)	6-T4-4.28	1-314033-000	H. Elaine Schneider, f/k/a H. Elaine Thorns, and Thomas E. Schneider, her husband	Chesapeake Appalachia, L.L.C.	18.0%	810/482
				SWN Production Company, L.L.C.		883/180
6)	6-T4-4.26	1-314033-000	H. Elaine Schneider, f/k/a H. Elaine Thorns, and Thomas E. Schneider, her husband	Chesapeake Appalachia, L.L.C.	18.0%	811/125
				SWN Production Company, L.L.C.		883/180
7)	6-T4-4.23	47-0000515-000	David Lee Barnett and Nancy Barnett f/k/a Nancy Jean Kovalchie, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	867/62
				SWN Production Company, L.L.C.		884/397
8)	6-T4-4.14	47-0000607-000	Cathy A. Calissie f/k/a Cathy A. Albaugh, a single woman	Chesapeake Appalachia, L.L.C.	18.0%	869/141
			Cathy A. Calissie f/k/a Cathy A. Albaugh, a single woman	Chesapeake Appalachia, L.L.C.		873/609
				SWN Production Company, L.L.C.		884/409
9)	6-T4-4.15	47-0000507-000	Cathy A. Calissie f/k/a Cathy A. Albaugh, a single woman	Chesapeake Appalachia, L.L.C.	18.0%	869/141
			Cathy A. Calissie f/k/a Cathy A. Albaugh, a single woman	Chesapeake Appalachia, L.L.C.		873/609

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SEP 24 2015

			SWN Production Company, L.L.C.		884/409
10) 6-T4-4.7	47-0000630-000	Albert J. Mestrovic Jr. and Sherrie E. Mestrovic, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	869/470
			SWN Production Company, L.L.C.		884/409
11) 6-T4-4.6	47-0000598-000	Gary W. Voorheis and Sundara Voorheis, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	868/569
			SWN Production Company, L.L.C.		884/409
12) 6-T4-4.29	47-0000598-000	Gary W. Voorheis and Sundara Voorheis, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	868/569
			SWN Production Company, L.L.C.		884/409
13) 6-T4-4.11	47-0001312-000	RCC Properties, LLC, a West Virginia limited liability company	Chesapeake Appalachia, L.L.C.	18.0%	881/329
			SWN Production Company, L.L.C.		895/462
14) 6-T4-4	1-265432-000	GW Rentals, LLC, a West Virginia Corporation	Chesapeake Appalachia, L.L.C.	12.5%	790/192
			SWN Production Company, L.L.C.		885/482
15) 3-L14-14	1-272773-000	Thomas Doepken, a single man	Chesapeake Appalachia, L.L.C.	16.0%	795/636
			SWN Production Company, L.L.C.		885/272

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Office of Oil & Gas
SEP 24 2015

16)	3-L14-14.6	1-268359-000	William E. Ward and Lollyanne Ward, his wife,	Chesapeake Appalachia, L.L.C.	12.5%	792/57
				SWN Production Company, L.L.C.		885/248
17)	3-L14-14.13	Pending	Larry R. Lewis and Mison Lewis a/k/a Mi Son Lewis a/k/a Mison Haught, husband and wife	SWN Production Company, L.L.C.	18.0%	893/653
18)	3-L14-14.4	1-268359-000	William E. Ward and Lollyanne Ward, his wife,	Chesapeake Appalachia, L.L.C.	12.5%	792/57
				SWN Production Company, L.L.C.		885/248
19)	3-L14-5	1-312919-000	Scott W. Knollinger and Barbara A. Knollinger, his wife	Chesapeake Appalachia, L.L.C.	18.0%	809/306
				SWN Production Company, L.L.C.		884/61
20)	3-L14-5.1	47-000020-000	Wilda X. Dunn, a widow	Chesapeake Appalachia, L.L.C.	18.0%	815/710
				SWN Production Company, L.L.C.		883/766
21)	3-L14-6	1-313172-000	Steven Passa, a single man	Chesapeake Appalachia, L.L.C.	18.0%	809/286
				SWN Production Company, L.L.C.		884/73
			Steven Passa, a single man	SWN Production Company, L.L.C.	18.0%	893/619
22)	8-VG9-93	47-001608-000	Valley Grove Volunteer Fire Department, Inc., a West Virginia corporation	Chesapeake Appalachia, L.L.C.	18.0%	834/597
				SWN Production Company, L.L.C.		885/176
23)	8-VG7-17	47-001999-000	Thomas J. Hunter and Carol R. Hunter, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	835/33
				SWN Production Company, L.L.C.		885/728
24)	8-VG7-24	1-385517-000	Jack Lawrence Nelson, a/k/a Jack L. Nelson, and Charolotte Ann Nelson, a/k/a Charolotte A. Nelson, husband and wife	NPAR, LLC	18.0%	815/593
				Chevron U.S.A., Inc.		827/269
				Chesapeake Appalachia, L.L.C.		867/713
				SWN Production Company, L.L.C.		883/742
25)	8-VG7-24.1	1-313868-000	Lynn Reusser and Yvonne Reusser, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	816/141
			Lynn Reusser and Yvonne Reusser, husband and wife	Chesapeake Appalachia, L.L.C.		820/727
				SWN Production Company, L.L.C.		884/1
26)	3-L11-20.1	47-000579-000	Lynn Reusser and Yvonne Reusser, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	814/411
				SWN Production Company, L.L.C.		885/620

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SWN
Southwestern Energy®
PO Box 1300
Jane Lew, WV 26378
PHONE: (832) 796-1610

4706900201

September 16, 2015

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

RE: SWN's proposed G W Rentals LLC OHI 405H and G W Rentals LLC OHI 605H in Ohio County, West Virginia, Drilling under National Road and West Alexander 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 National Road and West Alexander 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.

Sincerely,

Robert Walter
Senior Landman
Southwestern Energy Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

$\frac{R^2}{A} \rightarrow V+^{\circ}$

The Right People doing the Right Things, Wisely Investing the cash flow from our Underlying Assets, will create Value+

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Office of Oil & Gas
SEP 24 2015

WW-6AC
(1/12)

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

Date of Notice Certification: _____

API No. 47- 69 -
Operator's Well No. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI 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:	537046.2
County:	69- Ohio	Northing:	4436102.9
District:	7- Triadelphia	Public Road Access:	West Alexander Road
Quadrangle:	648- Valley Grove	Generally used farm name:	G W Rentals LLC
Watershed:	Little Wheeling Creek		

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 4706900201	☐ 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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Office of Oil & Gas
SEP 24 2015

WW-6AC
(1/12)

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:	304-471-2497
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 20th day of April 2015.

Brittany R Woody Notary Public

My Commission Expires 11/27/22

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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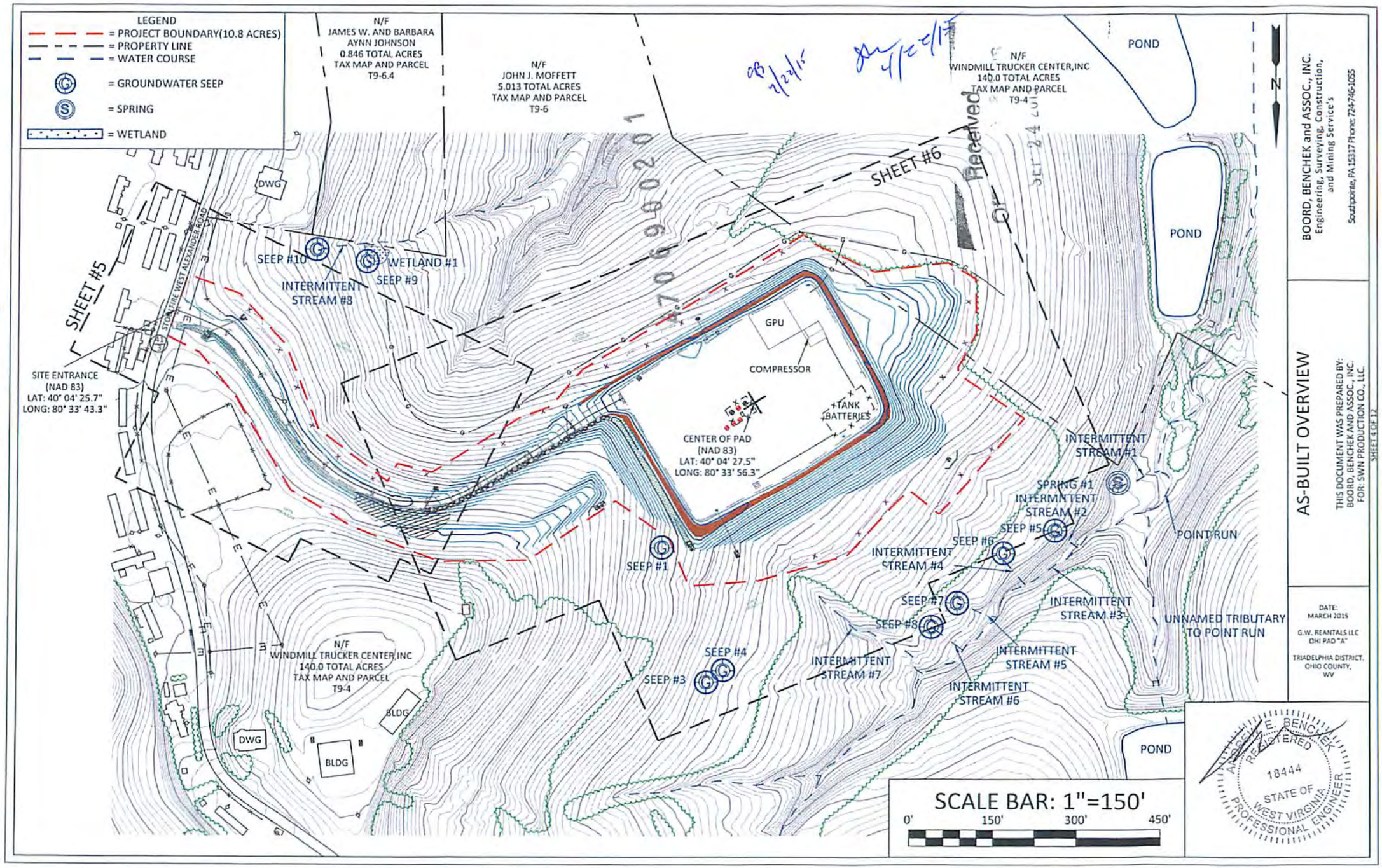
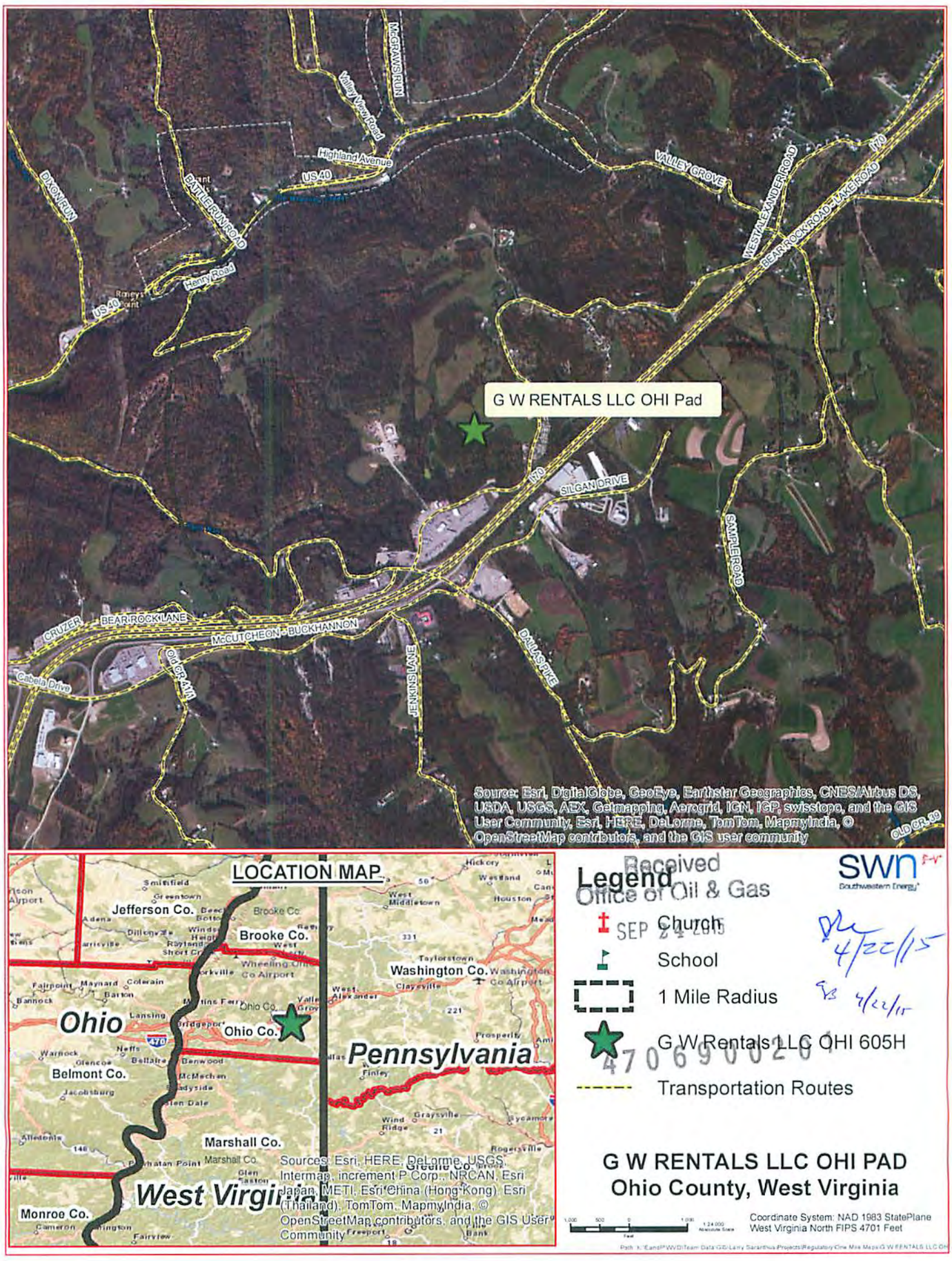
Office of Oil & Gas
SEP 24 2015

Attachment #3



Attachment #4



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Office of Oil & Gas
SEP 24 2015

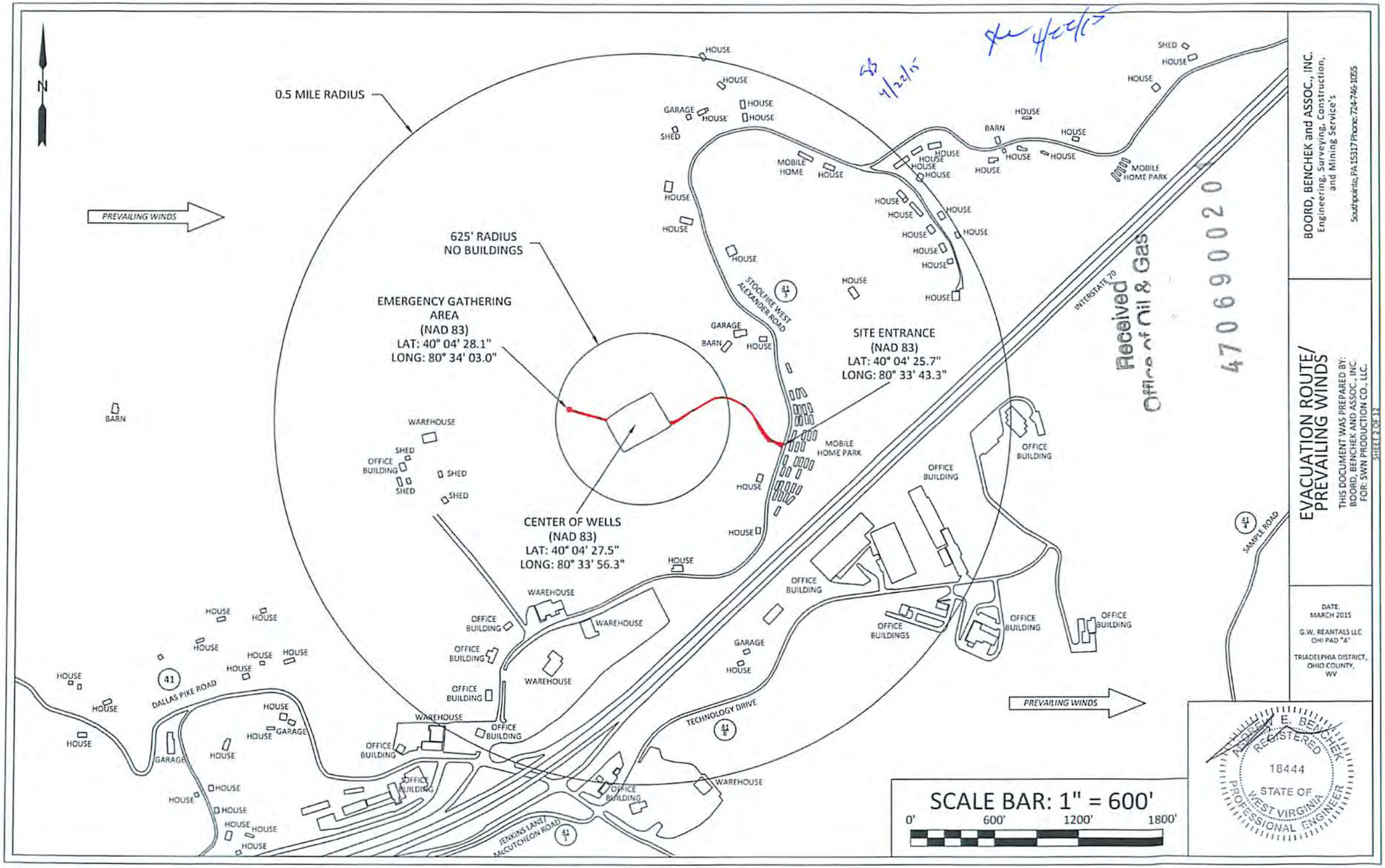
SWN Southwestern Energy

4/22/15

4/22/15

4706900201

Attachment #5



Received
Office of Oil & Gas

4706900020

BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

EVACUATION ROUTE/
PREVAILING WINDS

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 2 OF 12

DATE:
MARCH 2015

G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

JOSEPH E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

Received
Office of Oil & Gas

SEP 24 2015

4706900201

HOFFMAN ASSOCIATES INC
320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com

6675'

Latitude: 40°05'00"

Longitude: 80°32'30"

3261'

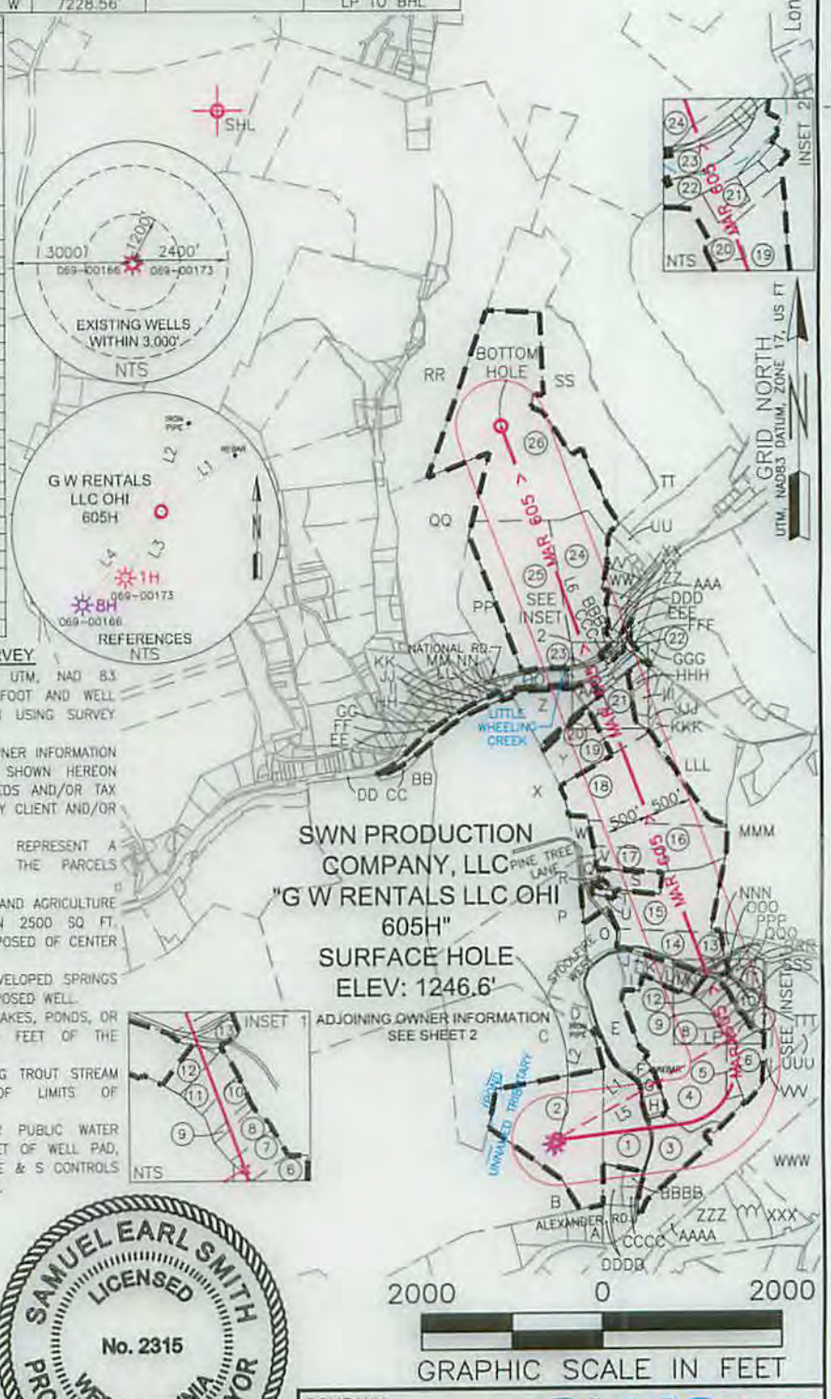
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 53°32'39" E	1282.49'	SHL TO LANDMARK	5/8" REBAR SET
L2	N 17°51'50" E	1268.32'	SHL TO LANDMARK	1" IRON PIPE
L3	S 28°54'49" W	41.08'	SHL TO REF. PNT.	G W RENTALS LLC OHI 1H WELL HEAD 069-00173
L4	S 39°33'52" W	68.16'	SHL TO REF. PNT.	G W RENTALS LLC OHI 8H WELL HEAD 069-00166

LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L5	N 60°17'33" E	2232.70'		SHL TO LP
L6	N 20°24'36" W	7228.56'		LP TO BHL

TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	GW RENTALS, LLC (S) LEE J. GLESSNER & GARY W. GLESSNER (R)	6-T9-5	13.96
2	GW RENTALS, LLC (S) LEE J. GLESSNER & GARY W. GLESSNER (R) JAMES Z. CHAMBERS (R) JEFFREY S. CHAMBERS (R) JUDY LYNN CHAMBERS (R)	6-T9-5.1	27.66
3	SAMUEL LEE HARRIS SR., TRUSTEE OF THE ROBERT EDWARD LEE HARRIS & SAMUEL LEE HARRIS JR., IRREVOCABLE TRUST (S/R)	6-T9-57	9.31
4	JOSEPH M. TEAGARDEN & MARLA M. TEAGARDEN (S) VICTOR A. WOOD & JENNA P. WOOD (R)	6-T4-4.30	33.32
5	H. ELAINE SCHNEIDER & THOMAS E. SCHNEIDER (S/R)	6-T4-4.28	1.71
6	H. ELAINE SCHNEIDER & THOMAS E. SCHNEIDER (S/R)	6-T4-4.26	3.95
7	DAVID LEE BARNETT & NANCY BARNETT (S/R)	6-T4-4.23	0.88
8	CATHY A. CALISSIE (S/R)	6-T4-4.14	0.74
9	CATHY A. CALISSIE (S/R)	6-T4-4.15	0.14
10	ALBERT J. MESTROVIC JR & SHERRIE E. MESTROVIC (S/R)	6-T4-4.7	1.19
11	GARY W. VOORHEIS & SUNDARA VOORHEIS (S/R)	6-T4-4.6	1.03
12	GARY W. VOORHEIS & SUNDARA VOORHEIS (S/R)	6-T4-4.29	0.87
13	RCC PROPERTIES, LLC (S/R)	6-T4-4.11	0.87
14	GW RENTALS, LLC (S/R)	6-T4-4	10.68
15	THOMAS DOEPKEN (S/R)	3-L14-14	25.00
16	WILLIAM E. WARD & LOLLYANNE G. WARD (S/R)	3-L14-14.6	9.74
17	LARRY R. LEWIS & MISON LEWIS (S/R)	3-L14-14.13	4.95
18	WILLIAM E. WARD & LOLLYANNE G. WARD (S/R)	3-L14-14.4	18.34
19	SCOTT W. KNOLLINGER & BARBARA A. KNOLLINGER (S/R)	3-L14-5	5.74
20	WILDA X. DUNN (S/R)	3-L14-5.1	0.69
21	STEVEN PASSA (S/R)	3-L14-6	0.82
22	VALLEY GROVE VOLUNTEER FIRE DEPT., INC. (S/R)	8-VG9-93	14.80
23	THOMAS J. HUNTER & CAROL R. HUNTER (S/R)	8-VG7-17	0.91
24	JACK LAWRENCE NELSON & CHAROLOTTE ANN NELSON (S/R)	8-VG7-24	14.78
25	LYNN REUSSER & YVONNE REUSSER (S/R)	8-VG7-24.1	25.87
26	LYNN REUSSER & YVONNE REUSSER (S/R)	3-L11-20.1	66.28

NOTES ON SURVEY

1. COORDINATE SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO OCCUPIED DWELLINGS AND AGRICULTURE BUILDINGS GREATER THAN 2500 SQ. FT. WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
8. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.



SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,102.929 EASTING: 537,046.192
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,440.161 EASTING: 537,637.213
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,438,505.005 EASTING: 536,869.079

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2315

SAMUEL EARL SMITH LICENSED No. 2315 WEST VIRGINIA PROFESSIONAL SURVEYOR

COMPANY: SWN Production Company, LLC — SWN Production Company™

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

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: G W RENTALS LLC OHI 605H

API WELL #: 47 (STATE) 69 (COUNTY) 00201 HCA (PERMIT)

WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☐ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒

WATERSHED: WHEELING CREEK ELEVATION: 1,246.6'

DISTRICT: TRIADELPHIA COUNTY: OHIO QUADRANGLE: VALLEY GROVE WV.

SURFACE OWNER: GW RENTALS, LLC. ACREAGE: ±27.66

OIL & GAS ROYALTY OWNER: LEE J GLESSNER & MARK W GLESSNER, JAMES Z CHAMBERS, JEFFREY S CHAMBERS, & JUDY LYNN CHAMBERS ACREAGE: ±27.66

DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,533' TVD 15,608' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300	ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378	CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- LEASE BOUNDARY
- 500' DHP BUFFER
- MAR 1 >– MARCELLUS DHP
- ABANDONED PATH

REVISIONS:	DATE: 09-01-2015
⚠ REVISED DIRECTIONAL PATH, 08-06-2015	SEE INSET SHEET 2
⚠ ADDED ADJACENT PARCELS, 08-14-2015	DRAWN BY: S. HUTSON
⚠ ADDED ADJACENT PARCEL OWNERS, TAX MAP PARCEL NUMBER, & ACREAGE, 09--10-2015	SCALE: 1" = 2000'
	DRAWING NO: 59092
	WELL LOCATION PLAT

S:\WEST VIRGINIA\GAS WELLS\OHI – OHIO COUNTY, WV\G W RENTALS LLC OHI\G W RENTALS LLC OHI 605H\GW RENTALS LLC OHI 605H.DWG
WEDNESDAY SEPTEMBER 16 2015 09:39AM

PROPERTY NUMBER 2501162723
PAD ID 3001156346

HOFFMAN ASSOCIATES INC
320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com

ADJOINING OWNER INSET

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	BUD & DARL INC	6-T9-6.6	2.12
B	WINDMILL TRUCKERS CENTER INC	6-T9-4	140.00
C	GW RENTALS, LLC	6-T9-5.2	38.16
D	GW RENTALS, LLC	6-T4-4.4	1.72
E	GARY W GLESSNER	6-T4-4.9	9.78
F	ROBERT L SCOTT & V J SCOTT	6-T4-4.22	0.76
G	ROBERT J MCCONNELL & ETHEL J MCCONNELL	6-T4-4.27	1.00
H	JACK E CORBETT JR	6-T4-4.25	1.00
I	HOWARD A WALLS III & TERESA WALLS	6-T4-4.24	1.77
J	PAUL WINTERS & LINDA WINTERS	6-T4-4.18	0.45
K	ROBERT B. ELLIOTT & KATHY A. ELLIOTT	6-T4-4.2	3.71
L	ROBERT ERIC BUCK & HUNTER JANNE BUCK	6-T4-4.3	0.68
M	ROBERT ERIC BUCK & HUNTER JANNE BUCK	6-T4-4.31	0.69
N	PAUL R HOWARD & ALICIA L HOWARD	6-T4-4.33	0.74
O	LEE J GLESSNER	6-T4-4.5	3.39
P	GW RENTALS LLC	6-T4-2.2	26.65
Q	WILLIAM E. WARD & LOLLYANNE G. WARD	3-L14-14.3	1.31
R	WILLIAM E. WARD & LOLLYANNE G. WARD	3-L14-14.8	0.15
S	JOHN W GRAMLICH JR	3-L14-14.7	3.04
T	JOHN W GRAMLICH JR	3-L14-14.9	0.21
U	JOHN W GRAMLICH & KATHLEEN GRAMLICH	3-L14-14.11	0.50
V	LARRY R LEWIS	3-L14-14.15	0.07
W	JAMES R. HALL JR. & MELISSA RENEE HALL	3-L14-14.14	1.99
X	LEE J. GLESSNER	3-T4-2	86.89
Y	JAMES E LAUDERMILT JR & ASHLEY L LAUDERMILT	3-L14-4	8.62
Z	RICHARD K DERROW & ALICIA DERROW	3-L14-3	6.74
AA	STEVEN PASSA	8-L14-6	0.82
BB	DONALD C. SINCLAIR & BETTY SINCLAIR	3-L14-1.1	99.77
CC	VALLEY GROVE VOLUNTEER FIRE DEPARTMENT, INC.	8-VG9-94	0.83
DD	JOE VESPA	8-VG9-92.1	1.01
EE	VILLAGE OF VALLEY GROVE	8-VG9-81	1.12
FF	VILLAGE OF VALLEY GROVE	8-VG9-82	0.18
GG	CARL W PHILABAUM III	8-VG9-85	2.00
HH	JEPSON L NELSON & C L NELSON	8-VG9-87	0.27
II	GEORGE E BESS & CATH L BESS	8-VG9-89	0.63
JJ	EDWARD A. REYNOLDS JR.	8-VG9-91	0.39
KK	EDWARD G. SCHULTZ & JANET L. SCHULTZ	8-VG6-23	0.36
LL	LINDA L. RINDER	8-VG7-23	0.26
MM	ROBERT F LUBIC LIFE	8-VG7-22	0.16
NN	GARY DEBOLT & JANICE M DEBOLT	8-VG7-21	0.17
OO	MARTHA A STARKEY & BARBARA A JENKS	8-VG7-18	1.93
PP	LYNN REUSSER	8-L14-2	10.00
QQ	WILLIAM S. PATTERSON III & DAWN E. PATTERSON	3-L14-2.2	32.26
RR	MICHAEL D. VARGO & MELISSA JEAN VARGO	3-L14-19	13.42
SS	LYNN REUSSER & YVONNE REUSSER	3-L14-20	103.84
TT	LYNN REUSSER & YVONNE REUSSER	3-L14-21	79.91
UU	VINCENT W BEVILL & BAMBI A BEVILL	8-VG7-1	2.21
VV	JACK L NELSON	8-VG7-5.1	1.92
WW	BRENDA S SHEPHERD	8-VG7-5	1.94
XX	THOMAS J HUNTER & CAROL R HUNTER	8-VG7-8	0.74
YY	CARL W PHILABAUM III & MARY B PHILABAUM	8-VG7-8.2	1.00
ZZ	CARL PHILABAUM III	8-VG7-9	0.31
AAA	JAMES R. HALL & KATHY D. HALL	8-VG7-14	0.22
BBB	CAROLYN L. NICK & DARRYL D. NICK	8-VG7-15	0.19
CCC	CAROLYN L. NICK & DARRYL D. NICK	8-VG7-16	0.19
DDD	RENA MOSA	8-VG7-7	0.33
EEE	DONALD PLETCHER & PEGGY PLETCHER	3-L14-56	5.13
FFF	KELLY A CALMBACHER	3-L14-56.1	0.63
GGG	DONALD PLETCHER & P L PLETCHER	8-L14-19.1	1.39
HHH	DAVID W. SLYDER & GINA SLYDER	3-L14-9	0.51
III	ANNA HACSKAYLO	8-L14-10	3.14
JJJ	JOHN KOVACS & TINA KOVACS	3-L14-11	2.00
KKK	JOHN W KOVACS JR & TINA M KOVACS	3-L14-11.1	2.00
LLL	RODNEY L MILLER & CLAUDIA K MILLER	8-L14-13	15.00
MMM	EARL F PARSONS & G A PARSONS	3-L14-15	51.71
NNN	NANCY MAE CUSTER	6-T4-5	8.81
OOO	ERNEST R. BURKY & JOYCE A. BURKY	6-T4-4.12	0.65
PPP	CLARA CLIFTON	6-T4-4.35	0.19
QQQ	CLARA M CLIFTON	6-T4-4.16	0.85
RRR	ROBERT L. CLIFTON & CLARA M. CLIFTON	6-T4-4.1	1.06
SSS	ALBERT B LEECH & JENIFER A LEECH	6-T4-4.32	0.96
TTT	C EDWARD BELCHER	6-T4-4.17	1.12
UUU	RAYMOND H. MCCAUSLAND & SHARON L. MCCAUSLAND	6-T4-9	13.51
VVV	H ELAINE THOMS & SCHNEIDER T THOMS	6-T4-9.2	1.23
WWW	UNITED STATES OF AMERICA	6-T9-31.3	18.65
XXX	VALLEY FOREST PRODUCTS INC	6-T9-31	5.23
YYY	BEYBA INC	6-T9-31.2	4.18
ZZZ	CONTINENTAL PLASTICS INC	6-T9-31.5	7.97
AAAA	RXI PLASTIC INC	6-T9-6	1.32
BBBB	JAMES W JOHNSON & B A JOHNSON	6-T9-6.4	0.85
CCCC	JAMES W JOHNSON & BARBARA A JOHNSON	6-T9-6.2	0.73
DDDD	JOANN T MOFFETT	6-T9-6	5.01

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SEP 24 2015

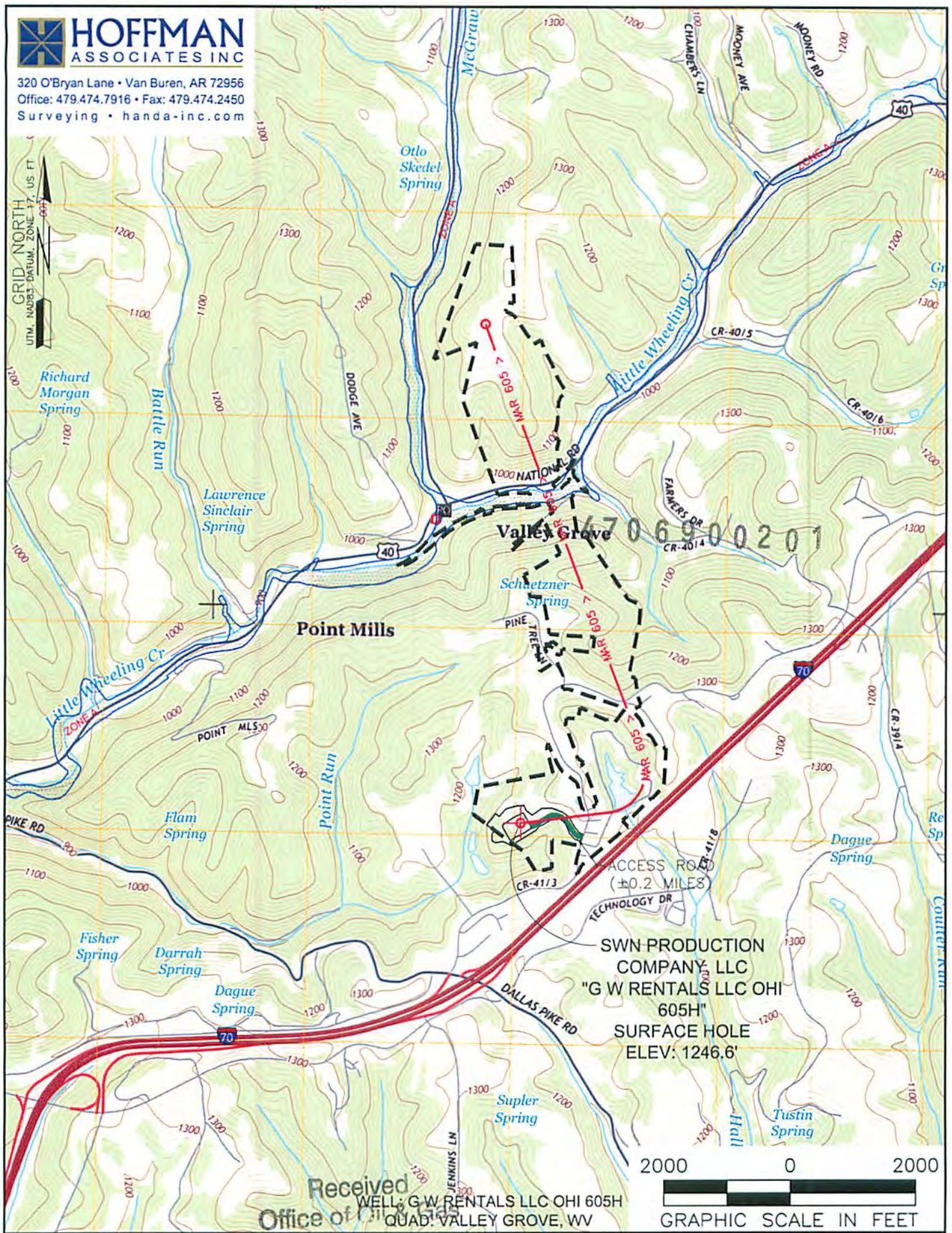
COMPANY: SWN Production Company, LLC — SWN Production Company™

REVISIONS:	DATE: 09-01-2015
	INSET FROM SHEET 1
	DRAWN BY: S. HUTSON
	SCALE: N/A
	DRAWING NO: 59092
	WELL LOCATION PLAT

S:\WEST VIRGINIA\GAS WELLS\OHI - OHIO COUNTY, WV\G W RENTALS LLC OHI\G W RENTALS LLC OHI 605H\GW RENTALS LLC OHI 605H.DWG
WEDNESDAY SEPTEMBER 16 2015 09:39AM

PROPERTY NUMBER 2501162723
PAD ID 3001156346

HOFFMAN ASSOCIATES INC
320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com



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WELL: G W RENTALS LLC OHI 605H
QUAD: VALLEY GROVE, WV

NAME AND DISTANCE TO THE NEAREST STREAM:	STREAM CROSSING COORDINATES (NAD 83):
AN UNNAMED TRIBUTARY OF POINT RUN IS LOCATED ±0.15 MILES NORTHWEST OF THE CENTER OF THE DRILL PAD.	NO NEW CROSSINGS

COMPANY: SWN Production Company, LLC / SWN Production Company™

WELL RESTRICTIONS:

WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET
WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET
CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET
CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET

FEMA FLOOD INFORMATION:

BY GRAPHIC PLOTTING ONLY FEMA FIRM UNINCORPORATED AREA OF OHIO COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0080D; EFFECTIVE JULY 17, 2006.

OPERATOR'S WELL #: G W RENTALS LLC OHI 605H

LOCATION: TRIADELPHIA DISTRICT, OHIO COUNTY, WEST VIRGINIA

SURFACE HOLE LOCATION:

GEOGRAPHIC (NAD83):
LATITUDE: 40.074378°
LONGITUDE: -80.565528°

BOTTOM HOLE LOCATION:

GEOGRAPHIC (NAD83):
LATITUDE: 40.096027°
LONGITUDE: -80.567468°

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- EXISTING SPRING
- EXISTING WATER WELL
- ACCESS ROAD
- ACCESS ROAD TO PREV. SITE
- HIGHWAY/INTERSTATE
- COUNTY ROAD

REVISIONS:
⚠ REVISED DIRECTIONAL PATH, 08-06-2015

DATE: 09-01-2015
DRAWN BY: S. HUTSON
SCALE: 1" = 2000'
DRAWING NO: 59092
TOPOGRAPHIC MAP

S:\WEST VIRGINIA\GAS WELLS\OHI - OHIO COUNTY, WV\G W RENTALS LLC OHI\G W RENTALS LLC OHI 605H\GW RENTALS LLC OHI 605H.DWG
WEDNESDAY SEPTEMBER 16 2015 09:40AM

PROPERTY NUMBER 2501162723
PAD ID 3001156346

WW-6A
(9-13)

API NO. 47- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI 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: 9/23/15 **Date Permit Application Filed:** 9/23/15

Notice of:

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

4706900201

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.

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

☑ SURFACE OWNER(s)
Name: G W Rentals LLC
Address: 2084 National Road
Wheeling, WV 26003
Name:
Address:

☐ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name:
Address:
Name:
Address:

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

☑ COAL OWNER OR LESSEE
Name: Alliance Resources GP, LLC %Christine St. John
Address: 2596 Battle Run Road
Triadelphia, WV 26059

☐ COAL OPERATOR
Name:
Address:

☑ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: *** See Attachment #1
Address:

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

*Please attach additional forms if necessary

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Attachment #1

G W Rentals LLC OHI Water Purveyors

Name	Address	City	State	Zip
G W Rentals LLC	2084 National Road x2	Wheeling	WV	26003
Windmill Truckers Center, INC.	2084 National Road x3	Wheeling	WV	26003
James & Barbara Johnson	629 West Alexander Road x2	Valley Grove	WV	26060
JVB Restaurant Enterprises, LLC	3 Pavilack Ct.	Wheeling	WV	26003
Robert Edward Lee & Samuel Lee Harris, Jr.	100 Circile Drive x2	Wheeling	WV	26003
Jack E. Corbitt, Jr.	33 Hubbard Lane	Wheeling	WV	26003
Robert J. McConnell	824 West Alexander Road	Valley Grove	WV	26060
Gary W. Glessner	P.O. Box 128	Valley Grove	WV	26060
Robert K. & V J Scott	858 West Alexander Road	Valley Grove	WV	26060
RXI Plastic INC C/O Silgan Plastics Corp- Pratt	14515 N. Outer 40 Suite 210	Chesterfield	MO	63017

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WW-6A
(8-13)

API NO. 47- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI 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.

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.

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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

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SEP 0 4 2015

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:

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SEP 24 2015

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

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- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI 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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SEP 24 2015

WW-6A
(8-13)

API NO. 47- 69 -
OPERATOR WELL NO. G W Rentals LLC OHI 605H
Well Pad Name: G W Rentals LLC OHI Pad

Notice is hereby given by:

Well Operator: SWN Production Co., LLC
Telephone: 304-884-1613
Email: Dee_Southall@swn.com

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile: 304-471-2497

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.

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 20th day of April 2015.

Brittany R Woody Notary Public

My Commission Expires 11/27/2022

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SEP 24 2015

WW-6A4
(1/12)

Operator Well No. GW Rentals OHI 605H

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: 03/26/2015 **Date Permit Application Filed:** 9/23/15

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

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

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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: GW Rentals LLC
Address: 2084 National Road
Wheeling, WV 26003

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: Ohio
District: Tridelphia
Quadrangle: Valley Grove
Watershed: Upper Ohio South

UTM NAD 83 Easting: 537046.2
Northing: 4436102.9
Public Road Access: West Alexander Road
Generally used farm name: GW Rentals

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 Company, LLC
Address: 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: steve_perkins@swn.com
Facsimile: 304-461-2497

Authorized Representative: Steve Perkins
Address: 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: steve_perkins@swn.com
Facsimile: 304-461-2497

Received
Office of Oil & Gas
SEP 24 2015

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.

WW-6A5
(1/12)

Operator Well No. GW Rentals OHI 605H

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: 03/26/2015 **Date Permit Application Filed:** 9/25/15

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

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

4706900201

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: GW Rentals LLC
Address: 2084 National Road
Wheeling, WV 26003

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: Ohio
District: Tridelphia
Quadrangle: Valley Grove
Watershed: Upper Ohio South

UTM NAD 83 Easting: 537046.2
Northing: 4436102.9
Public Road Access: West Alexander Road
Generally used farm name: GW Rentals

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 Company, LLC
Telephone: 304-517-6603
Email: steve_perkins@swn.com

Address: 179 Innovation Drive
Jane Lew, WV 26378
Facsimile: 304-461-2497

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
SEP 24 2015

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

April 24, 2015

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

4706900200

Subject: DOH Permit for the GW Rentals Well Pad Site, Ohio County

G W Rentals LLC OHI 605H

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit 06-2013-0030 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Ohio County Route 41/3 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.

Received
Office of Oil & Gas
SEP 24 2015

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

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 Alcohol Glycol Ether	64742-47-8 Proprietary
	Friction Reducer J609		Ammonium Sulfate	7783-20-2

4706900201

Received
Office of Oil & Gas
SEP 24 2015

Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
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

4706900201

Received
Office of Oil & Gas
SEP 24 2015

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

Received
Office of Oil & Gas
SEP 24 2015

4706900201

G. W. RENTALS LLC OHI PAD "A"
AS-BUILT & RECLAMATION PLAN
TRIADELPHIA DISTRICT, OHIO COUNTY, WV
MARCH 2015

WEST VIRGINIA 811

TWO WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR MUST CONTACT THE WV ONE CALL SYSTEM, INC., 1-800-245-4848
WV ONE CALL SERIAL #: 1213740331

OWNER

SWN Southwestern Energy®

SWN PRODUCTION CO., LLC.
P.O. BOX 1300
JANE LEW, WV 26378
(832)-796-1610

WVDEP OOG
ACCEPTED AS-BUILT
9/17/2015

SHEET INDEX

1. TITLE SHEET
2-3. EVACUATION ROUTE/PREVAILING WINDS
4. AS-BUILT OVERVIEW
5-6. AS-BUILT
7. ACCESS ROAD PROFILE
8. RECLAMATION PLAN OVERVIEW
9-10. RECLAMATION PLAN
11-12. DETAILS

TOTAL DISTURBED AREA: 10.8 AC.
ROAD DISTURBED AREA: 3.9 AC.
WELL PAD DISTURBED AREA: 6.9 AC.

LENGTH OF ACCESS ROAD: 1,007'
AVG. WIDTH OF ACCESS ROAD: 15'
WELL PAD ELEVATION: 1247'

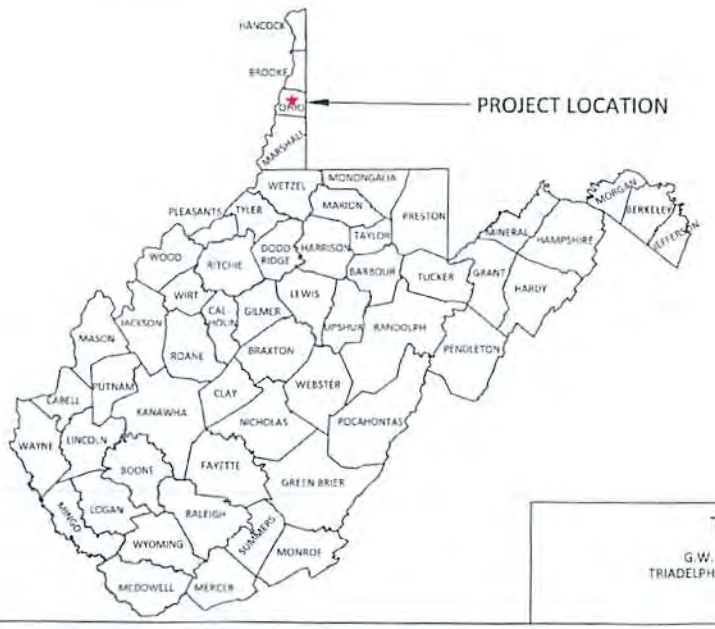
API# 6900166
API# 6900173
API# 6900193
API# 6900194
API# 6900195
API# 6900196

PLANS PREPARED BY:

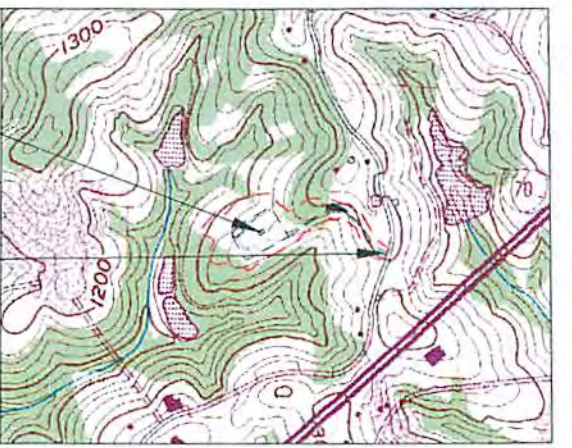
BOORD BENCHEK & ASSOCIATES, INC.
ENGINEERING,SURVEYING, CONSTRUCTION AND MINING SERVICES
SOUTHPOINTE, PA 15317 PHONE: 724-746-1055

ANDREW E. BENCHEK REGISTERED 18444 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

3-18-15
ANDREW BENCHEK P.E. — DATE

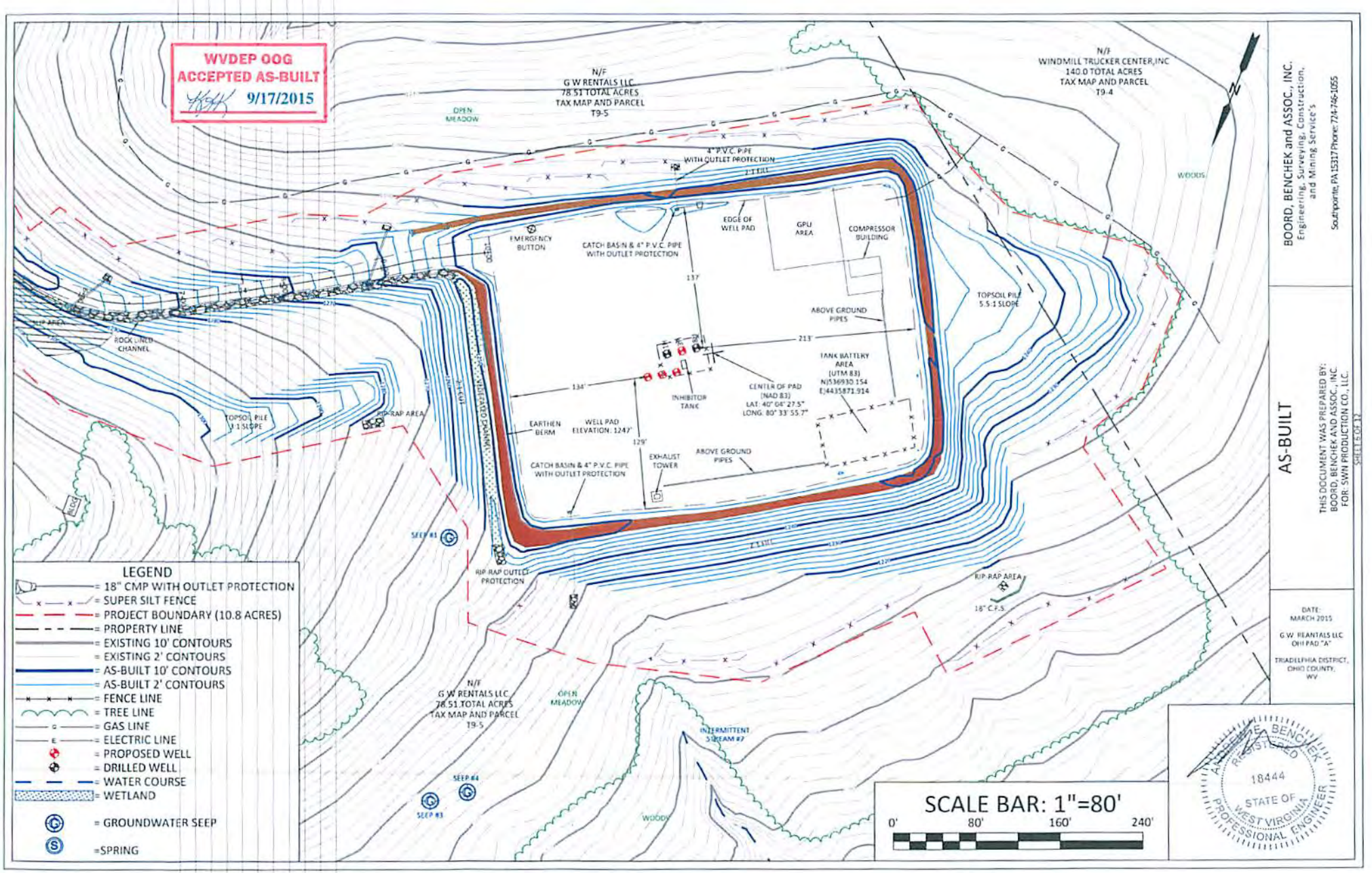


COORDINATES	
CENTER OF WELLS	(NAD 83) LAT: 40° 04' 27.5" LONG: 80° 33' 56.3" (NAD 27) LAT: 40° 04' 27.2" LONG: 80° 33' 57.0"
SITE ENTRANCE	(NAD 83) LAT: 40° 04' 25.7" LONG: 80° 33' 43.3" (NAD 27) LAT: 40° 04' 25.4" LONG: 80° 33' 44.0"



1"=1000'
0' 1000' 2000' 3000'

TITLE SHEET	SHEET
G.W. RENTALS LLC OHI PAD "A" TRIADELPHIA DISTRICT, OHIO COUNTY, WV	1 OF 12


WVDEP OOG
ACCEPTED AS-BUILT
9/17/2015
N/F
G W RENTALS LLC
78.51 TOTAL ACRES
TAX MAP AND PARCEL
T9-5
N/F
WINDMILL TRUCKER CENTER, INC
140.0 TOTAL ACRES
TAX MAP AND PARCEL
T9-4
OPEN MEADOW
WOODS
4" P.V.C. PIPE WITH OUTLET PROTECTION
2:1 FILL
EMERGENCY BUTTON
CATCH BASIN & 4" P.V.C. PIPE WITH OUTLET PROTECTION
EDGE OF WELL PAD
GPU AREA
COMPRESSOR BUILDING
TOPSOIL PILE 5.5:1 SLOPE
ABOVE GROUND PIPES
TANK BATTERY AREA (UTM 83) N/536930.154 E/4435871.914
CENTER OF PAD (NAD 83) LAT: 40° 04' 27.5" LONG: 80° 33' 55.7"
INHIBITOR TANK
EXHAUST TOWER
EARTHEN BERM
WELL PAD ELEVATION: 1247'
ROCK LINED CHANNEL
TOPSOIL PILE 3:1 SLOPE
RIP RAP AREA
SEEP #1
RIP RAP OUTLET PROTECTION
RIP RAP AREA
18" C.F.S.
N/F
G W RENTALS LLC
78.51 TOTAL ACRES
TAX MAP AND PARCEL
T9-5
OPEN MEADOW
INTERMITTENT STREAM #7
SEEP #4
SEEP #3
WOODS
LEGEND
= 18" CMP WITH OUTLET PROTECTION
= SUPER SILT FENCE
= PROJECT BOUNDARY (10.8 ACRES)
= PROPERTY LINE
= EXISTING 10' CONTOURS
= EXISTING 2' CONTOURS
= AS-BUILT 10' CONTOURS
= AS-BUILT 2' CONTOURS
= FENCE LINE
= TREE LINE
= GAS LINE
= ELECTRIC LINE
= PROPOSED WELL
= DRILLED WELL
= WATER COURSE
= WETLAND
= GROUNDWATER SEEP
=SPRING
SCALE BAR: 1"=80'
0'
80'
160'
240'
ANDREW A. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055
AS-BUILT
THIS DOCUMENT WAS PREPARED BY: BOORD, BENCHEK AND ASSOC., INC. FOR: SWN PRODUCTION CO., LLC.
SHEET 5 OF 12
DATE: MARCH 2015
G.W. RENTALS LLC
OHI PAD "A"
TRIADELPHIA DISTRICT, OHIO COUNTY, WV

G.W. RENTALS LLC -OHI AS-BUILT

AS-BUILT/PRODUCTION PLAN

TRIADELPHIA DISTRICT, OHIO COUNTY, WEST VIRGINIA

SOUTHWESTERN ENERGY

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
NORTH ZONE, NAD83
ELEVATIONS BASED ON NAVD88
ESTABLISHED BY SURVEY GRADE GPS & OPUS
POST-PROCESSING

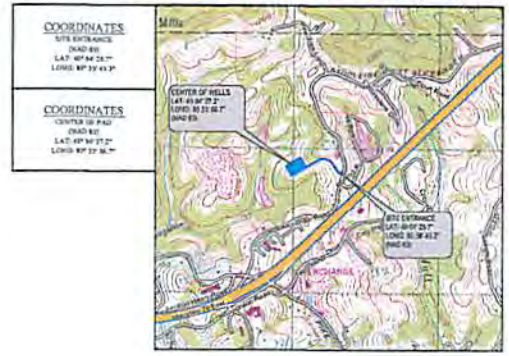
WEST VIRGINIA COUNTY MAP

TRIADELPHIA DISTRICT, OHIO COUNTY,
WEST VIRGINIA
SCALE: N.T.S.

DRAWING INDEX

01	-	COVER SHEET
02-03	-	EVACUATION SHEETS
04	-	PLAN SHEET
05	-	ACCESS ROAD PROFILE SHEET
06	-	DETAIL SHEET

USGS VALLEY GROVE, WV QUAD MAP



TRIADELPHIA DISTRICT, OHIO COUNTY,
WEST VIRGINIA

WVDOH COUNTY ROAD MAP
PROJECT LOCATION
SCALE: N.T.S.

PROJECT CONTACTS

SOUTHWESTERN ENERGY

Tom Chambers - Facilities Engineer
501-548-3753

John Angiulli, Field Regulatory Specialist
304-884-1644

Jimmy Johnson, Construction Superintendent
304-997-9403

ENGINEER & SURVEYOR

Anthony Baumgard, PE
Triple H Enterprises
304-873-3260

Darrell Boice, PS
Triple H Enterprises
304-873-3260

7-31-2015

ANTHONY L. BAUMGARD REGISTERED 14049 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

ANTHONY BAUMGARD, P.E. NO. WV 14049

MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section XXV: Chapter 24-C)
Requires that you call two business days before you dig in the state of West Virginia
IT'S THE LAW!!!

811 Know what's below. Call before you dig.

Received
Office of Oil & Gas
SEP 24 2015

4690020

AS-BUILT CERTIFICATION:
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL, OFFICE OF OIL AND GAS CRS 35-8.

NOTES:

1. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF JULY 22, 2015. TRIPLE H ENTERPRISES IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATE.
2. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
3. THE EXISTING ENTRANCE TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

TripleH enterprises

REVISION	DATE

SWN Production Company

THIS PLAN PREPARED FOR SOUTHWESTERN ENERGY

COVER SHEET

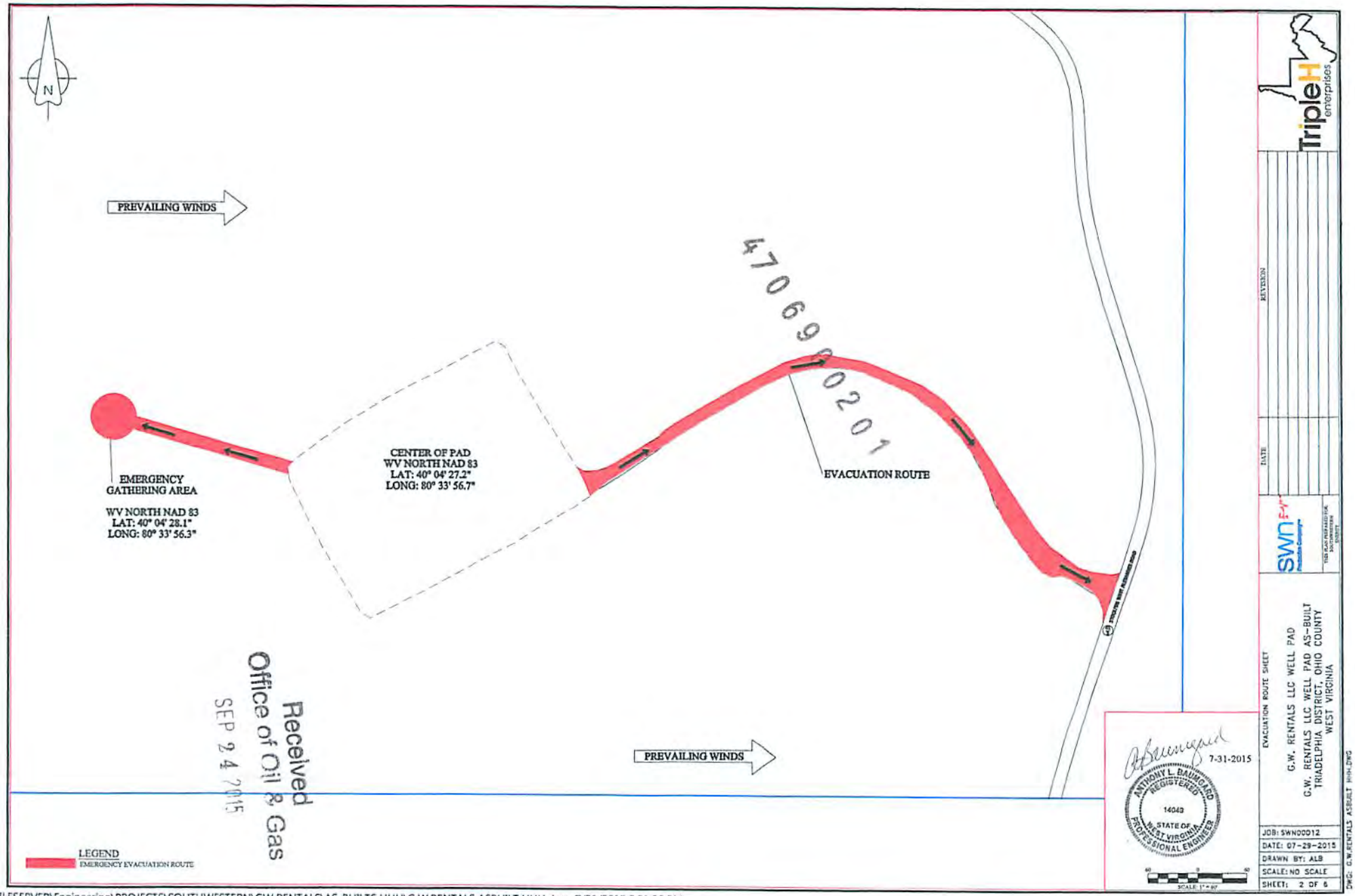
G.W. RENTALS LLC WELL PAD
G.W. RENTALS LLC WELL PAD AS-BUILT
TRIADELPHIA DISTRICT, OHIO COUNTY
WEST VIRGINIA

JOB: SWN00012
DATE: 07-29-2015
DRAWN BY: ALB
SCALE: NO SCALE
SHEET: 1 OF 6

DWG: G.W.RENTALS ASBUILT HHH.DWG

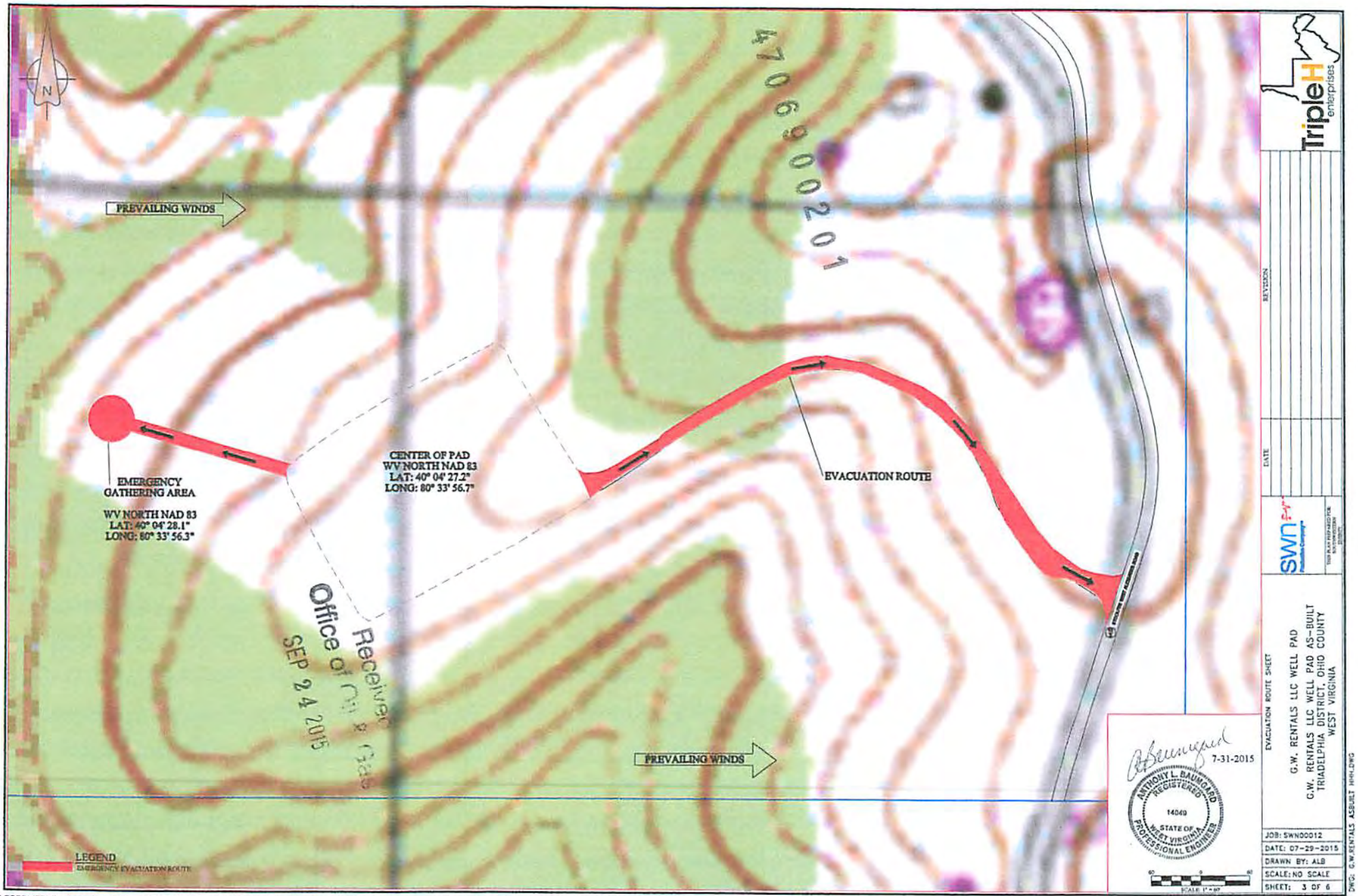
\\HHHFILESERVER\Engineering\PROJECTS\SOUTHWESTERN\GW RENTALS\AS_BUILTS HHH\G.W.RENTALS ASBUILT HHH.dwg, 7/31/2015 2:31:21 PM

8.10.15



\\HHHFILESERVER\Engineering\PROJECTS\SOUTHWESTERN\GW RENTALS\AS_BUILTS HHH\G.W.RENTALS ASBUILT HHH.dwg, 7/31/2015 2:31:26 PM

8.10.15



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E. B 8.10.15

WELL INFORMATION	
WELL NO.	API NO.
1H	069-00173
3H	N/A
5H	N/A
8H	069-00166
205H	N/A
405H	N/A
605H	N/A

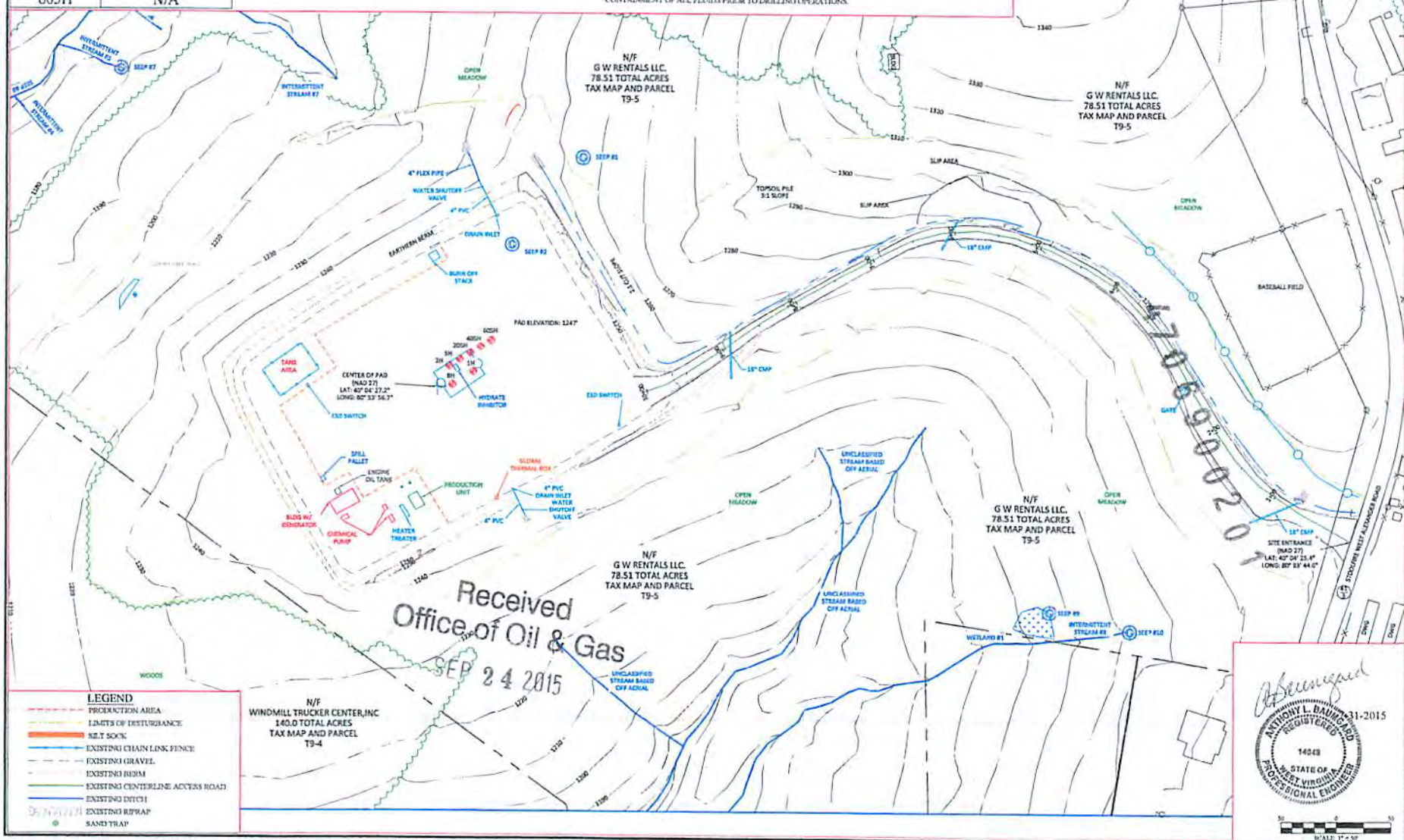
RECLAMATION SEQUENCE:

1. INSPECT EXISTING E&S BMP'S IN ACCORDANCE WITH MAINTENANCE AND INSPECTION PROCEDURES AS OUTLINED IN E&S CONTROL AND SITE PLAN, REPAIR & REPLACE AS NEEDED.
2. RECLAIM SITE AS PER RECLAMATION PLAN.
3. SEED AND MULCH ALL DISTURBED AREAS.
4. DO NOT REMOVE E&S BMP'S UNTIL 70% UNIFORM PERENNIAL GROWTH IS ACHIEVED.
5. IF DISTURBANCE OCCURS DURING REMOVAL OF E&S BMP'S IMMEDIATELY SEED AND MULCH DISTURBED AREAS.

*PLACE STRUCTURAL SOIL FILL IN 9 INCH LOOSE LIFTS, COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY.

NOTES:
SUMP DRAIN INLET GRATE ALONG NORTHERN SIDE DOES NOT SET FLUSH WITH PAD GRADE, IT IS APPROX. 6" HIGHER. SUMP DRAIN ALONG THE SOUTHERN SIDE DOES NOT HAVE AN INLET STRUCTURE AS SHOWN IN THE ORIGINAL PLANS, BUT ONLY A 4" PVC PIPE THAT IS FLUSH WITH THE PAD. BOTH SUMPS HAVE SHUT OFF VALVES. THE ACCESS ROAD DOES NOT NEED A MOUNTABLE BERM BECAUSE THE ROAD IS ON A POSITIVE GRADE GOING OUT OF THE PAD.

NOTES:
1. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
2. THE EXISTING EGRESS TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.



Received
Office of Oil & Gas
SEP 24 2015

LEGEND
- PRODUCTION AREA
- LIMITS OF DISTURBANCE
- SILT SOCK
- EXISTING CHAIN LINK FENCE
- EXISTING GRAVEL
- EXISTING BERM
- EXISTING CENTERLINE ACCESS ROAD
- EXISTING DITCH
- EXISTING RIPRAP
- SAND TRAP

ANTHONY L. BAUMGARD
REGISTERED
14048
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
31-2015

SCALE: 1" = 50'

TripleH enterprises

REVISION
DATE

swn
Production Company

THIS PLAN PREPARED FOR MULTIPLE SECTIONS INSTITUTE

PLAN SHEET

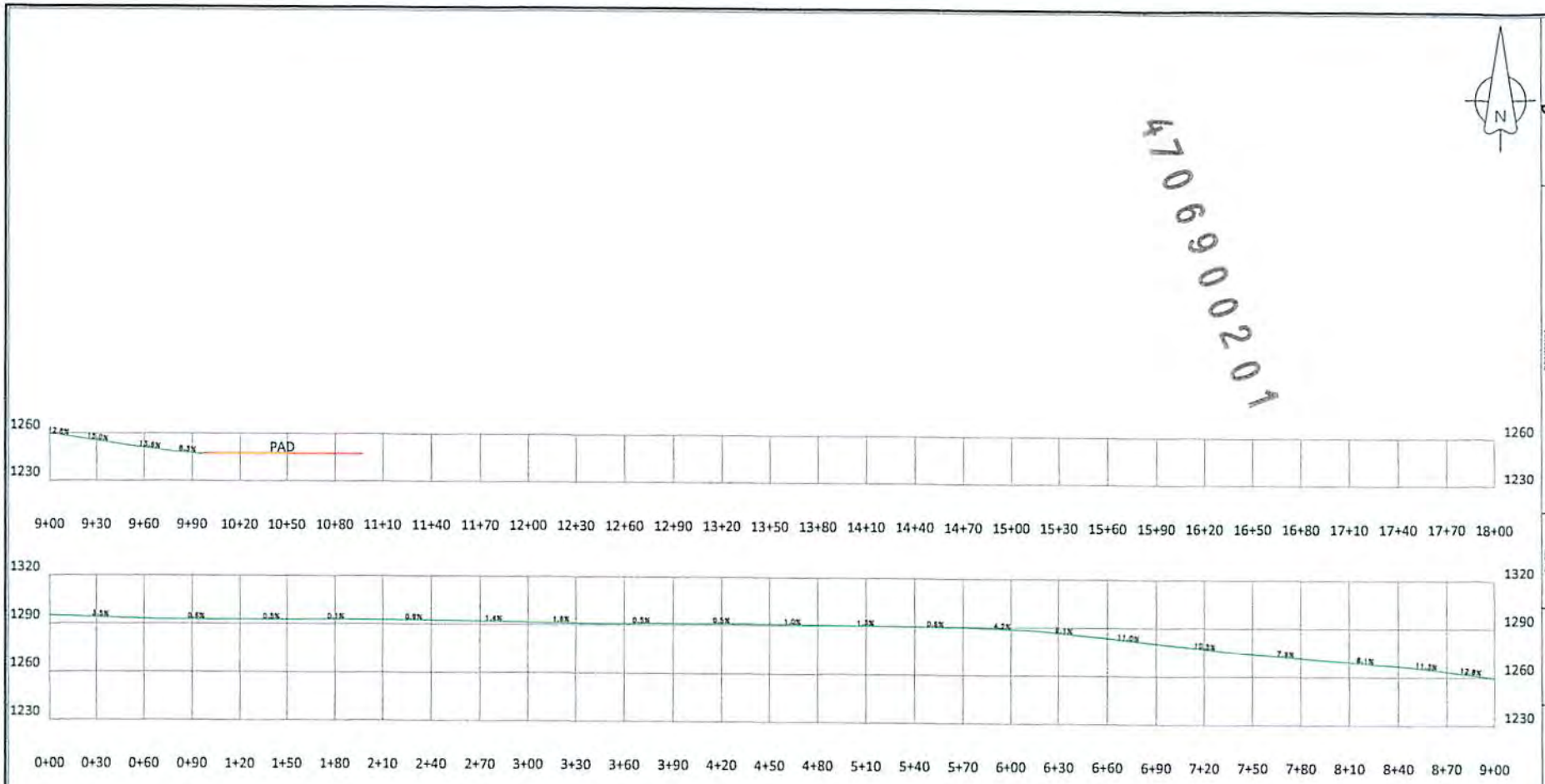
G.W. RENTALS LLC WELL PAD
G.W. RENTALS LLC WELL PAD AS-BUILT
TRIADELPHIA DISTRICT, OHIO COUNTY
WEST VIRGINIA

JOB: SWN00012
DATE: 07-29-2015
DRAWN BY: ALB
SCALE: NO SCALE
SHEET: 4 OF 6

DWG: G.W.RENTALS ASBUILT HHH.DWG

\\HHHFILESERVER\Engineering\PROJECTS\SOUTHWESTERN\GW RENTALS\AS_BUILTS HHH\G.W.RENTALS ASBUILT HHH.dwg, 7/31/2015 2:31:36 PM

C. Bl 8-10-15



4706900201

Received
Office of Oil & Gas
SEP 24 2015

7-31-2015

ANTHONY L. BAUMGARD
REGISTERED
14048
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

TripleH enterprises

REVISION | DATE

SWN Production Company

ACCESS ROAD PROFILE SHEET

G.W. RENTALS LLC WELL PAD

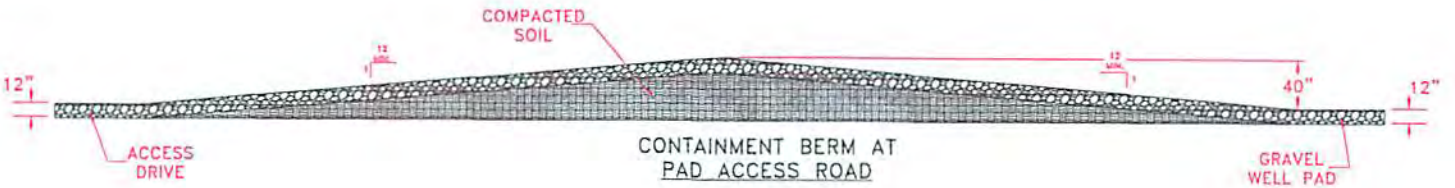
G.W. RENTALS LLC WELL PAD AS-BUILT
TRIADELPHIA DISTRICT, OHIO COUNTY
WEST VIRGINIA

JOB: SWN00012
DATE: 07-29-2015
DRAWN BY: ALB
SCALE: NO SCALE
SHEET: 5 OF 5

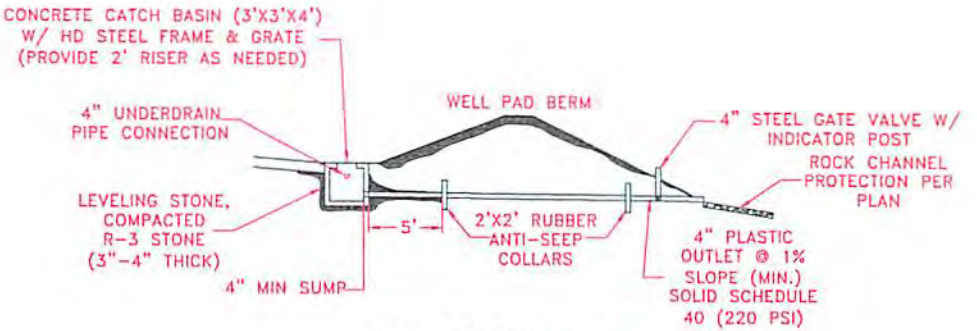
DWG: G.W.RENTALS ASBUILT HHH.DWG

\\HHHFILESERVER\Engineering\PROJECTS\SOUTHWESTERN\GW RENTALS\AS_BUILTS HHH\G.W.RENTALS ASBUILT HHH.dwg, 7/31/2015 2:31:40 PM

8.10.15



CONTAINMENT BERM AT
PAD ACCESS ROAD



WELL PAD TYPICAL SUMP
CROSS SECTION

NOTE!
THERE SHALL BE NO DISCHARGE FROM THE SUMP
DURING DRILLING OPERATIONS.

Received
Office of Oil & Gas
SEP 24 2015

4706900200

7-31-2015

ANTHONY L. BAUMGARD
REGISTERED
14049
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

Triple H enterprises

REVISION | DATE

SWN Production Company

DETAIL SHEET

G.W. RENTALS LLC WELL PAD

G.W. RENTALS LLC WELL PAD AS-BUILT
TRIADELPHIA DISTRICT, OHIO COUNTY
WEST VIRGINIA

JOB: SWN00012
DATE: 07-29-2015
DRAWN BY: ALB
SCALE: NO SCALE
SHEET: 5 OF 5

DWG: G.W.RENTALS ASBUILT HHH.DWG

\\HHHFILESERVER\Engineering\PROJECTS\SOUTHWESTERN\GW RENTALS\AS_BUILTS HHH\G.W.RENTALS ASBUILT HHH.dwg, 7/31/2015 2:31:46 PM

8.10.15

G. W. RENTALS
AS-BUILT & REC
TRIADELPHIA DISTRIC
MARC

WEST VIRGINIA 811

TWO WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR MUST CONTACT THE WV ONE CALL SYSTEM, INC., 1-800-245-4848
WV ONE CALL SERIAL #: 1213740331

OWNER

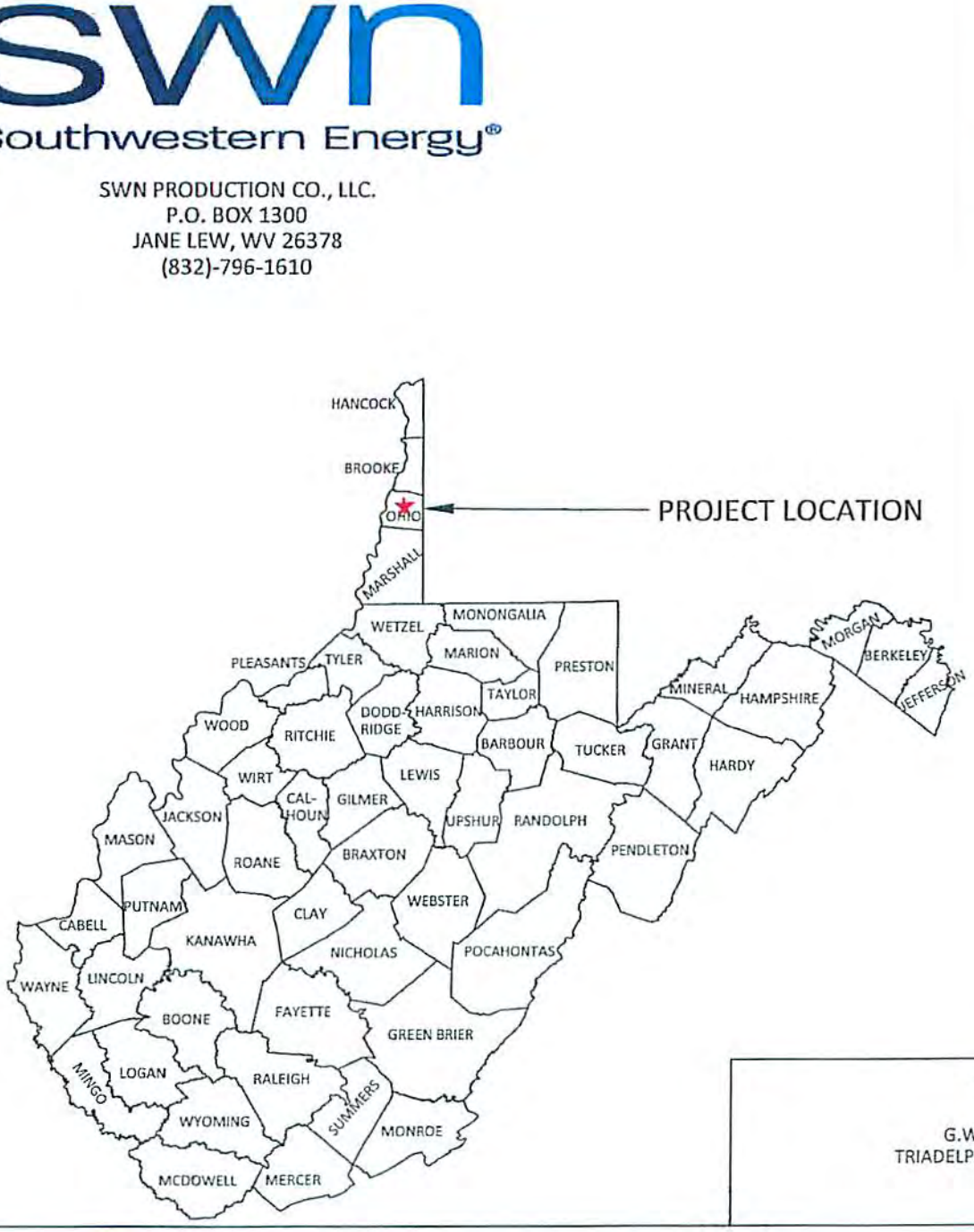
SWN Southwestern Energy®

SWN PRODUCTION CO., LLC.
P.O. BOX 1300
JANE LEW, WV 26378
(832)-796-1610

SHEET I
1. TITLE
2-3. EVACUATION RO
WIN
4. AS-BUILT
5-6. AS-
7. ACCESS RO
8. RECLAMATION
9-10. RECLAM
11-12. D

TOTAL DISTURBED
ROAD DISTURBE
WELL PAD DISTURB

LENGTH OF ACCES
AVG. WIDTH OF A
WELL PAD ELEV



TITLE SHEET

G.W. RENTALS LLC OHI PAD "A"
TRIADELPHIA DISTRICT, OHIO COUNTY, W

LLC OHI PAD "A"
LAMATION PLAN
T, OHIO COUNTY, WV
H 2015

PLANS PREPARED BY:

BOORD BENCHEK & ASSOCIATES, INC.
ENGINEERING,SURVEYING, CONSTRUCTION AND MINING SERVICES
SOUTHPOINTE, PA 15317 PHONE: 724-746-1055

DEX
HEET
UTE/PREVAILING
S
VERVIEW
UILT
D PROFILE
AN OVERVIEW
TION PLAN
TAILS

AREA: 10.8 AC.
AREA: 3.9 AC.
D AREA: 6.9 AC.

ROAD: 1,007'
ESS ROAD: 15'
TION: 1247'

ANDREW E. BENCHEK REGISTERED 18444 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

ab 4/22/15

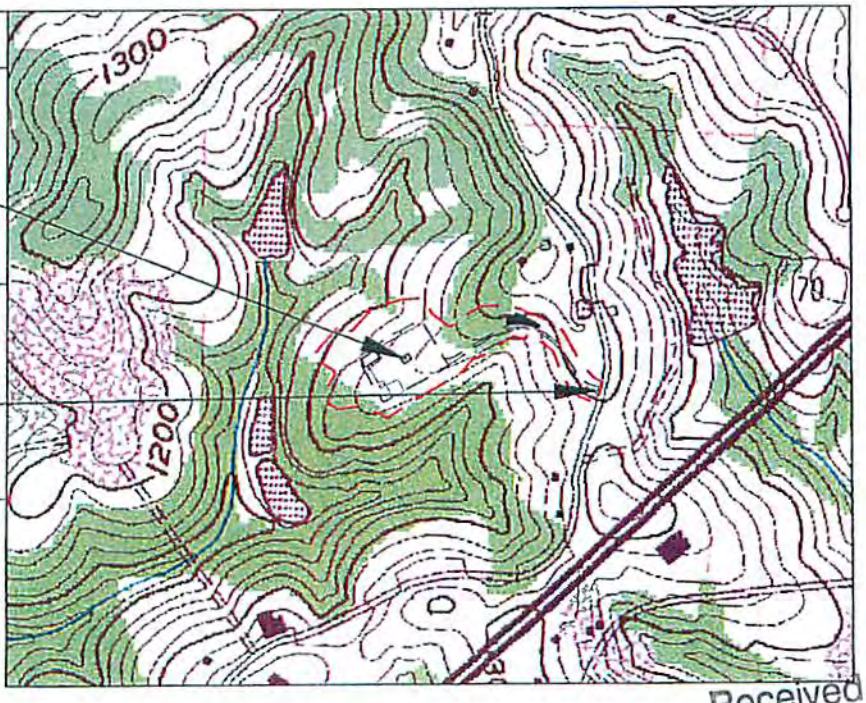
4/22/15

3-18-15

ANDREW BENCHEK
P.E.

DATE

COORDINATES	
CENTER OF WELLS	
(NAD 83)	
LAT: 40° 04' 27.5"	
LONG: 80° 33' 56.3"	
(NAD 27)	
LAT: 40° 04' 27.2"	
LONG: 80° 33' 57.0"	
SITE ENTRANCE	
(NAD 83)	
LAT: 40° 04' 25.7"	
LONG: 80° 33' 43.3"	
(NAD 27)	
LAT: 40° 04' 25.4"	
LONG: 80° 33' 44.0"	



Received
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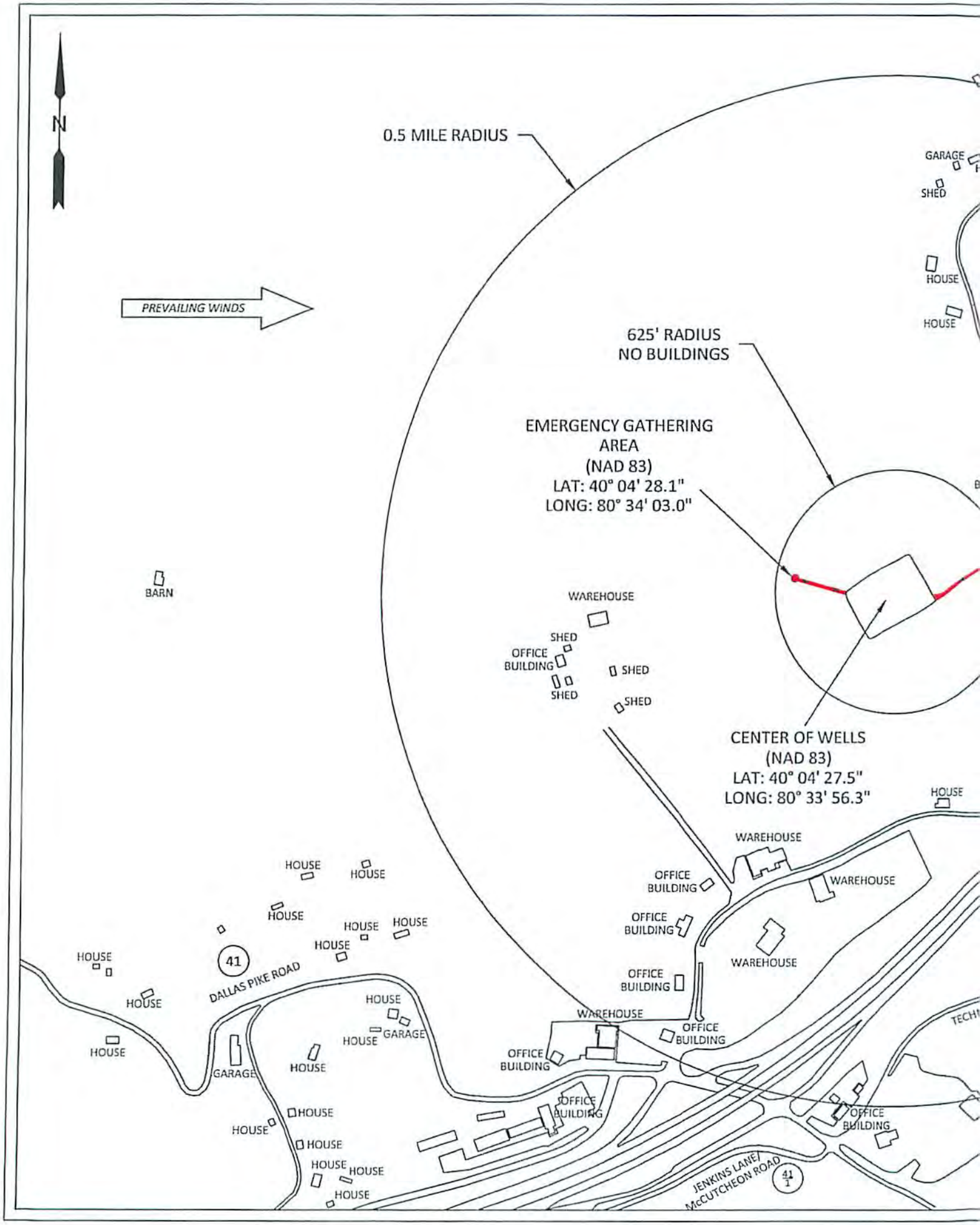
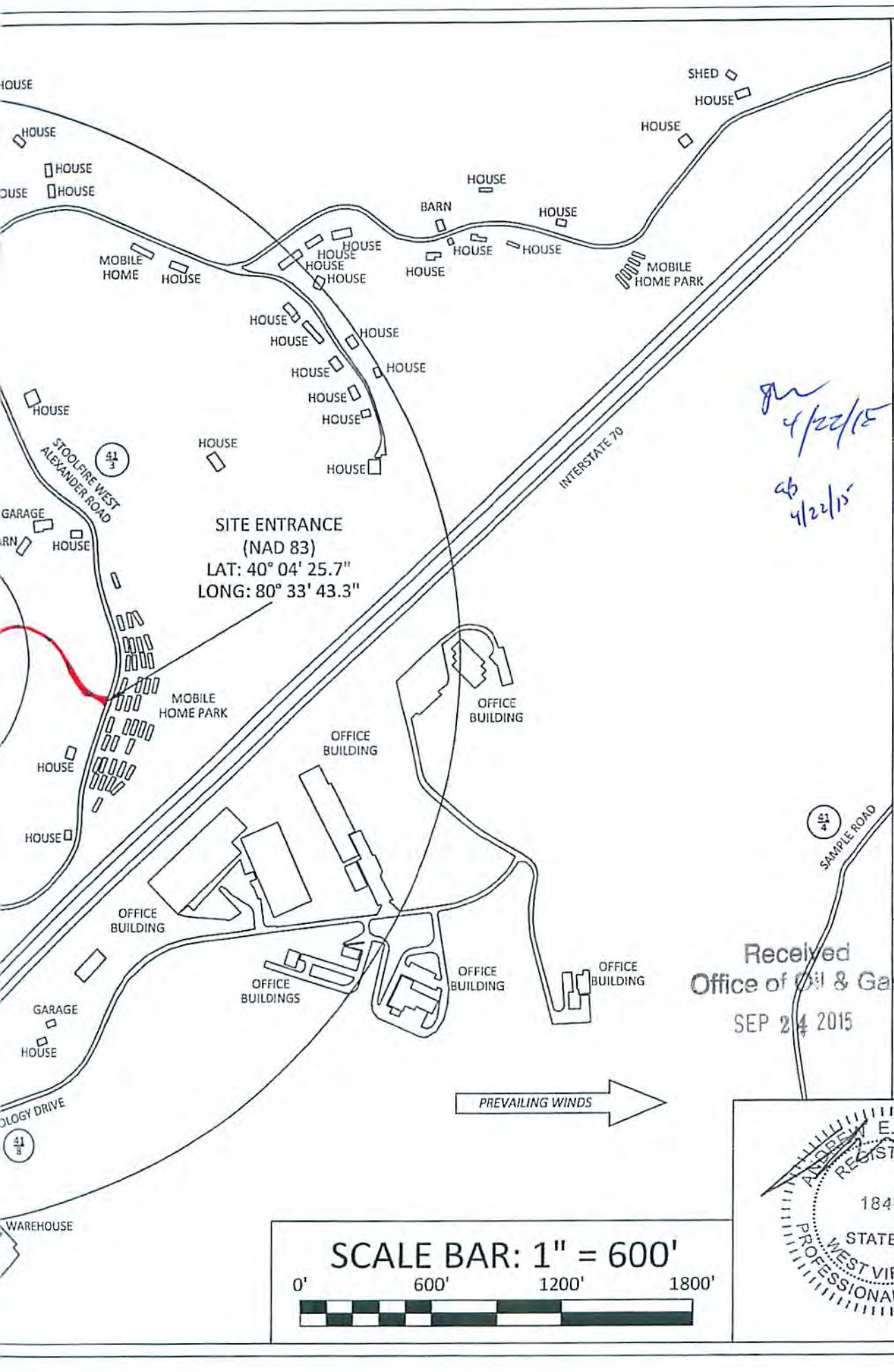
SEP 24 2015

1"=1000'
0' 1000' 2000' 3000'

SHEET
1
OF
12


N
0.5 MILE RADIUS
PREVAILING WINDS
625' RADIUS
NO BUILDINGS
EMERGENCY GATHERING
AREA
(NAD 83)
LAT: 40° 04' 28.1"
LONG: 80° 34' 03.0"
CENTER OF WELLS
(NAD 83)
LAT: 40° 04' 27.5"
LONG: 80° 33' 56.3"
GARAGE
SHED
HOUSE
HOUSE
BARN
WAREHOUSE
SHED
OFFICE
BUILDING
SHED
SHED
SHED
HOUSE
WAREHOUSE
OFFICE
BUILDING
WAREHOUSE
OFFICE
BUILDING
WAREHOUSE
OFFICE
BUILDING
WAREHOUSE
OFFICE
BUILDING
OFFICE
BUILDING
OFFICE
BUILDING
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
41
DALLAS PIKE ROAD
HOUSE
HOUSE
HOUSE
HOUSE
GARAGE
GARAGE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
JENKINS LANE/
McCUTCHEON ROAD
41
1



SCALE BAR: 1" = 600'

0' 600' 1200' 1800'

BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

4/22/15

4/22/15

EVACUATION ROUTE/ PREVAILING WINDS

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 2 OF 12

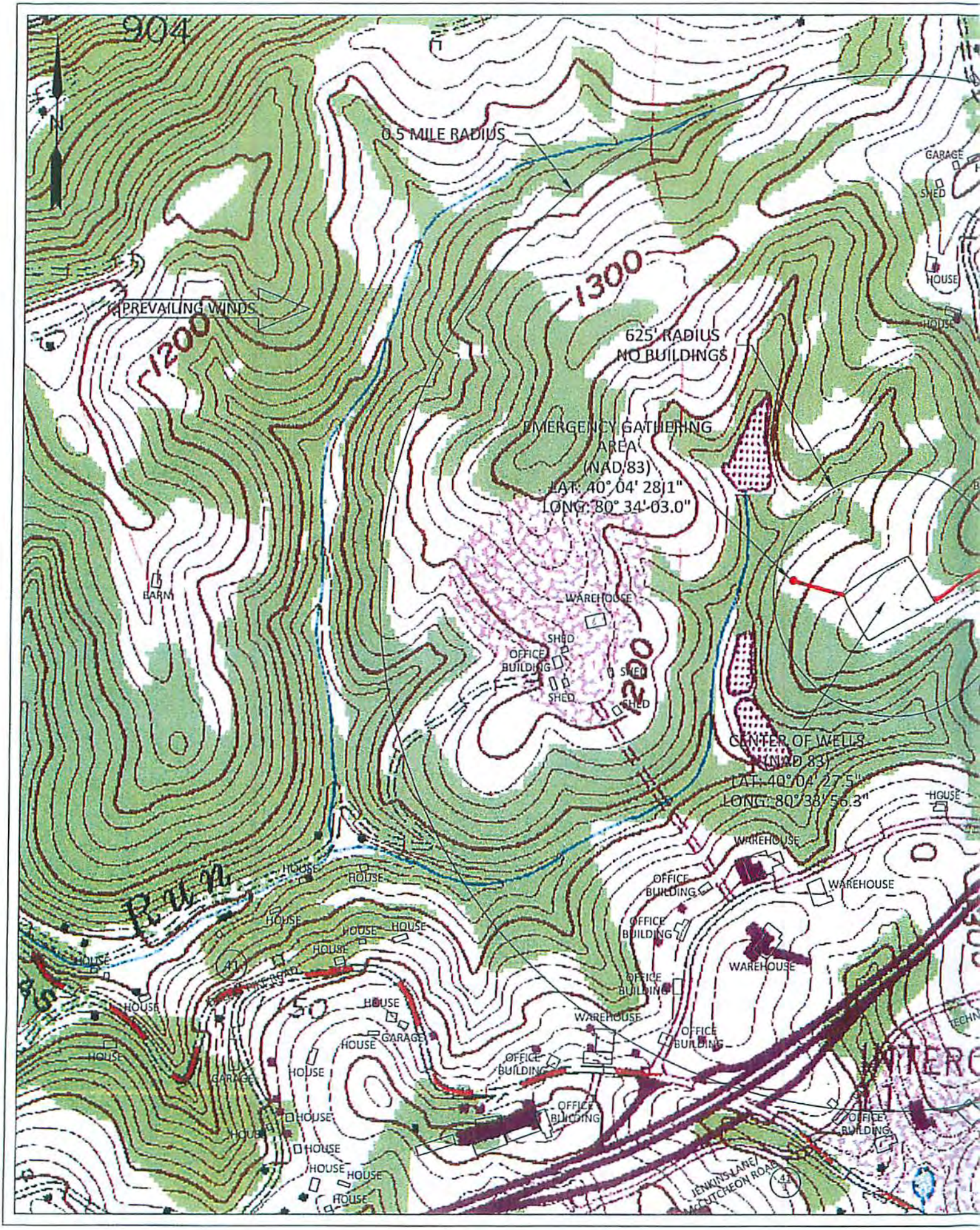
DATE:
MARCH 2015

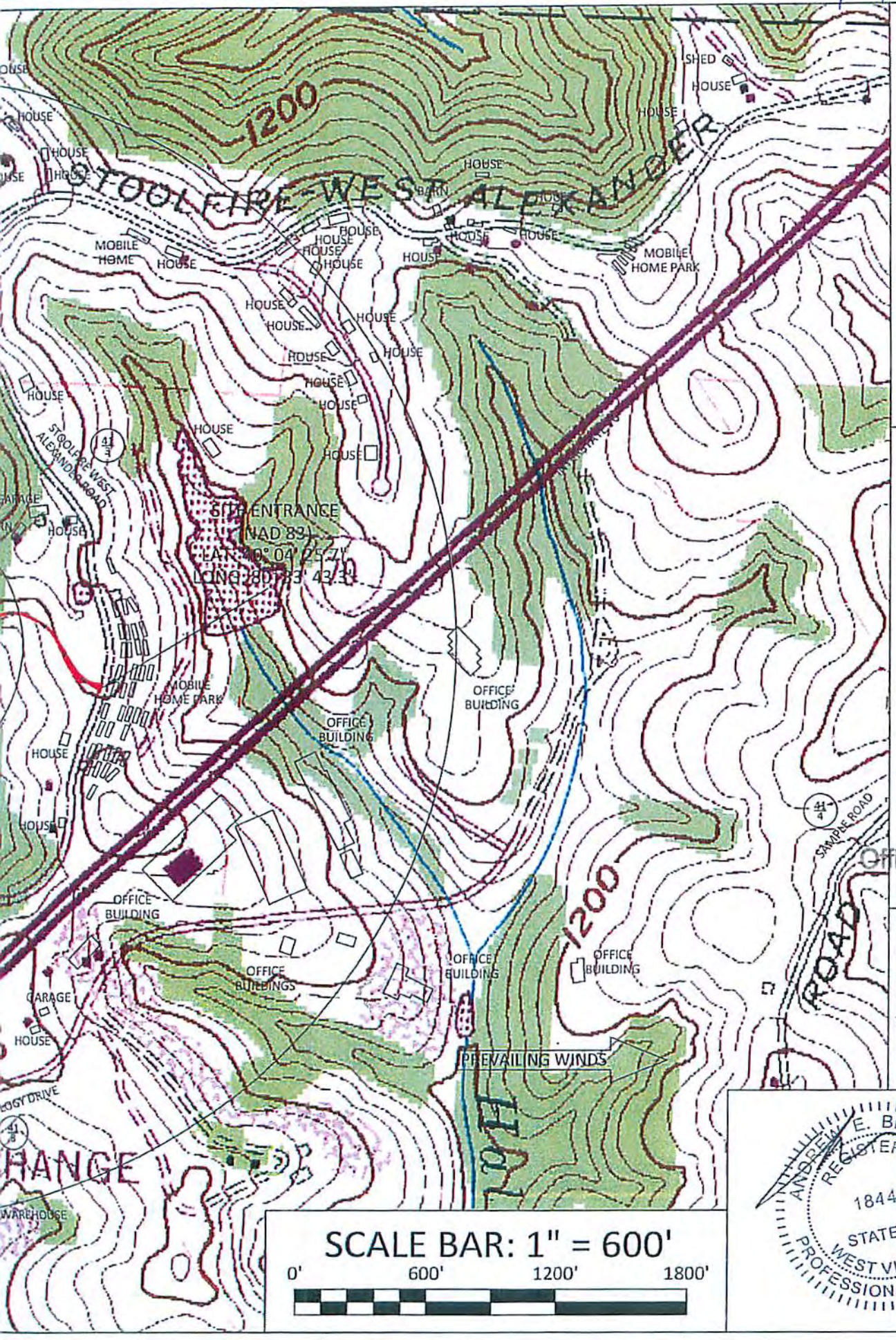
G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

Received
Office of Oil & Gas
SEP 24 2015

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER


904
N
0.5 MILE RADIUS
PREVAILING WINDS
1200
1300
625' RADIUS
NO BUILDINGS
EMERGENCY GATHERING
AREA
(NAD 83)
LAT: 40° 04' 28.1"
LONG: 80° 34' 03.0"
CENTER OF WELLS
(NAD 83)
LAT: 40° 04' 27.5"
LONG: 80° 38' 56.3"
GARAGE
SHED
HOUSE
BARN
WAREHOUSE
OFFICE
BUILDING
Run
JENKINS LANE/
McCUTCHEON ROAD



BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

EVACUATION ROUTE/ PREVAILING WINDS

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
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SHEET 3 OF 12

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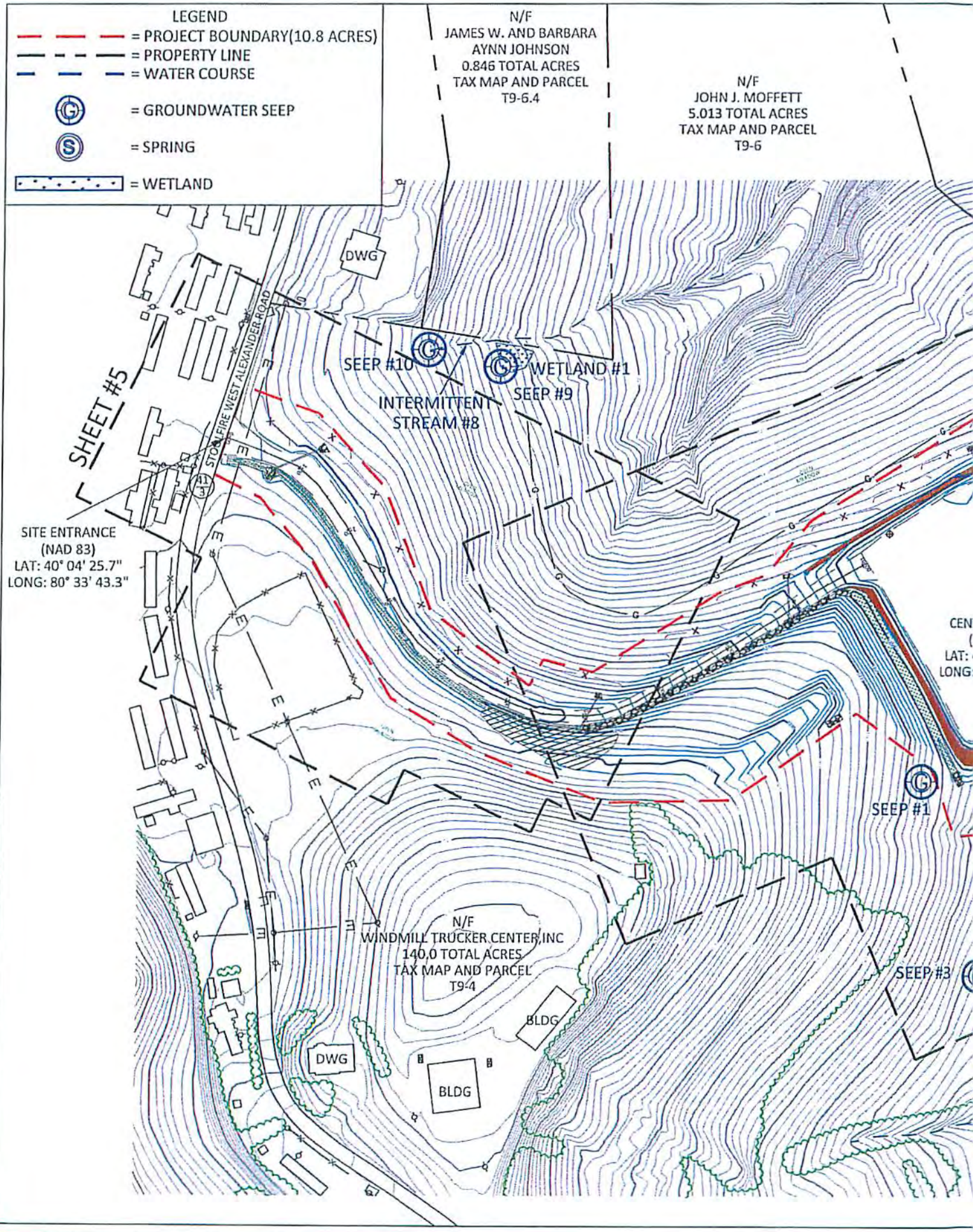
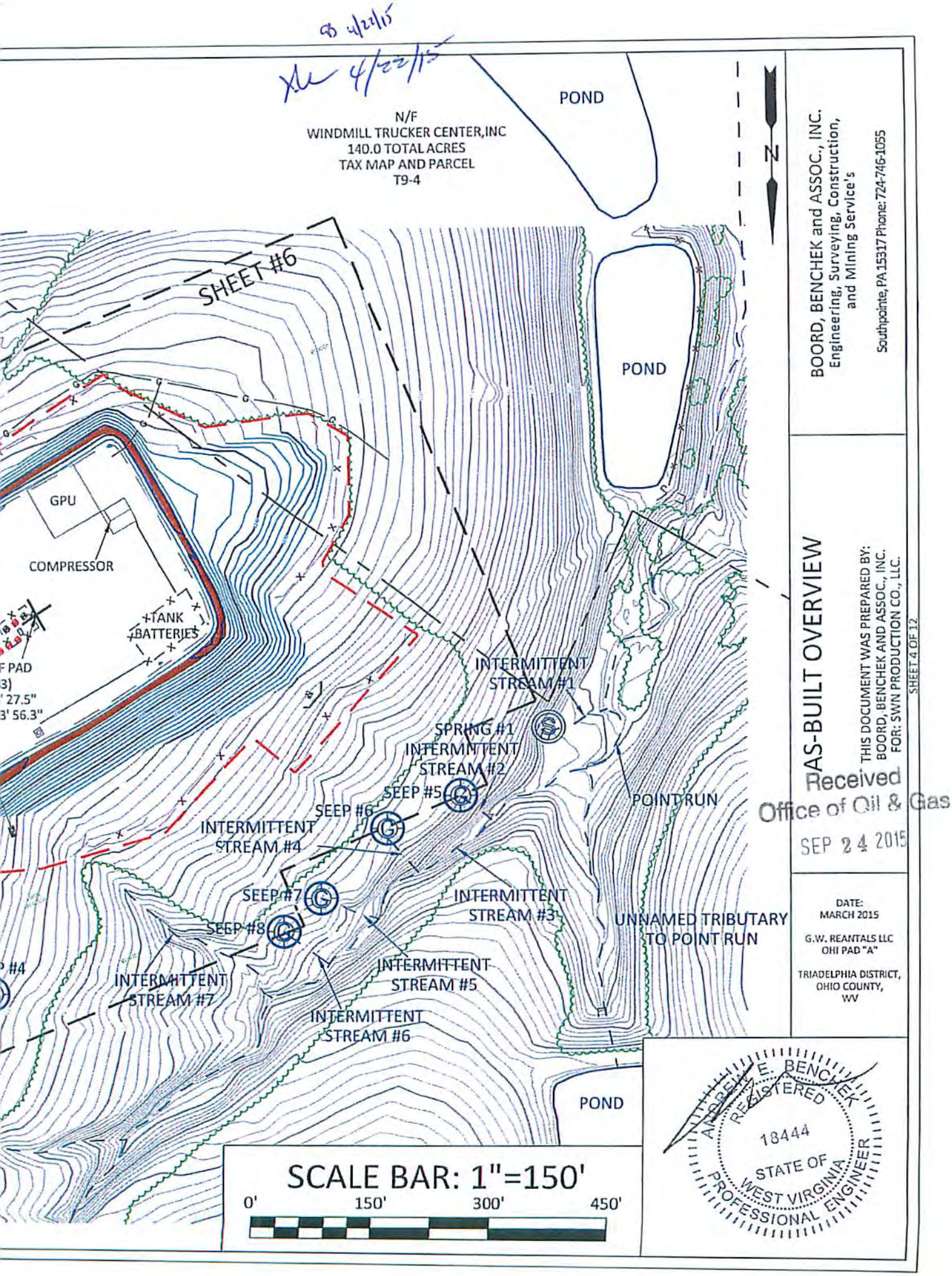
DATE:
MARCH 2015

G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER


LEGEND
= PROJECT BOUNDARY(10.8 ACRES)
= PROPERTY LINE
= WATER COURSE
= GROUNDWATER SEEP
= SPRING
= WETLAND
N/F
JAMES W. AND BARBARA
AYNN JOHNSON
0.846 TOTAL ACRES
TAX MAP AND PARCEL
T9-6.4
N/F
JOHN J. MOFFETT
5.013 TOTAL ACRES
TAX MAP AND PARCEL
T9-6
DWG
SEEP #10
WETLAND #1
SEEP #9
INTERMITTENT
STREAM #8
SHEET #5
STONEFIRE WEST ALEXANDER ROAD
SITE ENTRANCE
(NAD 83)
LAT: 40° 04' 25.7"
LONG: 80° 33' 43.3"
SEEP #1
N/F
WINDMILL TRUCKER CENTER INC
140.0 TOTAL ACRES
TAX MAP AND PARCEL
T9-4
BLDG
DWG
BLDG
SEEP #3



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Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

AS-BUILT OVERVIEW

THIS DOCUMENT WAS PREPARED BY:
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FOR: SWN PRODUCTION CO., LLC.

SHEET 4 OF 12

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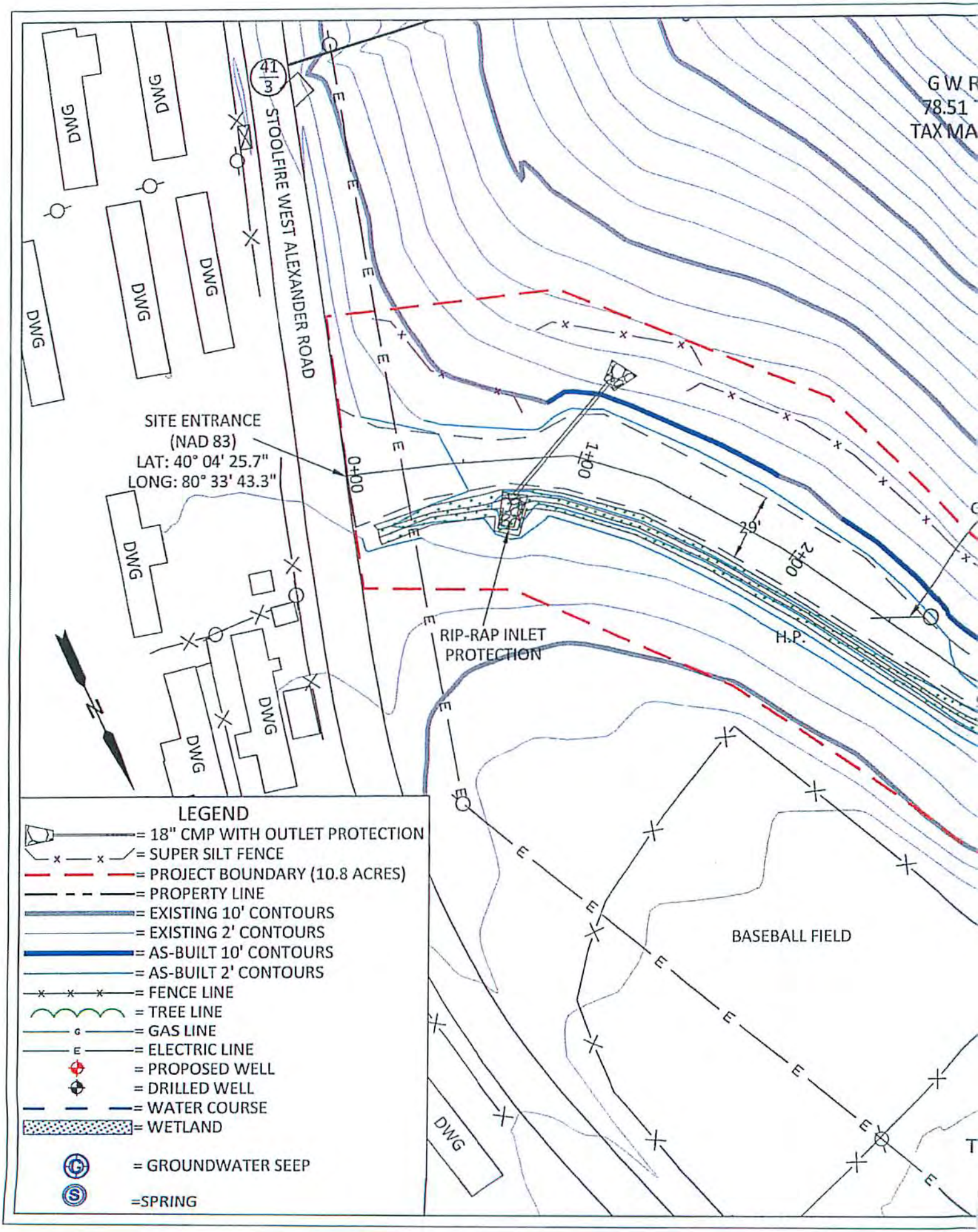
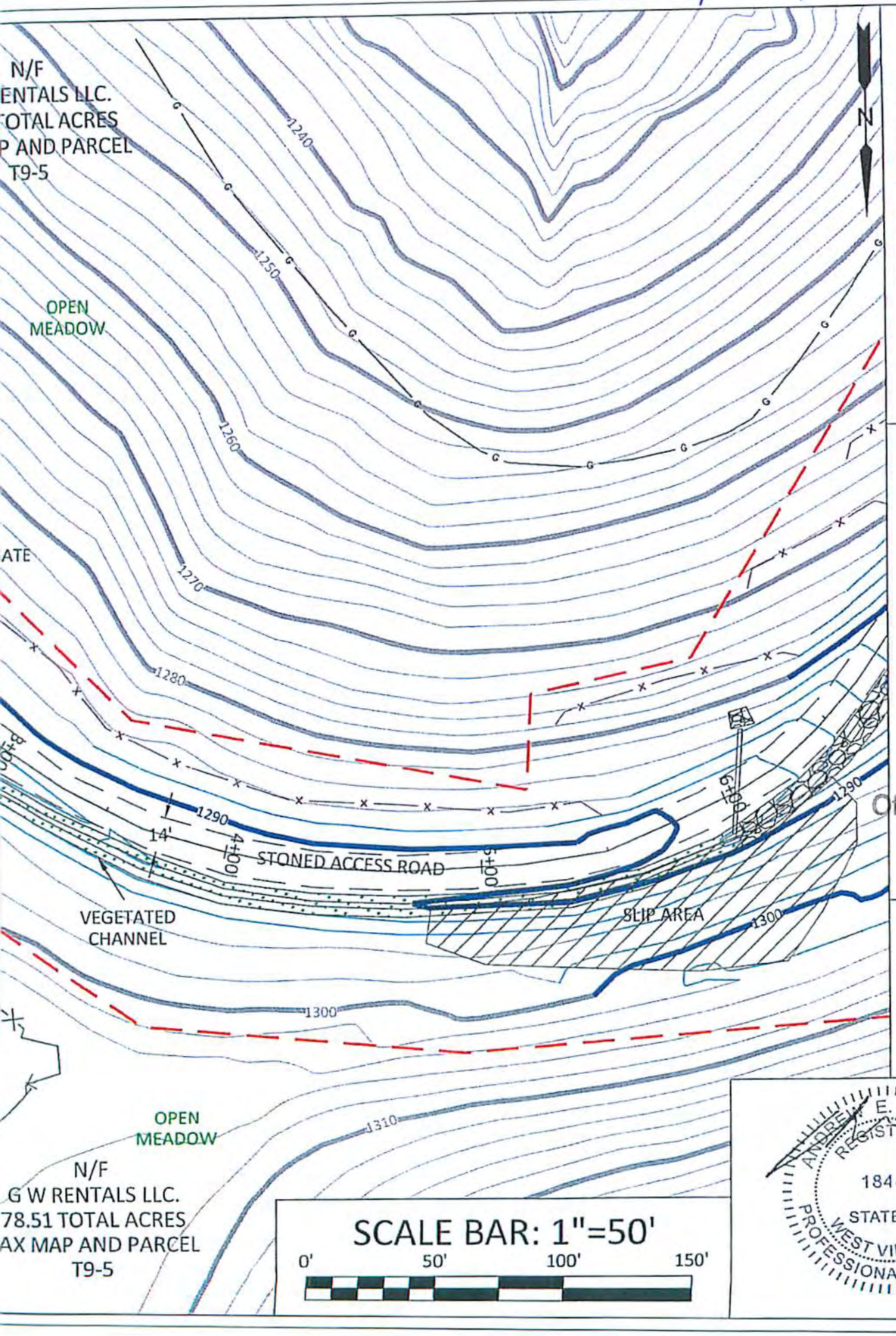
G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER


41/3
STOOLFIRE WEST ALEXANDER ROAD
DWG
SITE ENTRANCE
(NAD 83)
LAT: 40° 04' 25.7"
LONG: 80° 33' 43.3"
0+00
1+00
2+00
29'
RIP-RAP INLET
PROTECTION
H.P.
BASEBALL FIELD
LEGEND
= 18" CMP WITH OUTLET PROTECTION
= SUPER SILT FENCE
= PROJECT BOUNDARY (10.8 ACRES)
= PROPERTY LINE
= EXISTING 10' CONTOURS
= EXISTING 2' CONTOURS
= AS-BUILT 10' CONTOURS
= AS-BUILT 2' CONTOURS
= FENCE LINE
= TREE LINE
= GAS LINE
= ELECTRIC LINE
= PROPOSED WELL
= DRILLED WELL
= WATER COURSE
= WETLAND
= GROUNDWATER SEEP
=SPRING



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Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

AS-BUILT

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BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

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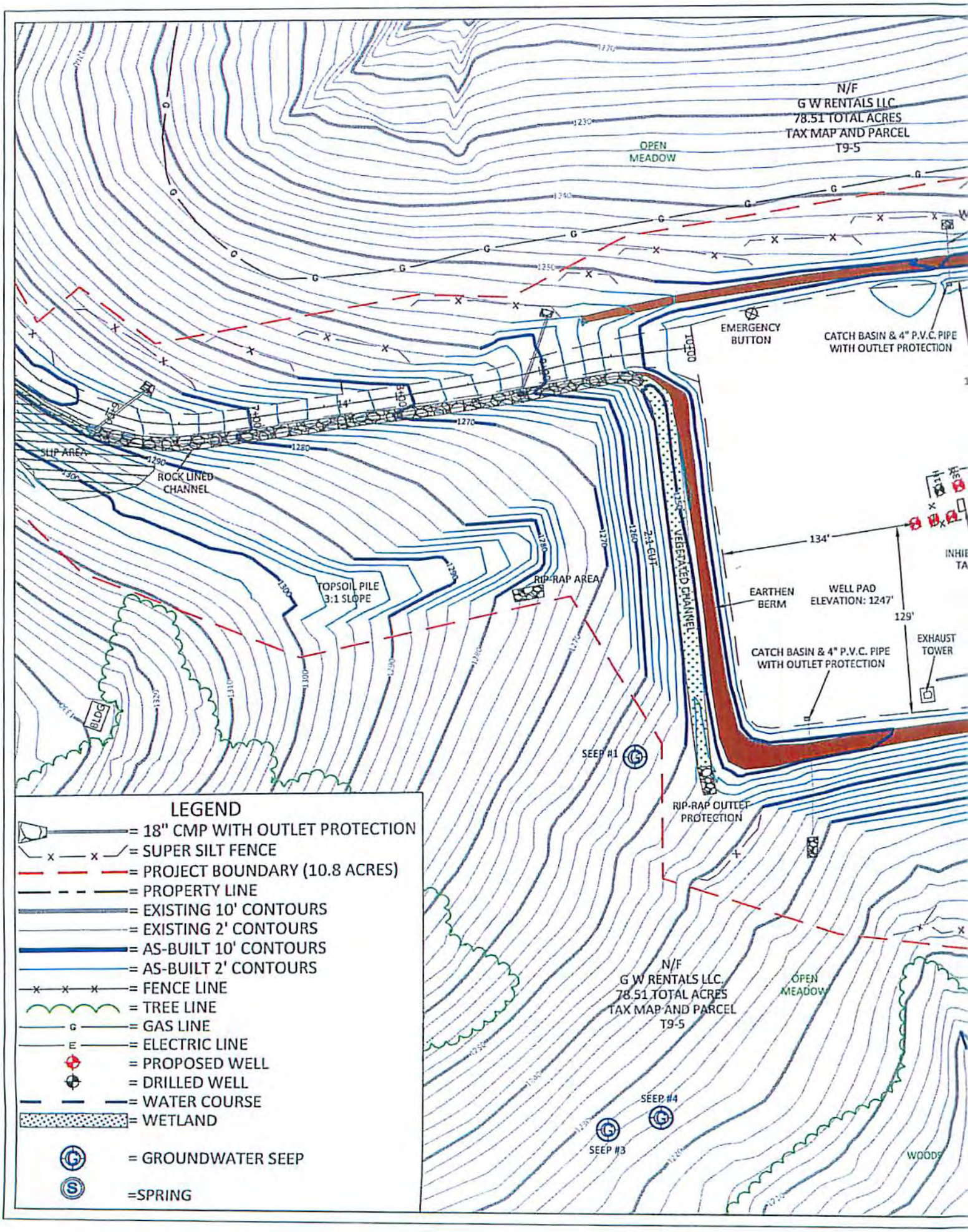
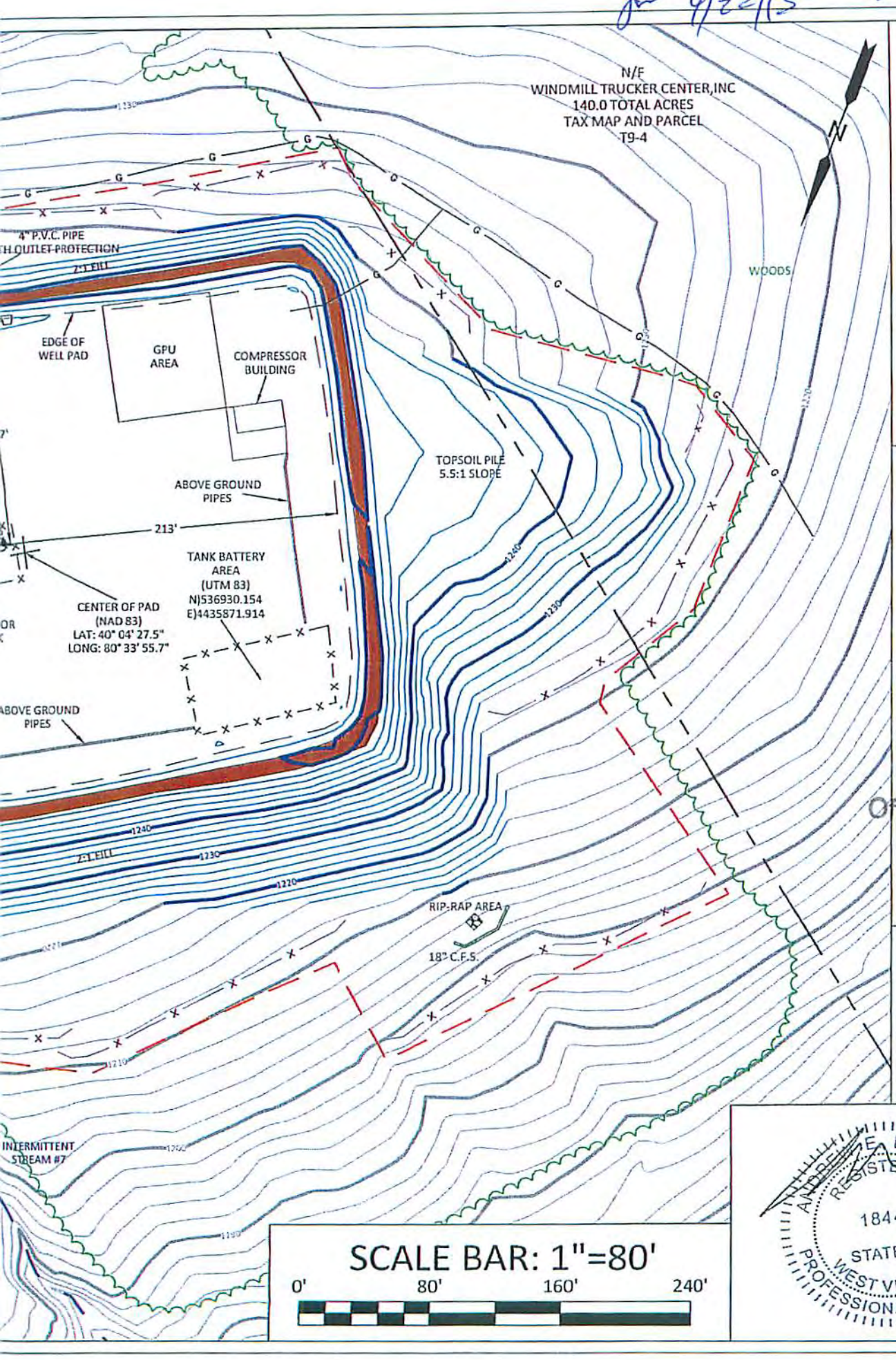
G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER


N/F
G W RENTALS LLC.
78.51 TOTAL ACRES
TAX MAP AND PARCEL
T9-5
OPEN
MEADOW
EMERGENCY
BUTTON
CATCH BASIN & 4" P.V.C. PIPE
WITH OUTLET PROTECTION
SLIP AREA
ROCK LINED
CHANNEL
TOPSOIL PILE
3:1 SLOPE
RIP-RAP AREA
2:1 CUT
VEGETATED CHANNEL
134'
129'
EARTHEN
BERM
WELL PAD
ELEVATION: 1247'
CATCH BASIN & 4" P.V.C. PIPE
WITH OUTLET PROTECTION
EXHAUST
TOWER
SEEP #1
RIP-RAP OUTLET
PROTECTION
N/F
G W RENTALS LLC.
78.51 TOTAL ACRES
TAX MAP AND PARCEL
T9-5
OPEN
MEADOW
SEEP #4
SEEP #3
WOODS
LEGEND
= 18" CMP WITH OUTLET PROTECTION
= SUPER SILT FENCE
= PROJECT BOUNDARY (10.8 ACRES)
= PROPERTY LINE
= EXISTING 10' CONTOURS
= EXISTING 2' CONTOURS
= AS-BUILT 10' CONTOURS
= AS-BUILT 2' CONTOURS
= FENCE LINE
= TREE LINE
= GAS LINE
= ELECTRIC LINE
= PROPOSED WELL
= DRILLED WELL
= WATER COURSE
= WETLAND
= GROUNDWATER SEEP
=SPRING



SCALE BAR: 1"=80'

0' 80' 160' 240'

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Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

AS-BUILT

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 6 OF 12

DATE:
MARCH 2015

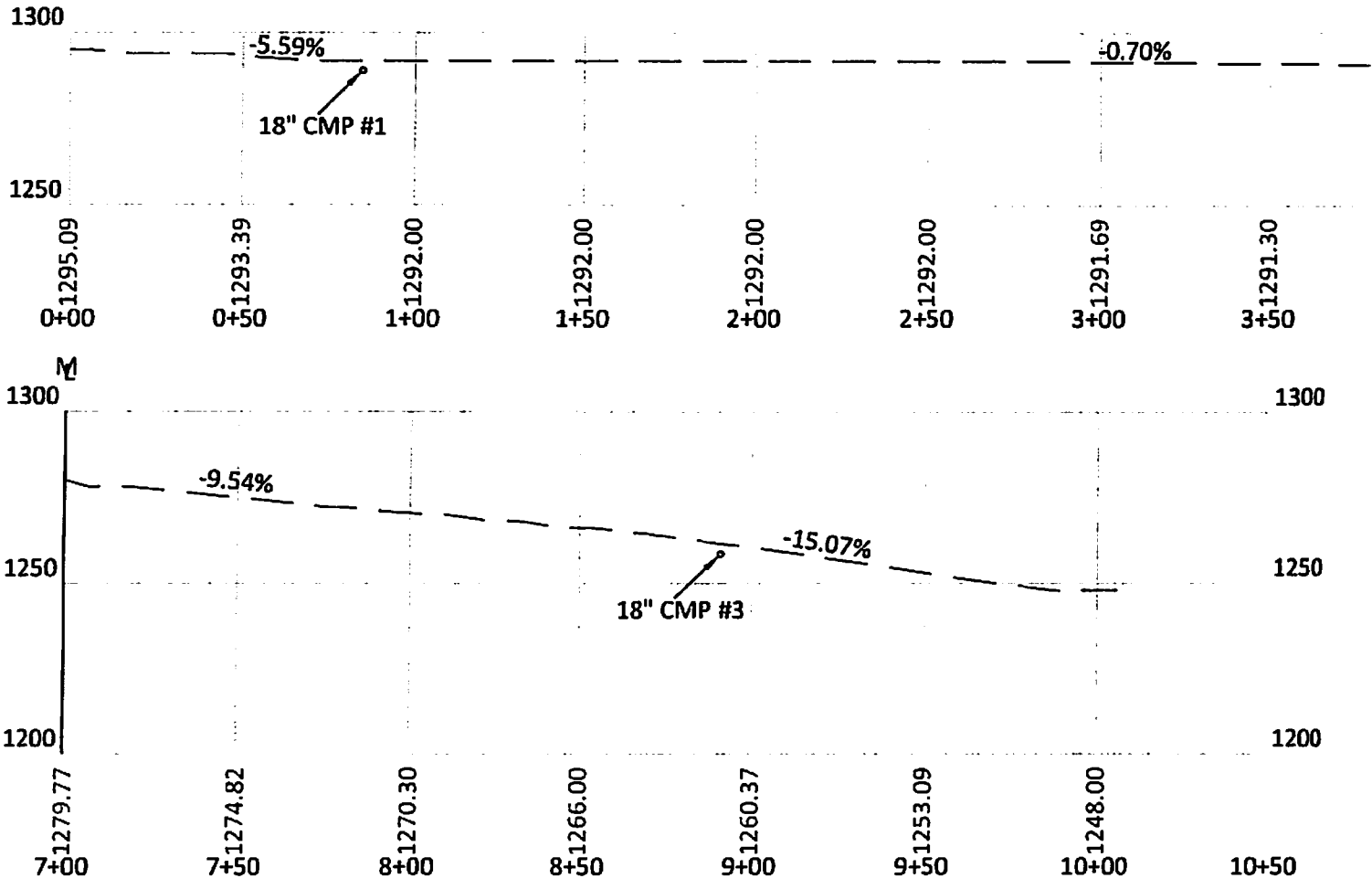
G.W. REANTALS LLC
OHI PAD "A"

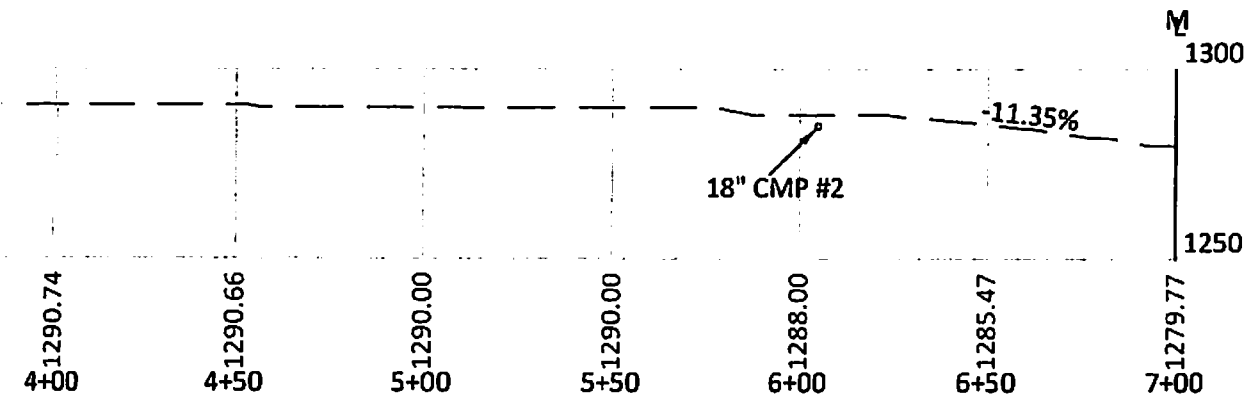
TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

Received
Office of Oil & Gas
SEP 24 2015

ACCESS ROAD PROFIL
SCALE: 1" = 50'





LEGEND

— — — = EXISTING GRADE

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ACCESS ROAD PROFILE

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SHEET 7 OF 12

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SEP 24 2015

DATE:
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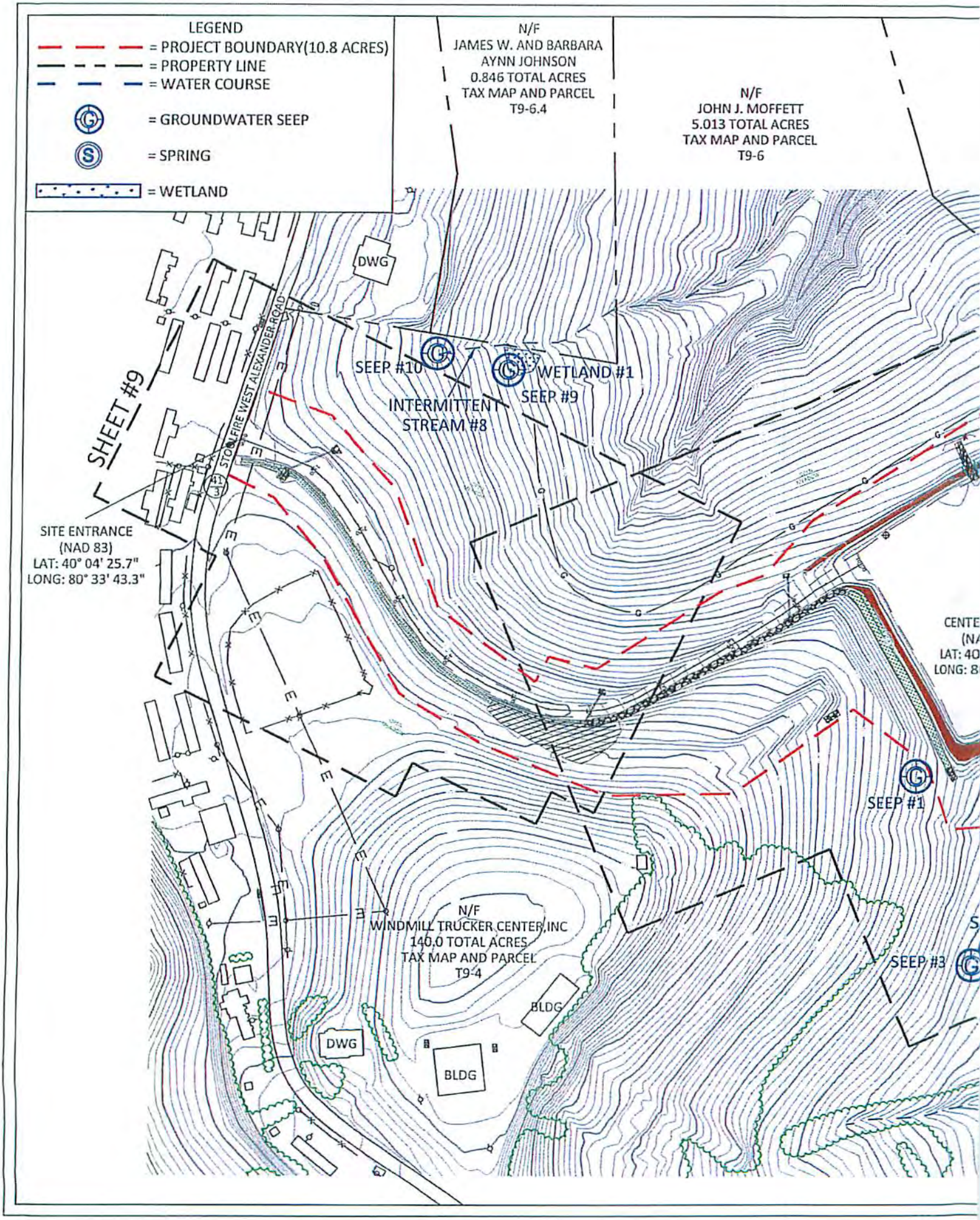
G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

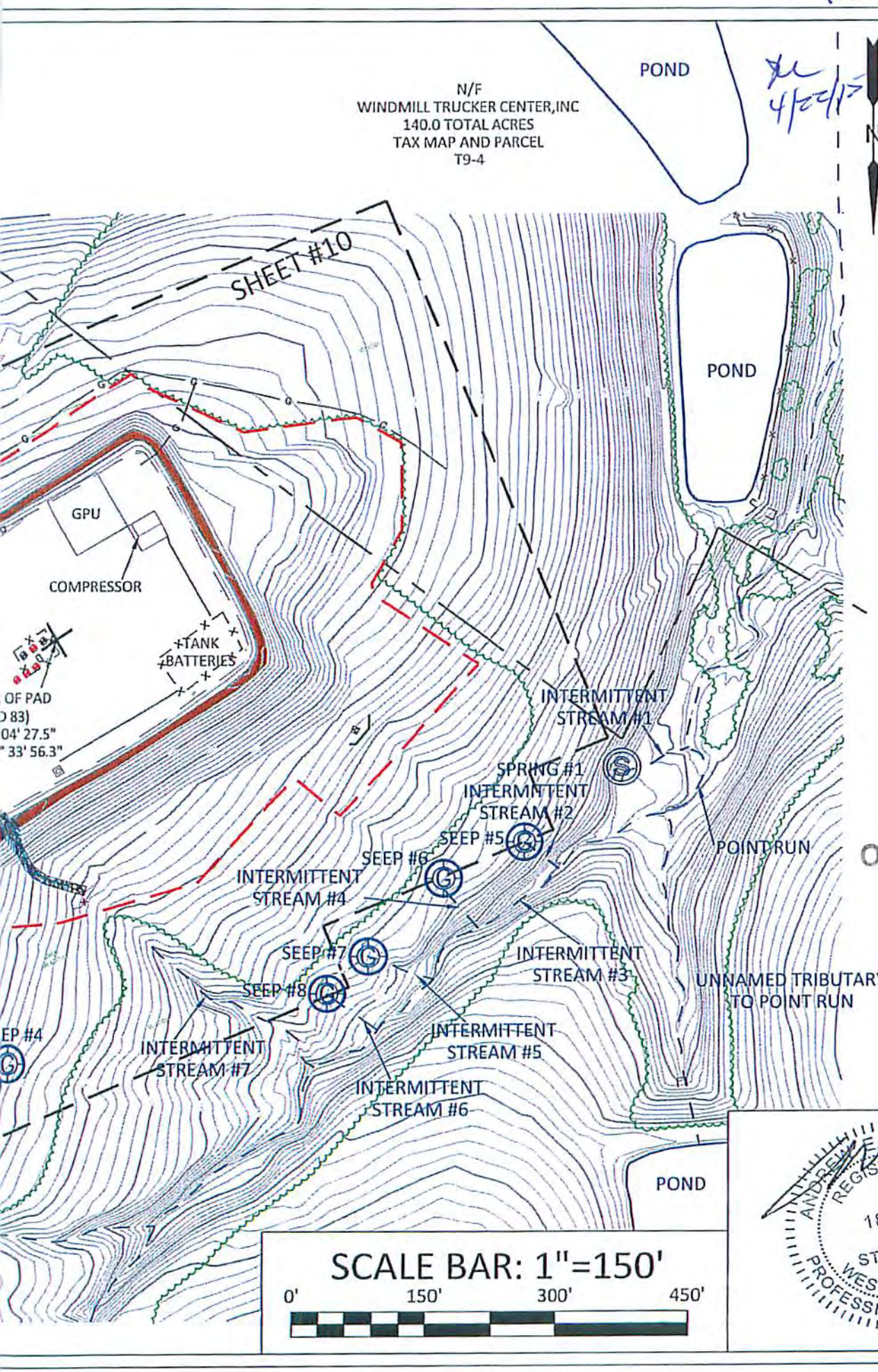
ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

SCALE BAR: 1"=50'

0' 50' 100' 150'


LEGEND
= PROJECT BOUNDARY(10.8 ACRES)
= PROPERTY LINE
= WATER COURSE
= GROUNDWATER SEEP
= SPRING
= WETLAND
N/F
JAMES W. AND BARBARA
AYNN JOHNSON
0.846 TOTAL ACRES
TAX MAP AND PARCEL
T9-6.4
N/F
JOHN J. MOFFETT
5.013 TOTAL ACRES
TAX MAP AND PARCEL
T9-6
SHEET #9
STONEFIRE WEST ALEXANDER ROAD
SITE ENTRANCE
(NAD 83)
LAT: 40° 04' 25.7"
LONG: 80° 33' 43.3"
DWG
SEEP #10
WETLAND #1
SEEP #9
INTERMITTENT
STREAM #8
SEEP #1
SEEP #3
N/F
WINDMILL TRUCKER CENTER, INC
140.0 TOTAL ACRES
TAX MAP AND PARCEL
T9-4
BLDG
BLDG
DWG

AB 4/22/15



BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's

Southpointe, PA 15317 Phone: 724-746-1055

RECLAMATION PLAN OVERVIEW

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 8 OF 12

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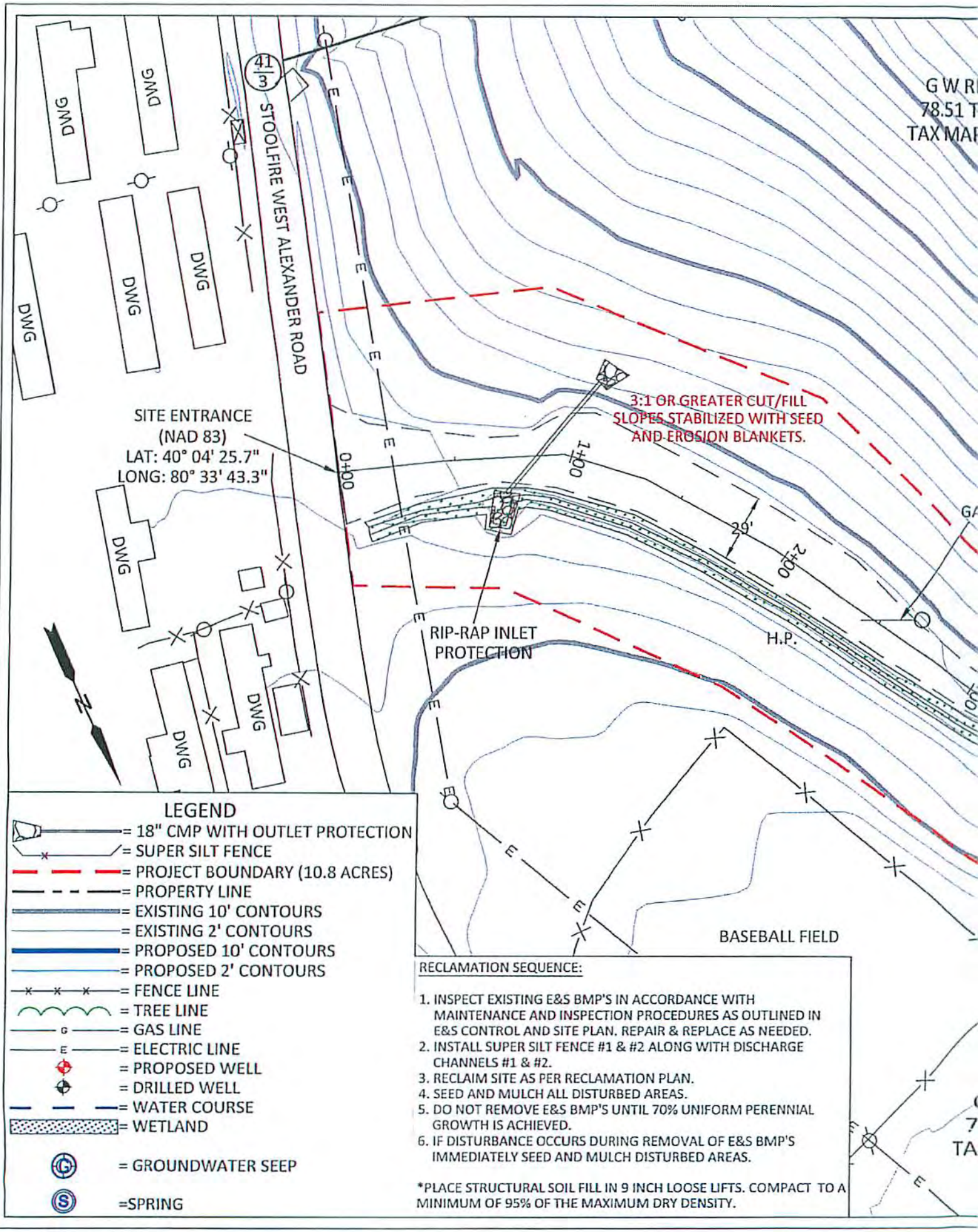
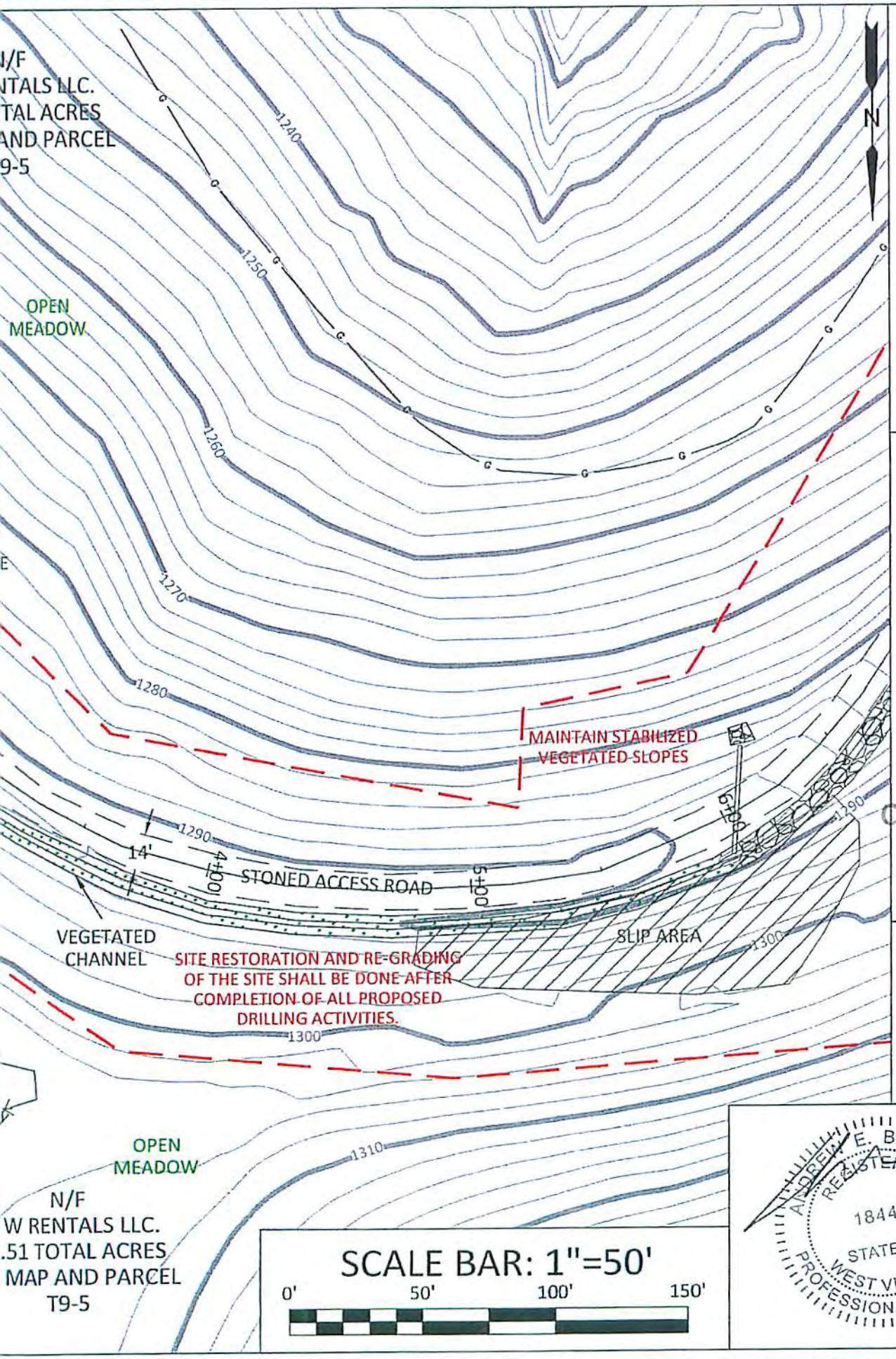
G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER


STOOLFIRE WEST ALEXANDER ROAD
41/3
DWG
SITE ENTRANCE
(NAD 83)
LAT: 40° 04' 25.7"
LONG: 80° 33' 43.3"
0+00
1+00
2+00
3:1 OR GREATER CUT/FILL SLOPES STABILIZED WITH SEED AND EROSION BLANKETS.
29'
RIP-RAP INLET PROTECTION
H.P.
BASEBALL FIELD
G W R
78.51 T
TAX MA
GA
LEGEND
= 18" CMP WITH OUTLET PROTECTION
= SUPER SILT FENCE
= PROJECT BOUNDARY (10.8 ACRES)
= PROPERTY LINE
= EXISTING 10' CONTOURS
= EXISTING 2' CONTOURS
= PROPOSED 10' CONTOURS
= PROPOSED 2' CONTOURS
= FENCE LINE
= TREE LINE
= GAS LINE
= ELECTRIC LINE
= PROPOSED WELL
= DRILLED WELL
= WATER COURSE
= WETLAND
= GROUNDWATER SEEP
=SPRING
RECLAMATION SEQUENCE:
1. INSPECT EXISTING E&S BMP'S IN ACCORDANCE WITH MAINTENANCE AND INSPECTION PROCEDURES AS OUTLINED IN E&S CONTROL AND SITE PLAN. REPAIR & REPLACE AS NEEDED.
2. INSTALL SUPER SILT FENCE #1 & #2 ALONG WITH DISCHARGE CHANNELS #1 & #2.
3. RECLAIM SITE AS PER RECLAMATION PLAN.
4. SEED AND MULCH ALL DISTURBED AREAS.
5. DO NOT REMOVE E&S BMP'S UNTIL 70% UNIFORM PERENNIAL GROWTH IS ACHIEVED.
6. IF DISTURBANCE OCCURS DURING REMOVAL OF E&S BMP'S IMMEDIATELY SEED AND MULCH DISTURBED AREAS.
*PLACE STRUCTURAL SOIL FILL IN 9 INCH LOOSE LIFTS. COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY.



BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction,
and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

RECLAMATION PLAN

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 9 OF 12

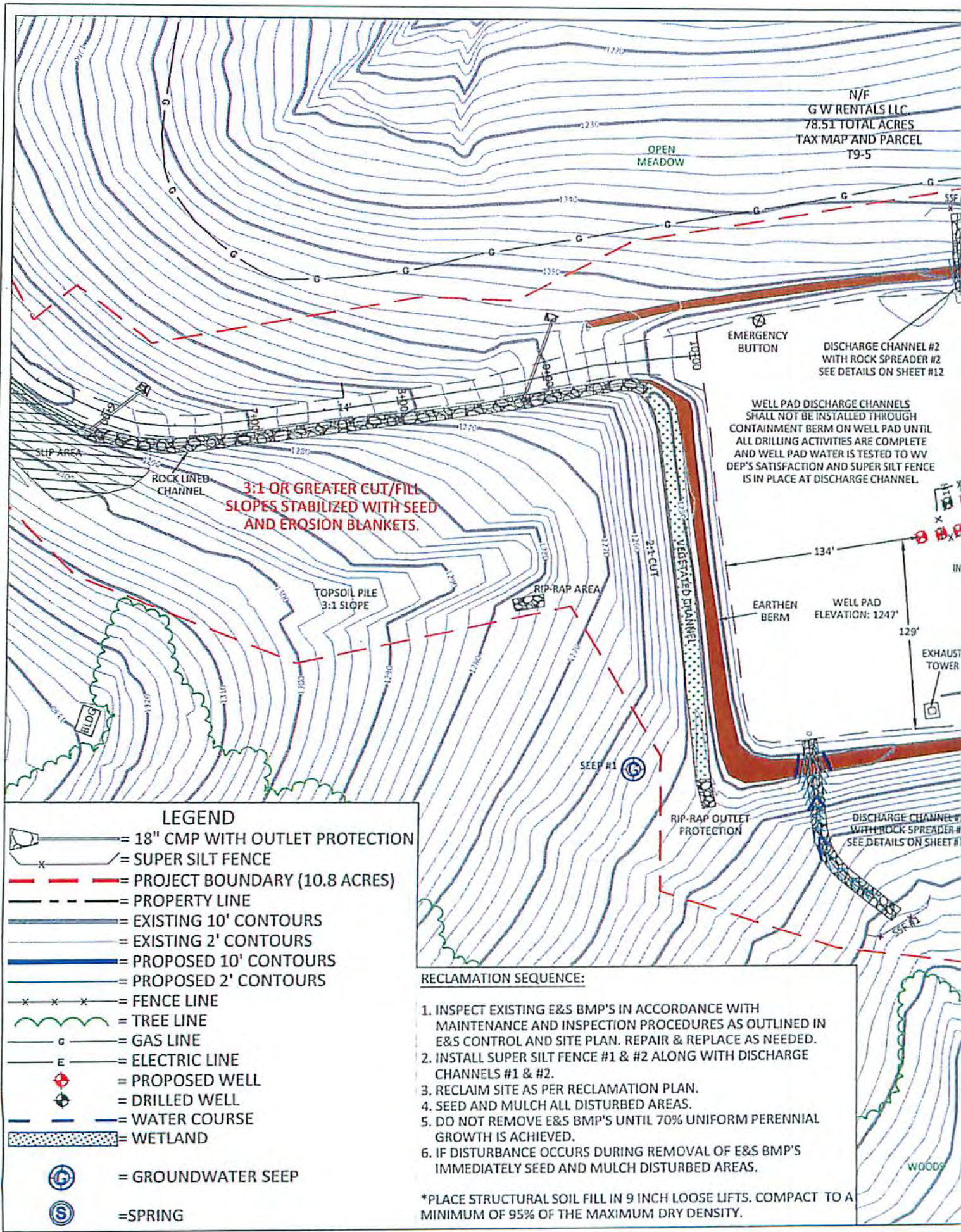
Received
Office of Oil & Gas
SEP 24 2015

DATE:
MARCH 2015

G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER



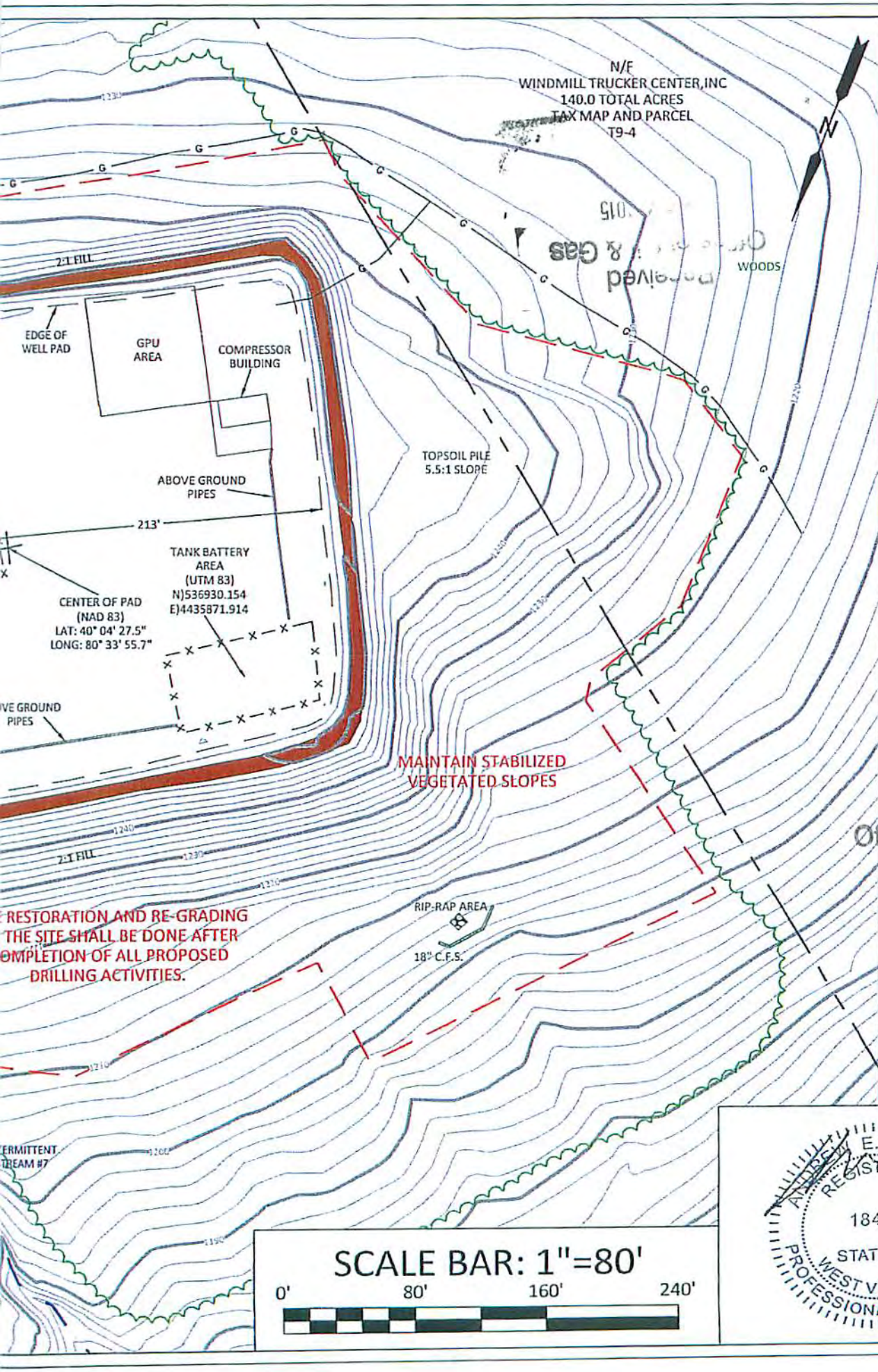
LEGEND

- = 18" CMP WITH OUTLET PROTECTION
- = SUPER SILT FENCE
- = PROJECT BOUNDARY (10.8 ACRES)
- = PROPERTY LINE
- = EXISTING 10' CONTOURS
- = EXISTING 2' CONTOURS
- = PROPOSED 10' CONTOURS
- = PROPOSED 2' CONTOURS
- = FENCE LINE
- = TREE LINE
- = GAS LINE
- = ELECTRIC LINE
- = PROPOSED WELL
- = DRILLED WELL
- = WATER COURSE
- = WETLAND
- = GROUNDWATER SEEP
- =SPRING

RECLAMATION SEQUENCE:

1. INSPECT EXISTING E&S BMP'S IN ACCORDANCE WITH MAINTENANCE AND INSPECTION PROCEDURES AS OUTLINED IN E&S CONTROL AND SITE PLAN. REPAIR & REPLACE AS NEEDED.
2. INSTALL SUPER SILT FENCE #1 & #2 ALONG WITH DISCHARGE CHANNELS #1 & #2.
3. RECLAIM SITE AS PER RECLAMATION PLAN.
4. SEED AND MULCH ALL DISTURBED AREAS.
5. DO NOT REMOVE E&S BMP'S UNTIL 70% UNIFORM PERENNIAL GROWTH IS ACHIEVED.
6. IF DISTURBANCE OCCURS DURING REMOVAL OF E&S BMP'S IMMEDIATELY SEED AND MULCH DISTURBED AREAS.

*PLACE STRUCTURAL SOIL FILL IN 9 INCH LOOSE LIFTS. COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY.



BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

ab 4/22/15

4/22/15

RECLAMATION PLAN

THIS DOCUMENT WAS PREPARED BY:
BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 10 OF 12

Received
Office of Oil & Gas
SEP 24 2015

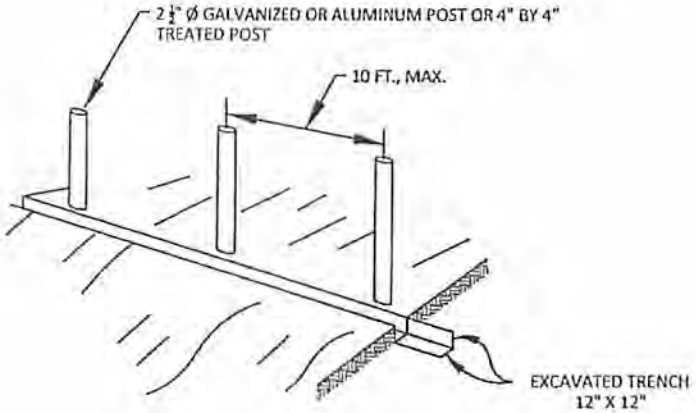
DATE:
MARCH 2015

G.W. REANTALS LLC
OHI PAD "A"

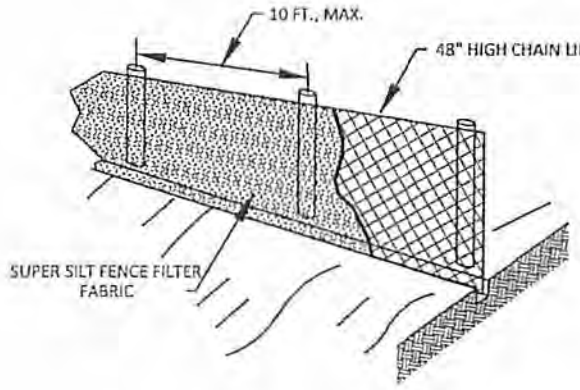
TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

ANDREW E. BENCHEK
REGISTERED
18444
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

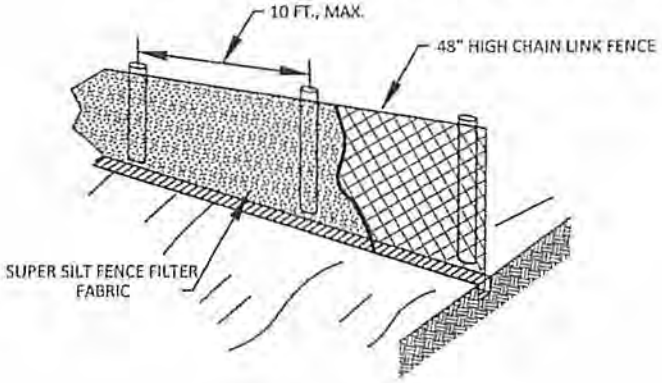
1. SET POSTS ALONG CONTOUR OF THE LAND AND EXCAVATE TRENCH UPSLOPE ALONG THE LINE OF POSTS.

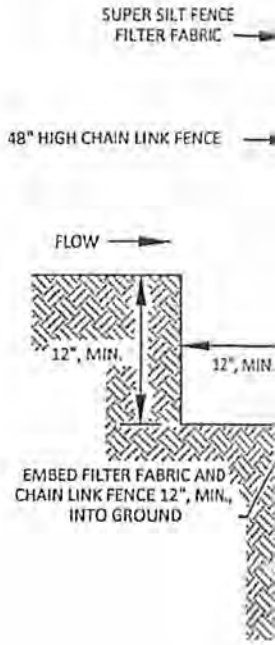


2. ATTACH THE CHAIN LINK FENCE AND FILTER FABRIC TO THE FENCE POSTS AND EXTEND THEM 12", MIN., INTO THE DITCH.



3. BACKFILL AND COMPACT THE TRENCH WITH EXCAVATED SOILS.





SUPER SILT FENCE

NTS

SUPER SILT FENCE NOTES:

1. CHAIN LINK FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 608 OF THE WVDOH SPECIFICATIONS. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE POSTS WITH WIRE TIES OR STAPLES.

2. POSTS NEED NOT BE SET IN CONCRETE.

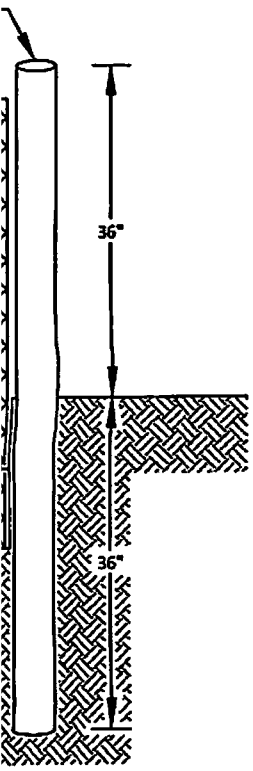
3. THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.

4. FABRIC AND FENCE SHALL BE EMBEDDED 12", MINIMUM, INTO THE GROUND.

5. A 6", MINIMUM, OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC ADJOIN. THE OVERLAPPED FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.

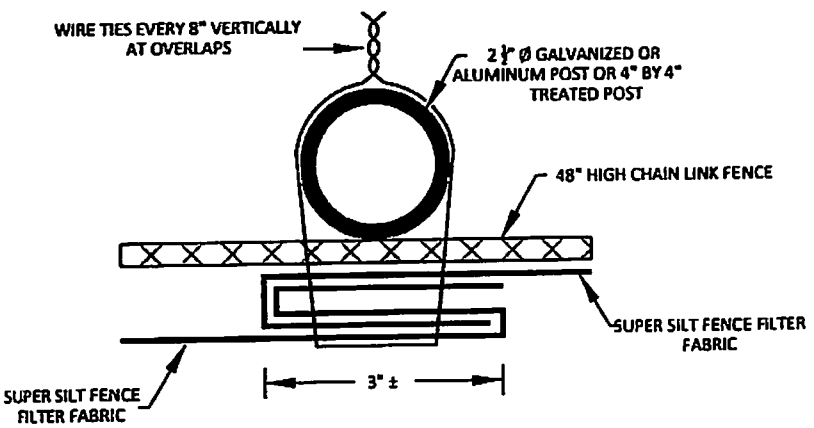
6. 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.

7. THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.



DE VIEW

NTS



END LAP TOP VIEW

NTS

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Engineering, Surveying, Construction, and Mining Service's
Southpointe, PA 15317 Phone: 724-746-1055

DETAILS

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BOORD, BENCHEK AND ASSOC., INC.
FOR: SWN PRODUCTION CO., LLC.

SHEET 11 OF 12

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SEP 24 2015

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MARCH 2015

G.W. REANTALS LLC
OHI PAD "A"

TRIADELPHIA DISTRICT,
OHIO COUNTY,
WV

Table 4a. Permanent seeding mixtures suitable for establishment in WV.

Species Mixture	Seeding Rate lbs/acre	Soil Drainage Preference	pH Range
Crownvetch/ Tall Fescue	10 - 15 30	Well - Mod. Well	5.0 - 7.5
Crownvetch/ Perennial Ryegrass	10 - 15 20	Well - Mod. Well	5.0 - 7.5
Flatpea or Perennial Pea/ Tall Fescue	20 15	Well - Mod. Well	4.0 - 8.0
Ladino Clover/ Sereca Lespedeza/ Tall Fescue	30 25 2	Well - Mod. Well	4.5 - 7.5
Tall Fescue/ Ladino Clover/ Redtop	40 3 3	Well - Mod Well	5.0 - 7.5
Crownvetch/ Tall Fescue/ Redtop	10 20 3	Well - Mod. Well	5.0 - 7.5
Tall Fescue/ Birdsfoot Trefoil/ Redtop	40 10 3	Well - Mod. Well	5.0 - 7.5
Sereca Lespedeza/ Tall Fescue/ Redtop	25 30 3	Well - Mod. Well	4.5 - 7.5
Redtop/ Tall Fescue/ Creeping Red	30 3 50	Well - Mod. Well	5.0 - 7.5
Tall Fescue	50	Well - Poorly	4.5 - 7.5
Perennial Ryegrass/ Tall Fescue/ Lathco Flatpea *	10 15 20	Well - Poorly	5.0 - 8.0

Tables IV 1-4 taken from Natural Resources Conservation Service Manual *Critical Area Planting*

Table 4b. Mixtures in the table below are more wildlife and farm friendly.

Species Mixture	Seeding Rate lbs/acre	Soil Drainage Preference	pH Range
KY Bluegrass/ Redtop/ Ladino Clover or Birdsfoot Trefoil	20 3 2 /10	Well – Mod. Well	5.5 - 7.5
Timothy/ Alfalfa	5 12	Well – Mod. Well	6.5 - 8.0
Timothy/ Birdsfoot Trefoil	5 8	Well - Poorly	5.5 - 7.5 8
Orchardgrass/ Ladino Clover/ Redtop	10 2 3	Well - Mod Well	5.5 - 7.5
Orchardgrass/ Ladino Clover	10 3	Well - Mod Well	5.5 - 7.5
Orchardgrass/ Perennial Ryegrass	20 10	Well - Mod Well	5.5 - 7.5
Creeping Red Fescue/ Perennial Ryegra	30 10	Well - Mod. Well	5.5 - 7.5
Orchardgrass or Kentucky Bluegrass	20	Well - Mod. Well	6.0 - 7.5
Birdsfoot Trefoil/ Redtop/ Orchardgrass	10 5 20	Well - Mod. Well	5.5 - 7.5
Lathco Flat Pea/ Perennial Ryegrass	30 20	Well - Mod. Well	5.5 - 7.5
Lathco Flat Pea/ Orchardgrass	30 20	Well - Mod. Well	5.5 - 7.5

Mixtures listed in bold are suitable for use in shaded woodland settings. Those in italics are suitable for use in filter strips.
* Lathco Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding.
For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate.

Table IV-5 Lime and Fertilizer Application Table

pH of Soil	Lime in Tons Per Acre	Fertilizer, Lbs. per Acre 10-20-20- or Equivalent
Above 6.0	2	500
5.0 to 6.0	3	500
Below 5.0	4	500

The pH can be determined with a portable pH testing kit or by sending the soil samples to a soil testing laboratory. When 4 tons of lime per acre are applied it must be incorporated into the soil by disking, backblading or tracking up and down the slope.

Table IV-6 Mulch Materials Rates and Uses

Material	Minimum Rates Per Acre	Coverage	Remarks
Hay or Straw	2 to 3 Tons 100 to 150 Bales	Cover 75% to 90% of Surface	Subject to Wind blowing or washing unless tied down
Wood Fiber Pulp Fiber Wood-Cellulose Recirculated Paper	1000 to 1500 lbs	Cover all Disturbed Areas	For Hydroseeding

Table IV-1 Recommended seeding dates for permanent and temporary cover unless otherwise

Planting Dates	Suitability
March 1 – April 15 and August 1 – October 1	Best seeding periods
April 15 – August 1	HIGH RISK -moisture stress likely
October 1 – Dec. 1	HIGH RISK - Freeze damage to young see
Dec. 1 – March 1	Good seeding period. Dormant seeding.

Table 2. Acceptable fertilization recommendation in absence of a soil test.

Species	N (lbs/ac)	P2O5 (lbs/ac)	K2O(lbs/ac)	Example Rec. (po
Cool Season Grass	40	80	80	400 lbs. 10-20-
CS Grass & Legume	30	60	60	300 lbs. 10-20-
Temporary Cover	40	40	40	200 lbs. 19-19-

Table 3. Temporary cover suitable for establishment in West Virginia.

Species	Seeding Rate (lbs/acre)	Optimum Seeding Dates	Drainage	pH
Annual Ryegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Poorly	5.5
Field Bromegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well – Mod. Well	6.0
Spring Oats	96	3/1 - 6/15	Well - Poorly	5.5
Sudangrass	40	5/15 - 8/15	Well - Poorly	5.5
Winter Rye	168	8/15 - 10/15	Well - Poorly	5.5
Winter Wheat	180	8/15 - 11/15	Well – Mod. Well	5.5
Japanese Millet	30	6/15 - 8/15	Well	4.5
Redtop	5	3/1 - 6/15	Well	4.0
Annual Ryegrass	26	3/1 - 6/15	Well – Poorly	5.5
Spring Oats	64	3/1 - 6/15	Well – Poorly	5.5

NOTE: These rates should be increased by 50% if planted April 15 – August 1 and October 1 – March 1.

Mulching

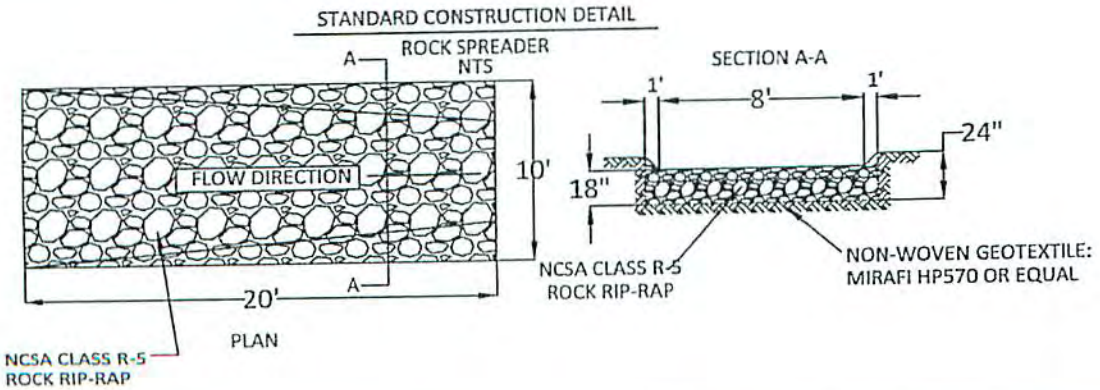
1. General Organic Mulches

The application of straw, hay or other suitable materials to the soil surface to prevent erosion. Straw made wheat or oats is the preferred mulch, the use of hay is permissible, but not encouraged due to the risk of spr invasive species. Mulch must be applied to all temporary and permanent seeding on all disturbed areas. De ing on site conditions, in critical areas such as waterways, or steep slopes, additional or substitute soil prote measures may be used if deemed necessary. Examples include jute mesh, and soil stabilization blankets or e sion control matting.

Areas that have been temporarily or permanently seeded should be mulched immediately following seeding Mulches conserve desirable soil properties, reduce soil moisture loss, prevent crusting and sealing of the soi surface and provide a suitable microclimate for seed germination.

Areas that cannot be seeded because of the season should be mulched to provide some protection to the soil surface. An organic mulch, straw or hay, should be used and the area then seeded as soon as weather or seas conditions permit. Do not use fiber mulch (cellulose-hydroseed) alone for this practice; at normal applicatio rates it will not give the soil protection of other types of mulch.

Wood cellulose fiber mulch, is used in hydroseeding operations and applied as part of the slurry. It creates t best seed-soil contact when applied over top of (as a separate operation) newly seeded areas. Fiber mulch do not alone provide sufficient protection on highly erodible soils, or during less than favorable growing condit Fiber mulch should not be used alone during the dry summer months or when used for late fall mulch cover straw mulch during these periods, and fiber mulch may be used to tack (anchor) the straw mulch. Fiber mul well suited for steep slopes, critical areas, and areas susceptible to wind.



Loading Chart for Profile's SMMs, BFMs, HP-FGMs and ET-FGM

Tank Size (gal)	# of 50-lb bales	(lb)	Displacement (gal)	2,500 lb/acre Sq ft	2,500 lb/acre Acres	3,000 lb/acre Sq ft	3,000 lb/acre Acres	3,500 lb/acre Sq ft	3,500 lb/acre Acres	4,000 lb/acre Sq ft	4,000 lb/acre Acres	4,500 lb/acre Sq ft	4,500 lb/acre Acres
250	2	100	230	1,742	0.040	1,452	0.033	1,245	0.029	1,089	0.025	968	0.022
500	4	200	460	3,485	0.080	2,904	0.067	2,489	0.057	2,178	0.050	1,936	0.044
750	6	300	840	5,227	0.120	4,356	0.100	3,734	0.086	3,267	0.075	2,904	0.067
1,000	8	400	1,120	6,970	0.160	5,808	0.133	4,978	0.114	4,356	0.100	3,872	0.089
1,500	12	600	1,680	10,454	0.240	8,712	0.200	7,467	0.171	6,534	0.150	5,808	0.133
2,000	16	800	2,240	13,939	0.320	11,616	0.267	9,957	0.229	8,712	0.200	7,744	0.178
2,500	20	1,000	2,800	17,424	0.400	14,520	0.333	12,446	0.286	10,890	0.250	9,680	0.222
3,000	24	1,200	3,360	20,909	0.480	17,424	0.400	14,925	0.343	13,068	0.300	11,616	0.267
3,500	28	1,400	3,920	24,394	0.560	20,328	0.467	17,424	0.400	15,246	0.350	13,552	0.311
4,000	32	1,600	4,480	27,878	0.640	23,233	0.533	19,913	0.457	17,424	0.400	15,488	0.356

Additional Notes:

- For hose applications, 35 lb/100 gal is recommended.
- Rough surfaces (rocky terrain, cat tracks, ripped soils, etc.) may require additional product to achieve 100% coverage.
- Be sure to allow for residual material in tank on subsequent applications.

Application Rates

Slope Condition	English	SI
≤ 4H to 1V	2500 lb/acre	2800 kg/hectare
> 4H to 1V and ≤ 3H to 1V	3000 lb/acre	3400 kg/hectare
> 3H to 1V and ≤ 2H to 1V*	3500 lb/acre	3900 kg/hectare
> 2H to 1V and ≤ 1H to 1V*	4000 lb/acre	4500 kg/hectare
> 1H to 1V*	4500 lb/acre	5100 kg/hectare
Below ECB or TRM	1500 lb/acre	1700 kg/hectare
As infill for TRM*	3500 lb/acre	3900 kg/hectare

*SMM not recommended for slopes greater than 2H:1V.
*BFM not recommended for slopes greater than 1H:1V.
*HP-FGM or ET-FGM recommended for slopes greater than 1H:1V
*Use only approved and tested TRMs to create the GreenArmor System.

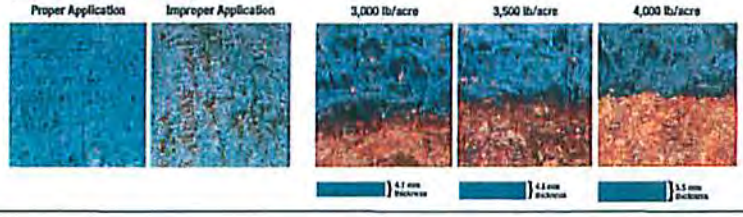
Slope Interruption Limits*

Product Category	Length (ft)	Length (m)
SMM	50	15
BFM	75	23
HP-FGM	100	30
ET-FGM	125	38

*Listed slope interruption limits are for product applications on a 2H:1V slope. For application on steeper slopes, slope interruption lengths may need to be decreased.

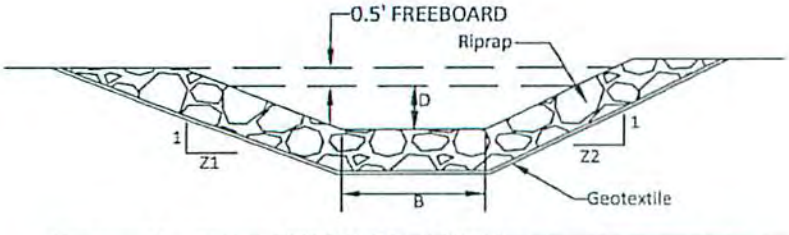
Visual Key for Proper Application

(Flexterra HP-FGM shown below)



STANDARD CONSTRUCTION DETAIL

RIPRAP CHANNEL
NTS



CHANNEL NO.	TOTAL LENGTH (FT.)	BOTTOM WIDTH B (FT.)	DEPTH D (FT.)	Z1 (FT.)	Z2 (FT.)	LINING
DISCHARGE CHANNEL #1	123	2	1	2	2	18" THICK R-5 RIPRAP
DISCHARGE CHANNEL #2	33	2	1	2	2	18" THICK R-5 RIPRAP

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