

12/8/21



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
2045 MORSE RD, BLDG. F-2, COLUMBUS, OH 43229-6693
Phone: (614) 265-6922 · Fax: (614) 265-6910



APPLICATION FOR A PERMIT (Form 1)

(REVISED 6/2020)

SEE INSTRUCTIONS ON BACK

1. We (applicant) <u>DeepRock Disposal Solutions LLC.</u>		2. OWNER NUMBER: <u>9896</u>																																																																																		
Address: <u>637 State Route 821, Complex 1, Building 1, Marietta, OH 45750</u>		Phone: <u>740-371-5078</u>																																																																																		
hereby apply this date <u>November 25</u> <u>2020</u> for a permit to:																																																																																				
<input checked="" type="checkbox"/> Drill Vertical Well <input type="checkbox"/> Revised Location <input type="checkbox"/> Drill Horizontally <input type="checkbox"/> Plug Back <input type="checkbox"/> Drill Directionally <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Reopen <input type="checkbox"/> Reissue		<input type="checkbox"/> Convert <input type="checkbox"/> Deepen																																																																																		
3. TYPE OF WELL: <input type="checkbox"/> Oil & Gas <input type="checkbox"/> Annular Disposal <input type="checkbox"/> Saltwater Injection <input type="checkbox"/> Solution Mining* <input type="checkbox"/> Gas Storage <input type="checkbox"/> Other (explain): <input checked="" type="radio"/> Input/Injection <input type="checkbox"/> Enhanced Recovery* (*if checked, select appropriate box below) <input type="checkbox"/> Water Supply <input type="checkbox"/> Observation <input type="checkbox"/> Production/Extraction																																																																																				
4. Is the well location or production facility(s) within an urbanized area as defined by ORC 1509.01 (Y)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		20. TYPE OF TOOLS: <input type="checkbox"/> Cable <input checked="" type="checkbox"/> Rotary (<input type="radio"/> Air <input checked="" type="radio"/> Fluid) <input type="checkbox"/> Cable/Rotary <input type="checkbox"/> Service Rig																																																																																		
5. MAIL PERMIT TO: DeepRock Disposal Solutions LLC. 637 SR 821 Marietta, OH 45750		21. SOURCE(S) OF GROUND AND/OR SURFACE WATER USED IN PRODUCTION OPERATION: Ohio River Watershed: <input type="checkbox"/> Lake Erie <input checked="" type="checkbox"/> Ohio River Estimated Withdrawal Rate (gal/day): 10,000 Estimated Total Volume (gal): 100,000 If Recycled Water – Estimated Total Volume (gal):																																																																																		
6. COUNTY: Washington		22. EMERGENCY TELEPHONE NUMBERS (closest to well site): Fire: 740-373-2424 Med cal: 740-374-3200																																																																																		
7. CML TOWNSHIP: Warren		23. MEANS OF INGRESS AND EGRESS: Road: State Route 550																																																																																		
8. SECTION: 11 9. LOT:		24. ROAD USE FOR HORIZONTAL WELL: <input type="checkbox"/> Maintenance Agreement Attached <input type="checkbox"/> Non-agreement Affidavit Attached <input checked="" type="checkbox"/> State Route (Not Required)																																																																																		
10. FRACTION: 11. QTRTWP:		25. ARE THE SURFACE RIGHTS OWNED BY THE STATE OF OHIO? Agency Name:																																																																																		
12. TRACT/ALLOT:		26. FOR PLUGGING APPLICATIONS: Date of Last Production: Amount of Oil: _____ (bbl) Gas: _____ (mcf)																																																																																		
13. WELL NUMBER: <u>1</u>																																																																																				
14. LEASE NAME: <u>Pioneer</u>																																																																																				
15. PROPOSED TOTAL DEPTH: 6,500'																																																																																				
16. PROPOSED GEOLOGICAL FORMATION(S): Clinton-Medina																																																																																				
17. DRILLING UNIT ACRES: 42.07																																																																																				
18. ATTACH LANDOWNER ROYALTY LISTING:																																																																																				
19. IF PERMITTED PREVIOUSLY: API Number:																																																																																				
27. PROPOSED CASING AND CEMENTING PROGRAM <table border="1"> <thead> <tr> <th>Type Casing</th> <th>Borehole Diameter (in)</th> <th>Borehole Depth (ft)</th> <th>Casing Diameter (in)</th> <th>Casing Depth (ft)</th> <th>Cement Volume (sacks)</th> <th>Formation</th> <th>Zone Tested or Produced (✓ if Yes)</th> <th>Hydraulic Fracturing (✓ if Yes)</th> </tr> </thead> <tbody> <tr> <td>Drive Pipe</td> <td>24"</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conductor</td> <td>24"</td> <td>100'</td> <td>20"</td> <td>100'</td> <td>106</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mine String</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Surface</td> <td>17-1/2"</td> <td>400'</td> <td>13-3/8"</td> <td>400'</td> <td>306</td> <td>Thur Fresh Water Zones</td> <td></td> <td></td> </tr> <tr> <td>1st Intermediate</td> <td>12-1/4"</td> <td>2,400'</td> <td>9-5/8"</td> <td>2,400'</td> <td>706</td> <td>Thur Gordon</td> <td></td> <td></td> </tr> <tr> <td>2nd Intermediate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production</td> <td>8-3/4"</td> <td>6,450'</td> <td>7"</td> <td>6,400'</td> <td>556</td> <td>Thur Clinton-Medina</td> <td></td> <td></td> </tr> <tr> <td>Liner</td> <td>TUBING</td> <td></td> <td>4-1/2"</td> <td>6,135'</td> <td>NA</td> <td>Set Packer 65' above top perf</td> <td></td> <td></td> </tr> </tbody> </table>				Type Casing	Borehole Diameter (in)	Borehole Depth (ft)	Casing Diameter (in)	Casing Depth (ft)	Cement Volume (sacks)	Formation	Zone Tested or Produced (✓ if Yes)	Hydraulic Fracturing (✓ if Yes)	Drive Pipe	24"								Conductor	24"	100'	20"	100'	106				Mine String									Surface	17-1/2"	400'	13-3/8"	400'	306	Thur Fresh Water Zones			1 st Intermediate	12-1/4"	2,400'	9-5/8"	2,400'	706	Thur Gordon			2 nd Intermediate									Production	8-3/4"	6,450'	7"	6,400'	556	Thur Clinton-Medina			Liner	TUBING		4-1/2"	6,135'	NA	Set Packer 65' above top perf		
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I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.
I, the undersigned, further depose and state that I am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I, the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 557.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (9) ORC for this application have been duly provided by me. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required in Section 1509.13, ORC, have been given.
That I hereby agree to conform with all provisions of Chapter 1509., ORC, and Chapter 1501., OAC, and all orders and conditions issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Owner/Authorized Agent: John W. Mossor Jr.Name (Type or Print): John W. Mossor Jr.Title: General Manager

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this the 8th day of December, 2021.



DeepRock Disposal Solutions, LLC
637 State Rt 821, Complex 1, Bldg 1
Marietta, OH 45750
Phone: (740) 371-5078

To: Division of Oil and Gas Resources Management
From: DeepRock Disposal Solutions, LLC – John W. (Wes) Mossor
SUBJECT: List of Landowners Royalty Owners – Pioneer # 1 permit application

- Landowner - Heinrich Property LLC, PO Box 280, Reno Ohio 45773
- Royalty interest- Heinrich Production LLC, PO Box 280, Reno Ohio 45773



**SUPPLEMENT TO APPLICATION
PERMIT FOR A SALTWATER INJECTION WELL (Form 210)**
(REVISED 0515)

AREA OF REVIEW: An application for a saltwater injection well (SWIW) will be evaluated on the basis of an "area of review" surrounding the proposed well. The area of review for wells, in which injection of greater than two hundred (200) barrels per day is proposed, shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-half mile. The area of review for wells, in which a maximum injection of two hundred (200) barrels per day or less is proposed, shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-quarter mile.

31. PROPOSED INJECTION ZONE:

Geological Formation: Clinton, Medina

Injection Well Interval: FROM 6,135' FEET TO 6,325' FEET

Geologic description of injection zone: Limestone, Dolomite, and Sandstone

Composition of Proposed Fluids to be Injected: (CHECK ALL THAT APPLY)

Brine

Flow-Back Drilling

Fluids

Other Approved Fluids

32. WELL CONSTRUCTION AND OPERATION:

A. Description of the proposed casing and cement program for new wells, or of the casing, cementing or sealing with prepared clay for existing wells to be converted:

See attached, Elevation Tops and Cementing Program and subsurface construction page 2

B. Proposed method for testing the casing:

Load the 7" casing w/fresh water and inhibitor, pressure up, (ODNR provided maximum pressure)

using a pump truck w/recorder, monitor pressure to and for (ODNR provided) time to confirm no pressure loss.

C. Description of the proposed method for completion and operation of the injection well:

Well will (see below) be operated as part of our Rt.7 UIC facility.

Completion will be perforated casing and acidized and limited injection testing performed

D. Description of the proposed unloading, surface storage, and spill containment facilities:

Will tie into our Rt.7 UIC approved offload facility via pipeline, with Facility Modification approval.

33. PROPOSED INJECTION VOLUMES

A. Indicate the estimated amount of saltwater to be injected into the proposed injection well per day:

AVERAGE: 3,500 / 5,500 MAXIMUM: 6,000

34. PROPOSED INJECTION PRESSURES

A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:

AVERAGE: 1,375 MAXIMUM: 1,420

**SUPPLEMENT TO APPLICATION
PERMIT FOR A SALTWATER INJECTION WELL (Form 210)**
(REVISED 0515)

36. MAP

Each application for a permit shall be accompanied by a map or maps showing and containing the following information:

- A. The subject tract of land on which the proposed injection well is to be located.
- B. The location of the proposed injection well on the subject tract established by an Ohio registered surveyor showing the distances in feet from the proposed well site to the boundary lines on the subject tract;
- C. The geographic location of all wells, penetrating the formation proposed for injection regardless of status, within the area of review;
- D. All holders of the land owner's royalty interest of record, or holders of the severed oil and gas mineral estates of record in the subject tract;
- E. All owners or operators of wells producing from or injecting into the same formation proposed as the injection formation.

37. SCHEMATIC DRAWING OF SUBSURFACE CONSTRUCTION

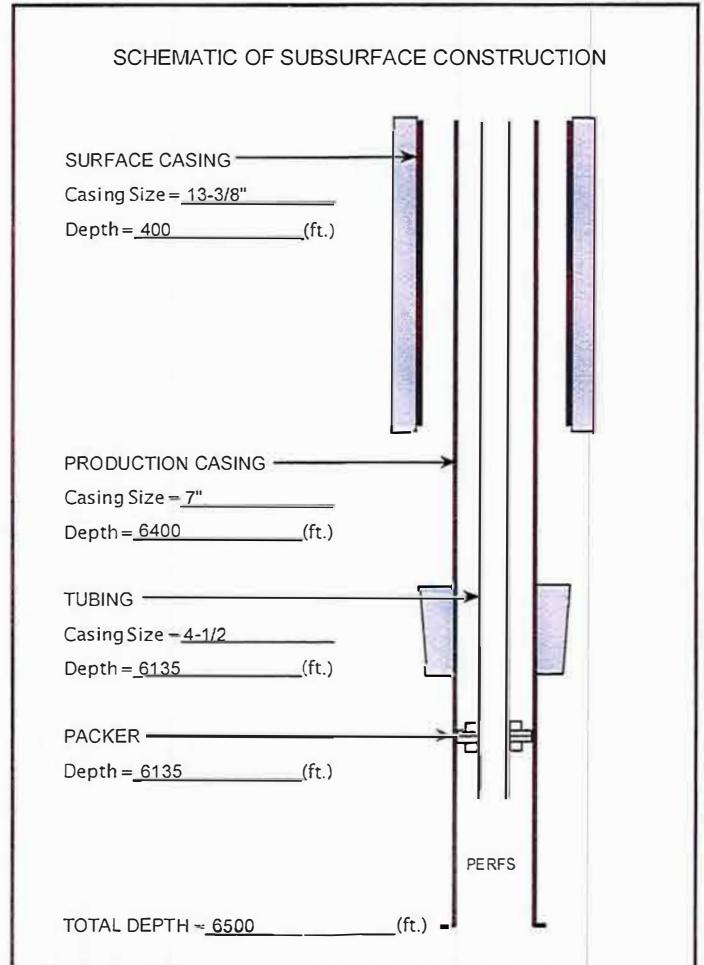
Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval. If the proposed input well design is substantially different from the schematic below, attach on a separate sheet a schematic of your proposal labeled with the above information.

38. PUBLIC NOTICE OF A SALTWATER INJECTION WELL

Public notice of an application for a saltwater injection well is required by law. In addition, the applicant must submit, on an attached sheet, a list of the names and address(es) of those persons required to receive personal notice in accordance with Rule 1501:9-3-06(H) of the Ohio Administrative Code.

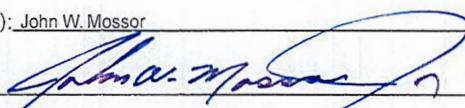
After submitting the application, and after a determination by the Division that it is complete as required by the rules of the Division, a legal notice must be published by the applicant in a newspaper of general circulation in the area of review. The legal notice must contain the information described in Rule 1501:9-3-06(H) of the Ohio Administrative Code. A copy of the notice must be delivered to all owners or operators of wells within the area of review producing from or injecting into the same formation proposed as the injection formation. Proof of publication, publication date, and an oath as to the delivery to those entitled to receive personal notice under this method must be filed with the Division within thirty (30) days after the Division determines that the application is complete.

In addition, notice of all applications for saltwater injection wells will be published in the Division's weekly circular.



The undersigned hereby agrees to comply with all provisions for a saltwater injection well as required by Chapter 1501:9-3 of the Ohio Administrative Code. In addition, the undersigned deposes and says that s/he shall conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all orders and rules issued by the Chief, Division of Oil and Gas Resources Management.

Owner/Authorized Agent (Type or Print): John W. Mossor

Signature of Owner/Authorized Agent:  Title: General Manager

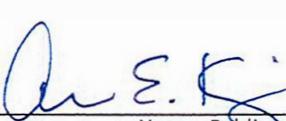
Permanent Address of Home Office: 637 State Route 821 Marietta, OH 45750

If signed by Authorized Agent, a certified copy of appointment of agent must be on file with the Division.

SWORN to and subscribed to me this 8th day of December, 20 21



ANN E KERENYI
Notary Public - State of Ohio
My Commission Expires
February 13, 2023


Notary Public

2-13-23

Date Commission Expires

DeepRock Disposal

Pioneer # 1

Washington County - Warren Township - Section 11

<u>STRUCTURAL</u>	<u>DEPTHs</u>	<u>FORMATION TOPS</u>
Berea Sandstone	1,175'	2,017'
Onondaga Limestone	3,675'	4,517'
Packer Shell	5,275'	6,117'
Top of Clinton Sandstone	6,165'	
Top of Medina Sandstone	6,309'	
Base of Medina Sandstone	6,325'	
Proposed Total Depth	6,450'	

CASING PROGRAM

<u>Type</u>	<u>Hole Size</u>	<u>Pipe Size</u>	<u>Casing Depth</u>
Conductor	24"	20"	100'
Surface	17 1/2"	13 3/8"	400'
Intermediate	12 1/4	9 5/8"	2,400"
Longstring	8 3/4"	7"	6,400"
Tubing	4 1/2"		Set on packer

Cementing Program

Conductor	20" - 94lb - J55 inside 24" hole - cemented to surface Class A (15.6lb/gal) - 106 Sks
Surface	13 3/8" - 48lb - H40 inside 17 1/2" hole - cemented to surface Class A (15.6lb/gal) - 306 Sks
Intermediate	9 5/8" - 36lb - J55 inside 12 1/4" hole - cemented to surface total Cement - 706 Sks Lead cement - 28gel - 14.7lb/per gal - 387.5 Sks Tail cement - Class A (15.6lb/per gal) - 318.5 Sks
Longstring	7" - 23lb - P110 inside 8 3/4" hole - cemented back to 2,100' - 556 Sks Lead cement - Unifill - 13.6lb/per gal - 269.5 Sks Tail cement - 50/50 POZ (28lb/per gal) - 286.5 Sks

Pioneer #1

Elevation 842' GL

Section 11

Warren Township

Structural Depths

Berea Sandstone - 1175

Formation Tops

2017'

Onondaga Limestone - 3675

4517'

Packer Shell - 5275

6117'

Top Clinton Sandstone = 6,165'

Top Medina Sandstone = 6,309'

Base Medina Sandstone = 6,325'

Proposed Total Depth = 6,450'

Casing Program

Type	Hole Size	casing Depth
Conductor	20"	24"
Surface	13 3/8"	17 1/2"
Intermediate	9 5/8	12 1/4"
Longstring	7"	8 3/4"
Tubing	4-1/2"	
		2,400' (Through Gordon)
		6,400'

Cementing Program - See Cementing Program

Pioneer #1

Cementing Program

Conductor

(20" 94lb-J55) in 24" hole

Cemented to Surface

$$100' \times .9599 \text{ ft}^3/\text{ft} = 96 \text{ ft}^3 + 30\% \text{ Excess} = 125 \text{ ft}^3$$

$$\text{CLASS A (15.6 lb/gal)} = 1.18 \text{ ft}^3/\text{sk} = \boxed{106 \text{ SKS}}$$

Surface

(13 3/8" 48lb-H40) in 17 1/2" hole

Cemented to Surface

$$400' \times .6946 \text{ ft}^3/\text{ft} = 278 \text{ ft}^3 + 30\% \text{ Excess} = 361 \text{ ft}^3$$

$$\text{CLASS A (15.6 lb/gal)} = 1.18 \text{ ft}^3/\text{sk} = \boxed{306 \text{ SKS}}$$

Intermediate

(9 5/8 36lb-J55) in 12 1/4" hole

Cemented to Surface

Lead Cement $\text{Clr50A 28 gel} = 1.36 \text{ ft}^3/\text{sk}$ (14.7lb/gal)

(1,400')

$$1400' \times .3132 \text{ ft}^3/\text{ft} = 439 \text{ ft}^3 + 20\% \text{ Excess} = 527 \text{ ft}^3 = 387.5 \text{ SKS}$$

Tail Cement

$\text{CLASS A} = 1.18 \text{ ft}^3/\text{sk}$ (15.6 lb/gal)

(1,000')

$$1000' \times .3132 \text{ ft}^3/\text{ft} = 313 \text{ ft}^3 + 20\% \text{ Excess} = 376 \text{ ft}^3 = 318.5 \text{ SKS}$$

$$* \text{ Total Cement} = \boxed{706 \text{ SKS}}$$

Longstring

(7" 23lb-P110) in 8 3/4" hole

Cemented back to 2100'

Lead Cement $\text{Unifill Light} = 1.54 \text{ ft}^3/\text{sk}$ (13.6 lb/gal)

(2,300')

$$2300' \times .1503 \text{ ft}^3/\text{ft} = 346 \text{ ft}^3 + 20\% \text{ Excess} = 415 \text{ ft}^3 = 269.5 \text{ SKS}$$

Tail Cement

$50/50 \text{ PbZ, 28 gel} = 1.26 \text{ ft}^3/\text{sk}$

(2,000')

$$2000' \times .1503 \text{ ft}^3/\text{ft} = 301 \text{ ft}^3 + 20\% \text{ Excess} = 361 \text{ ft}^3 = 286.5 \text{ SKS}$$

$$* \text{ Total Cement} = \boxed{556 \text{ SKS}}$$

**DeepRock Disposal
Pioneer # 1
Permit Appalachian**

32.(D). Description of proposed unloading, surface, and spill containment.

- A. Brine will be offloaded at our Rt.7 – UIC permitted facility, brine will then transfer via UIC permitted pipeline to our, UIC permitted 676 facility.
 - We have in-line turbine meters at Rt. discharge pumps, in addition we have discharge meters in-line at the 676 facilities pumps, and we will install new in-line flow/volume meter at the Pioneer well
- a. New pipeline will be constructed of 3" steel – welded, Class A ~ 2,200 PSI, enclosed in 6" – DR 17 polypipe.
- b. We have high- and low-level storage tank automatic shut-downs on both Rt.7 and 676 sites.
- c. We have pressure sensors, with automatic high, and low shutdowns on all discharge pumps.
- d. Our Silver Smith – Meter Central monitoring system in addition sends automated text messages for all preset levels alarms to all DeepRock managers.

PLAIN END LINE PIPE - Continued

Outside Diameter	Wall Thickness	Weight Per Foot	Test Pressure							
			Grade A	Grade B	Grade X-42	Grade X-46	Grade X-52	Grade X-56	Grade X-60	Grade X-
3 1/2	.083	3.03	850	1000	1200	1310	1480	1590	1710	18
3 1/2	.109	3.95	1120	1310	1570	1720	1940	2090	2240	24
3 1/2	.125	4.51	1290	1500	1800	1970	2230	2400	2570	27
3 1/2	.141	5.06	1450	1690	2030	2220	2510	2710	2900	30
3 1/2	.156	5.57	1600	1870	2250	2460	2780	3000	3000	30
3 1/2	.172	6.11	1770	2060	2480	2710	3000	3000	3000	30
3 1/2	.188	6.65	1930	2260	2710	2970	3000	3000	3000	30
3 1/2	.216 STD	7.58	2220	2500	3000	3000	3000	3000	3000	30



A DIVISION OF CHEVRON PHILLIPS CHEMICAL COMPANY LP

PE 4710 (PE3408) Energy - DriscoPlex® 6400 Series PE4710 IPS Pipe Data

Pipe weights are calculated in accordance with PPI TR-7. Average inside diameter calculated using nominal OD and minimum wall plus 6% for use in estimating fluid flows. Actual ID will vary. When designing components to fit the pipe ID, refer to pipe dimensions and tolerances in applicable pipe specifications. Pressure Ratings are for water at 73.4° F. For other fluid and service temperature, ratings may differ. Refer to Engineering Manual for Chemical and Environmental Considerations.

Rating	DR 6.0				DR 8.0				DR 11.0				DR 14.0				IPS Pipe Size	
	IPS Pipe Size	Nom OD (in)	Min Wall (in)	Avg ID (in)	Wgt (lb/ft)													
1"	1.315	0.219	0.851	10.33	0.180	0.933	0.29	0.182	0.151	1.340	0.31	0.123	1.369	0.26	0.140	1.387	0.34	1 1/4"
1 1/4"	1.860	0.277	1.073	10.62	0.227	1.179	0.46	0.184	1.270	0.37	0.151	1.340	0.31	0.123	1.369	0.26	0.140	1 1/2"
1 1/2"	1.900	0.317	1.226	10.60	0.266	1.349	0.61	0.211	1.453	0.49	0.173	1.535	0.41	0.141	1.601	0.34	0.176	2"
2"	2.375	0.395	1.505	11.07	0.325	1.684	0.95	0.264	1.815	0.77	0.216	1.917	0.54	0.176	2.002	0.53	0.140	2 1/2"
3"	3.500	0.683	2.284	12.33	0.478	2.485	2.06	0.389	2.675	1.68	0.318	2.826	1.39	0.258	2.951	1.18	0.205	3"
4"	4.900	0.750	2.910	13.60	0.516	3.194	3.40	0.500	3.440	2.75	0.409	3.633	2.31	0.330	3.794	1.92	0.265	3 1/2"
6"	6.425	1.104	4.225	15.55	0.908	4.700	7.37	0.738	5.665	5.29	0.602	5.349	5.00	0.49	5.584	4.15	0.390	5 7/8"

Rating	DR 6.0				DR 8.0				DR 11.0				DR 14.0				IPS Pipe Size
	IPS Pipe Size	Nom OD (in)	Min Wall (in)	Avg ID (in)	Wgt (lb/ft)	IPS Pipe Size	Nom OD (in)	Min Wall (in)	Avg ID (in)	Wgt (lb/ft)	IPS Pipe Size	Nom OD (in)	Min Wall (in)	Avg ID (in)	Wgt (lb/ft)	IPS Pipe Size	
20"	26.000	3.111	21.465	11.43	2.600	10.475	3.111	22.665	21.93	20.983	70.30	1.920	21.917	21.917	70.30	26"	
26"	28.000	3.333	22.634	12.24	3.111	21.465	3.333	22.665	22.02	22.665	89.26	2.074	23.603	23.603	89.26	26"	
30"	30.000	3.667	24.000	13.00	3.333	22.634	3.667	24.218	23.22	24.218	102.47	2.222	25.289	25.289	102.47	30"	
32"	32.000	3.917	25.367	13.75	3.667	24.000	3.917	25.633	24.59	25.633	115.58	2.370	26.976	26.976	115.58	32"	
34"	34.000	4.171	26.734	14.50	3.917	25.367	4.171	27.447	25.31	27.447	131.61	2.518	28.660	28.660	131.61	34"	
36"	36.000	4.429	28.094	15.25	4.171	26.734	4.429	29.061	27.55	29.061	147.55	2.667	30.348	30.348	147.55	36"	

Pressure ratings are calculated using 0.63 design factor for HDS at 73°F as listed in PPI TR-4 for PE4710 materials. Temperature and environmental use considerations may require use of additional design factors.

Other Sizes and Dimensions Available

Bullet: PP 155-4710 (PE 3408)

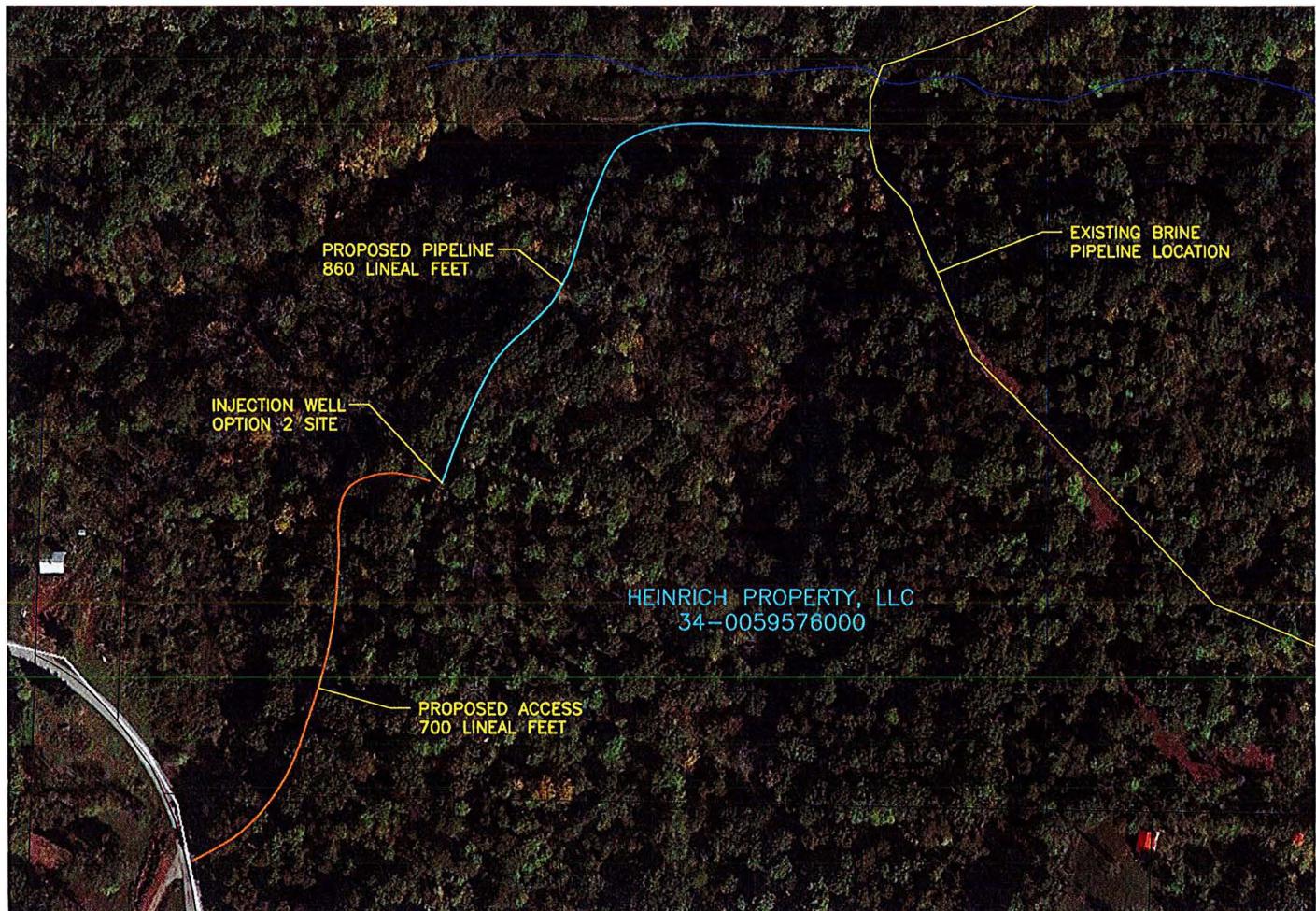
Page 1 of 1

Performance Pipe, a division of

www.performancepipe.com

March 2008 supersedes all previous publications

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DEEPROCK DISPOSAL - PIONEER # 1 - AREA OF REVIEW

<u>COUNT</u>	<u>WELL NAME</u>	<u>OPERATOR</u>	<u>FORMATION</u>	<u>PERMIT #</u>
1	J. Denton # 1	Stonebridge Operating	Berea	3937
2	Magers # 1	Stonebridge Operating	Berea	3986
3	Lavina Michaelis	Heinrich Enterprise	Berea	7744
4	Michaelis # 1	Heinrich Enterprise	Berea	1058
5	Harris Unit # 1	Energy Search	CANCELED	9496
6	Larry D. & Joyce Harris	Stonebridge Operating	Berea	3993
7	L. Michaelis # 2	Heinrich Enterprise	Berea	4113
8	Lavina Michaelis # 3	Heinrich Enterprise	Berea	7745
9	Vandale # 1	OWS Acquisition	Berea	5319
10	Vandale # 2	OWS Acquisition	Berea	5338
11	Albicht # 1	Heinrich Enterprise	Ohio Shale	9558
12	Richard Wilson # 1	Richard Wilson	Berea	3926
13	C. Sullivan # 1	OWS Acquisition	Berea	3359
14	Heinrich Unit # 2 (SWIW # 22)	DeepRock Disposal	Medina	9464
15	Vocational School # 2 (SWIW # 20)	DeepRock Disposal	Medina	9543
16	Horton # 1	Heinrich Enterprise	Ohio Shale	9557

Well Owners address

DeepRock Disposal 637 State Route 821 Marietta, OH 45750

DeepRock Disposal 637 State Route 821 Marietta, OH 45750



Ohio Oil & Gas Wells

ONNR, Division of Oil & Gas

County Bookmarks

Select A County:

Clear Result

► Other Tools

▶ Print

▼ Search

Select A Layer:

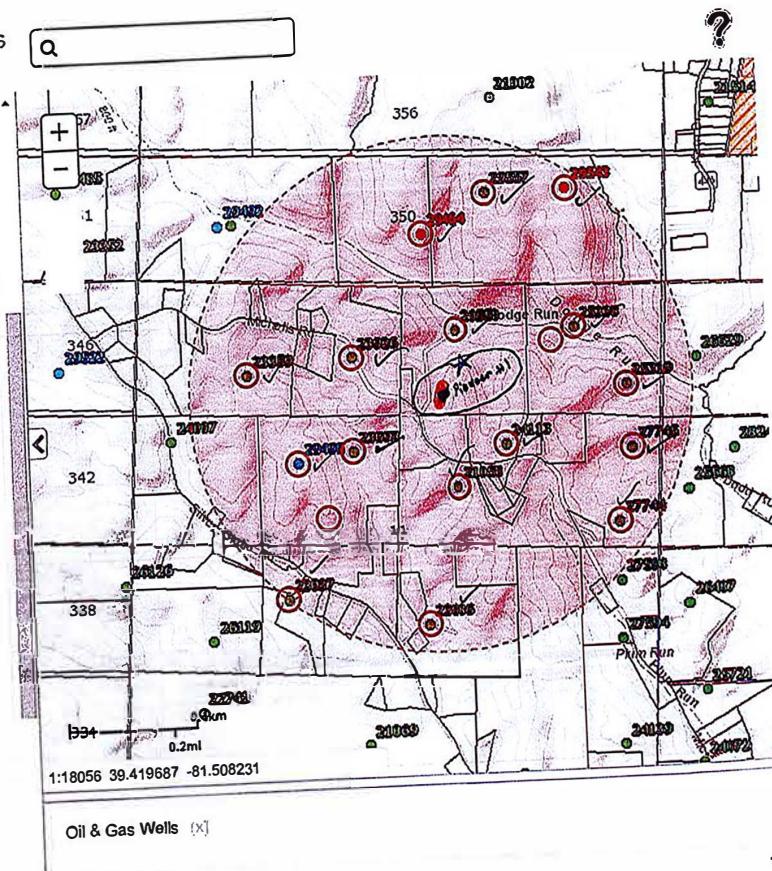
Buffer: 0.5 Miles

Display Buffer Only:

Select Features By:

100

<https://gis.ohiodnr.gov/MapViewer/?config=olgaswells>



NOTES:

1. THIS SURVEY WAS PERFORMED FOR THE PURPOSE OF OBTAINING A PERMIT TO DRILL A PROPOSED WELL AND TO SHOW THE PROPOSED WELL RELATIVE TO EXISTING BOUNDARIES. ALSO THE SURVEY IS TO PROVIDE STATE PLANE AND GEOGRAPHIC COORDINATES OF THE PROPOSED WELL.
2. PARCEL DIMENSIONS AND OWNERSHIP DATA WERE OBTAINED FROM THE COUNTY AUDITOR, TAX MAPS AND GIS DATA.
3. PARCEL ACREAGES SHOWN ARE FROM DEED RECORDS AND NOT VERIFIED BY SURVEY.
4. STREAMS SHOWN ARE BASED ON AERIAL MAPPING.
5. TIES TO SECTION LINES ARE BASED ON MONUMENTS FOUND DURING THE FIELD SURVEY.
6. THE PROPOSED WELL SHOWN HEREON IS TO BE AN INJECTION WELL.

REFERENCES:

1. WASHINGTON COUNTY AUDITOR'S TAX MAP
2. DEEDS OF RECORD FROM THE COUNTY RECORDER'S OFFICE.
3. AERIAL MAPPING FROM THE WASHINGTON COUNTY, OH GIS WEBSITE AT <http://www.washingtoncountyauditor.us/Map.aspx>
4. USGS QUADRANGLE: FLEMING 7.5'
5. TITLE INFORMATION SUPPLIED BY THE CLIENT.

OPERATOR: DEEP ROCK DISPOSAL SOLUTIONS LLC

LAND OWNER(S):

SURFACE: HEINRICH PROPERTY LLC
MINERAL: HEINRICH PROPERTY LLC

WELL NAME: PIONEER

WELL NUMBER: 1

COUNTY: WASHINGTON

MUNICIPALITY: WARREN TOWNSHIP

U.S.G.S. QUAD: FLEMING 7.5'

OHIO STATE PLANE GRID:

COORDINATES OH-S NAD 83

N: 519,049.30

E: 2,249,145.00

LAT: 39-25-15.15 (N)

LONG: 81-30-23.53 (W)

COORDINATES OH-S NAD 27

N: 519,011.40

E: 2,280,608.90

LAT: 39-25-14.88 (N)

LONG: 81-30-24.09 (W)

ELEVATION:

842' NAVD 88

WELL TYPE

OIL OR GAS: NEW LOCATION: OTHER:

SURVEY CERTIFICATION:

THIS WELL LOCATION PLAT MEETS THE SPECIFICATIONS SET FORTH IN OHIO ADMINISTRATIVE CODE 1501:9-1. THIS PLAT IS NOT A BOUNDARY SURVEY AS SPECIFIED IN OHIO ADMINISTRATIVE CODE 4733 AND IS SUBJECT TO ALL FACTS REVEALED BY TITLE EXAMINATION.

DeepRock
DISPOSAL SOLUTIONS, LLC



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 DIVISION OF ENVIRONMENTAL PROTECTION, STATE OF OHIO, DEPARTMENT OF NATURAL RESOURCES, DIVISION OF OIL AND GAS REGULATIONS.

P.S.
7999

Robert H. Roush

DATE

2-25-2020

SLS
FROM THE GROUND UP

12 Vandorn Drive | PO. Box 110 | Gilmore, WV 20351 | 304.462.5134
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
154 East Gauley Street, #400-A | Beckley, WV 25801 | 304.255.5296
SLS.com



PIONEER ENGINEERING
& SURVEYING LLC

740-350-4003
ROBERT ROUSH

P.O. BOX 172, Beverly, OH 45715

DEEP ROCK DISPOSAL SOLUTIONS LLC
SECTION 11, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

PIONEER 1

Drawn By: C. MOYERS	Date: FEB. 24, 2020	Scale: N/A
Checked By: C.V. Moyers	Job Number: 8812	Sheet No. 2 of 2

RESTORATION PLAN (Form 4)
 Ohio Department of Natural Resources
 Division of Oil and Gas Resources Management, 2045 Morse Road, Bldg. F-2, Columbus OH 43229-6693

1. DATE OF APPLICATION: November 25, 2020		3. API #:	
2. OWNER NAME, ADDRESS, & TELEPHONE NO.: DeepRock Disposal Solutions, LLC 637 State Route 821 Marietta, OH 45750		4. WELL #: 1 5. LEASE NAME: Pioneer 6. PROPERTY OWNER: Heinrich Property, LLC 7. COUNTY: Washington 8. CIVIL TOWNSHIP: Warren 9. SECTION: # 11	
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Pasture <input checked="" type="checkbox"/> Idle Land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike		10. LOT:	
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps Other: (explain) _____		17. TYPE OF WELL: <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other	
13. TYPE OF FALL VEGETAL COVER: <input type="checkbox"/> Little or no vegetal cover <input checked="" type="checkbox"/> Short grasses <input type="checkbox"/> Tall weeds or short brush (1 to 2 ft.) <input checked="" type="checkbox"/> Brush or bushes (2 to 6 ft.) <input type="checkbox"/> Agricultural crops <input checked="" type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush		18. STEEPEST SLOPE GRADIENT CROSSING SITE: <input checked="" type="checkbox"/> 0 to 2% <input type="checkbox"/> 2.1 to 8% <input checked="" type="checkbox"/> 8.1 to 10% <input type="checkbox"/> greater than 24%	
14. SOIL & RESOILING MATERIAL AT WELLSITE: <input checked="" type="checkbox"/> Stockpile and protect topsoil to be used when preparing seedbed <input type="checkbox"/> Use of soil additives (e.g., lime, fertilizer) <input type="checkbox"/> No resoiling planned <input type="checkbox"/> Proposed alternative		19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <input type="checkbox"/> 1 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input checked="" type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> greater than 400 ft.	
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input type="checkbox"/> No trees disturbed <input type="checkbox"/> Haul to landfill <input type="checkbox"/> Cut into firewood <input type="checkbox"/> Sell to lumber company <input type="checkbox"/> Bury with landowner's approval <input type="checkbox"/> Mulch small trees and branches, erosion control <input checked="" type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative		20. RESTORATION OF DRILLING PITS: ** <input checked="" type="checkbox"/> Haul drilling fluids and fill pits <input type="checkbox"/> Use steel circulating tanks <input type="checkbox"/> Proposed alternative	
16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES: <input checked="" type="checkbox"/> No existing drainage facilities for removal of surface and/or subsurface water <input type="checkbox"/> Tile drainage system underlying land to be disturbed <input type="checkbox"/> Drain pipe(s) underlying land to be disturbed <input type="checkbox"/> Surface drainage facilities on land to be disturbed		21. BACKFILLING AND GRADING AT SITE: <input type="checkbox"/> Construct diversions channeled to naturally established drainage systems <input type="checkbox"/> Construct terraces across slopes <input checked="" type="checkbox"/> Grade to approximate original contour <input type="checkbox"/> Grade to minimize erosion & control offsite runoff <input type="checkbox"/> Proposed alternative	
22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <input checked="" type="checkbox"/> Seeding plan <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Proposed alternative		<input type="checkbox"/> Sod <input type="checkbox"/> Trees and/or Bushes	
23. ADDITIONAL HOLES: <input type="checkbox"/> Rat/Mouse, if used, will be plugged		24. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD: <input type="checkbox"/> 100 ft. or less <input type="checkbox"/> 101 to 500 ft. <input type="checkbox"/> 501 to 1500 ft. <input checked="" type="checkbox"/> greater than 1500 ft.	
25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input checked="" type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike			

**PITS MUST BE FILLED WITHIN TWO MONTHS AFTER COMMENCEMENT OF THE WELL AND WITHIN FOURTEEN DAYS AFTER COMMENCEMENT OF THE WELL IN AN URBANIZED AREA.

REQUIRED BY SECTION 1509.06 (A)(10), OHIO REVISED CODE – FAILURE TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN \$100.00 NOR MORE THAN \$2,000.00 OR CIVIL PENALTIES NOT LESS THAN \$4,000.00.

26. SURFACING MATERIAL FOR ACCESS ROAD: <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Brick and/or tile waste <input checked="" type="checkbox"/> Slag <input type="checkbox"/> Crushed stone <input type="checkbox"/> No surfacing material to be used <input type="checkbox"/> Proposed alternative _____	29. STEEPEST SLOPE/GRADIENT ON ACCESS ROAD: <input type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input checked="" type="checkbox"/> greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <input type="checkbox"/> Landowner <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Existing access road <input type="checkbox"/> Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <input type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input checked="" type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> greater than 400 ft.
28. GRAZING AND EROSION CONTROL PRACTICE ON ROAD: <input checked="" type="checkbox"/> Diversions <input type="checkbox"/> Drains <input type="checkbox"/> Open top culverts <input checked="" type="checkbox"/> Outsloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative _____	<input type="checkbox"/> Filter strips <input type="checkbox"/> Riprap <input type="checkbox"/> Water breaks
31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Owner/Authorized Agent



Name (Typed or Printed)

John W. Mosser Jr.

Date 11-25-2020

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

DeepRock Disposal - Pioneer # 1 - SWIW

ODNR - SWIW - Maximum Surface Injection Pressure (MAIP) Calculation

For:

Equations:

$$P_G = 0.433 \times SG$$

$$P_m = 0.75D - P_G D$$

Values

0.433 = Pressure gradient for fresh water (psi/ft)

SG = 1.2 = specific gravity of injected fluid

D = 6,156 = Depth to highest perforation or top of open hole interval (ft)

0.75 = Maximum allowable pressure gradient (psi/ft)

$P_G = 0.5196$ = Pressure gradient of injected fluid (psi/ft)

$P_m = 1420$ = Maximum surface injection pressure (psi)

Calculation:

$$P_G = 0.433 \times 1.2 = 0.5196$$

$$P_m = 0.75 \times (6156) - (0.5196) \times (6156) = 1418.342 \text{ psi}$$

Round to the nearest multiple of five = 1420 psi

Just type in the depth of the highest perforation.