

09/21/2018



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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, September 19, 2018  
WELL WORK PERMIT  
Horizontal 6A / New Drill

AMERICAN PETROLEUM PARTNERS OPERATING, LLC  
4600 J. BARRY COURT SUITE 310

CANONSBURG, PA 15317

Re: Permit approval for CASTERLY ROCK-5UH  
47-051-02071-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin  
Chief

A handwritten signature in blue ink, appearing to read "James A. Martin", is positioned to the right of the typed name and title.

Operator's Well Number: CASTERLY ROCK-5UH  
Farm Name: LESLIE B. & LORI D. SCHABE  
U.S. WELL NUMBER: 47-051-02071-00-00  
Horizontal 6A New Drill  
Date Issued: 9/19/2018

Promoting a healthy environment.

# 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

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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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

API Number: 09/21/2018  
~~4705102071~~

## PERMIT CONDITIONS

11. 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](mailto:DEPOOGNotify@wv.gov).



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-926-0499 Ext 1274

Barry K. Lay, Chairman  
dep.wv.gov

August 30, 2018

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

RE: Application for Deep Well Permit – API #47-051-02071

COMPANY: American Petroleum Partners Operating, LLC

FARM: American Petroleum Partners Operating, LLC Casterly Rock-5UH

COUNTY: Marshall DISTRICT: Union QUAD: Moundsville

The deep well review of the application for the above company is **Approved to drill to Point Pleasant for completion.**

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

1. Comments to Notice of Deviation filed? No
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: \*yes, Docket 266-256 Exception Location Hearing, 47-051-02018, 47-051-02046, 47-051-02047, 47-051-02072, and 47-051-02073.
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

A handwritten signature in blue ink that reads "Susan Rose".

Susan Rose  
Administrator

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

1) Well Operator: American Petroleum Partners 494521257 Marshall Union Moundsville  
Operator ID County District Quadrangle

2) Operator's Well Number: Casterly Rock-5UH Well Pad Name: Casterly Rock

3) Farm Name/Surface Owner: Leslie B. & Lori D. Schaber Public Road Access: State Route 88

4) Elevation, current ground: 1,338.53' Elevation, proposed post-construction: 1311.38

5) Well Type (a) Gas  Oil  Underground Storage   
Other

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant Formation 11,395' / 130' thick 10,141 or .89 psi per foot / Utica Formation 11,212 150' thick / 10,000 psi or .89 psi per foot.

8) Proposed Total Vertical Depth: 11,395'

9) Formation at Total Vertical Depth: Point Pleasant

10) Proposed Total Measured Depth: 16,484'

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11) Proposed Horizontal Leg Length: 3,378'

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12) Approximate Fresh Water Strata Depths: 130', 850'

13) Method to Determine Fresh Water Depths: Nearest offset well

WV Department of  
Environmental Protection

14) Approximate Saltwater Depths: Na

15) Approximate Coal Seam Depths: 625', 825'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated. Mine maps attached.

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

(a) If Yes, provide Mine Info: Name: The Ohio County Mine  
Depth: 625' - 825'  
Seam: Sewickley and Pittsburgh  
Owner: Murray American Energy & Consolidation Coal Company

WW-6B  
(04/15)

4705102071  
 API NO. 47- 051 - 09/21/2018  
 OPERATOR WELL NO. Casterly Rock-5UH  
 Well Pad Name: Casterly Rock

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	81.3#	60'	60'	CTS
Fresh Water	20"	New	J-55	94#	900'	900'	15.6ppg to surf 521 ex w/30% CH excess
Coal	13 3/8"	New	J-55	54.5#	2111"	2111'	15.2ppg to surf 556 ex w/30% CH Excess
Intermediate	9 5/8"	New	HCP-110	43.5#	9712'	9712'	15.4ppg to surf 942 ex w/30% CH excess
Production	5 1/2"	New	HCP-110	23#	16484'	16484'	14.8ppg TOC = 200' above 9.825 shoe
Tubing	2 7/8"	New	J-55	6.5#	11,400	11,400'	
Liners							

*JW*  
*6/28/18*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"		300		Type 1	Lead yield 2.38 Tail 521 ex Yield 1.18
Fresh Water	20"	24"	.438	2110	400	Class A	Lead yield 2.38 Tail 556 ex Yield 1.27
Coal	13 3/8"	17.5"	.380	2730	688	Class A	Lead Yield 2.38 Tail 556 ex Yield 1.27
Intermediate	9 5/8"	12.38"	.435	8700	3166	Class A	Lead Yield 1.28 Tail 936 ex Yield 1.28
Production	5 1/2"	8.75"	.415	16,510	13000	Class H	Lead Yield 1.27 Tail 4714 ex Yield 1.27
Tubing	2 7/8"	5.14"	.217	10570	8000		
Liners							

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PACKERS

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Kind:					WV Department of Environmental Protection
Sizes:					
Depths Set:					

WW-6B  
(10/14)

API NO. 47-051 -

OPERATOR WELL NO. Casterly Rock-5UH

Well Pad Name: Casterly Rock

*Handwritten signature and date: 6/25/18*

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

Drill the vertical depth to the Point Pleasant at an estimated total vertical depth of approximately 11,395'. Drill the horizontal leg- stimulate and produce the Utica/Point Pleasant formation. Should we encounter a unanticipated void we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be in multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. Our maximum pressure is not to exceed 10,000 lbs.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.5 acres

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22) Area to be disturbed for well pad only, less access road (acres): 9.9 acres

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23) Describe centralizer placement for each casing string:

Conductor- No centralizers used. Freshwater/Surface- Bow Spring centralizers every 3 joints to 100' from surface. 1st Intermediate - Bow Spring centralizers every 3 joints to 100' from surface. 2nd Intermediate - Bow Spring centralizers every 3 joints to 100' from surface. Production - Rigid bow springs every third joint from KOP to TOC. Rigid every joint to KOP.

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

Type 1 to Surface. Surface/Freshwater - 15.6 Class A +2% CaCl, 30% OH Excess Yield =1.18. 1st Intermediate - 15.6 ppg Class A +2% CaCl, 0.25 Lost Circ. 30% Yield =1.27. 2nd Intermediate- 2 Stage cement job with 15.4 ppg Class A lead + additives (antisetling, antifoam, fluid loss retarder, salt, viscosifer) & 15.4 Class A tail with additives (antisetling, antifoam, fluid loss retarder, salt, dispersant or 12.0 Class A lead + additives (+/-5% dispersant, 10% light weight additive, 75% fluid loss additive, and 1.15% fluid loss additive, Yield=1.28) 15.4 ppg Class A Tail + additives (+/- fluid loss additive, & .5% light weight additive, Yield 1.28), 0.125#/SK lost circ 30% excess to Surface. Production- 12.5ppg Class H Lead +additives and 14.8 ppg Class H Tail + additives (antifoam, antisetling, extender,dispersant) 15%excess TOC>=200' above 9.625" shoe.

25) Proposed borehole conditioning procedures:

Conductor - The hole is drilled w/ air and casing is run on air. Apart from insuring hole is clean via air circulation at TD, there are no other conditioning procedures. Freshwater/Surface- The hole is drilled w/air or Freshwater based mud and casing is run on air. Once casing is at setting depth, fill with KCl water circulate a minimum of one hole volume prior to pumping cement. First Intermediate- Drilled on Air. Once casing is at a setting depth, circulate a minimum of one hole volume prior to pumping cement. Second Intermediate - Drilled on air. Fill with salt saturated water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement. Production- drilled on +/- 14.8ppg SOBM. Once at TD, circulate at max allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate minimum of one hole volume prior to pumping cement.

\*Note: Attach additional sheets as needed.

Fresh Water Protection String:		Cement Additives	
Allied Material Name	Additive (Material) Type	Additive (Material) Description	CAS #
CCAC (Class A Common)	Base Cement	Grey powder	65997-15-1
CA-100	Accelerator	White, flake	10043-52-4 7447-40-7 7732-18-5 7647-14-5

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**DRILLING WELL PLAN**

**Casterly Rock-5UH  
Utica Horizontal  
Marshall Co, WV**

**Horizontal Well Plan with Cemented Long String Completion**

HOLE	RIG	CASING	GEOLOGY	Top TVD	MD	MUD	CEMENT	DIRECTIONAL	LOGS	BITS	COMMENTS
36"	Conductor Rig	30" 81.3# LS				AIR	To Surface	N/A	N/A		Stabilize surface fill/soil
			<b>Conductor</b>	60	60						
24"	Top-Hole	20" 94# J-55 BTC	Sewickley Coal	625		AIR	15.6ppg to surface 521sx w/ 30% OH excess	20" Air Hammer Totco at TD	CBL Log Cased hole NPHI, GR at Pilot TD in Pilot Well only	Carbide hammer bit	Protect fresh groundwater
			Pittsburgh Coal	825							
			Surf. Casing	900	900						
17.5"	Top-Hole	13-3/8" 54.5# J-55 BTC	Big Lime	1695	1811	AIR	15.2ppg to surface 556sx w/ 30% OH excess	Center Rock 15" Air Hammer Gyro above Coal, (Mine Approval) Totco at TD		Hammer bit w/ diamond gage Test casing to 800psi	
			Greenbrier Group	1762							
			Big Injun	1811							
			Int. Casing	2111	2111						
12.375" 12.25"	Horizontal Rig	9-5/8" 43.5# P-110 BTC	Tully LS	6386		AIR	15.4ppg to surface 942sx w/ 30% OH excess	12" Air Hammer Totco every 400ft	MWD surveys Mud Logger - 90 ft samples	Hammer bit w/ full face diamond Test casing to 1000psi	PU cleanout assembly,dress plug, displace to 12.0ppg SOBM, PU Curve BHA, time drill / KO cement plug. Expect Seepage in curve
			Hamilton	6415							
			Cherry Valley	6524							
			Marcellus Shale	6526							
			Onondaga Ls	6560							
			Oriskany Sandstone	6789							
			Salina Group	7373							
			Vernon Shale	8128							
			Lockport Dolomite	8345							
			Clinton Group	9060							
			Medina Group	9132							
			Queenston Shale	9312	10112						
8.5" Curve/Lateral	Horizontal Rig	5-1/2" 23# HCP-110 BPN	Utica Shale	11212		+/- 14.5 ppg SOB	14.8ppg TOC >= 200' Above 9.625 shoe 3032sx w/ 15% OH excess	6.75" PDM & MWD 2.38" ADJ Bend (10° Build DLS)	MWD Surveys Mud Logger - 30 ft samples (Curve) 90 ft samples (Lateral)	PDC 5 - 25 WOB 100 - 120 RPM 450 - 500 GPM	Geosteering
			Point Pleasant Formation	11395							
			Curve LP								
			TARGET								
			Production Casing								

8.5 Hole - Cemented Long String 5-1/2" 23# HCP-110 BPN

Lateral Targets	Landing Point 11395 TVD 13106 MD	89.5 Inc 145 Az	3378 ft Lateral Length	89.5 Inc 145 Az	Total Depth 11395 TVD 16484 TD
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*[Handwritten signature]*  
4/25/18

4705102071

WW-9  
(4/16)

4705102034 09/21/2018

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Casterly Rock-5UH

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name American Petroleum Partners Operating, LLC OP Code 494521257

Watershed (HUC 10) Short Creek-Ohio River, Upper Ohio South Quadrangle Moundsville

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: \_\_\_\_\_

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 See attached sheet )
- Reuse (at API Number at next anticipated well )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

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/water based mud through intermediate thin SOBM

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

Additives to be used in drilling medium? See attached sheet with list.

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Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill - See attached sheet

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_ **JUL 07 2018**

-Landfill or offsite name/permit number? See Attached Sheet

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Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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.

Company Official Signature *Braulio Silva*

Company Official (Typed Name) Braulio Silva

Company Official Title Vice President - Drilling

Subscribed and sworn before me this 28th day of June, 2018

*Earline Bugay* Notary Public

My commission expires 1/23/2020

COMMONWEALTH OF PENNSYLVANIA  
NOTARIAL SEAL  
Earline Bugay, Notary Public  
New Sewickley Twp., Beaver County  
My Commission Expires Jan. 23, 2020  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

American Petroleum Partners Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 22.5 Prevegetation pH 6.0

Lime 2-3 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-20-20 or Equal

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw at 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye Grass	40	Crownvetch	10-15
Filed Bromegrass	40	Tall Fescue	30
Spring Oats	96	Perennial Ryegrass	20

\*Refer to attached Reclamation Plan for further detail.

Attach:

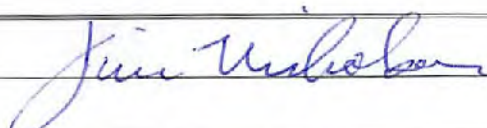
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

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Plan Approved by: \_\_\_\_\_



Comments: \_\_\_\_\_

WV Department of  
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Title: WV DEP Oil and Gas Inspector

Date: 6/28/18

Field Reviewed?

Yes

No

# Cuttings Disposal/Site Water

4705102071

## Cuttings –Haul off Company:

Eap Industries, Inc. DOT # 0876278  
1575 Smith Two State Rd. Atlasburg, PA 15004  
1-888-294-5227

09/21/2018

Waste Management  
200 Rangos Lane  
Washington, PA 15301  
724-222-3272

Environmental Coordination Services & Recycling (ECS&R)  
3237 US Highway 19  
Cochranon, PA 16314  
814-425-7773

## Disposal Locations:

Apex Environmental, LLC Permit # 06-08438  
11 County Road 78  
Amsterdam, OH 43903  
740-543-4389

Westmoreland Waste, LLC Permit # 100277  
111 Conner Lane  
Belle Vernon, PA 15012  
724-929-7694

Sycamore Landfill Inc. Permit #R30-079001 05-2010  
4301 Sycamore Ridge Road  
Hurricane, WV 25526  
304-562-2611

Max Environmental Technologies, Inc. Facility Permit # PAD004835146 / 301071  
233 Max Lane  
Yukon, PA 25968  
724-722-3500

Max Environmental Technologies, Inc. Facility Permit # PAD05087072 / 301359  
200 Max Drive  
Bulger, PA 15019  
724-796-1571

Waste Management Kelly Run Permit # 100663  
1901 Park Side Drive  
Elizabeth, PA 15037  
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592  
3100 Hill Road  
Library, PA 15129  
724-348-7013  
412-384-7569

Waste Management Arden Permit # 100172  
200 Rangos Lane  
Washington, PA 15301  
724-222-3272

Waste Management Meadowfill Permit # 1032  
1488 Dawson Drive  
Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-103-97 / WV 0109029  
Rd 2 Box 410  
Colliers, WV 26035  
304-748-0014

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185  
Rt 1 Box 156A  
New Martinsville, WV 26035  
304-455-3800

09/21/2018

Energy Solutions, LLC Permit # UT 2300249  
423 West 300 South  
Suite 200  
Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-L24  
1560 Bear Creek Road  
Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MID020906814  
3947 US 131 North, PO Box 1030  
Kalkaska, MI 49646  
231-258-9961

**Water Haul off Companies:**

Dynamic Structures, Clear Creek DOT # 720485  
3790 State Route 7  
New Waterford, OH 44445  
330-892-0164

CMS of Delaware Inc. DBA CMS Oilfield Serv  
301 Commerce Drive  
Moorestown, NJ 08057

Nabors Completion & Production Services Co.  
PO Box 975682  
Dallas, TX 75397-5682

Force, Inc.  
1380 Rte. 286 Hwy. E, Suite 303  
Indiana, PA 15701

Select Energy Services, LLC  
PO Box 203997  
Dallas, TX 75320-3997

Solo Construction  
P.O. Box 544  
St. Mary's, WV 26170

Nuverra Environmental Solutions  
11942 Veterans Memorial Highway  
Masontown, WV 26542

Equipment Transport  
1 Tyler Court  
Carlisle, PA 17015

Mustang Oilfield Services LLC  
PO Box 739  
St. Clairsville, OH 43950

Myers Well Service, Inc.  
2001 Ballpark Court  
Export, PA 15632

Wilson's Outdoor Services, LLC  
456 Cracraft Road  
Washington, PA 15301

Burns Drilling & Excavating  
618 Crabapple Road P.O. Box 41  
Wind Ridge, PA 15380

**Disposal Locations:**

Solidification  
Waste Management, Arden Landfill Permit # 100172  
200 Rangos Lane  
Washington, PA 15301  
724-225-1589

Nichlos 1-A (SWIW #13)  
Permit # 3862  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

Solidification/Incineration  
Soil Remediation, Inc. Permit # 02-20753  
6065 Arrel-Smith Road  
Lowelville, OH 44436  
330-536-6825

Groselle (SWIW #34)  
Permit # 4096  
Rt. 88  
Garrettsville, OH  
713-275-4816

Adams #1 (Buckeye Brine, LLC)  
Permit # 34-031-2-7177  
23986 Airport Road  
Coshocton, OH 43812  
740-575-4484  
512-478-6545

Kemble 1-D Well  
Permit # 8780  
7675 East Pike  
Norwich, Oh 43767  
614-648-8898  
740-796-6495

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Environmental Protection

4705102071

Adams #2 (Buckeye Brine, LLC)  
2205 Westover Road  
Austin Tx 78703  
Permit # 34-031-2-7178  
740-575-4484  
512-478-6545

Adams #3 (Buckeye Brine, LLC)  
Permit #34-031-2-7241-00-00  
2630 Exposition, Suite 117  
Austin, TX 78703  
512-478-6545

Mozena #1 Well (SWIW # 13)  
Permit # 34-157-2-5511-00-00  
5367 E. State Street  
Newcomerstown, OH 43832  
740-763-3966

Goff SWD #1 (SWIW # 27)  
Permit # 34-119-2-8776-000  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

SOS D#1 (SWIW #12)  
Permit # 34-059-2-4202-00-00  
Silcor Oilfield Services, Inc.  
2939 Hubbard Road  
Youngstown, PH 44505

Dudley #1 UIC (SWIW #1)  
Permit # 34-121-2-2459-00-00  
Select Energy Services, LLC  
7994 S. Pleasants Hwy  
St. Marys, WV 26170  
304-665-2652

OH UIC #1 Buckeye UIC Barnesville 1 & 2  
CNX Gas Company, LLC  
1000 Consol Energy Drive  
Permit # 34-013-2-0609-00-00  
Permit # 34-013-2-0614-00-00  
304-323-6568

09/21/2018

US Steele 11385  
Permit # 47-001-00561  
200 Evergreen Drive  
Waynesburg, PA 15730  
304-323-6568

Chapin #7 UIC (SWIW #7)  
Permit # 34-083-2-4137-00-00  
Elkhead Gas& Oil Company  
12163 Marne Rd. NE  
Newark, OH 43055  
740-763-3966

RECEIVED  
Office of Oil and Gas  
JUL 07 2018  
WV Department of  
Environmental Protection



**AMERICAN  
PETROLEUM  
PARTNERS**

09/21/2018

# Site Safety Plan

**American Petroleum Partners Operating, LLC  
Casterly Rock Well Pad**

**June 2018: Version 1**

*ju  
6/28/18*

**For Submission to  
West Virginia Department of Environmental Protection,  
Office of Oil and Gas**

American Petroleum Partners Operating, LLC  
4600 J. Barry Ct  
Suite 310  
Canonsburg, PA 15317

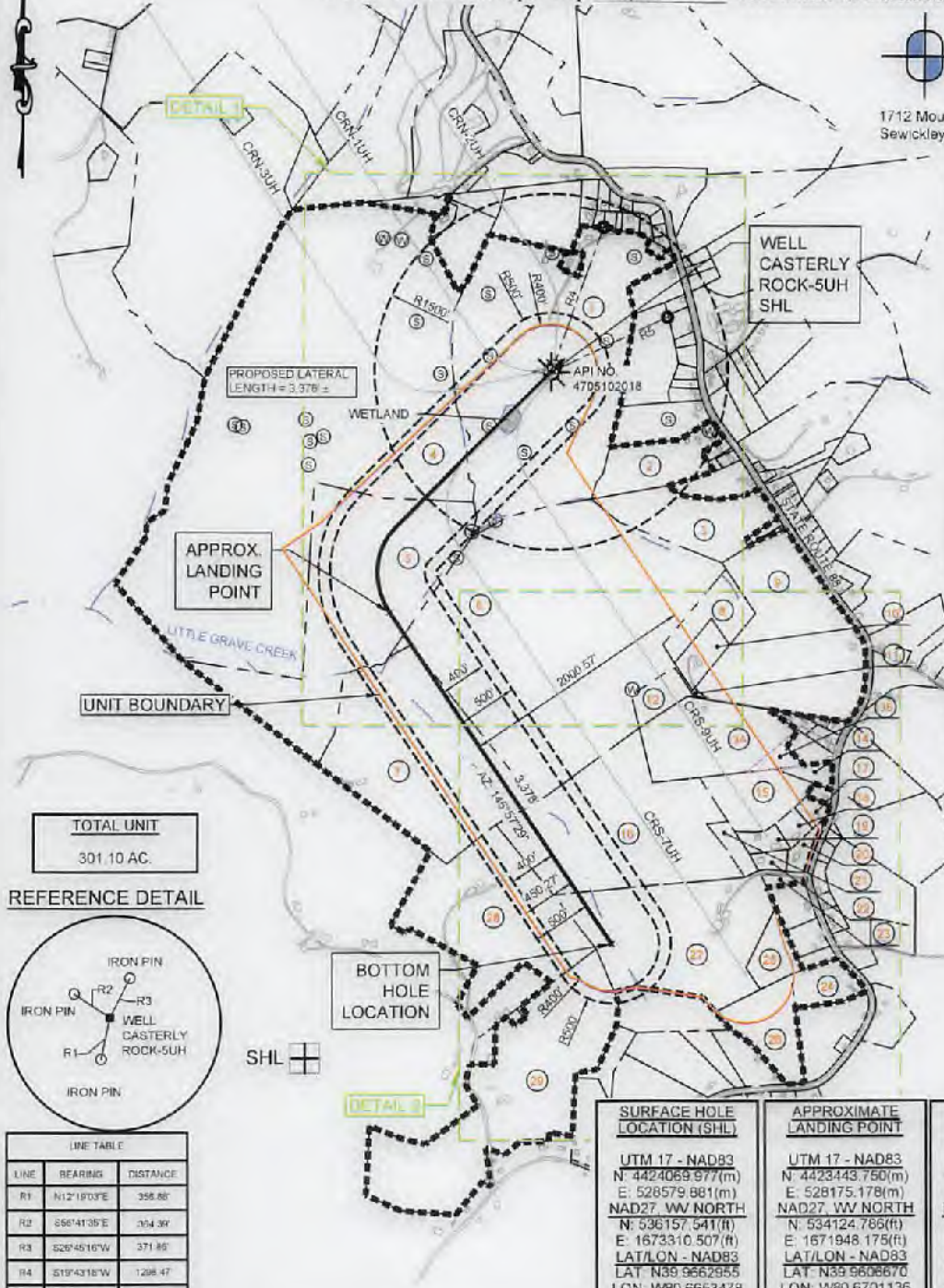
Well is located on topo map 12,278 feet south of Latitude: 40° 00' 00"

**Sheffler & Company, Inc.**  
ENGINEERING • SURVEYING

1712 Mount Nebo Road  
Sewickley, PA 15143

Phone: 412-219-4508  
Email: info@shefflerco.com

Well is located on topo map 11,309 feet west of Longitude: 80° 37' 30"



**LEGEND**

- TOPO MAP POINT
- PROPOSED WELL
- PRIVATE SPRING LOCATION
- LEASED NUMBER BASED ON ATTACHED WWB#1 ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- UNIT BOUNDARY
- PARCEL LINES
- MINERAL PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/POND/WATERWAY
- ROAD

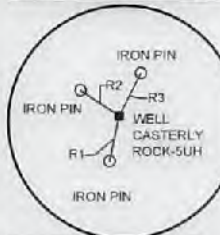
**WELLS WITHIN 3000'**

- RECORD WELL

- NOTES**
- 1 There are no water wells or developed springs within 250' of proposed well.
  - 2 There are no existing buildings within 625' of proposed well.
  - 3 Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - 4 There are no native trout streams within 300' of proposed well.
  - 5 Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  - 6 It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  - 7 Mineral and Surface parcel lines are the same except for #13 above.

**TOTAL UNIT**  
301.10 AC.

**REFERENCE DETAIL**



**LINE TABLE**

LINE	BEARING	DISTANCE
R1	S12°19'03"E	356.68'
R2	S66°41'35"E	354.39'
R3	S26°45'16"W	371.85'
R4	S19°43'18"W	1288.47'
R5	S6°44'30"W	1587.60'

SURFACE HOLE LOCATION (SHL)	APPROXIMATE LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17 - NAD83 N: 4424069.977(m) E: 528579.881(m) NAD27 - WV NORTH N: 536157.541(ft) E: 1673310.507(ft) LAT/LON - NAD83 LAT: N39.9662955 LON: W80.6653478	UTM 17 - NAD83 N: 4423443.750(m) E: 528175.178(m) NAD27 - WV NORTH N: 534124.786(ft) E: 1671948.175(ft) LAT/LON - NAD83 LAT: N39.9608670 LON: W80.6701136	UTM 17 - NAD83 N: 4422601.121(m) E: 528765.194(m) NAD27 - WV NORTH N: 531327.268(ft) E: 1673838.065(ft) LAT/LON - NAD83 LAT: N39.9530553 LON: W80.6632429

FILE #: CASTERLY ROCK-5UH

DRAWING #: CRSW-5UH-R5.DWG

SCALE: 1"=1500'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX0787, 1319.9'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED: [Signature]

R.P.E.: 21452 L.L.S.: P.S. NO.



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

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'

COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV

SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75

OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010 TRUST ACREAGE: 73.74

DATE: June 22, 2018 -- REV -- July 18, 2018

OPERATOR'S WELL #: CASTERLY ROCK-5UH

API WELL # 47 051 02071166A

STATE COUNTY PERMIT

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE

PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON

CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 18,484' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN

Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301



Well is located on topo map 1,923 feet south of Latitude: 39° 57' 30"



1712 Mount Nebo Road Phone: 412-219-4509  
Sewickley, PA 15143 Email: info@shefflerco.com



09/21/2018

Well is located on topo map 10,721 feet west of Longitude: 80° 37' 30"

FILE #: CASTERLY ROCK-5UH  
DRAWING #: CRSW-5UH-R5.DWG  
SCALE: 1"=1500'  
MINIMUM DEGREE OF ACCURACY: 1/2500  
PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX0787 - 1319.9'

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SIGNED: [Signature]  
R.P.E.: 21452 L.L.S.: P.S. NO. \_\_\_\_\_



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



DATE: June 22, 2018 --- REV --- July 18, 2018  
OPERATOR'S WELL #: CASTERLY ROCK-5UH  
API WELL # 47 051 0207166A  
STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'  
COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDVILLE, WV  
SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75  
OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010. ACREAGE: 73.74

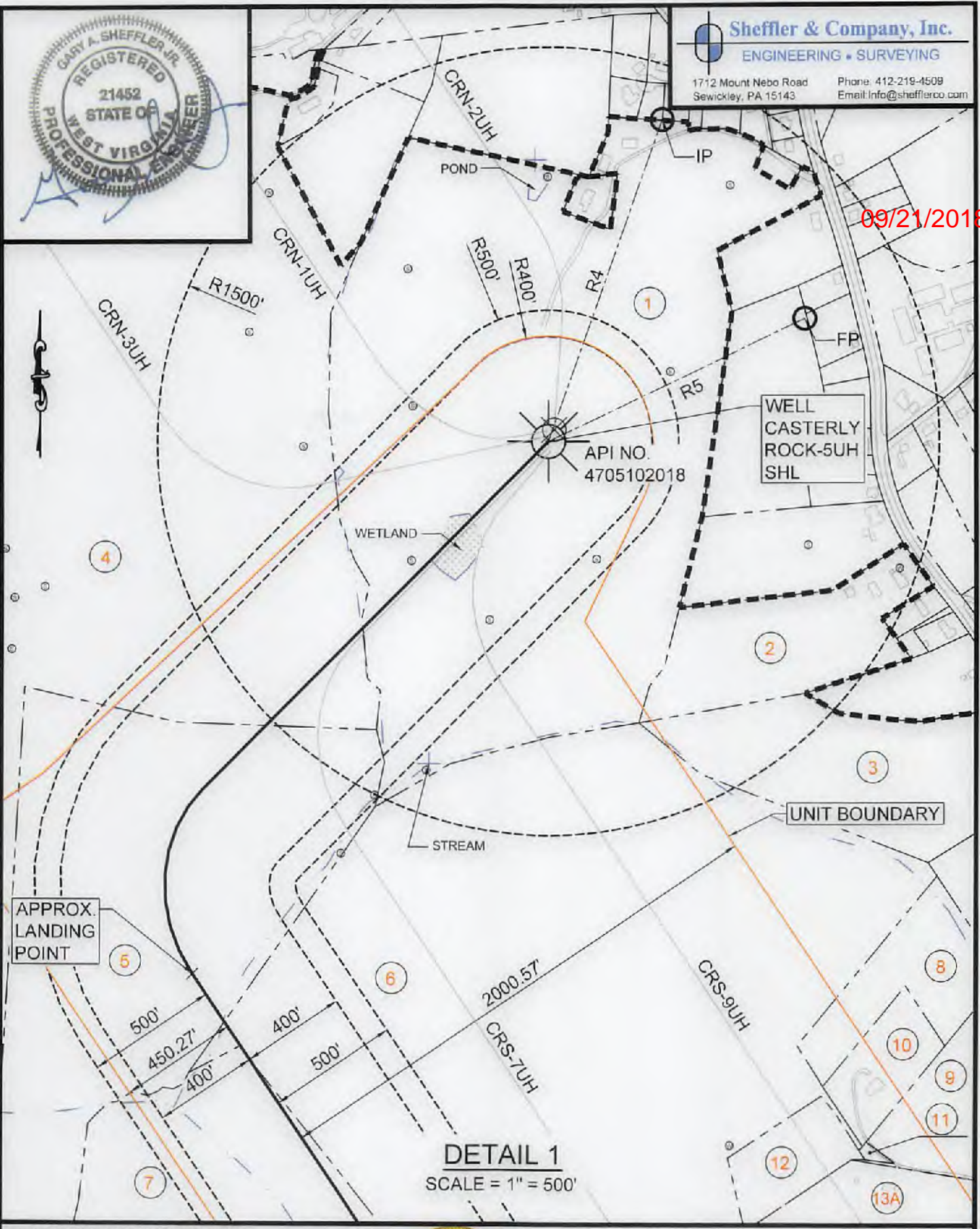
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON  
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 16,484' ±  
WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN  
Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST. SUITE 1000  
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301



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 ENGINEERING • SURVEYING  
 1712 Mount Nebo Road  
 Sewickley, PA 15143  
 Phone: 412-219-4509  
 Email: info@shefflerco.com

09/21/2018



**DETAIL 1**  
 SCALE = 1" = 500'

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



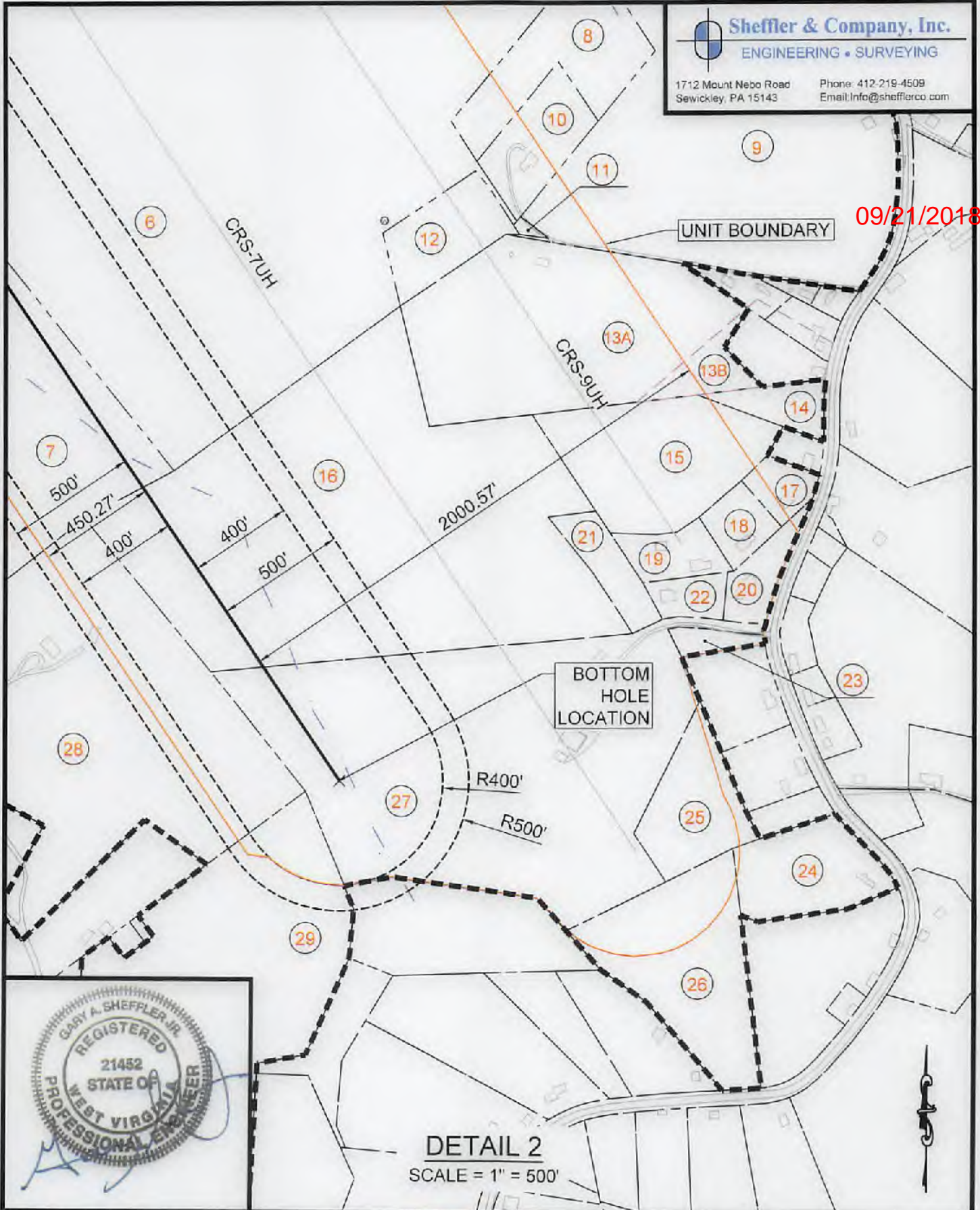
DATE: June 22, 2018 --- REV --- July 18, 2018  
 OPERATOR'S WELL #: CASTERLY ROCK-5UH  
 API WELL # 47 051 0207146A  
 STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'  
 COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV  
 SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75  
 OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010  
 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010. TRUST ACREAGE: 73.74

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

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 16,484' ±  
 WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN  
 Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000  
 City: CANONSBURG State: PA Zip Code: 15317 City: CHARLESTON State: WV Zip Code: 25301



09/21/2018



**DETAIL 2**  
 SCALE = 1" = 500'

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



DATE: June 22, 2018 --- REV --- July 18, 2018

OPERATOR'S WELL #: CASTERLY ROCK-5UH

API WELL # 47 051 20271111  
 STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'

COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV

SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75

OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010. TRUST ACREAGE 73.74

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

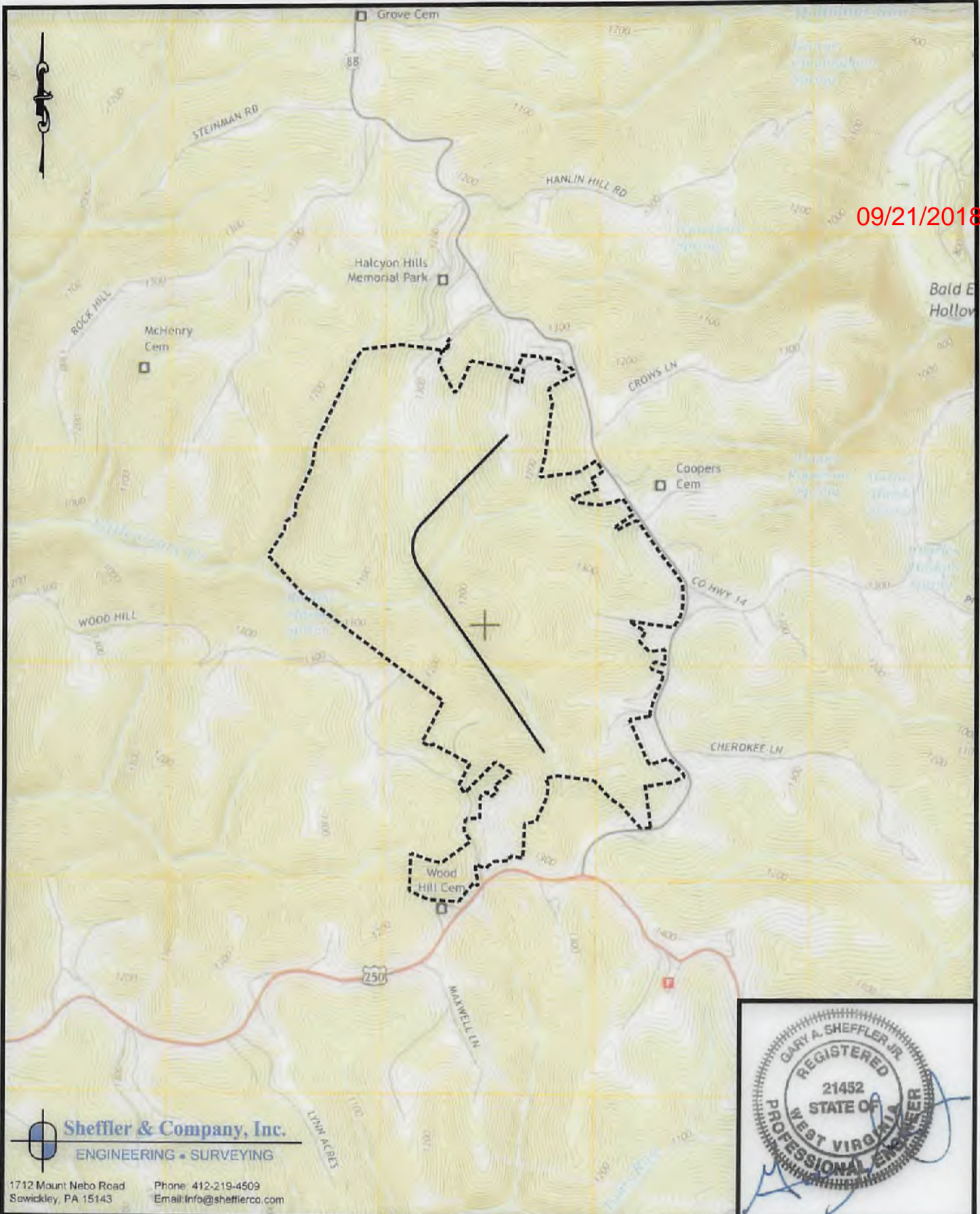
TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 16,484' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN

Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

09/21/2018



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ENGINEERING • SURVEYING  
1712 Mount Nebo Road Phone: 412-219-4509  
Sawickley, PA 15143 Email: info@shefflerco.com



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



DATE: June 22, 2018 --- REV --- July 18, 2018  
OPERATOR'S WELL #: CASTERLY ROCK-5UH  
API WELL # 47 051 0207194  
STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'  
COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV  
SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE 71.75  
OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010. TRUST ACREAGE: 73.74

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

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH TVD 11,395' ± TMD 16,484' ±  
WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN  
Address: 4800 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST. SUITE 1000  
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

09/21/2018

1 TAX MAP NO. 13-0013-0010-0000-0000 ASSESSED ACREAGE = 74.11 AC.  
SURFACE OWNERS: SCHABER, LESLIE B. & LORI D.  
MINERAL OWNERS: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010;  
JOHN F. MILLER, SR., ACTING AS TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010

2 TAX MAP NO. 13-0013-0013-0000-0000 ASSESSED ACREAGE = 15.74 AC.  
SURFACE & MINERAL OWNERS: GROSS, COBER R. ET UX

3 TAX MAP NO. 13-0013-0015-0000-0000 ASSESSED ACREAGE = 13.705 AC.  
SURFACE & MINERAL OWNERS: BROWN, ROSEMARY M.

4 TAX MAP NO. 13-0013-0009-0000-0000 ASSESSED ACREAGE = 186.14 AC.  
SURFACE & MINERAL OWNERS: HELLER, EDGAR

5 TAX MAP NO. 13-0013-0023-0000-0000 ASSESSED ACREAGE = 47.26 AC.  
SURFACE OWNERS: HELLER, EDGAR  
MINERAL OWNERS: HELLER, EDGAR  
FAITH UNITED METHODIST CHURCH

6 TAX MAP NO. 13-0013-0021-0000-0000 ASSESSED ACREAGE = 92.21 AC.  
SURFACE OWNERS: HELLER, JR., EDGAR  
MINERAL OWNERS: HELLER, JEANNIE

7 TAX MAP NO. 13-0013-0022-0000-0000 ASSESSED ACREAGE = 47.00 AC.  
SURFACE OWNERS: HILL, CHARLES DOUGLAS ET UX.  
MINERAL OWNERS: HILLS CREEK CONSULTING, LLC, FAITH UNITED METHODIST CHURCH

8 TAX MAP NO. 13-0013-0018-0000-0000 ASSESSED ACREAGE = 7.00 AC.  
SURFACE & MINERAL OWNERS: BLACK, TIMOTHY JON

9 TAX MAP NO. 13-0013-0017-0000-0000 ASSESSED ACREAGE = 33.3 AC.  
SURFACE & MINERAL OWNERS: LILLEY, PAUL THOMAS

10 TAX MAP NO. 13-0013-0018-0001-0000 ASSESSED ACREAGE = 3.00  
SURFACE & MINERAL OWNERS: BLACK, TIMOTHY JON

11 TAX MAP NO. 13-0013-0020-0000-0000 ASSESSED ACREAGE = 0.11 AC.  
SURFACE & MINERAL OWNERS: CUNNINGHAM, JEFFREY H. & CHAD

12 TAX MAP NO. 13-0013-0019-0000-0000 ASSESSED ACREAGE = 2.9 AC.  
SURFACE & MINERAL OWNERS: CUNNINGHAM, JEFFREY H. & CHAD

13 TAX MAP NO. 13-0014-0047-0001-0000 ASSESSED ACREAGE = 16.43 AC.  
SURFACE OWNERS: CUNNINGHAM, CHAD L. & JEFFREY H.  
MINERAL OWNERS: CHAD L. CUNNINGHAM; JEFFREY H. CUNNINGHAM;

14 TAX MAP NO. 13-0014-0046-0001-0000 ASSESSED ACREAGE = 1.47 AC.  
SURFACE OWNERS: CUNNINGHAM, CHAD L. & JEFFREY H.  
MINERAL OWNERS: CHAD L. CUNNINGHAM; JEFFREY H. CUNNINGHAM; JOHN WAYNE OSTRANDER; JESS BLAINE OSTRANDER, JR.; LATERIA TRIGG; LINDA S. OSTRANDER; ROBERT LEE OSTRANDER; SHARON HEATH; CAROLYN M. PIATT; PHYLLIS JEAN OSTRANDER

15 TAX MAP NO. 13-0014-0046-0001-0000 ASSESSED ACREAGE = 1.47 AC.  
SURFACE & MINERAL OWNERS: BOWME, CHRISTOPHER E.

16 TAX MAP NO. 13-0014-0041-0000-0000 ASSESSED ACREAGE = 6.73 AC.  
SURFACE & MINERAL OWNERS: ROSS, JASON C. & MELISSA S.

17 TAX MAP NO. 13-0014-0041-0000-0000 ASSESSED ACREAGE = 38.409 AC.  
SURFACE & MINERAL OWNERS: HULL, JUSTIN ANDREW

18 TAX MAP NO. 13-0014-0041-0005-0000 ASSESSED ACREAGE = 1.28 AC.  
SURFACE OWNERS: DAGUE, WILLIAM D. & ANN R.  
MINERAL OWNERS: KATHY J. YANNERELLA

19 TAX MAP NO. 13-0014-0041-0004-0000 ASSESSED ACREAGE = 1.50 AC.  
SURFACE & MINERAL OWNERS: ROSS, JASON C. & MELISSA S.

20 TAX MAP NO. 13-0014-0041-0003-0000 ASSESSED ACREAGE = 1.77 AC.  
SURFACE & MINERAL OWNERS: SCHERRER, EUGENE A. JR.

21 TAX MAP NO. 13-0014-0046-0003-0000 ASSESSED ACREAGE = 1.726 AC.  
SURFACE & MINERAL OWNERS: OWENS, DAVID N. & PATRICIA A.

22 TAX MAP NO. 13-0014-0041-0001-0000 ASSESSED ACREAGE = 1.02 AC.  
SURFACE & MINERAL OWNERS: OWENS, DAVID N. & PATRICIA A.

23 TAX MAP NO. 13-0014-0043-0003-0000 ASSESSED ACREAGE = 0.59 AC.  
SURFACE & MINERAL OWNERS: HULL, JUSTIN ANDREW

24 TAX MAP NO. 14-0005-0024-0002-0000 ASSESSED ACREAGE = 4.28 AC.  
SURFACE OWNERS: WOODS, JOHN E. SR. & FRANCES J.  
MINERAL OWNERS: BONNIE J. MASTERS; CARL E. KOONTZ, JR.; CATHY A. EBERT; DIANNA LOU COFFIELD; GLEN O. RICHMOND; HELEN M. KOONTZ; JOYCE E. GEORGE; MEGAN S. LAKE; VICKI Y. WRIGHT

25 TAX MAP NO. 13-0014-0043-0002-0000 ASSESSED ACREAGE = 3.82 AC.  
SURFACE & MINERAL OWNERS: DAVID L. SNYDER (LIFE ESTATE) JILL ANN BEVERIDGE (REMAINDERMAN)

26 TAX MAP NO. 13-0014-0043-0001-0000 ASSESSED ACREAGE = 8.23 AC.  
SURFACE & MINERAL OWNERS: SMITH, MAXINE K.

27 TAX MAP NO. 13-0014-0043-0000-0000 ASSESSED ACREAGE = 31.065 AC.  
SURFACE & MINERAL OWNERS: HULL, JUSTIN ANDREW

28 TAX MAP NO. 14-0004-0015-0003-0000 ASSESSED ACREAGE = 29.38 AC.  
SURFACE & MINERAL OWNERS: GOLE, ELAINE S.

29 TAX MAP NO. 14-0004-0016-0000-0000 ASSESSED ACREAGE = 42.95 AC.  
SURFACE & MINERAL OWNERS: BERTRAM, GEORGE E., ET UX.

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



DATE: June 22, 2018 --- REV --- July 18, 2018  
OPERATOR'S WELL #: CASTERLY ROCK-SUH  
API WELL # 47 051 02071 H6A  
STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,338.53'  
COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV  
SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75  
OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010. TRUST ACREAGE: 73.74

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TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 16,484' ±  
WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN  
Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000  
City: CANONSBURG State: PA Zip Code: 15317 City: CHARLESTON State: WV Zip Code: 25301

WW-6A1  
(5/13)

Operator's Well No. Casterly Rock-5UH

**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 attached sheet				

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

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

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

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: American Petroleum Partners Operating, LLC  
 By: Braulio Silva  
 Its: Vice President-Drilling

**CRSW 5UH - Wellbore Tracts**

	<b>LEASE #</b>	<b>LESSOR</b>	<b>CURRENT LESSEE</b>	<b>ROYALTY</b>	<b>MOL RECORDING INFORMATION</b>	<b>TAX PARCEL</b>
1	WV-MAR-0685	Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	777/21	13-13-10
1	WV-MAR-0686	John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	777/30	13-13-10
6	Pending	Jeanie Heller	American Petroleum Partners Operating, LLC	Not less than 1/8	873/140	13-13-21
27	WV-MAR-0037	Justin Andrew Hull	American Petroleum Partners Operating, LLC	Not less than 1/8	822/196	13-14-43
16	WV-MAR-0037	Justin Andrew Hull	American Petroleum Partners Operating, LLC	Not less than 1/8	822/196	13-14-46
7	Pending	Faith United Methodist Church	American Petroleum Partners Operating, LLC	Not less than 1/8	775/65	13-13-22
7	Pending	Hills creek Consulting, LLC	American Petroleum Partners Operating, LLC	Not less than 1/8	877/219	13-13-22
5	Pending	Faith United Methodist Church	American Petroleum Partners Operating, LLC	Not less than 1/8	775/65	13-13-23
5	Pending	Edgar Heller	American Petroleum Partners Operating, LLC	Not less than 1/8	879/272	13-13-23
4	Pending	Edgar Heller	American Petroleum Partners Operating, LLC	Not less than 1/8	879/272	13-13-9

4705102071

09/21/2018



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Office of Oil & Gas  
601 57<sup>th</sup> street, SE  
Charleston, WV 25304-2345

June 22, 2018

Re: Drilling Under Roads

To Whom It May Concern:

American Petroleum Partners Operating, LLC. has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire additional information, please do not hesitate to contact me at [regulatory@app-lp.com](mailto:regulatory@app-lp.com).

Sincerely,

Braulio Silva  
VP- Drilling

BS/djs

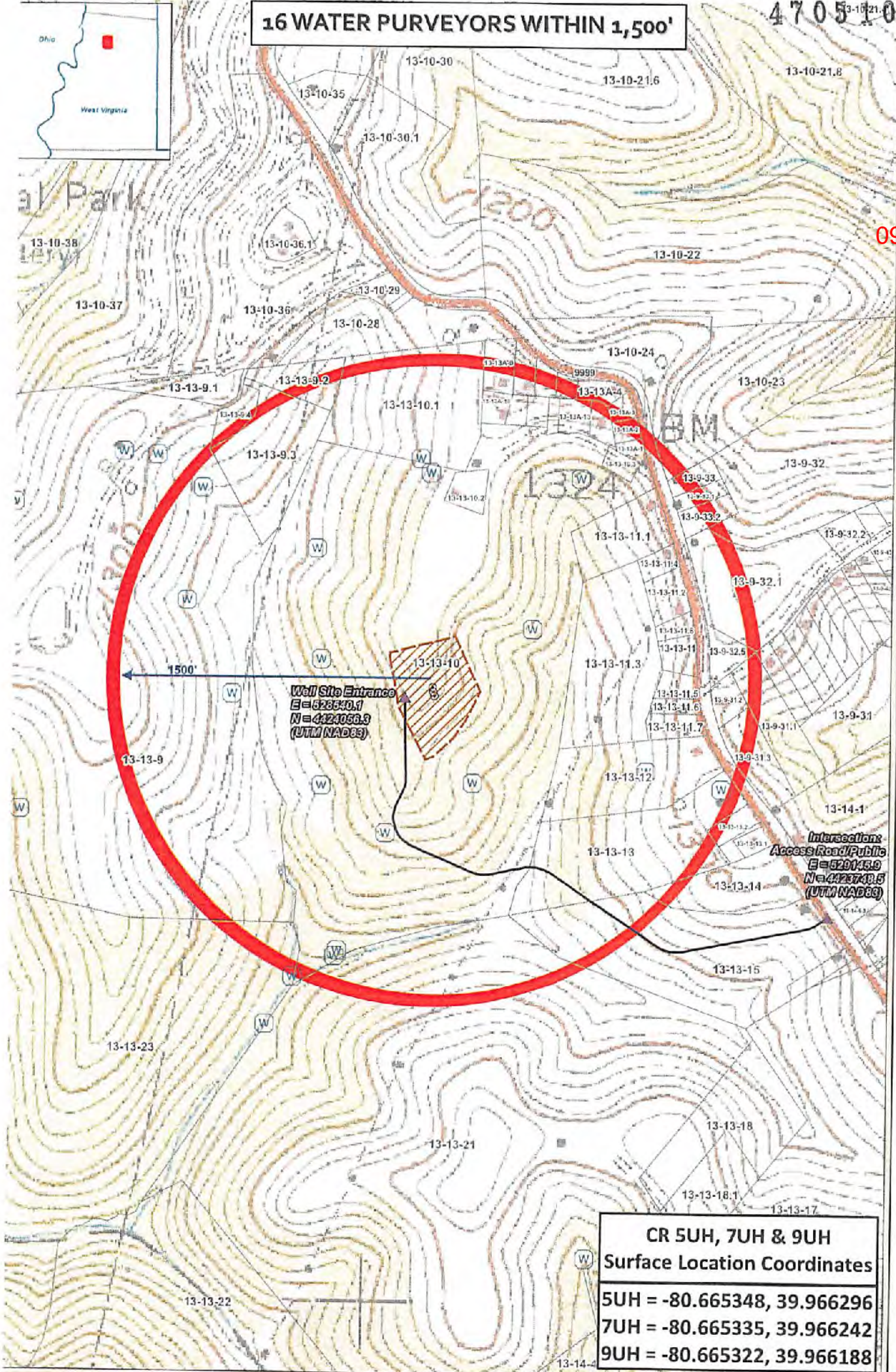
RECEIVED  
Office of Oil and Gas  
JUL 07 2018  
WV Department of  
Environmental Protection



**16 WATER PURVEYORS WITHIN 1,500'**

4705102071

09/21/2018



**Well Site Entrance**  
 E = 628640.1  
 N = 4424059.9  
 (UTM NAD83)

**Intersection - Access Road/Public**  
 E = 620143.9  
 N = 4423749.5  
 (UTM NAD83)

CR 5UH, 7UH & 9UH Surface Location Coordinates	
5UH	= -80.665348, 39.966296
7UH	= -80.665335, 39.966242
9UH	= -80.665322, 39.966188

**CR 5UH, 7UH & 9UH - Water Source**

Marshall County  
 West Virginia

- Well SHL
- Well Pad
- Access Rd Intersection
- Access Road
- Water Well
- 1,500' Buffer
- Parcels



Coordinate System: NAD 83 UTM Zone 17N  
 Projection: Transverse Mercator  
 Datum: North American 83  
 Units: Meter

Map Scale Units: 1:10,000 (1 inch = 813 feet)  
 Map Author: AS  
 Map Date: 09/2018

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

Date of Notice Certification: 6/29/18

API No. 47- 051 -  
Operator's Well No. Casterly Rock-5UH  
Well Pad Name: Casterly Rock

**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: RECEIVED  
Office of Oil and Gas

State: West Virginia  
County: Marshall  
District: Union  
Quadrangle: Moundsville  
Watershed: Short Creek-Ohio River, Upper Ohio South

UTM NAD 83 Easting: 528579.881  
Northing: 4424069.977 JUL 07 2018  
Public Road Access: State Route 88  
Generally used farm name: Leslie B. & Lori D. Schaber

WV Department of  
Environmental Protection

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

- 1. NOTICE OF SEISMIC ACTIVITY or  NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or  NO PLAT SURVEY WAS CONDUCTED
- 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)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

OOG OFFICE USE ONLY

- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

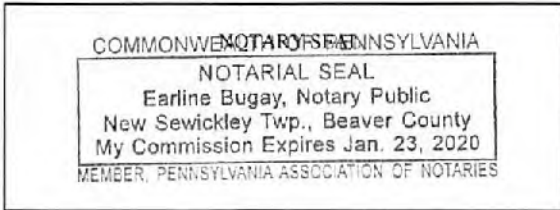
**Required Attachments:**

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.

**Certification of Notice is hereby given:**

THEREFORE, I Braulio Silva, 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:	<u>American Petroleum Partners Operating, LLC</u>	Address:	<u>4600 J. Barry Court Suite 310</u>
By:	<u>Braulio Silva</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Vice President-Drilling</u>	Facsimile:	<u>na</u>
Telephone:	<u>1-724-338-8629</u>	Email:	<u>Regulatory@app-lp.com</u>



Subscribed and sworn before me this 28<sup>th</sup> day of June.

Earline Bugay Notary Public

My Commission Expires 1/23/2020

**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](mailto:depprivacyofficer@wv.gov).

RECEIVED  
Office of Oil and Gas  
JUL 07 2018  
WV Department of  
Environmental Protection

WW-6A  
(9-13)

4705102071  
API NO. 47-051 - 09/21/2018  
OPERATOR WELL NO. Casterly Rock-5UH  
Well Pad Name: Casterly Rock

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

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

**Date of Notice:** 6/29/18 **Date Permit Application Filed:** 6/29/18

**Notice of:**

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

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

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

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

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

SURFACE OWNER(s)  
Name: Leslie B. & Lori D. Schaber  
Address: 46 Ken Mar Drive  
Wheeling, WV 26003

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: Rosemary M. Brown  
Address: 5743 Fairmont Pike Road  
Wheeling, WV 26003

Name: Cober R. Gross and Beverly T. Stromatoes  
Address: 5809 Fairmont Pike Road  
Wheeling, WV 26003

SURFACE OWNER(s) (Impoundments or Pits)  
Name: None  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: Murray American Energy and Consolidation Coal Company  
Address: 46226 National Road  
St. Clairsville, OH 43950

COAL OPERATOR  
Name: The Ohio County Mine  
Address: 46226 National Road  
St. Clairsville, OH 43950

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: See attached sheet.  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: None  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> 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.**

**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.

4705102071

WW-6A  
(8-13)

API NO. 47-051 - 09/21/2018  
OPERATOR WELL NO. Casterly Rock-50H  
Well Pad Name: Casterly Rock

**Notice is hereby given by:**

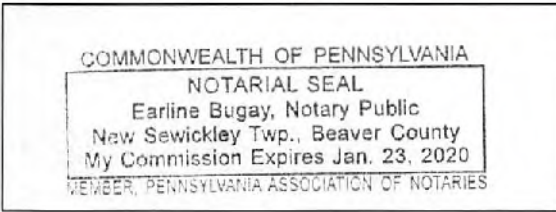
Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-724-338-8529  
Email: Regulatory@APP-LP.com

Address: 4600 J. Barry Court, Suite 310  
Canonsburg, PA 15317  
Facsimile: na

**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](mailto:deprivacyofficer@wv.gov).

*Braulio Silver* *Burt Hester*



Subscribed and sworn before me this 28<sup>th</sup> day of June, 2018.

Earline Bugay Notary Public

My Commission Expires 1/23/2020



4705102071

Water Purveyors within 1500'

Leslie B. and Lori D. Schaber

46 Ken Mar Drive

Wheeling, WV 2603

James Shannon, Et Ux

5581 Fairmont Pike Road

Wheeling, WV 26003

Edgar Heller

301 Penny Lane

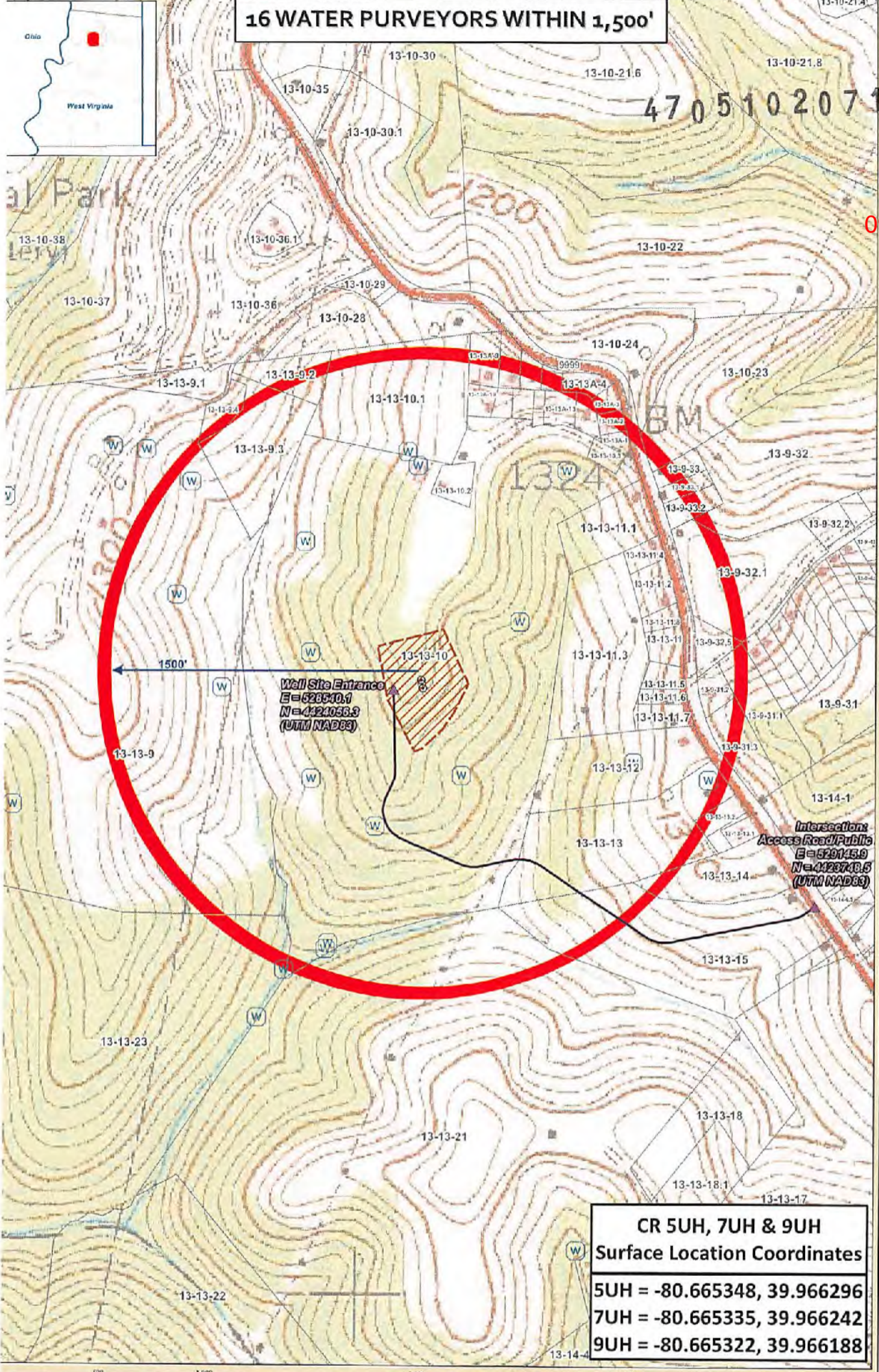
Wheeling, WV 26003

Cober R. Gross and Beverly T. Stromatoes

5609 Fairmont Pike Road

Wheeling, WV 26003

**16 WATER PURVEYORS WITHIN 1,500'**



09/21/2018

Well Site Entrance  
 E = 628540.1  
 N = 4221056.9  
 (UTM NAD83)

Intersection  
 Access Road/Public  
 E = 629145.9  
 N = 422740.6  
 (UTM NAD83)

**CR 5UH, 7UH & 9UH  
 Surface Location Coordinates**

5UH = -80.665348, 39.966296  
 7UH = -80.665335, 39.966242  
 9UH = -80.665322, 39.966188

**CR 5UH, 7UH & 9UH - Water Source**

Marshall County  
 West Virginia  
 Coordinate System: NAD 83 UTM Zone 18 Q U  
 Projection: Transverse Mercator  
 Datum: North American 83  
 Units: Meter  
 Map Scale: 1:10,000  
 1 inch = 500 feet  
 Map Author: JKS  
 Map Date: 09/2018

- Well SHL
- Well Pad
- Access Rd Intersection
- Access Road
- Parcels
- Water Well
- 1,500' Buffer



WW-6A3  
(1/12)

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 12/5/2017 **Date of Planned Entry:** 12/15/2017

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: Rosemary M. Brown

Address: 5743 Fairmont Pike RD  
Wheeling, WV 26003

Name: Cober R. Gross and Beverly L. Stromatoes

Address: 5609 Fairmont Pike  
Wheeling, WV 26003

Name: Leslie B. Schaber and Lori D. Schaber

Address: 46 Ken Mar DR  
Wheeling, WV 26003

COAL OWNER OR LESSEE

Name: Murray Energy

Address: 46226 National Road  
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: Rosemary M. Brown

Address: 5743 Fairmont Pike RD  
Wheeling, WV 26003

\*please attach additional forms if necessary

RECEIVED  
Office of Oil and Gas  
JUL 07 2018  
WV Department of  
Environmental Protection

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.966 -80.665</u>
County: <u>051-Marshall</u>	Public Road Access: <u>RT 38 Fairmont Pike Rd</u>
District: <u>Union</u>	Watershed: <u>Upper Ohio South</u>
Quadrangle: <u>Moundsville, WV</u>	Generally used farm name: <u>Schaber</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: <u>American Petroleum Partners Operating, LLC and APP Midstream LLC</u>	Address: <u>4600 J. Berry CT., Suite 310</u>
Telephone: <u>1-844-835-5277</u>	<u>Canonsburg, PA 15317</u>
Email: <u>mleehr@app-lp.com</u>	Facsimile: _____

**Oil and Gas Privacy Notice:**

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

4705102071  
09/21/2018

WW-6A3  
(1/12)

Operator Well No. Casterly Rock A-UH, B-UH, F-UH

**SUPPLEMENTAL TO THE STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY**

**MINERAL OWNER(S)**

**Name:** Cober R. Gross and Beverly L. Stromatoes

**Address:** 5609 Fairmont Pike

Wheeling, WV 26003

**Name:** Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010

**Address:** 8669 Patterson RD

Hilliard, OH 43026

**Name:** John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010

**Address:** 8669 Patterson RD

Hilliard, OH 43026

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: 06/29/18 Date Permit Application Filed: 6-29-18

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED  HAND DELIVERY

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

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

Name: Leslie B. & Lori D. Schaber  
Address: 46 Ken Mar Drive  
Wheeling, WV 26003

Name: Rosemary M. Brown  
Address: 5743 Fairmont Pike Road  
Wheeling, WV 26003

RECEIVED  
Office of Oil and Gas  
JUL 07 2018  
WV Department of  
Environmental Protection

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 528579.881  
County: Marshall Northing: 4424069.977  
District: Union Public Road Access: State Route 86  
Quadrangle: Moundsville Generally used farm name: Leslie B. & Lori D. Schaber  
Watershed: Short Creek-Ohio River, Upper Ohio South

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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-724-336-8629  
Email: Regulatory@app-llp.com

Address: 4600 J. Barry Court Suite 310  
Canonsburg, PA 15317  
Facsimile: na

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](mailto:depprivacyofficer@wv.gov).

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: 6/29/18 Date Permit Application Filed: 6-29-18

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

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND DELIVERY

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

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

Name: Cober R. Gross and Beverly T. Stromatoes  
Address: 5609 Fairmont Pike Road  
Wheeling, WV 26003

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

RECEIVED  
Office of Oil and Gas

JUL 07 2018

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: <u>West Virginia</u>	UTM NAD 83 Easting: <u>528579.881</u>
County: <u>Marshall</u>	Northing: <u>442489.977</u>
District: <u>Union</u>	Public Road Access: <u>State Route 88</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>Leslie B. &amp; Lori D. Schaber</u>
Watershed: <u>Short Creek, Ohio River</u>	

WV Department of  
Environmental Protection

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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-844-835-5277  
Email: Regulatory@app-llp.com

Address: 4600 J. Barry Court Suite 310  
Canonsburg PA 15317  
Facsimile: \_\_\_\_\_

Oil and Gas Privacy Notice:

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



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

Thomas J. Smith, P. E.  
Secretary of Transportation/  
Commissioner of Highways

Reissued June 26, 2018

Jill M. Newman  
Deputy Commissioner

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

Subject: DOH Permit for the Casterly Rock Pad, Marshall County  
Casterly Rock 5UH Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0221 which has been issued to American Petroleum Partners for access to the State Road for a well site located off of WV 88 in Marshall County.

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

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

RECEIVED  
Office of Oil and Gas

JUL 07 2018

Cc: Braulio Silva  
American Petroleum Partners  
CH, OM, D-6  
File

WV Department of  
Environmental Protection

## Hydraulic Fracturing Fluid Product Component Information Disclosure

### Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**
Water	Operator	Carrier/Base Fluid			
			Water	7732-18-5	100.00000
Terraprop Plus 30/50	Baker Hughes	Proppant			
			Aluminum Oxide	1344-28-1	100.00000
			Amorphous Silica	7631-86-9	20.00000
			Titanium Dioxide	13463-67-7	5.00000
			Iron Oxide	1309-37-1	5.00000
Sand (Proppant)	Stingray	Proppant			
			Silica Substrate	14808-60-7	87.00000
ProLife 40/70	Imerys	Proppant			
			Mullite	1302-93-8	70.00000
			Cristobalite	14464-45-1	30.00000
			Amorphous Silica	7631-86-9	15.00000
Hydrochloric Acid (HCl)	FTSI	Acid			
			Hydrogen Chloride	7647-01-0	15.00000
SI-117	WST	Scale Inhibitor			
			Copolymer of Maleic and Acrylic Acid	52255-49-9	70.00000
			Ethylene glycol	107-21-1	40.00000
			DETA phosphonate	15827-60-8	20.00000
			Hexamethylene Triamine Penta (Methylene Phosphonic Acid)	34860-00-1	20.00000
			Phosphino carboxylic acid polymer	71050-62-9	20.00000
K-BAC 1020 DBNPA	WST	Bactericide			
			Polyethylene glycol	25322-68-3	50.00000
			Water	7732-18-5	30.00000
			2,2-Dibromo-3-nitropropionamide	10222-01-2	21.00000
NEFE-180	Stingray	Acid Inhibitor/Iron Control			
			Acetic Acid	64-19-7	60.00000
			Methanol	67-58-1	30.00000
			2-Ethylhexanol	104-76-7	7.50000
			Cocunut Oil Acid diethanolamine	88803-42-9	3.00000
			Alcohols, C15-15, ethoxylated	68951-67-7	3.00000
			Olefin	64743-02-8	3.00000
			Fatty Acids, tall oil	61790-12-3	3.00000
			2-Propyn-1-ol	107-19-7	3.00000
FRA-409	Stingray	Friction Reducer			
			Copolymer of 2-propenamide	Proprietary	30.00000
			Distillates (petroleum), Hydrotreated Light	64742-47-8	20.00000
			Alcohols, C12-16, Ethoxylated	68551-12-2	2.00000
			Alkanolamide	93-83-4	2.00000
			Ammonium Chloride	12125-02-9	1.00000
CSL-30	Stingray	pH Control			
			Sodium Hydroxide	1310-73-2	30.00000
WG-36 GELLING AGENT	Halliburton	Gelling Agent			
			Guar gum	9000-30-0	100.00000
SP BREAKER	Halliburton	Breaker			
			Sodium persulfate	7775-27-1	100.00000
LOSURF-300D	Halliburton	Non-Ionic Surfactant			
			Ethanol	64-17-5	60.00000
			Heavy aromatic petroleum	64742-94-5	30.00000
			Naphthalene	91-20-3	5.00000
			Poly(oxy-1,2-ethanediy), alpha-	127087-87-0	5.00000
			1,2,4 Trimethylbenzene	95-63-6	1.00000



4705102071

# CASTERLY ROCK WELL PAD UNION DISTRICT, MARSHALL COUNTY, WV MARCH 2018

PLANS PREPARED BY:

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



*Andrew Benchek* 3-20-18

ANDREW BENCHEK  
P.E.

**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 TICKET#1701749131)

SHEET INDEX	
1.	TITLE SHEET
2-3.	EVACUATION ROUTE/PREVAILING WIND
4.	E&S CONTROL LAYOUT OVERVIEW
5-7.	E&S CONTROL LAYOUT
8.	E&S CONTROL AND SITE PLAN OVERVIEW
9-11.	E&S CONTROL AND SITE PLAN
12.	WELL PAD CROSS-SECTIONS AND UNDERDRAIN PROFILES
13.	ACCESS ROAD PROFILE
14-17.	ACCESS ROAD CROSS-SECTIONS
18.	STREAM CROSSINGS #1 AND #2 CROSS-SECTIONS AND PROFILES
19-22.	DETAILS
23.	RECLAMATION PLAN OVERVIEW
22-26.	RECLAMATION PLAN

TOTAL DISTURBED AREA: 22.6 AC.  
ACCESS ROAD DISTURBED AREA: 12.7 AC.  
WELL PAD DISTURBED AREA: 9.9 AC.

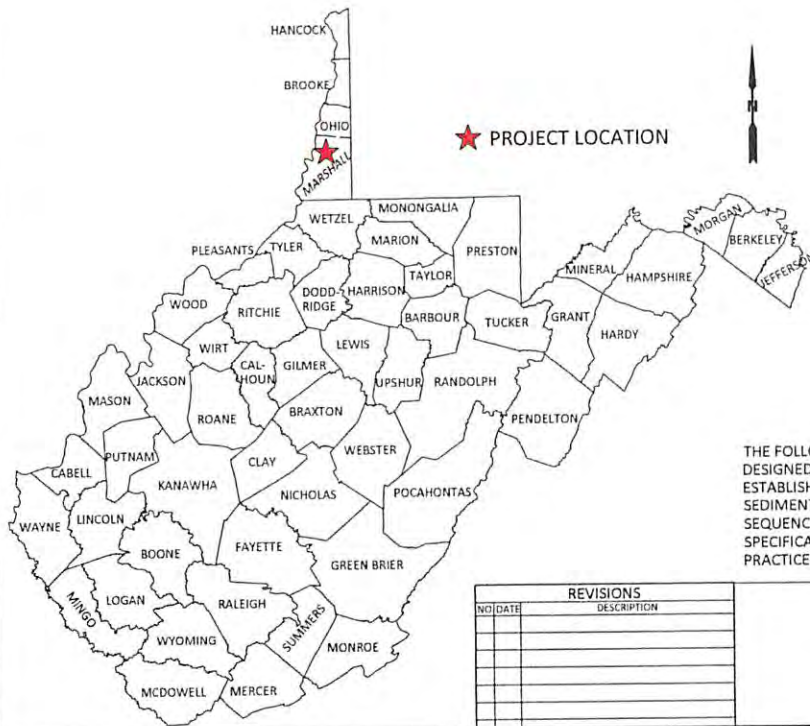
OWNER



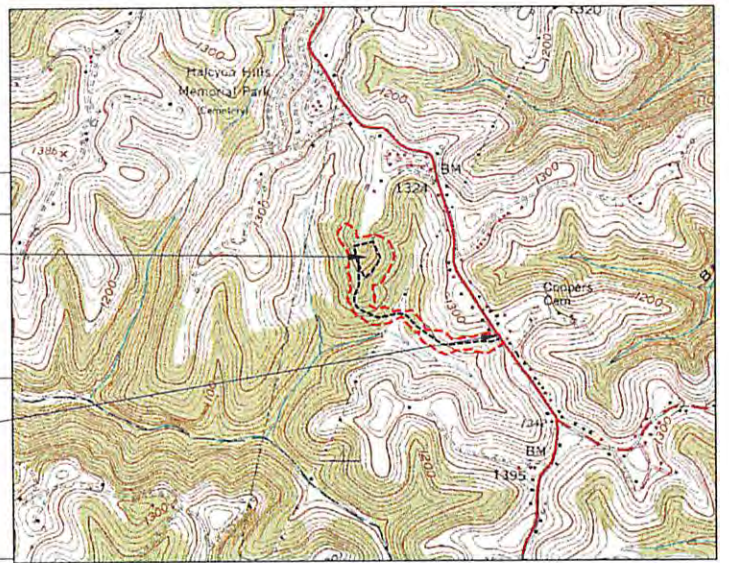
AMERICAN PETROLEUM PARTNERS OPERATING, LLC  
4600 J. BARRY COURT, SUITE 310,  
CANONSBURG, PA 15317

**APPROVED  
WVDEP OOG**  
*WJD* 4/10/2018

PROPERTY OWNER DISTURBANCE  
ROSEMARY M BROWN (TAX MAP AND PARCEL 13-13-15): 6.0 AC.  
COBER R GROSS (13-13-13): 1.3 AC.  
LESLIE SCHABER AND LORI SCHABER (13-13-10): 15.3 AC.



COORDINATES	
CENTER OF WELLS (NAD 83)	
LAT:	39° 57' 58.69"
LONG:	80° 39' 55.06"
(NAD 27)	
LAT:	39° 57' 58.42"
LONG:	80° 39' 55.77"
SITE ENTRANCE (NAD 83)	
LAT:	39° 57' 47.58"
LONG:	80° 39' 30.64"
(NAD 27)	
LAT:	39° 57' 47.31"
LONG:	80° 39' 31.35"

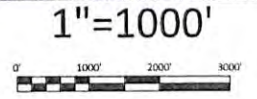


IN ACCORDANCE WITH WV 35 CSR 8 THE FOLLOWING EROSION & SEDIMENT CONTROL PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES ESTABLISHED BY THE CHIEF AND PROVIDED IN THE OFFICE'S EROSION AND SEDIMENT CONTROL FIELD MANUAL. A GENERAL CONSTRUCTION SEQUENCE, DESCRIPTION OF STABILIZATION METHODS, AND DETAILS & SPECIFICATIONS FOR EROSION & SEDIMENT BEST MANAGEMENT PRACTICES HAVE BEEN INCLUDED IN THE PROVIDED DETAIL SHEETS.

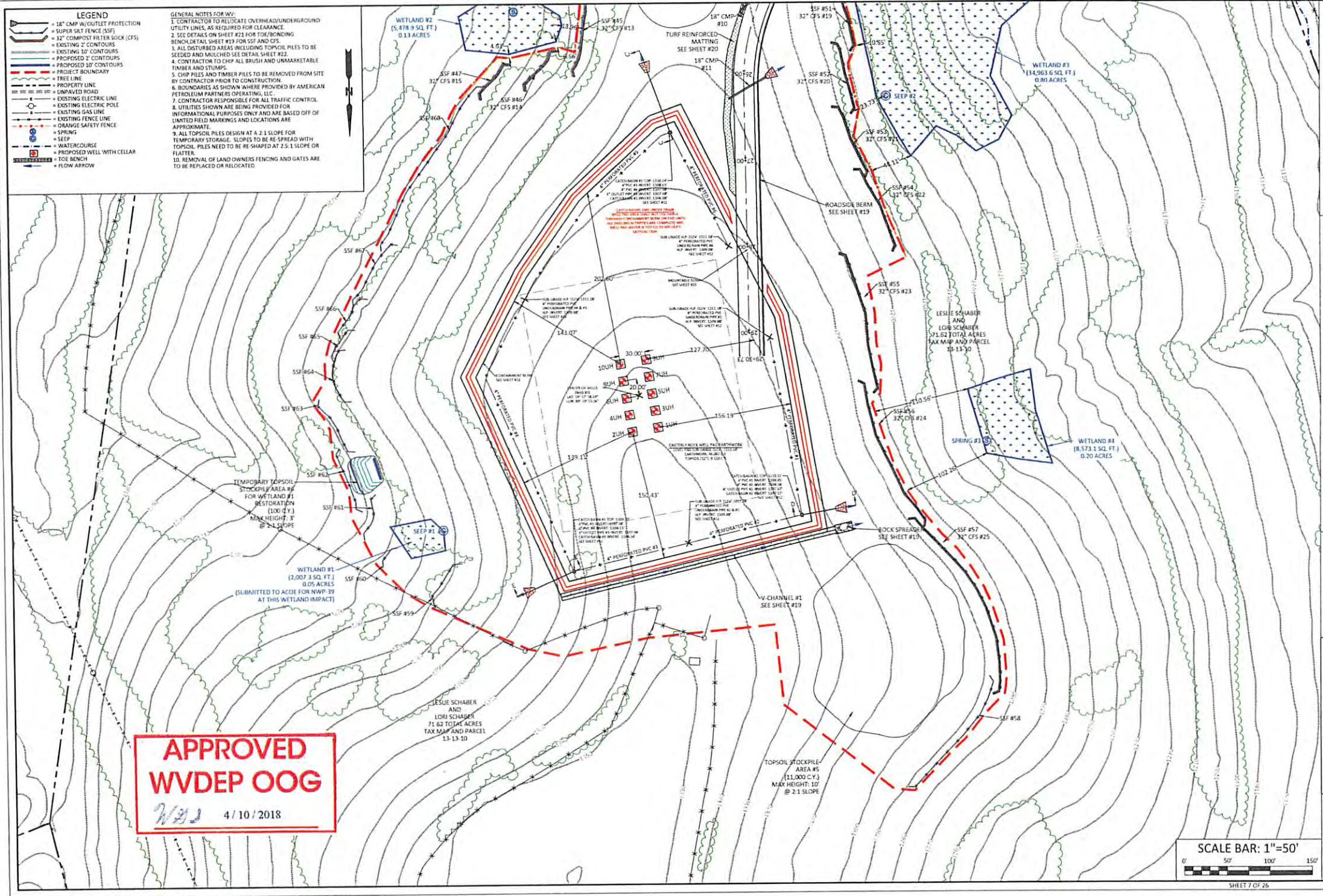
REVISIONS	
NO	DATE

**TITLE SHEET**  
CASTERLY ROCK WELL PAD  
UNION DISTRICT, MARSHALL COUNTY, WV

**SHEET**  
1  
OF  
26



4705102071



**APPROVED WVDEP OOG**  
*WES* 4/10/2018

- LEGEND**
- 18" CMP W/OUTLET PROTECTION
  - SUPER SRT FENCE (SSF)
  - 32" COMPOST FILTER SOCK (CFS)
  - EXISTING 2' CONTOURS
  - EXISTING 10' CONTOURS
  - PROPOSED 2' CONTOURS
  - PROPOSED 10' CONTOURS
  - PROJECT BOUNDARY
  - TREE LINE
  - PROPERTY LINE
  - UNPAVED ROAD
  - EXISTING ELECTRIC LINE
  - EXISTING ELECTRIC POLE
  - EXISTING GAS LINE
  - EXISTING FENCE LINE
  - ORANGE SAFETY FENCE
  - SEEP
  - WATERCOURSE
  - PROPOSED WELL WITH CELLAR
  - TOE BENCH
  - FLOW ARROW

- GENERAL NOTES FOR WV:**
- CONTRACTOR TO RELOCATE OVERHEAD/UNDERGROUND UTILITY LINES, AS REQUIRED FOR CLEARANCE.
  - SEE DETAILS ON SHEET #21 FOR TOP/BONDING BENCH DETAIL SHEET #13 FOR SSF AND CFS.
  - ALL DISTURBED AREAS INCLUDING TOPSOIL PILES TO BE SEEDED AND MULCHED SEE DETAIL SHEET #22.
  - CONTRACTOR TO CHIP ALL BRUSH AND UNMARKETABLE TIMBER AND STUMPS.
  - CHIP PILES AND TIMBER PILES TO BE REMOVED FROM SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
  - BOUNDARIES AS SHOWN WHERE PROVIDED BY AMERICAN PETROLEUM PARTNERS OPERATING, LLC.
  - CONTRACTOR RESPONSIBLE FOR ALL TRAFFIC CONTROL.
  - UTILITIES SHOWN ARE BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED OFF OF LIMITED FIELD MARKINGS AND LOCATIONS ARE APPROXIMATE.
  - ALL TOPSOIL PILES DESIGN AT A 2:1 SLOPE FOR TEMPORARY STORAGE. SLOPES TO BE RE-SHAPED WITH TOPSOIL PILES NEED TO BE RE-SHAPED AT 2.5:1 SLOPE OR FLATTER.
  - REMOVAL OF LAND OWNERS FENCING AND GATES ARE TO BE REPLACED OR RELOCATED.

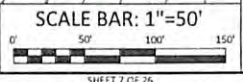
**BOORD, BENCHEK and ASSOC., INC.**  
 Engineering, Surveying, Construction,  
 and Mining Services  
 Southpointe, PA 15317 Phone: 724-746-1055

**E&S CONTROL LAYOUT**

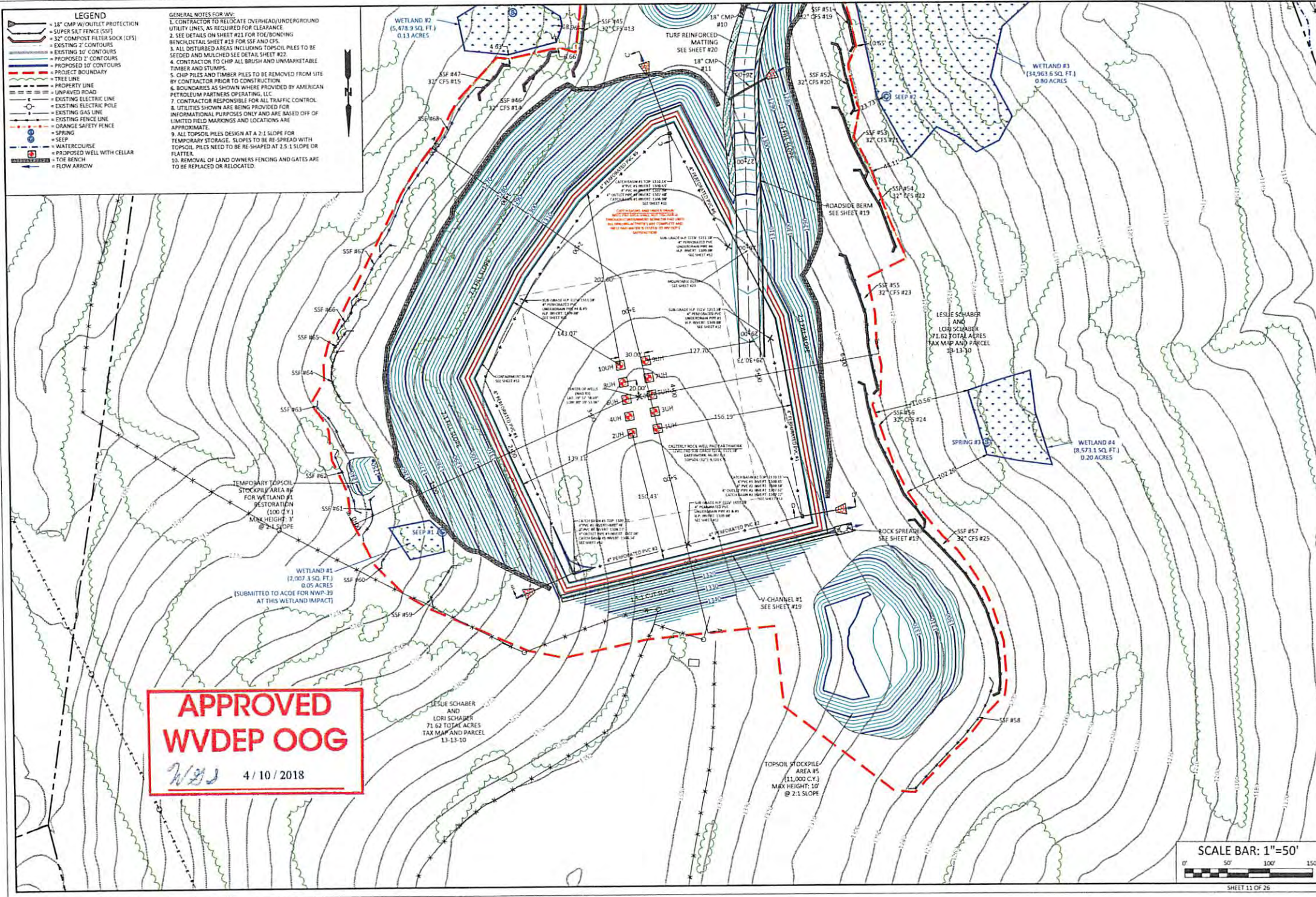
THIS DOCUMENT WAS PREPARED BY:  
 BOORD, BENCHEK AND ASSOC., INC.  
 FOR: AMERICAN PETROLEUM PARTNERS OPERATING, LLC.

DATE:  
 MARCH 2018  
 CASTERLY ROCK  
 WELL PAD  
 UNION DISTRICT,  
 MARSHALL COUNTY,  
 WV

NO.	DATE	DESCRIPTION
1	4/10/18	WV DEP COMMENTS ON 4/10/18



4705102071



**LEGEND**

- 18" CMP W/INLET PROTECTION
- SUPER SLIT FENCE (SSF)
- 32" COMPOST FILTER SOCK (CFS)
- EXISTING 1" CONTOURS
- EXISTING 2" CONTOURS
- PROPOSED 1" CONTOURS
- PROPOSED 2" CONTOURS
- PROJECT BOUNDARY
- TREE LINE
- PROPERTY LINE
- UNPAVED ROAD
- EXISTING ELECTRIC LINE
- EXISTING ELECTRIC POLE
- EXISTING GAS LINE
- EXISTING FENCE LINE
- ORANGE SAFETY FENCE
- SPRING
- SEEP
- WATERCOURSE
- PROPOSED WELL WITH CELLAR
- TOE BENCH
- FLOW ARROW

**GENERAL NOTES FOR WVP:**

1. CONTRACTOR TO RELOCATE OVERHEAD/UNDERGROUND UTILITY LINES, AS REQUIRED FOR CLEARANCE.
2. SEE DETAILS ON SHEET #21 FOR TOP/BONDING BENCH/DETAIL SHEET #13 FOR SSF AND CFS.
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6. BOUNDARIES AS SHOWN WHERE PROVIDED BY AMERICAN PETROLEUM PARTNERS OPERATING, LLC.
7. CONTRACTOR RESPONSIBLE FOR ALL TRAFFIC CONTROL.
8. UTILITIES SHOWN ARE BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED OFF OF LIMITED FIELD MARKINGS AND LOCATIONS ARE APPROXIMATE.
9. ALL TOPSOIL PILES DESIGN AT A 2:1 SLOPE FOR TEMPORARY STORAGE. SLOPES TO BE RE-SPREAD WITH TOPSOIL. PILES NEED TO BE RE-SHAPED AT 2.5:1 SLOPE OR FLATTER.
10. REMOVAL OF LAND OWNERS FENCING AND GATES ARE TO BE REPLACED OR RELOCATED.

APPROVED  
WVDEP OOG

*WJS* 4/10/2018

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

**E&S CONTROL AND SITE PLAN**

THIS DOCUMENT WAS PREPARED BY:  
**BOORD, BENCHEK AND ASSOC., INC.**  
FOR: AMERICAN PETROLEUM PARTNERS OPERATING, LLC.

DATE: MARCH 2018  
CASTERLY ROCK WELL PAD  
UNION DISTRICT, MARSHALL COUNTY, WV

NO.	DATE	REVISIONS DESCRIPTION

SCALE BAR: 1"=50'

0' 50' 100' 150'

SHEET 11 OF 26