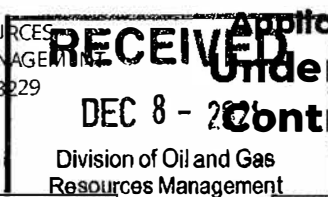




OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 Morse Road, F-2 • Columbus, OH 43229
(614) 265-6922 • Fax (614) 265-6910



Application for ORC 1509.06
Underground Injection
Control Permit (UIC 1)

See Instructions on page 4.

Applicant: DeepRock Disposal Solutions LLC.

Owner #: 9896

Address: 637 State Route 821

Phone: 740-371-5078

Marietta OH 45750

Email: wesm@deeprockds.com

Applicant hereby applies on 11/01/2021 for a permit to

2. Mail Permit to:

DeepRock Disposal Solutions LLC.

637 State Route 821

Marietta OH 45750

1. Type of Permit:

☐
☐
☐

Drill a New Well

Revise Location

Deepen

☒
☐

Reissue

Convert

☐
☐

Plug Back

Reopen

Previously Issued API #: 34-167-2-9770

3. Orientation of Well:

☒

Vertical

☐

Directional

☐

Other

4. Well Type:

☒
☐
☐

Saltwater Injection

Solution Mining

Enhanced Recovery

Choose all that apply:

☒
☐

Input/Injection

Water Supply

☐
☐

Observation

Production/Extraction

5. Is the well or surface facility located within an urbanized area as defined by ORC 1509.01(Y)?

☐

Yes

☒

No

If Yes, Name of Urbanized Area:

6. Well Information:

Well Name:

Stephan

Well Number:

1

Section/Lot #:

4

City/Village/Township:

Warren

County:

Washington

7. Proposed Depth and Geological Formation:

Proposed Total Depth: 6,450

Subject Tract Acres: 20.582

Depth of Base of Target Formation: 6,325

Proposed geological formation(s) to be used as the injection zone:

Clinton - Medina sandstone

8. Royalty Interest Owner Information *Attach Royalty Interest Owner Information List.*

Does the State hold any royalty interest within the proposed subject tract?

☐

Yes

☒

No

If Yes, Name of Agency:

Are there any surface rights owned by the State of Ohio in this subject tract?

☐

Yes

☒

No

If Yes, Name of Agency:

9. Water Source for Production Operations: ORC 1509.01 (AA)

OPTIONAL Latitude:

Longitude:

Water Source: Municipal- City of Marietta - (Source) -Seven production water wells from sand & gravel aquifer

Watershed:

☐

Lake Erie

☒

Ohio River

☐

Other:

Estimated Withdrawal Rate:

10,000

GAL/DAY

e.g. Recycled water or water from a non-Ohio watershed

Estimated Total Volume:

100,000

GAL

If Recycled Water, Estimated Total Volume:

GAL

10. Jurisdictional Emergency Contacts for the Well Site:

	NAME	PHONE NUMBER (NOT 911)
Fire Department:	Reno - VFD	740-373-9800
Sheriff's Office or Police Department:	Washington County Sheriff	740-373-7070
Closest Medical Facility:	Marietta Memorial Hospital	740-374-1400
County EMA Director: <i>OPTIONAL</i>	Rich Hays	740-373-5613
Local Emergency Planning Committee: <i>OPTIONAL</i>		740-373-5613

11. 24 Hour Emergency Contact:

Company Name:	DeepRock Disposal Solutions		
Contact Name:	Dave Casto	Title:	Operations Manager
24-Hour Phone Number:	740-371-5078	Email Address:	davec@deeprockds.com

Please attach name and contact information for any additional emergency contacts.

12. Well Site Access:

Describe ingress/egress route: Take OH Rt. 550 from OH Rt.7 for 4/10ths. mile, lease road on left

Location (NAD83) of well site entrance from a public road:

Latitude:

39-24-16.61

Longitude:

81-28-40.25

13. Other Attachments

Choose the appropriate supplemental form:

☒

Form 210 (SWIW) and required attachments

☐

Form 203 (ERP) and required attachments

☐

Form 206 (SMP) and required attachments

☒

Plat Map

☒

Restoration Plan (Form 4)

☐

Completion Report (Form 8) if conversion

If in an Urbanized Area:

☒

Required Maps

☒

Required Notification and List

14. Well Construction:

TYPE CASING	BOREHOLE		CASING		CEMENT		FORMATION
	DIAMETER IN	DEPTH FT	DIAMETER IN	DEPTH FT	TOP FT	VOLUME SACKS	
Drive Pipe							
Conductor	24"	100'	20"	100'	surface	106	
Mine String							
Surface	17 1/2"	400'	13 3/8"	400'	surface	306	
Intermediate 1	9 5/8"	2,400'	9 5/8"	2,400'	surface	706	through Gordon
Intermediate 2							
Production 1	8 3/4"	6,400"	7"	6,400'	2,100'	556	
Production 2							
Open Holes							
Liner							
Tubing	4 1/2"			6,135'			set on packer
Packer							

TYPE CASING	DRILLING EQUIPMENT	NUMBER OF CENTRALIZERS	TESTED?	PRODUCED?	HYDRAULIC FRACTURING?
Drive Pipe			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Conductor			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Mine String			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Surface	Air & Fuild Rotary Rig	1	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 1	Air & Fuild Rotary Rig - 9 5/8" - 2,400'	2	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 1	Air & Fuild Rotary Rig - 7" - 6,400'	4	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Open Hole			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Liner			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Tubing	Rotary or Service Rig - 4 1/2" - 6,135'	6	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Packer	Service Rig - Packer Set 6,135'		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes


15. Signatures

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 submit an application in accordance with Section 1509.06 of the Revised Code.

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 5577.12 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.

By signing below I hereby agree to conform with all provisions of Chapter 1509 of the Ohio Revised Code and Chapter 1501:9 of the Ohio Administrative Code, and all orders and conditions issued by the Chief of the Division of Oil and Gas Resources Management.

 SIGNATURE OF OWNER/AUTHORIZED AGENT	John W. Mossor Jr. NAME Type or Print	General Manager TITLE
--	--	--------------------------

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



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

Sworn to before me and subscribed in my presence on this

30th day of November, 2021
MONTH YEAR


NOTARY PUBLIC

My commission expires 2-13-23

Instructions

- Drill, Reopen, Deepen, Plug Back, and Convert** an Oil and Gas Well (non-urban valid for 24 months; urban valid for 12 months)
 - Original Application for a Permit (Form 1)
 - Original of an Ohio registered surveyor's plat
 - Original of the Restoration Plan (Form 4)
 - Reopen, Deepen, Plug Back and Convert** require a copy of the Well Completion Record (Form 8)
 - Fees: Check or money order payable to the Division of Oil and Gas Resources Management

Class II Disposal Well: \$1,000

Class II Enhanced Recovery Well and Class III Solution Mining Well:

- \$500 for a township with a population up to 9,999
- \$750 for a township with a population of 10,000 to 14,999
- \$1,000 for a township with a population exceeding 15,000

2. Reissue or Revised Location

- Same as above: 1 (a), (b), (c), (d), (f)
- Fee: \$250 check or money order payable to the Division of Oil and Gas Resources Management

3. Definitions:

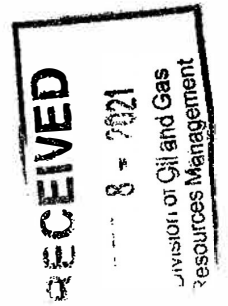
- "Urbanized area" means an area where a well or production facilities of a well are located within a municipal corporation or within a township that has an unincorporated population of more than five thousand in the most recent federal decennial census prior to the issuance of the permit for the well or surface facility.
- "Subject tract" means a tract(s) upon which a person proposes to and has the legal right to drill, reopen, deepen, plug back, or convert a well for the injection of brine for the class II disposal well.

SEND ALL ATTACHMENTS AND FEES TO:
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 MORSE ROAD BUILDING F
COLUMBUS OH 43229

LIST OF LANDOWNER ROYALTY OWNERS

STEPHAN #1

- Valley Hospitality Inc.
301 Popular Avenue
Williamstown, Ohio 26187





**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 6,165.00 FEET TO 6,325.00 FEET

Geologic description of Injection zone: Sand Stone

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

B. Proposed method for testing the casing:

Load casing w/fresh water and inhibitor, pressure up (ODNR approved/directed maximum pressure)

using a pump truck equipped w/recorder, monitor pressure 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 be operated as part of our ODNR/UIC approved Rt. 7 facility,

connected via pipeline, pipe will be 3" welded steel, incased inside 6" HPDE "poly-pipe" conduit

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

Well will be operated as part of our ODNR/UIC approved Rt. 7 facility

33. PROPOSED INJECTION VOLUMES

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

AVERAGE: 3,000

MAXIMUM: 5,500

B. Indicate the method to be used to measure the actual daily injection pressure:

Will be connected to our Silver Smith/Meter Central scada system, pressures will be transmitted via inline transducers, backed up with a Barton meter,

along with volume meters at the wellhead

34. PROPOSED INJECTION PRESSURES

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

AVERAGE: 1,400

MAXIMUM: 1,420

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:

Based on area of review, we do not believe there are any corrective actions required.

**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

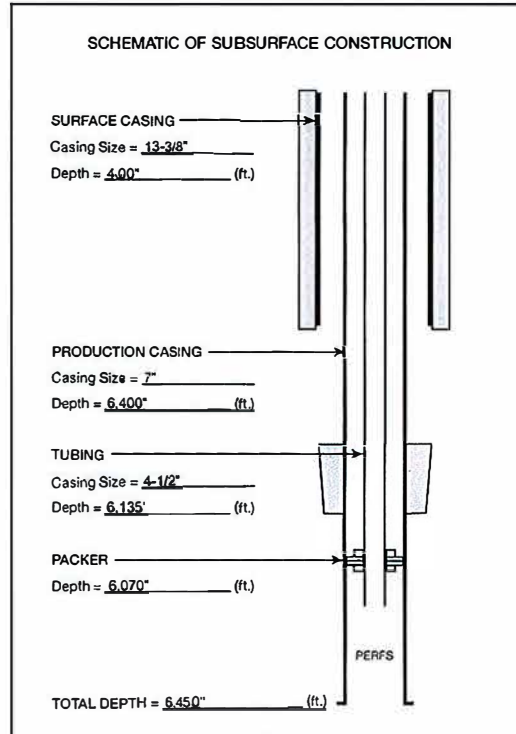
Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing 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 deposed 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 Jr

Signature of Owner/Authorized Agent: [Signature]

Title: General Manager

Permanent Address of Home Office: 637 State Rt. 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 22nd day of October, 2021



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

[Signature]
Notary Public

2-13-23

Date Commission Expires

<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'	

<u>CASING PROGRAM</u>				
<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"	(Through Gordon)
Longstring	8 3/4"	7"	6,400"	
Tubing	4 1/2"		6,135'	Set on packer

<u>Cementing Program</u>	
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

**DeepRock Disposal
Stephan # 1
Permit Appalachian**

**Privileged and Confidential Information work Product Not Intended for
Publication for Use by ODNR for SWIW/UIC Permit Evaluation ONLY**

32(C). WELL, CONTRUCTION AND OPERATIONS

1. Well will be perforated casing and acidized along with limited injection testing.
2. Brine will be offloaded and stored at our Rt.7 – UIC permitted facility, brine will then transfer via pipeline.
 - i. We have in-line turbine meters at Rt. 7 discharge pumps, in addition we will install new in-line flow/volume meter at the Stephan # 1 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 our Rt.7 AST/Storage tank.
- 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.

DeepRock Disposal - Stephan # 1

ODNR - SWIW - Maximum Surface Injection Pressure (MAIP) Calculation											
For:											
Equations:											
$P_g = 0.433 \times SG$											
$P_m = 0.75D - P_gD$											
Values											
		0.433	=	Pressure gradient for fresh water (psi/ft)							
	SG=	1.2	=	specific gravity of injected fluid							
	D=	6165	=	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	x	1.2	=	0.5196					
	P_m =	0.75	x (	6165	) - (	0.5196	) x (	6165	) =	1420.416	psi
										Round to the nearest multiple of five =	1420 psi
Just type in the depth of the highest perforation.											



½ MILE AREA OF REVIEW WORKSHEET

Proposed New SWIW – STEPHAN #1

County: Washington

Township: Warren

Permit No.	Geologic Formation	Well construction and cementing
<u>64086</u>	<u>Macksburg ss</u>	<u>TD = 1,490 feet. Plugged and Abandoned.</u> <u></u> <u></u>
<u>24560</u>	<u>Berea Ss</u>	<u>TD = 2,301 feet. 8-5/8" – 203' 4-1/2" – 2,301'</u> <u></u> <u></u>
<u>27694</u>	<u>Gordon ss</u>	<u>TD = 2,375 feet. 8-5/8" – 267' 4-1/2" – 2,375'</u> <u></u> <u></u>
<u>27552</u>	<u>Ohio Shale</u>	<u>TD = 2,217 feet. 8-5/8" – 245' 4-1/2" – 2,220'</u> <u></u> <u></u>
<u>27695</u>	<u>Ohio Shale</u>	<u>TD = 2,396 feet. 8-5/8" – 261' 4-1/2" – 2,400'</u> <u></u> <u></u>
<u>24848</u>	<u>Berea Ss</u>	<u>TD = 2,482 feet. 8-5/8" – 200' 4-1/2" – 2,482'</u> <u></u> <u></u>
<u>29766</u>	<u>OH-CL/Med</u>	<u>Existing SWIW – 13-3/8" – 399' Cement to Surface</u> <u>9-5/8" – 2,019' Cement to Surface</u> <u>7" – 6,187' cemented w/654 sacks. Cement into 9-5/8"</u>
<u>65450</u>	<u>Berea Ss</u>	<u>TD = Unknown – I&O Program to be plugged.</u>



½ MILE AREA OF REVIEW WORKSHEET

Proposed New SWIW – STEPHAN #1

County: Washington

Township: Warren

Permit No.	Geologic Formation	Well construction and cementing
<u>28025</u>	<u>Gordon ss</u>	<u>Not Drilled – Permit Expired</u> <u></u> <u></u>
<u>29705</u>	<u>Macksburg ss</u>	<u>TD = 1,200 feet. 9-5/8” – 144’ 4-1/2” – 1,171’</u> <u></u> <u></u>
<u>29765</u>	<u>Berea- CL/MED</u>	<u>Well permitted – 09/15/2017 – Deep Rock now owns</u> <u>Lease – Well will not be drilled.</u> <u></u>
<u>28045</u>	<u>Berea – Gordon</u>	<u>Not Drilled – Permit Expired.</u> <u></u> <u></u>
<u>24062</u>	<u>Berea - Gordon</u>	<u>TD = 2,445 feet. 8-5/8” – 250’ 4-1/2” – 2,512’</u> <u></u> <u></u>
<u>25084</u>	<u>Berea - Gordon</u>	<u>TD = 2,345 feet. 8-5/8” – 205’ 4-1/2” – 2,350’</u> <u></u> <u></u>
<u>24321</u>	<u>Berea - Gordon</u>	<u>TD = 2,320 feet. 8-5/8” – 209’ 4-1/2” – 2,320’</u> <u></u> <u></u>

½ MILE AREA OF REVIEW WORKSHEET

Proposed New SWIW – STEPHAN #1

County: Washington

Township: Warren

Permit No. Geologic Formation

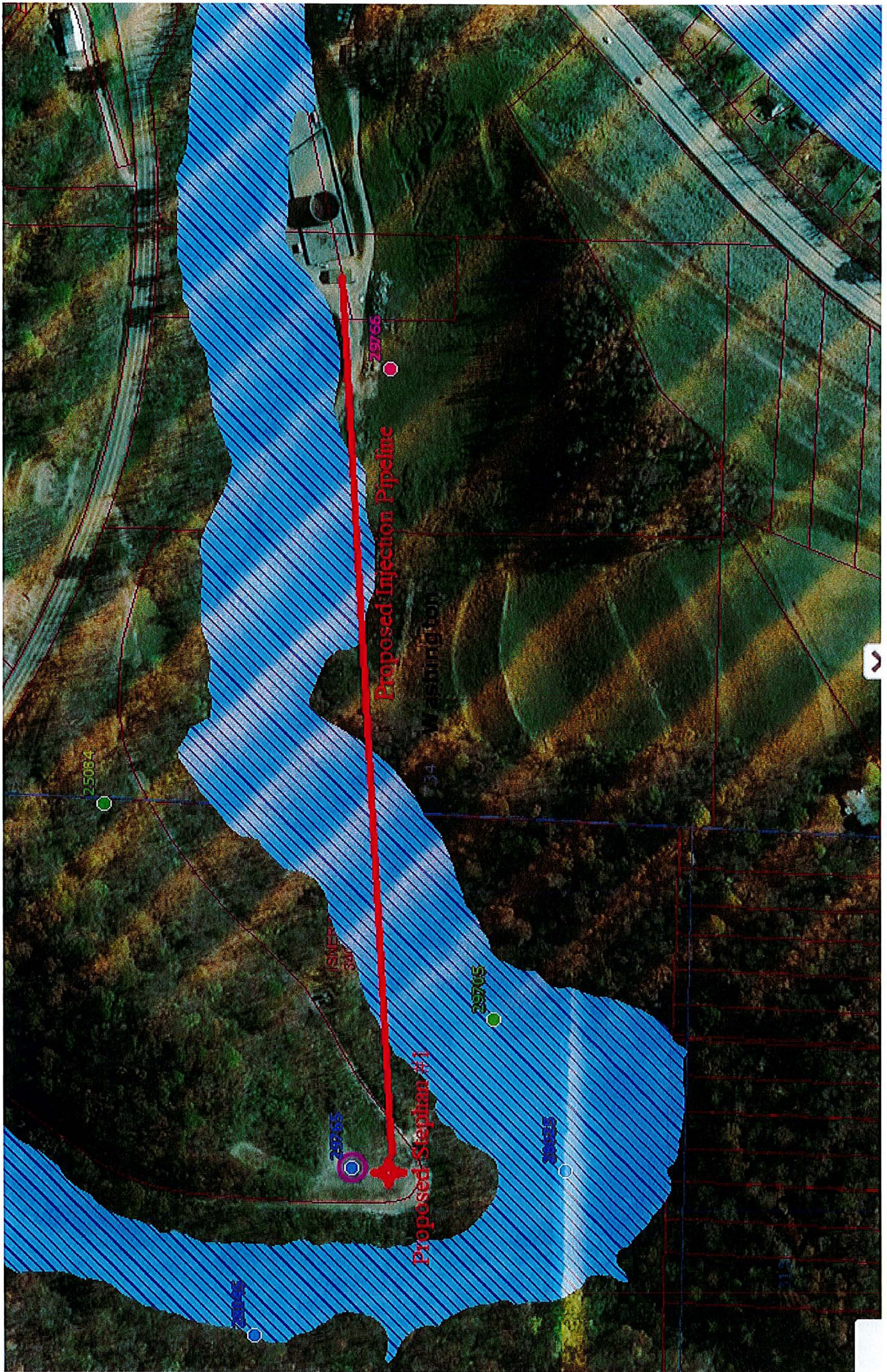
Well construction and cementing

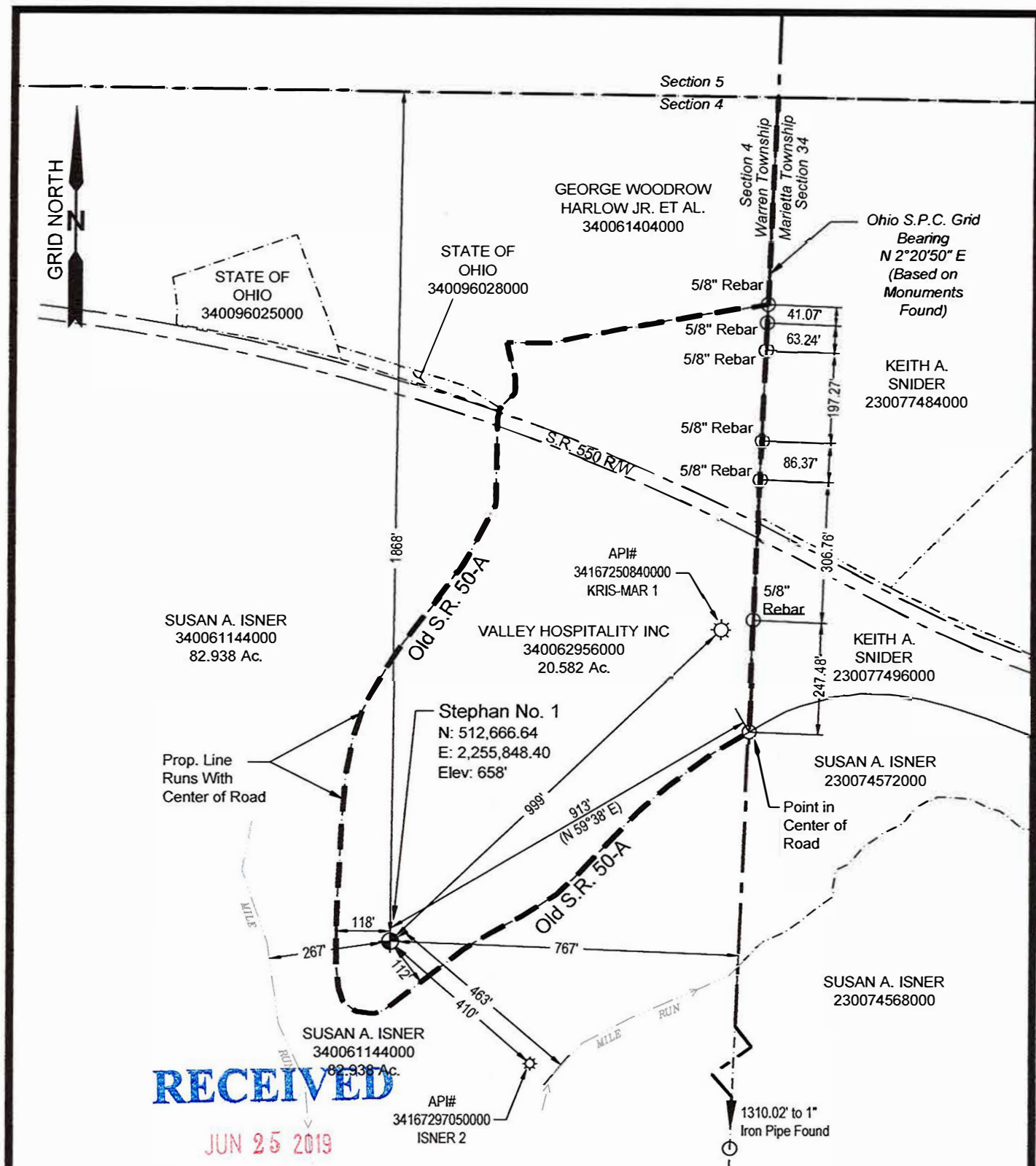
34-167-2-9766 Oriskany and Newburg

DeepRock Disposal – UIC-Class II injection well

DeepRock Disposal, drilled, owns and operates the American Growers # 1

Stephan Warren - General Manager
12/12/21





SLS
Land & Energy Development

Solutions from the ground up.
P.O. Box 150 • 12 Vashon Drive • Glenville, WV 26351 • (304) 462-5634
1412 Kanawha Boulevard East • Charleston, WV 25301
www.slsrv.com



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

DATE

Robert H. Roush
5-8-2019



LEGEND

SURFACE BOUNDARY

SECTION LINE

ROAD RIGHT OF WAY

STREAMS

FOUND MONUMENT
(AS NOTED)

PROPOSED WELL

EXISTING WELL



PIONEER ENGINEERING
& SURVEYING LLC

740-350-4003
ROBERT ROUSH

P.O. BOX 172, Beverly, OH 45715

DEEP ROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

VALLEY HOSPITALITY, INC

Drawn By: A. Boston

Date: May 7, 2019

Scale: 1" = 300'

Checked By: C.V. Moyers

Job Number: 8812

Sheet No. 1 of 2

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 FIELD SURVEY.
- 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: MARIETTA 7.5'
- 5. TITLE INFORMATION SUPPLIED BY THE CLIENT.

OPERATOR: DEEP ROCK DISPOSAL SOLUTIONS LLC

LAND OWNER(S):

SURFACE: VALLEY HOSPITALITY, INC
MINERAL: LOUIS G. STEPHAN, III AND RITA STEPHAN, H/W

WELL NAME: STEPHAN

WELL NUMBER: 1

COUNTY: WASHINGTON

MUNICIPALITY: MARIETTA TOWNSHIP

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

OHIO STATE PLANE GRID:

COORDINATES OH-S NAD 83
N: 512,666.64
E: 2,255,848.40
LAT: 39-24-11.33
LONG: 81-28-59.03
COORDINATES OH-S NAD 27
N: 512,628.80
E: 2,287,312.24
LAT: 39-24-11.06
LONG: 81-28-59.59

ELEVATION:

658' NAVD 88

WELL TYPE

OIL OR GAS: _____ NEW LOCATION: _____ OTHER: X

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.



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

P.S. 7999 Pete H. Bush
DATE 5-8-2019



PIONEER ENGINEERING
& SURVEYING LLC
740-350-4003
ROBERT ROUSH
P.O. BOX 172, Beverly, OH 45715

DEEP ROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

VALLEY HOSPITALITY, INC

Drawn By: A. Boston	Date: May 7, 2019	Scale: 1" = N.T.S.
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: June 25, 2019		3. API #:	
2. OWNER NAME, ADDRESS, & TELEPHONE NO.: Deep Rock Disposal Solutions, LLC 637 State Route 821, Complex 1, Building 1 Marietta, Ohio 45750 (740) 371-5078		4. WELL #: 1	
		5. LEASE NAME: Stephan	
		6. PROPERTY OWNER: Valley Hospitality, Inc.	
		7. COUNTY: Washington	
		8. CIVIL TOWNSHIP: Warren	
		9. SECTION: 4 10. LOT:	
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input 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		17. TYPE OF WELL: <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other	
		18. STEEPEST SLOPE GRADIENT CROSSING SITE: <input checked="" type="checkbox"/> 0 to 2% <input checked="" type="checkbox"/> 2.1 to 8% <input type="checkbox"/> 8.1 to 10% <input type="checkbox"/> greater than 24% <input type="checkbox"/> 10.1 to 24%	
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other: (explain)		19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <input checked="" 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.	
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 type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush		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	
14. SOIL & RESEALING 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 resealing planned <input type="checkbox"/> Proposed alternative		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	
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input checked="" 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 type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative		22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <input checked="" type="checkbox"/> Seeding plan <input type="checkbox"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <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		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 checked="" type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> greater than 1500 ft.	
25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <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 -- FAILED 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.

RECEIVED

JUN 25 2013

26. SURFACING MATERIAL FOR ACCESS ROAD: <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Slag <input type="checkbox"/> No surfacing material to be used <input type="checkbox"/> Proposed alternative <input type="checkbox"/> Brick and/or tile waste <input type="checkbox"/> Crushed stone	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: <input checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <input type="checkbox"/> Landowner <input checked="" type="checkbox"/> Existing access road <input type="checkbox"/> Contractor <input type="checkbox"/> Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <input checked="" type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <input 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

John W. Mosser

Name (Typed or Printed)

John W. Mosser

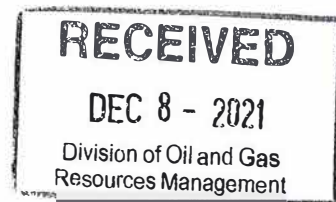
Date

06/25/2019

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 MORSE RD., F-2, COLUMBUS, OH 43229-6693 • (614) 265-6922



SALTWATER INJECTION WELL AFFIDAVIT

(REVISED 0415)

State of Ohio Washington County,
John W. Mosser being

first duly sworn says that as principal, or authorized agent, for Deep Rock Disposal Solutions, LLC, he or
she has made application for a saltwater injection well in the State of Ohio Washington
County, Warren Township, section/lot number Section 4; and

further certifies that notice of application has been delivered to each individual entitled to personal notification
in accordance with paragraph (H) of Rule 1501:9-3-06 of the Ohio Administrative Code.

And further affiant saith not.

[Signature]
AFFIANT SIGNATURE

Sworn to before me and subscribed in my presence this 30th day of November, 2021.



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

[Signature]
NOTARY PUBLIC



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 Morse Road, F-2 • Columbus, OH 43229
(614) 265-6922 • Fax (614) 265-6910

Application for ORC 1509.06 Underground Injection Control Permit (UIC 1)

See Instructions on page 4.

Applicant: DeepRock Disposal Solutions LLC.

Address: 637 State Route 821

Marietta OH 45750

Owner #: 9896

Phone: 740-371-5078

Email: wesm@deeprockds.com

Applicant hereby applies on 11/30/2021 for a permit to

1. Type of Permit:

- | | | |
|--|----------------------------------|------------------------------------|
| <input checked="" type="checkbox"/> Drill a New Well | <input type="checkbox"/> Reissue | <input type="checkbox"/> Plug Back |
| <input type="checkbox"/> Revise Location | <input type="checkbox"/> Convert | <input type="checkbox"/> Reopen |
| <input type="checkbox"/> Deepen | | |

Previously Issued API #:

2. Mail Permit to:

DeepRock Disposal Solutions LLC.

637 State Route 821

Marietta OH 45750

3. Orientation of Well:

- ☒ Vertical ☐ Directional ☐ Other

4. Well Type:

- | | | |
|---|------------------------|--|
| <input checked="" type="checkbox"/> Saltwater Injection | Choose all that apply: | <input type="checkbox"/> Observation |
| <input type="checkbox"/> Solution Mining | | <input type="checkbox"/> Production/Extraction |
| <input type="checkbox"/> Enhanced Recovery | | <input type="checkbox"/> Input/Injection |
| | | <input type="checkbox"/> Water Supply |

5. Is the well or surface facility located within an urbanized area as defined by ORC 1509.01(Y)?

☐ Yes ☒ No

If Yes, Name of Urbanized Area:

6. Well Information:

Well Name: American Growers

Well Number: 3

Section/Lot #: 4

City/Village/Township: Warren

County: Washington

7. Proposed Depth and Geological Formation:

Proposed Total Depth: 6,500'

Subject Tract Acres:

Depth of Base of Target Formation: 6,325'

Proposed geological formation(s) to be used as the injection

zone: Oriskany through Medina

8. Royalty Interest Owner Information Attach Royalty Interest Owner Information List.

Does the State hold any royalty interest within the proposed subject tract?

☐ Yes ☒ No

If Yes, Name of Agency:

Are there any surface rights owned by the State of Ohio in this subject tract?

☐ Yes ☒ No

If Yes, Name of Agency:

9. Water Source for Production Operations: ORC 1509.01 (AA)

OPTIONAL Latitude: Longitude:

Water Source:

Watershed: ☐ Lake Erie ☒ Ohio River ☐ Other:

Estimated Withdrawal Rate: GAL/DAY e.g. Recycled water or water from a non-Ohio watershed

Estimated Total Volume: GAL

If Recycled Water, Estimated Total Volume: GAL

10. Jurisdictional Emergency Contacts for the Well Site:

	NAME	PHONE NUMBER (NOT 911)
Fire Department:	Reno - VFD	740-373-9800
Sheriff's Office or Police Department:	Washington County Sheriff	740-373-7070
Closest Medical Facility:	Marietta Memorial Hospital	740-374-1400
County EMA Director: <i>OPTIONAL</i>	Rich Hays	740-373-5613
Local Emergency Planning Committee: <i>OPTIONAL</i>		740-373-5613

11. 24 Hour Emergency Contact:

Company Name:

Contact Name: Title:

24-Hour Phone Number: Email Address:

Please attach name and contact information for any additional emergency contacts.

12. Well Site Access:

Describe ingress/egress route:

Location (NAD83) of well site entrance from a public road:

Latitude: Longitude:

13. Other Attachments

Choose the appropriate supplemental form:

- ☒ Form 210 (SWIW) and required attachments
☐ Form 203 (ERP) and required attachments
☐ Form 206 (SMP) and required attachments

- ☒ Plat Map
☒ Restoration Plan (Form 4)
☐ Completion Report (Form 8) *if conversion*

If in an Urbanized Area:

- ☒ Required Maps
☒ Required Notification and List

14. Well Construction:

TYPE CASING	BOREHOLE		CASING		CEMENT		FORMATION
	DIAMETER IN	DEPTH FT	DIAMETER IN	DEPTH FT	TOP FT	VOLUME SACKS	
Drive Pipe							
Conductor	24"	100'	20"	100'	SURFACE	106	
Mine String							
Surface	17 1/2"	400'	13 3/8"	400'	SURFACE	306	
Intermediate 1	9 5/8"	2,400'	9 5/8"	2,400'	SURFACE	706	THROUGH THE GORDON
Intermediate 2							
Production 1	8 3/4"	6,400'	7"	6,400'	2,100'	556	
Production 2							
Open Holes							
Liner							
Tubing	4 1/2"			6,135'			SET ON PACKER
Packer				6,135'			

TYPE CASING	DRILLING EQUIPMENT	NUMBER OF CENTRALIZERS	TESTED?	PRODUCED?	HYDRAULIC FRACTURING?
Drive Pipe			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Conductor			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Mine String			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Surface	Air & Fuird Rotary Rig	1	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 1	Air & Fuird Rotary Rig	2	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 1	Air & Fuird Rotary Rig	4	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Open Hole			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Liner			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Tubing	Service Rig	6	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Packer	Service Rig set packer		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes


15. Signatures

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 submit an application in accordance with Section 1509.06 of the Revised Code.

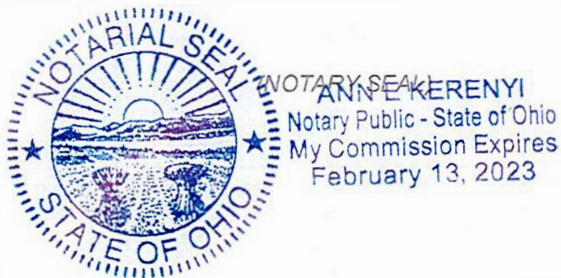
And furthermore, I the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A)(9) ORC for this application have been duly provided by me.

By signing below I hereby agree to conform with all provisions of Chapter 1509 of the Ohio Revised Code and Chapter 1501:9 of the Ohio Administrative Code, and all orders and conditions issued by the Chief of the Division of Oil and Gas Resources Management.




John W. Mossor Jr.	General Manager
--------------------	-----------------

SIGNATURE OF OWNER/AUTHORIZED AGENT NAME Type or Print TITLE
If signed by Authorized Agent, a Certificate of appointment of agent must be on file.



Sworn to before me and subscribed in my presence on this

30th day of November 2021
MONTH YEAR


NOTARY PUBLIC

My commission expires 2-13-23

Instructions

1. **Drill, Reopen, Deepen, Plug Back, and Convert** an Oil and Gas Well (non-urban valid for 24 months; urban valid for 12 months)
 - a. Original Application for a Permit (Form 1)
 - b. Original of an Ohio registered surveyor's plat
 - c. Original of the Restoration Plan (Form 4)
 - d. **Reopen, Deepen, Plug Back** and **Convert** require a copy of the Well Completion Record (Form 8)
 - e. Fees: Check or money order payable to the Division of Oil and Gas Resources Management

Class II Disposal Well: \$1,000

Class II Enhanced Recovery Well and Class III Solution Mining Well:

- \$500 for a township with a population up to 9,999
- \$750 for a township with a population of 10,000 to 14,999
- \$1,000 for a township with a population exceeding 15,000

2. Reissue or Revised Location

- a. Same as above: 1 (a), (b), (c), (d), (f)
- b. Fee: \$250 check or money order payable to the Division of Oil and Gas Resources Management

3. Definitions:

- "Urbanized area" means an area where a well or production facilities of a well are located within a municipal corporation or within a township that has an unincorporated population of more than five thousand in the most recent federal decennial census prior to the issuance of the permit for the well or surface facility.
- "Subject tract" means a tract(s) upon which a person proposes to and has the legal right to drill, reopen, deepen, plug back, or convert a well for the injection of brine for the class II disposal well.

SEND ALL ATTACHMENTS AND FEES TO:
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 MORSE ROAD BUILDING F
COLUMBUS OH 43229



**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: Oriskany, through Medina

32. Injection Well Interval: FROM 4,549.00 FEET TO 6,325.00 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

33. 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 and subsurface construction (page 2 of form 210)

B. Proposed method for testing the casing:

Load the 7" casing w/fresh water & inhibitor, pressure up (ODNR provided maximum pressure)
using a pump truck w/recorder and chart, 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 be perforated and acid frac-ed

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

Brine will be offload and stored at our UIC approved facility (Rt.7)

Well will be operated as part of our ODNR - UIC approved facility (Rt.7 - offloading and storage) and connected via new constructed pipeline

33. PROPOSED INJECTION VOLUMES

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

AVERAGE: 3,000 MAXIMUM: 5,000

B. Indicate the method to be used to measure the actual daily injection pressure:

Well will be connected/added to our Silver Smith - Meter Central scada/monitoring system. We will use both transducers and a "barton" meter and in-line flow meter

34. PROPOSED INJECTION PRESSURES

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

AVERAGE: _____ MAXIMUM: _____

SEE ATTACHED.

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:

According to our area of review study, there are no wells in question

**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

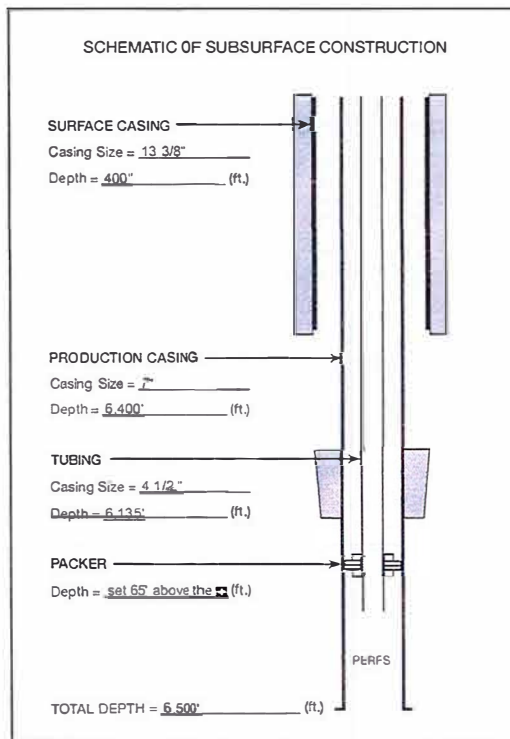
Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing 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 deposed 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 Jr.

Signature of Owner/Authorized Agent: [Signature]

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

30th

day of

November

, 20

21



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

[Signature]
Notary Public

2-13-23

Date Commission Expires

**DeepRock Disposal
American Growers # 3
Permit Appalachian**

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

- A. Brine will be offloaded and stored at our Rt.7 – UIC permitted facility, brine will then transfer via pipeline.
 - We have in-line turbine meters at Rt. 7 discharge pumps, in addition we will install new in-line flow/volume meter at the American Growers # 3 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 our Rt.7 AST/Storage tank.
- 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.

**DeepRock Disposal
American Growers # 3
Permit Appalachian**

34. PROPOSED INJECTION PRESSURES

- A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:
 - 1. If completed in Oriskany, top perf @ 4,549
 - a. Average: 1,020 – Maximum: 1,050
 - 2. If completed only in the Clinton-Medina, top perf @ 6,200
 - a. Average: 1,400 – Maximum: 1,430

<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	6,500'	

<u>CASING PROGRAM</u>			
<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"	6,450"
Tubing	4 1/2"		
			(Through Gordon)
			Set on packer "65'" above highest perforation

<u>Cementing Program</u>	
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

DeepRock Diposal - American Growers # 3 - SWIW

IF COMPLETED AS CLINTON_MEDINA

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

For:

Equations:

$$P_G = 0.433 \times SG$$

$$P_m = 0.75D - P_GD$$

Values

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

SG= 1.2 = specific gravity of injected fluid

D= 6200 = 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)

$P_m = 1430$ = Maximum surface injection pressure (psi)

Calculation:

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

$$P_m = 0.75 \times (6200) - (0.5196) \times (6200) = 1428.48 \text{ psi}$$

Round to the nearest multiple of five = 1430 psi

Just type in the depth of the highest perforation.

DeepRock Diposal - American Growers # 3 - SWIW

IF COMPLETED AS Oriskany

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

For:

Equations:

$$P_G = 0.433 \times SG$$

$$P_m = 0.75D - P_GD$$

Values

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

SG= 1.2 = specific gravity of injected fluid

D= 4549 = 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)

$P_m = 1050$ = Maximum surface injection pressure (psi)

Calculation:

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

$$P_m = 0.75 \times (4549) - (0.5196) \times (4549) = 1048.09 \text{ psi}$$

Round to the nearest multiple of five = 1050 psi

Just type in the depth of the highest perforation.



SALTWATER INJECTION WELL AFFIDAVIT


(REVISED 0415)

State of Ohio, Washington County,
John W. Mossor Jr. _____ being

first duly sworn says that as principal, or authorized agent, for DeepRock Disposal Solutions LLC, he or
she has made application for a saltwater injection well in the State of Ohio Washington
County, Warren Township, section/lot number Section 4; and

further certifies that notice of application has been delivered to each individual entitled to personal notification
in accordance with paragraph (H) of Rule 1501:9-3-06 of the Ohio Administrative Code.

And further affiant saith not.


AFFIANT SIGNATURE

Sworn to before me and subscribed in my presence this 30th day of November, 2021.



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


NOTARY PUBLIC



LANDOWNER FEE SIMPLE OWNERSHIP AFFIDAVIT

(REV0412)

Application No. _____
(To be filled in by the Division)

STATE OF OHio ss:

COUNTY OF Washington

NAME OF LANDOWNER: V-M Mil eRun LLC - V-M Management Solutions LLC

ADDRESS OF LANDOWNER: P.O. Box 37 Marietta, OH 45750

Being first duly sworn according to law, depose and say that they are the owners of the following described real estate:

Located in U.S.G.S. Quad - Fleming 7.5 Quarter of
Section 4
Fraction/Lot _____, Warren Township,
Washington County, Ohio.

The undersigned certify that they are the owners of the property in fee simple, including the coal rights, and have no objections to the drilling of the American Growers #3 - SWIW, by the
(Well Name & No.)

Deep Rock Disposal Solutions, LLC on said premises.
(Company)

Further affiant sayeth naught.

Signatures: _____

Signatures: _____

Signatures: _____

Signatures: _____

SWORN to before me and subscribed in my presence this 15th Day of November, 2021

Notary Public: Ann E. Kerenyi



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

Ohio Department of Natural Resources

1. DATE OF APPLICATION: November 30, 2021	3. API #:
2. OWNER NAME, ADDRESS, & TELEPHONE NO.: Deep Rock Disposal Solutions, LLC 637 State Route 821, Complex 1, Building 1 Marietta, Ohio 45750 (740) 371-5078	4. WELL #: 3
	5. LEASE NAME: American Growers
	6. PROPERTY OWNER: V-M Mile Run LLC. - V-M Management Solutions
	7. COUNTY: Washington
	8. CIVIL TOWNSHIP: Warren
	9. SECTION: 4
	10. LOT:
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Wetlands <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Idle Land <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial	17. TYPE OF WELL: <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other: (explain)	18. STEEPEST SLOPE GRADIENT CROSSING SITE: <input checked="" type="checkbox"/> 0 to 2% <input checked="" type="checkbox"/> 2.1 to 8% <input type="checkbox"/> 8.1 to 10% <input type="checkbox"/> greater than 24% <input type="checkbox"/> 10.1 to 24%
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 type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush	19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <input checked="" 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.
14. SOIL & RESEILING 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 reseiling planned <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
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input checked="" type="checkbox"/> No trees disturbed <input type="checkbox"/> Cut into firewood <input type="checkbox"/> Bury with landowner's approval <input type="checkbox"/> Mulch small trees and branches, erosion control <input type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative <input type="checkbox"/> Haul to landfill <input type="checkbox"/> Sell to lumber company	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
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	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 checked="" type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> 101 to 500 ft. <input type="checkbox"/> greater than 1500 ft.
	25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input checked="" type="checkbox"/> Idle land <input type="checkbox"/> Industrial <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike <input type="checkbox"/> Pasture <input type="checkbox"/> Wetlands <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Recreational

Page 1 of 2

26. SURFACING MATERIAL FOR ACCESS ROAD: <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Brick and/or tile waste <input 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 checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <input type="checkbox"/> Landowner <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Existing access road <input type="checkbox"/> Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <input checked="" type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <input type="checkbox"/> Diversions <input type="checkbox"/> Filter strips <input type="checkbox"/> Drains <input type="checkbox"/> Riprap <input type="checkbox"/> Open top culverts <input type="checkbox"/> Water breaks <input checked="" type="checkbox"/> Outsloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative _____	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



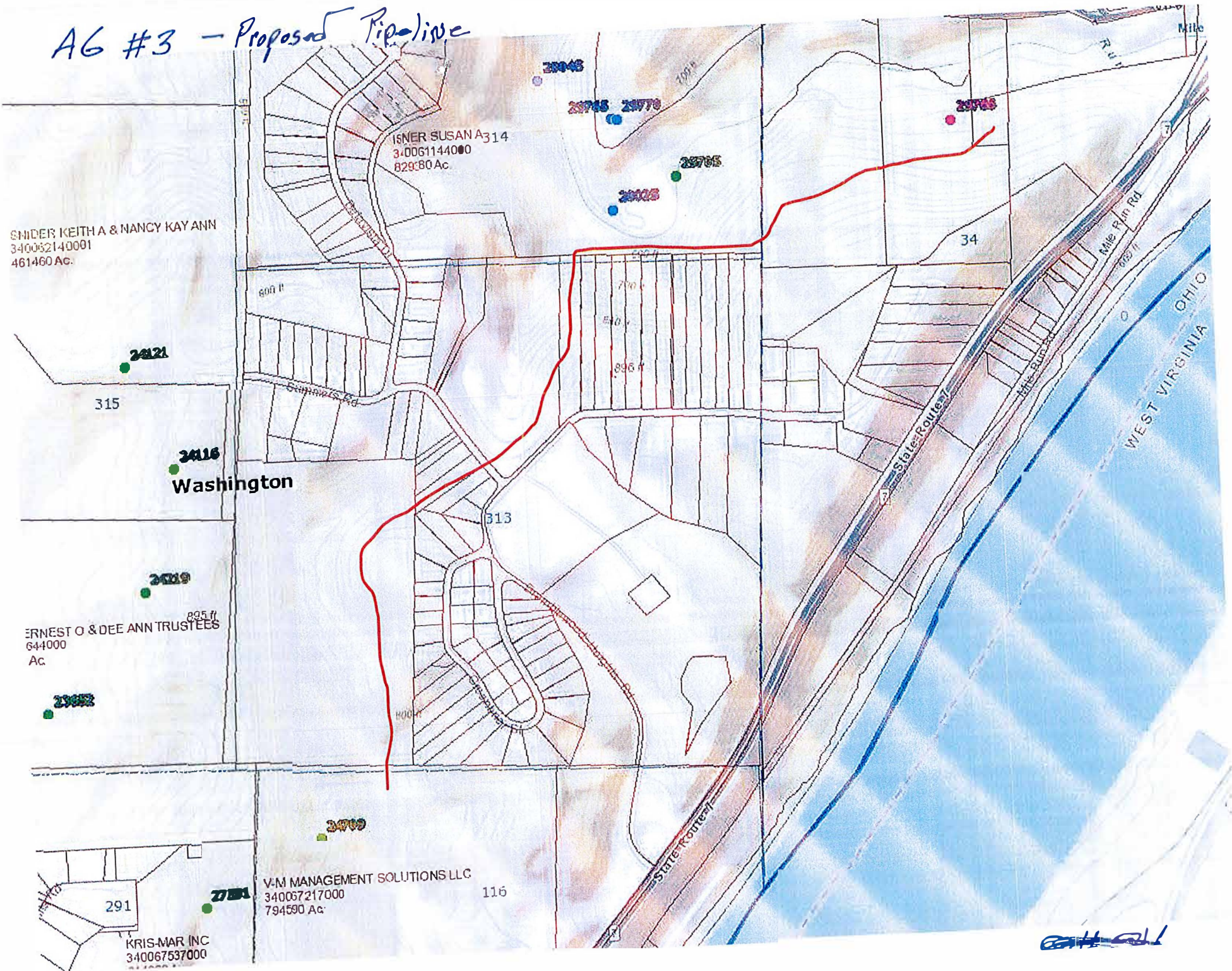
Name (Typed or Printed)

JOHN W. MOSSOR JR.

Date 11-30-2021

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

AG #3 - Proposed Pipeline





Ohio Oil & Gas Wells
ODNR - Division of Oil & Gas

OPNR - Division of Oil & Gas

▶ **County Bookmarks**

▼ Other Tools

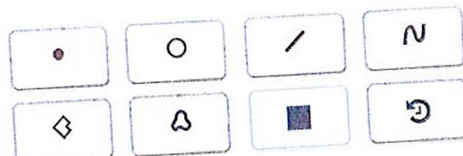
Address/Coordinate Search

Example: -83.000, 40.000

Measurement

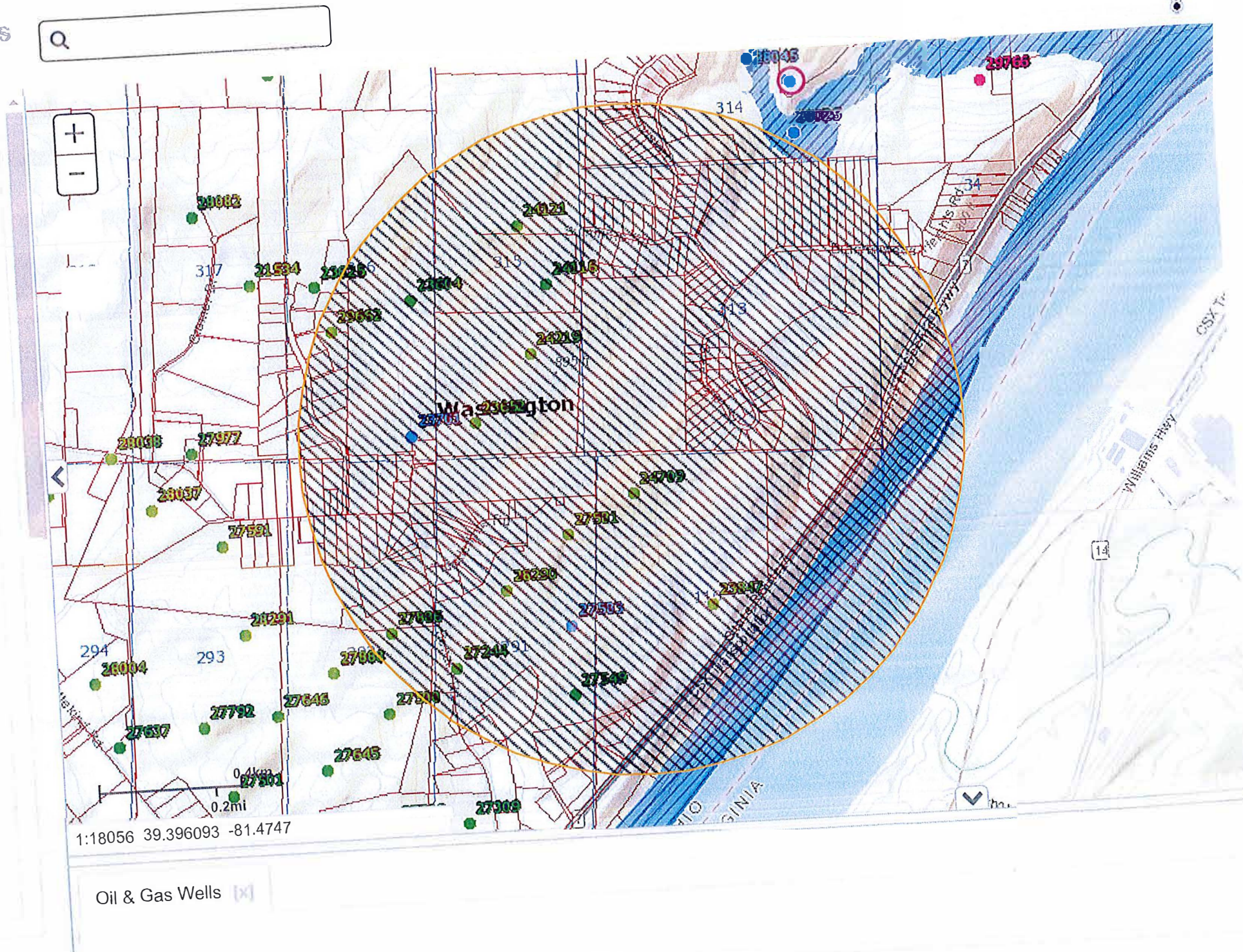
Measurement Result

 Draw



Current draw mode: None

Oil & Gas Wells ☒

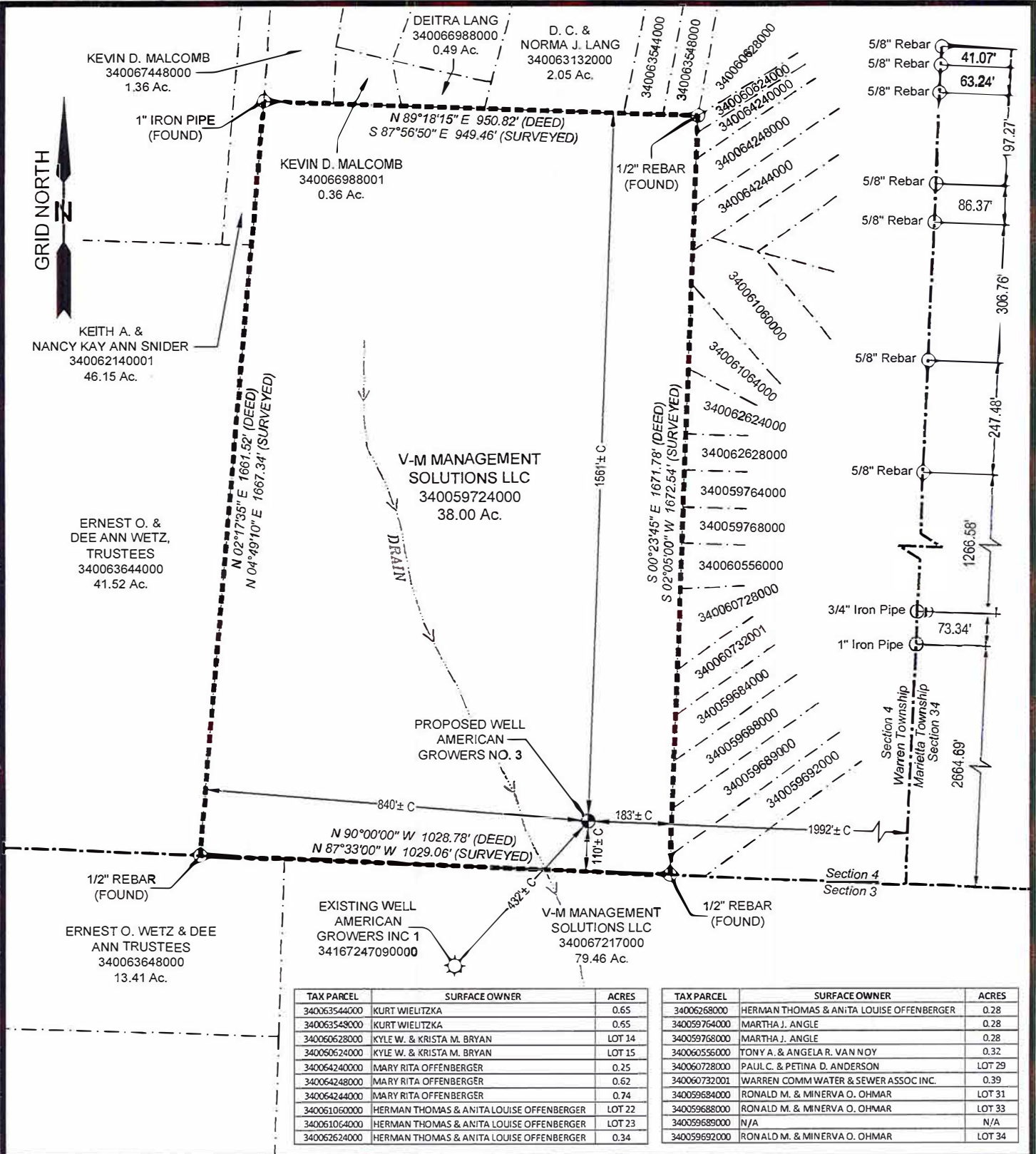


DeepRock Disposal

American Growers # 3

Area of Review

<u>PERMIT #</u>	<u>WELL NAME</u>	<u>WELL NUMBER</u>	<u>PRODUCING FORMATION</u>	<u>OPERATOR - COMPANY</u>
34-167-2-4121	C. Harris	4	Berea	Stonebridge Operating Co
34-167-2-4116	C. Harris	3	Berea	Stonebridge Operating Co
34-167-2-3604	C. Harris	1	Berea	Stonebridge Operating Co
34-167-2-9662	Wilfong Unit	3	Medina	Heinrich Enterprises
34-167-2-3652	McGraw	1	Berea	Stonebridge Operating Co
34-167-2-2370	NOT DRILLED			
34-167-2-4709	American Growers	1	Berea	Kroll Energy
34-167-2-3847	American Growers	2	Berea	Kroll Energy
34-167-2-7549	Kris-Mar	3	Berea	Beardmore Oil & Gas
34-167-2-7581	Kris-Mar	7	Berea	Beardmore Oil & Gas
34-167-2-7282	Kris-Mar	19	Berea	VIRCO Inc.
34-167-2-7886	Kris-Mar	15	Maxton	VIRCO Inc.
34-167-2-7244	Kris-Mar	1	Berea	VIRCO Inc.
34-167-2-7583	NOT DRILLED			



TAX PARCEL	SURFACE OWNER	ACRES
340063544000	KURT WIELTZKA	0.65
340063548000	KURT WIELTZKA	0.55
340060628000	KYLE W. & KRISTA M. BRYAN	LOT 14
340060624000	KYLE W. & KRISTA M. BRYAN	LOT 15
340064240000	MARY RITA OFFENBERGER	0.25
340064248000	MARY RITA OFFENBERGER	0.52
340064244000	MARY RITA OFFENBERGER	0.74
340061060000	HERMAN THOMAS & ANITA LOUISE OFFENBERGER	LOT 22
340061064000	HERMAN THOMAS & ANITA LOUISE OFFENBERGER	LOT 23
340062624000	HERMAN THOMAS & ANITA LOUISE OFFENBERGER	0.34

TAX PARCEL	SURFACE OWNER	ACRES
34006268000	HERMAN THOMAS & ANITA LOUISE OFFENBERGER	0.28
340059764000	MARTHA J. ANGLE	0.28
340059768000	MARTHA J. ANGLE	0.28
340060556000	TONY A. & ANGELA R. VAN NOY	0.32
340060728000	PAUL C. & PETINA D. ANDERSON	LOT 29
340060732001	WARREN COMM WATER & SEWER ASSOC INC.	0.39
340059684000	RONALD M. & MINERVA O. OHMAR	LOT 31
340059688000	RONALD M. & MINERVA O. OHMAR	LOT 33
340059689000	N/A	N/A
340059692000	RONALD M. & MINERVA O. OHMAR	LOT 34



GREEN AND ASSOCIATES

156 Woodrow Ave. Suite 2A
St. Clairsville, OH 43950
(740) 695-9977 OH
(304) 595-3290 WV
green@greenandassoc.net



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.
6608

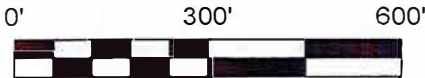
DATE

[Signature]
12/19/21

LEGEND

- SUBJECT 82.04 ACRES
- SURFACE BOUNDARY
- SECTION LINE
- STREAMS
- FOUND MONUMENT (AS NOTED)
- PROPOSED WELL
- EXISTING WELL

SCALE:



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 504.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5295
slswv.com

DEEPROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

V-M MANAGEMENT SOLUTIONS LLC

Drawn By: K. G. Moyers

Date: 11-19-2021

Scale: 1" = 300'

Checked By: J. M. Green

Job Number: 9149

Sheet No. 1 of 2

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 WASHINGTON COUNTY AUDITOR'S GIS DATA AND NOT VERIFIED BY SURVEY.
- 4. TIES TO SECTION LINES ARE BASED ON MONUMENTS FOUND DURING THE FIELD SURVEY. TIE DISTANCE TO SECTION LINE BETWEEN SECTIONS 4 AND 34, ALSO DESIGNATED AS THE BOUNDARY LINE BETWEEN WARREN AND MARIETTA TOWNSHIPS, WAS ESTABLISHED BY NINE (9) FOUND MONUMENTS LOCATED ALONG SAID SECTION LINE DURING A PREVIOUS SURVEY TO THE NORTHEAST OF THE SUBJECT PROPERTY.
- 5. THE PROPOSED WELL SHOWN HEREON IS TO BE AN INJECTION WELL.

REFERENCES:

- 1. WASHINGTON COUNTY AUDITOR'S TAX MAP
- 2. DEED BOOK 593 PAGE 717 OF RECORD FROM THE WASHINGTON COUNTY RECORDER'S OFFICE.
- 3. AERIAL MAPPING FROM THE WASHINGTON COUNTY, OH GIS WEBSITE
AT <http://www.washingtoncountyauditor.us/Map.aspx>
- 4. USGS QUADRANGLE: MARIETTA 7.5'
- 5. TITLE INFORMATION SUPPLIED BY THE CLIENT.

OPERATOR: DEEPROCK DISPOSAL SOLUTIONS LLC, 637 STATE RT. 821, MARIETTA, OH 45750

LAND OWNER(S):

SURFACE: V-M MANAGEMENT SOLUTIONS LLC
MINERAL: V-M MANAGEMENT SOLUTIONS LLC

WELL NAME: AMERICAN GROWERS

WELL NUMBER: 3

COUNTY: WASHINGTON

MUNICIPALITY: WARREN TOWNSHIP

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

OHIO STATE PLANE GRID:

COORDINATES OH-S NAD 83
N: 509,354.18
E: 2,254,482.81
LAT(N): 39.394095
LONG(W): 81.488028
COORDINATES OH-S NAD 27
N: 509,316.39
E: 2,285,946.64
LAT(N): 39.394021
LONG(W): 81.488183

ELEVATION:

753.2' 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.

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.
6608

DATE

[Signature]
12/21 12/19/21



GREEN AND ASSOCIATES

156 Woodrow Ave. Suite 2A
St. Clairsville, OH 43950
(740) 695-9977 OH
(304) 595-3290 WV
green@greenandassoc.net



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.452.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.348.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5295
slswv.com

DEEPROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

V-M MANAGEMENT SOLUTIONS LLC

Drawn By: K. G. Moyers	Date: 11-19-2021	Scale: N.T.S.
Checked By: J. M. Green	Job Number: 9149	Sheet No. 2 of 2



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 Morse Road, F-2 • Columbus, OH 43229
(614) 265-6922 • Fax (614) 265-6910

Application for ORC 1509.06 Underground Injection Control Permit (UIC 1)

See Instructions on page 4.

Applicant: DeepRock Disposal Solutions LLC.

Address: 637 State Route 821
Marietta OH 45750

Owner #: 9896

Phone: 740-371-5078

Email: wesm@deeprockds.com

Applicant hereby applies on 12/07/2021 for a permit to

1. Type of Permit:

<input checked="" type="checkbox"/> Drill a New Well	<input type="checkbox"/> Reissue	<input type="checkbox"/> Plug Back
<input type="checkbox"/> Revise Location	<input type="checkbox"/> Convert	<input type="checkbox"/> Reopen
<input type="checkbox"/> Deepen		

Previously Issued API #:

2. Mail Permit to:

DeepRock Disposal Solutions LLC.
637 State Route 821
Marietta OH 45750

3. Orientation of Well:

☒ Vertical ☐ Directional ☐ Other

4. Well Type:

<input checked="" type="checkbox"/> Saltwater Injection	Choose all that apply:	<input checked="" type="checkbox"/> Input/Injection	<input type="checkbox"/> Observation
<input type="checkbox"/> Solution Mining		<input type="checkbox"/> Water Supply	<input type="checkbox"/> Production/Extraction
<input type="checkbox"/> Enhanced Recovery			

5. Is the well or surface facility located within an urbanized area as defined by ORC 1509.01(Y)?

☐ Yes ☒ No If Yes, Name of Urbanized Area:

6. Well Information:

Well Name:	American Growers	Well Number:	4
Section/Lot #:	4	City/Village/Township:	Warren
		County:	Washington

7. Proposed Depth and Geological Formation:

Proposed Total Depth:	6,500'	Proposed geological formation(s) to be used as the injection zone:
Subject Tract Acres:		Oriskany-through-Medina
Depth of Base of Target Formation:	6,325'	

8. Royalty Interest Owner Information Attach Royalty Interest Owner Information List.

Does the State hold any royalty interest within the proposed subject tract?

☐ Yes ☒ No If Yes, Name of Agency:

Are there any surface rights owned by the State of Ohio in this subject tract?

☐ Yes ☒ No If Yes, Name of Agency:

9. Water Source for Production Operations: ORC 1509.01 (AA)

OPTIONAL Latitude: Longitude:

Water Source:

Watershed: ☐ Lake Erie ☒ Ohio River ☐ Other:

Estimated Withdrawal Rate: GAL/DAY e.g. Recycled water or water from a non-Ohio watershed

Estimated Total Volume: GAL

If Recycled Water, Estimated Total Volume: GAL

10. Jurisdictional Emergency Contacts for the Well Site:

	NAME	PHONE NUMBER (NOT 911)
Fire Department:	Reno - VFD	740-373-9800
Sheriff's Office or Police Department:	Washington County Sheriff	740-373-7070
Closest Medical Facility:	Marietta Memorial Hospital	740-374-1400
County EMA Director: <i>OPTIONAL</i>	Rich Hays	740-373-5613
Local Emergency Planning Committee: <i>OPTIONAL</i>		740-373-5613

11. 24 Hour Emergency Contact:

Company Name:

Contact Name: Title:

24-Hour Phone Number: Email Address:

Please attach name and contact information for any additional emergency contacts.

12. Well Site Access:

Describe ingress/egress route:

Location (NAD83) of well site entrance from a public road:

Latitude: Longitude:

13. Other Attachments

Choose the appropriate supplemental form:

- ☒ Form 210 (SWIW) and required attachments
☐ Form 203 (ERP) and required attachments
☐ Form 206 (SMP) and required attachments

- ☒ Plat Map
☒ Restoration Plan (Form 4)
☐ Completion Report (Form 8) *if conversion*
If in an Urbanized Area:
☒ Required Maps
☒ Required Notification and List

14. Well Construction:

TYPE CASING	BOREHOLE		CASING		CEMENT		FORMATION
	DIAMETER IN	DEPTH FT	DIAMETER IN	DEPTH FT	TOP FT	VOLUME SACKS	
Drive Pipe							
Conductor	24"	100'	20"	100'	SURFACE	106	
Mine String							
Surface	17 1/2"	400'	13 3/8"	400'	SURFACE	306	
Intermediate 1	9 5/8"	2,400'	9 5/8"	2,400'	SURFACE	706	THROUGH THE GORDON
Intermediate 2							
Production 1	8 3/4"	6,400'	7"	6,400'	2,100'	556	
Production 2							
Open Holes							
Liner							
Tubing	4 1/2"			6,135'			SET ON PACKER
Packer				6,135'			

TYPE CASING	DRILLING EQUIPMENT	NUMBER OF CENTRALIZERS	TESTED?	PRODUCED?	HYDRAULIC FRACTURING?
Drive Pipe			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Conductor			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Mine String			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Surface	Air & Fuild Rotary Rig	1	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 1	Air & Fuild Rotary Rig	2	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Intermediate 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 1	Air & Fuild Rotary Rig	4	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Production 2			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Open Hole			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Liner			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Tubing	Service Rig	6	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
Packer	Service Rig set packer		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes


15. Signatures

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 submit an application in accordance with Section 1509.06 of the Revised Code.

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 5577.12 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.

By signing below I hereby agree to conform with all provisions of Chapter 1509 of the Ohio Revised Code and Chapter 1501:9 of the Ohio Administrative Code, and all orders and conditions issued by the Chief of the Division of Oil and Gas Resources Management.

	John W. Mossor Jr.	General Manager
SIGNATURE OF OWNER/AUTHORIZED AGENT	NAME Type or Print	TITLE


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



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

Sworn to before me and subscribed in my presence on this

7th day of December, 2021.
MONTH YEAR


NOTARY PUBLIC

My commission expires 2-13-23.

Instructions

- Drill, Reopen, Deepen, Plug Back, and Convert an Oil and Gas Well** (non-urban valid for 24 months; urban valid for 12 months)
 - Original Application for a Permit (Form 1)
 - Original of an Ohio registered surveyor's plat
 - Original of the Restoration Plan (Form 4)
 - Reopen, Deepen, Plug Back and Convert** require a copy of the Well Completion Record (Form 8)
 - Fees: Check or money order payable to the Division of Oil and Gas Resources Management

Class II Disposal Well: \$1,000

Class II Enhanced Recovery Well and Class III Solution Mining Well:

- \$500 for a township with a population up to 9,999
- \$750 for a township with a population of 10,000 to 14,999
- \$1,000 for a township with a population exceeding 15,000

2. Reissue or Revised Location

- Same as above: 1 (a), (b), (c), (d), (f)
- Fee: \$250 check or money order payable to the Division of Oil and Gas Resources Management

3. Definitions:

- "Urbanized area" means an area where a well or production facilities of a well are located within a municipal corporation or within a township that has an unincorporated population of more than five thousand in the most recent federal decennial census prior to the issuance of the permit for the well or surface facility.
- "Subject tract" means a tract(s) upon which a person proposes to and has the legal right to drill, reopen, deepen, plug back, or convert a well for the injection of brine for the class II disposal well.

SEND ALL ATTACHMENTS AND FEES TO:
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
2045 MORSE ROAD BUILDING F
COLUMBUS OH 43229



**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: Oriskany, through Medina

Injection Well Interval: FROM 4,549.00 FEET TO 6,325.00 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 and subsurface construction (page 2 of form 210)

B. Proposed method for testing the casing:

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

using a pump truck w/recorder and chart, 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 be perforated and acid frac-ed

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

Brine will be offload and stored at our UIC approved facility (Rt.7)

Well will be operated as part of our ODNR - UIC approved facility (Rt.7 - offloading and storage) and connected via new constructed pipeline

33. PROPOSED INJECTION VOLUMES

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

AVERAGE: 3,000 MAXIMUM: 5,000

B. Indicate the method to be used to measure the actual daily injection pressure:

Well will be connected/added to our Silver Smith - Meter Central scada/monitoring system. We will use both transducers and a "barton" meter and in-line flow meter

34. PROPOSED INJECTION PRESSURES

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

AVERAGE: _____ MAXIMUM: _____

SEE ATTACHED.

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:

According to our area of review study, there are no wells in question

**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

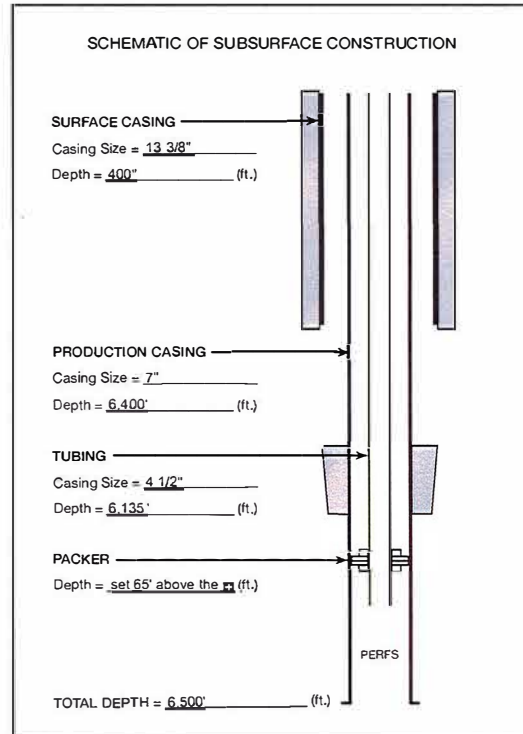
Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing 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 Jr.

Signature of Owner/Authorized Agent: [Signature] 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 11th day of December, 2021



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

[Signature]
Notary Public
2-13-23
Date Commission Expires

**DeepRock Disposal
American Growers # 4
Permit Appalachian**

34. PROPOSED INJECTION PRESSURES

- A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:
 - 1. If completed in Oriskany, top perf @ 4,549
 - a. Average: 1,020 – Maximum: 1,050
 - 2. If completed only in the Clinton-Medina, top perf @ 6,200
 - a. Average: 1,400 – Maximum: 1,430

**DeepRock Disposal
American Growers # 4
Permit Appalachian**

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

- A. Brine will be offloaded and stored at our Rt.7 – UIC permitted facility, brine will then transfer via pipeline.
 - We have in-line turbine meters at Rt. 7 discharge pumps, in addition we will install new in-line flow/volume meter at the American Growers # 3 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 our Rt. 7 AST/Storage tank.
- 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.

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: December 7, 2021		3. API #:	
2. OWNER NAME, ADDRESS, & TELEPHONE NO.: Deep Rock Disposal Solutions, LLC 637 State Route 821, Complex 1, Building 1 Marietta, Ohio 45750 (740) 371-5078		4. WELL #: 4	
		5. LEASE NAME: American Growers	
		6. PROPERTY OWNER: V-M Mile Rum LLC. - V-M Management Solutions	
		7. COUNTY: Washington	
		8. CIVIL TOWNSHIP: Warren	
		9. SECTION: 4	
		10. LOT:	
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Wetlands <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Idle Land <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial		17. TYPE OF WELL: <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other	
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other: (explain)		18. STEEPEST SLOPE GRADIENT CROSSING SITE: <input checked="" type="checkbox"/> 0 to 2% <input checked="" type="checkbox"/> 2.1 to 8% <input type="checkbox"/> 8.1 to 10% <input type="checkbox"/> greater than 24% <input type="checkbox"/> 10.1 to 24%	
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 type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush		19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <input checked="" 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.	
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		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	
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input checked="" 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 type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative		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	
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		22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <input checked="" type="checkbox"/> Seeding plan <input type="checkbox"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <input type="checkbox"/> Proposed alternative	
		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 checked="" type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> greater than 1500 ft.	
		25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <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 -- FAILED 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 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 checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <input type="checkbox"/> Landowner <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Existing access road <input type="checkbox"/> Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <input checked="" type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <input type="checkbox"/> Diversions <input type="checkbox"/> Filter strips <input type="checkbox"/> Drains <input type="checkbox"/> Riprap <input type="checkbox"/> Open top culverts <input type="checkbox"/> Water breaks <input checked="" type="checkbox"/> Outsloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative _____	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. Messer Jr.

Date 12-7-21

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.



LANDOWNER FEE SIMPLE OWNERSHIP AFFIDAVIT

(REV0412)

Application No. _____
(To be filled in by the Division)

STATE OF Ohio ss:

COUNTY OF Washington

NAME OF LANDOWNER: V-M Mile Run LLC - V-M Management Solutions LLC

ADDRESS OF LANDOWNER: P.O. Box 37 Marietta, OH 45750

Being first duly sworn according to law, depose and say that they are the owners of the following described real estate:

Located in U.S.G.S. Quad - Fleming 7.5 Quarter of
Section 4
Fraction/Lot _____, Warren Township,
Washington County, Ohio.

The undersigned certify that they are the owners of the property in fee simple, including the coal rights, and have no objections to the drilling of the American Growers #4 - SWIW, by the
(Well Name & No.)
DeepRock Disposal Solutions, LLC on said premises.
(Company)

Further affiant sayeth naught.

Signatures: _____

Signatures: _____

Signatures: _____

Signatures: _____

SWORN to before me and subscribed in my presence this 15th Day of November, 2021

Notary Public: Ann E. Kerenyi




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



SALTWATER INJECTION WELL AFFIDAVIT

(REVISED 0415)

State of Ohio, Washington County,
John W. Mossor Jr. _____ being
first duly sworn says that as principal, or authorized agent, for DeepRock Disposal Solutions LLC., he or
she has made application for a saltwater injection well in the State of Ohio Washington
County, Warren Township, section/lot number Section 4; and
further certifies that notice of application has been delivered to each individual entitled to personal notification
in accordance with paragraph (H) of Rule 1501:9-3-06 of the Ohio Administrative Code.
And further affiant saith not.


AFFIANT SIGNATURE

Sworn to before me and subscribed in my presence this 7th day of December, 20 21.



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


NOTARY PUBLIC

DeepRock Disposal

American Growers # 4

Washington County - Warren Township - Section 4

<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	6,500'	

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"	(Through Gordon)
Longstring	8 3/4"	7"	6,450"	
Tubing	4 1/2"			Set on packer "65'" above highest perforation

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

DeepRock Diposal - American Growers # 3 - SWIW

IF COMPLETED AS CLINTON_MEDINA

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

For:

Equations:

$$P_G = 0.433 \times SG$$

$$P_m = 0.75D - P_GD$$

Values

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

SG= 1.2 = specific gravity of injected fluid

D= 6200 = 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)

$P_m = 1430$ = Maximum surface injection pressure (psi)

Calculation:

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

$$P_m = 0.75 \times (6200) - (0.5196) \times (6200) = 1428.48 \text{ psi}$$

Round to the nearest multiple of five = 1430 psi

Just type in the depth of the highest perforation.

DeepRock Diposal - American Growers # 3 - SWIW

IF COMPLETED AS Oriskany									
ODNR - SWIW - Maximum Surface Injection Pressure (MAIP) Calculation									
For:									
Equations:									
$P_G = 0.433 \times SG$									
$P_m = 0.75D - P_GD$									
Values									
		0.433	=	Pressure gradient for fresh water (psi/ft)					
	SG=	1.2	=	specific gravity of injected fluid					
	D=	4549	=	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 =	1050	=	Maximum surface injection pressure (psi)					
Calculation:									
	P_G =	0.433	x	1.2	=	0.5196			
	P_m =	0.75	x (	4549	) - (	0.5196	) x (	4549	) = 1048.09 psi
Round to the nearest multiple of five =									1050 psi
Just type in the depth of the highest perforation.									

AG #4 - Proposed Pipeline

SHIDER KEITH A & NANCY KAY ANN
340062140001
461460 Ac.

ISNER SLSANA 314
340061144000
829380 Ac.

Washington

ERNEST O & DEE ANN TRUSTEES
644000
Ac.

V-M MANAGEMENT SOLUTIONS LLC
340067217000
794590 Ac.

KRIS-MAR INC
340067537000

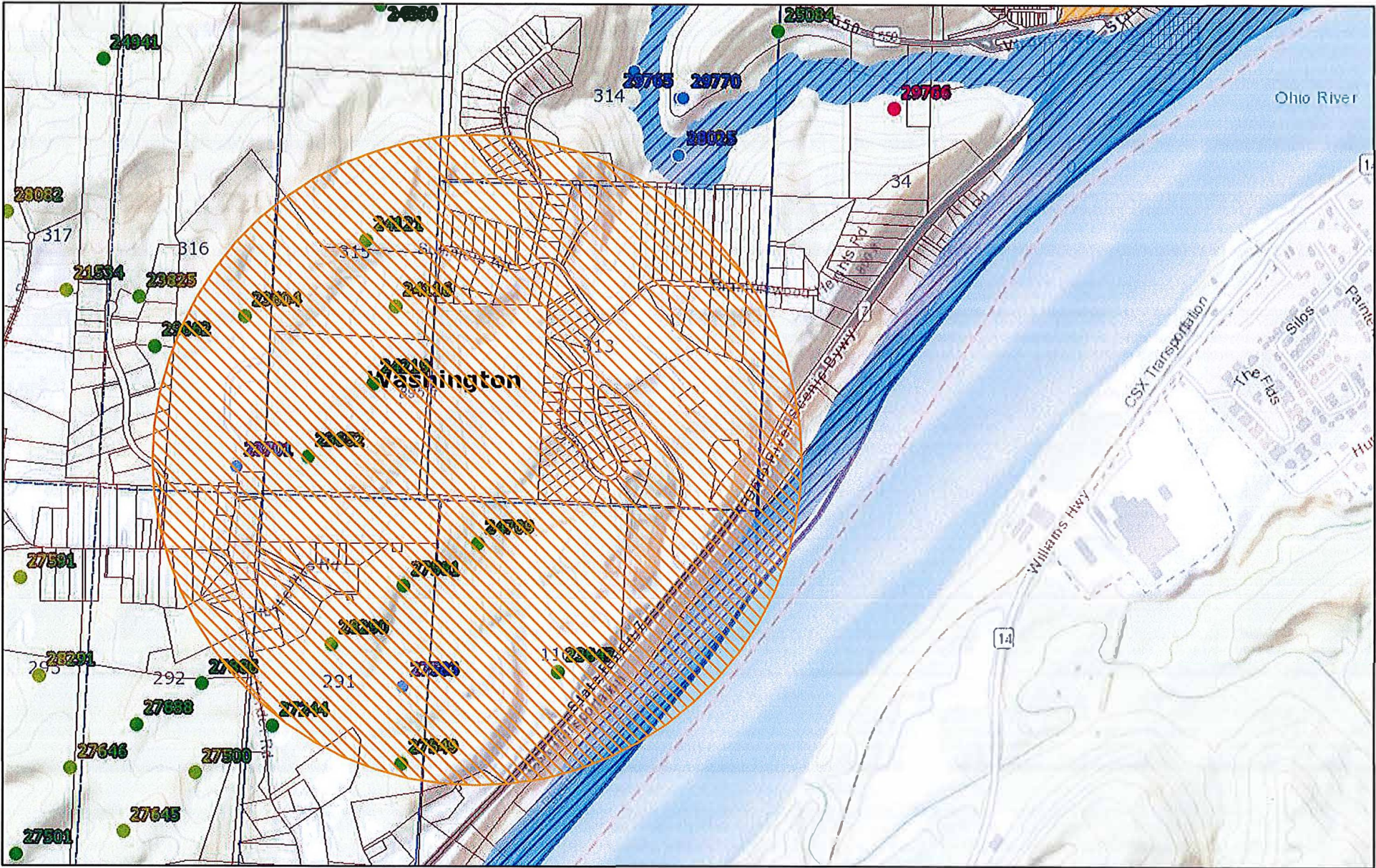
116

34

WEST VIRGINIA
OHIO

cont. 2/11

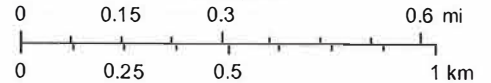
Ohio Oil & Gas Wells



December 7, 2021

-  Counties
  Statewide Parcels
-  Current Township
-  Land Subdivision

1:18,056



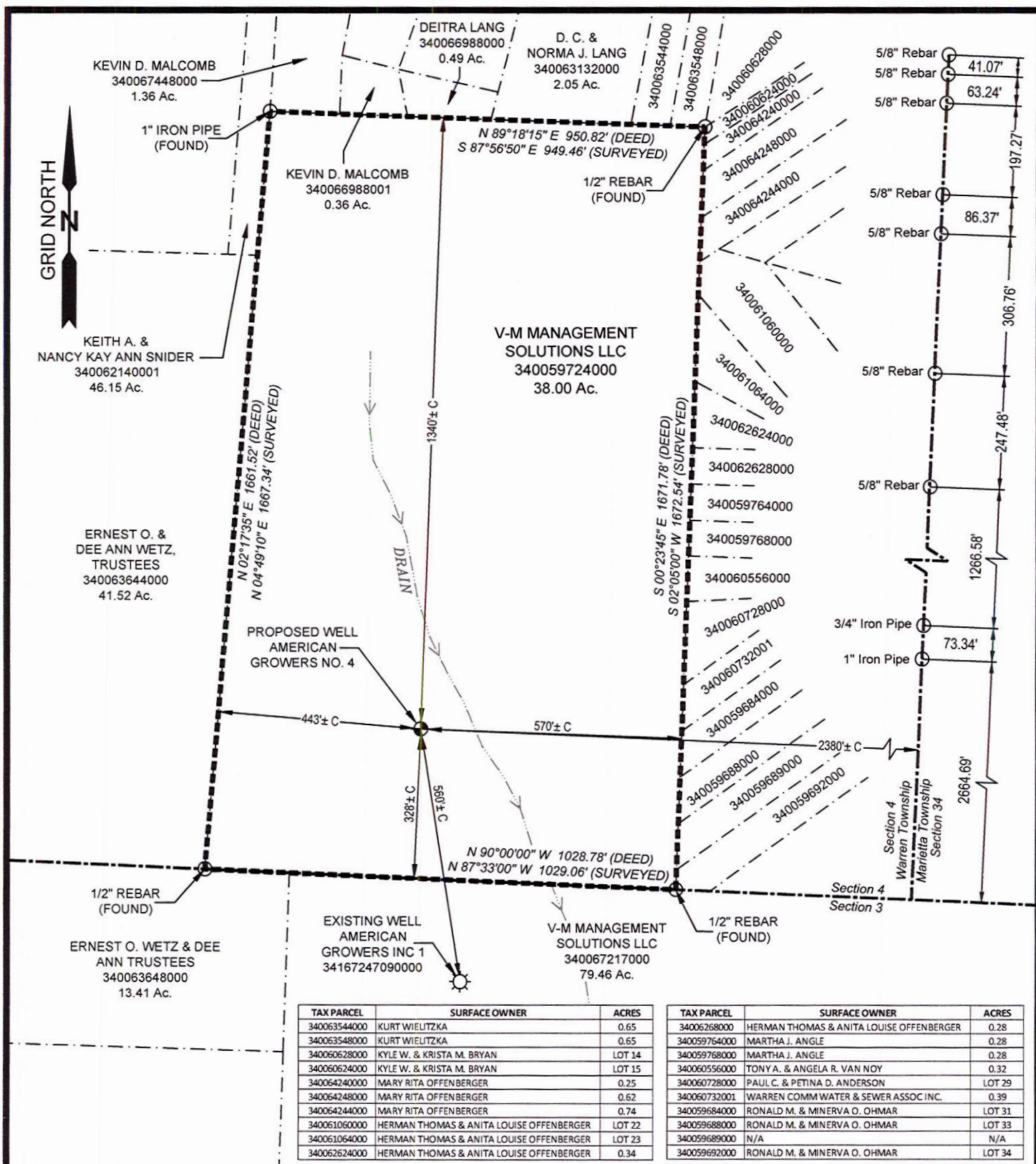
Division of Drinking and Ground Waters, Ohio EPA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

DeepRock Disposal

American Growers # 4

Area of Review

<u>PERMIT #</u>	<u>WELL NAME</u>	<u>WELL NUMBER</u>	<u>PRODUCING FORMATION</u>	<u>OPERATOR - COMPANY</u>
34-167-2-7549	Kris-Mar	3	Berea	Beardmore Oil & Gas
34-167-2-7581	Kris-Mar	7	Berea	Beardmore Oil & Gas
34-167-2-9662	Wilfong Unit	3	Medina	Heinrich Enterprises
34-167-2-4219	Micheal McGraw	2	Berea	Heinrich Enterprises
34-167-2-4709	American Growers	1	Berea	Kroll Energy
34-167-2-3847	American Growers	2	Berea	Kroll Energy
34-167-2-4121	C. Harris	4	Berea	Stonebridge Operating Co
34-167-2-4116	C. Harris	3	Berea	Stonebridge Operating Co
34-167-2-3604	C. Harris	1	Berea	Stonebridge Operating Co
34-167-2-3652	McGraw	1	Berea	Stonebridge Operating Co
34-167-2-7282	Kris-Mar	19	Berea	VIRCO Inc.
34-167-2-7886	Kris-Mar	15	Maxton	VIRCO Inc.
34-167-2-7244	Kris-Mar	1	Berea	VIRCO Inc.
34-167-2-8290	Kris-Mar	19	Berea	VIRCO Inc.
34-167-2-7583	NOT DRILLED			



GREEN AND ASSOCIATES

156 Woodrow Ave. Suite 2A
St. Clairsville, OH 43950
(740) 695-9977 OH
(304) 595-3290 WV
green@greenandassoc.net



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.
6608

DATE

John M. Green
12/19/21

LEGEND

- SUBJECT 82.04 ACRES
- SURFACE BOUNDARY
- SECTION LINE
- STREAMS →→
- FOUND MONUMENT (AS NOTED)
- PROPOSED WELL +
- EXISTING WELL *

SCALE:



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsvv.com

DEEPROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

V-M MANAGEMENT SOLUTIONS LLC

Drawn By: K. G. Moyers

Date: 11-19-2021

Scale: 1" = 300'

Checked By: J. M. Green

Job Number: 9149

Sheet No. 1 of 2

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 WASHINGTON COUNTY AUDITOR'S GIS DATA AND NOT VERIFIED BY SURVEY.
- 4. TIES TO SECTION LINES ARE BASED ON MONUMENTS FOUND DURING THE FIELD SURVEY. TIE DISTANCE TO SECTION LINE BETWEEN SECTIONS 4 AND 34, ALSO DESIGNATED AS THE BOUNDARY LINE BETWEEN WARREN AND MARIETTA TOWNSHIPS, WAS ESTABLISHED BY NINE (9) FOUND MONUMENTS LOCATED ALONG SAID SECTION LINE DURING A PREVIOUS SURVEY TO THE NORTHEAST OF THE SUBJECT PROPERTY.
- 5. THE PROPOSED WELL SHOWN HEREON IS TO BE AN INJECTION WELL.

REFERENCES:

- 1. WASHINGTON COUNTY AUDITOR'S TAX MAP
- 2. DEED BOOK 593 PAGE 717 OF RECORD FROM THE WASHINGTON COUNTY RECORDER'S OFFICE.
- 3. AERIAL MAPPING FROM THE WASHINGTON COUNTY, OH GIS WEBSITE
AT <http://www.washingtoncountyauditor.us/Map.aspx>
- 4. USGS QUADRANGLE: MARIETTA 7.5'
- 5. TITLE INFORMATION SUPPLIED BY THE CLIENT.

OPERATOR: DEEPROCK DISPOSAL SOLUTIONS LLC, 637 STATE RT. 821, MARIETTA, OH 45750

LAND OWNER(S):

SURFACE: V-M MANAGEMENT SOLUTIONS LLC
MINERAL: V-M MANAGEMENT SOLUTIONS LLC

WELL NAME: AMERICAN GROWERS

WELL NUMBER: 4

COUNTY: WASHINGTON

MUNICIPALITY: WARREN TOWNSHIP

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

OHIO STATE PLANE GRID:

COORDINATES OH-S NAD 83
N: 509,588.24
E: 2,254,104.47
LAT(N): 39.394749
LONG(W): 81.489357
COORDINATES OH-S NAD 27
N: 509,550.45
E: 2,285,568.30
LAT(N): 39.394675
LONG(W): 81.489512

ELEVATION:

793.6' 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.

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.
6608

DATE

[Signature]
12/19/21



GREEN AND ASSOCIATES

156 Woodrow Ave. Suite 2A
St. Clairsville, OH 43950
(740) 695-9977 OH
(304) 595-3290 WV
green@greenandassoc.net



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsvv.com

DEEPROCK DISPOSAL SOLUTIONS LLC
SECTION 4, TOWNSHIP 2 NORTH, RANGE 9 WEST
WARREN TOWNSHIP
WASHINGTON COUNTY, OHIO

V-M MANAGEMENT SOLUTIONS LLC

Drawn By: K. G. Moyers

Date: 11-19-2021

Scale: N.T.S.

Checked By: J. M. Green

Job Number: 9149

Sheet No. 2 of 2

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> , 20 <u>20</u> for a permit to:								
<input checked="" type="checkbox"/> Drill Vertical Well <input type="checkbox"/> Drill Horizontally <input type="checkbox"/> Drill Directionally <input type="checkbox"/> Reissue		<input type="checkbox"/> Revised Location <input type="checkbox"/> Plug Back <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Reopen						
<input type="checkbox"/> Convert <input type="checkbox"/> Deepen								
3. TYPE OF WELL: <input type="checkbox"/> Oil & Gas <input type="checkbox"/> Annular Disposal <input checked="" 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="radio"/> Enhanced Recovery* (*if checked, select appropriate box below)								
<input type="radio"/> Water Supply <input type="radio"/> Observation <input type="radio"/> 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 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: <u>Ohio River</u>						
6. COUNTY: <u>Washington</u>		Watershed: <input type="checkbox"/> Lake Erie <input checked="" type="checkbox"/> Ohio River						
7. CIVIL TOWNSHIP: <u>Warren</u>		Estimated Withdrawal Rate (gal/day): <u>10,000</u>						
8. SECTION: <u>11</u>		Estimated Total Volume (gal): <u>100,000</u>						
9. LOT:		If Recycled Water – Estimated Total Volume (gal):						
10. FRACTION:		22. EMERGENCY TELEPHONE NUMBERS (closest to well site):						
11. QTRTWP:		Fire: <u>740-373-2424</u>						
12. TRACT/ALLOT:		Med'cal: <u>740-374-3200</u>						
13. WELL NUMBER: <u>1</u>		23. MEANS OF INGRESS AND EGRESS:						
14. LEASE NAME: <u>Pioneer</u>		Road: <u>State Route 550</u>						
15. PROPOSED TOTAL DEPTH: <u>6,500'</u>		24. ROAD USE FOR HORIZONTAL WELL:						
16. PROPOSED GEOLOGICAL FORMATION(S): <u>Clinton-Medina</u>		<input type="checkbox"/> Maintenance Agreement Attached						
		<input type="checkbox"/> Non-agreement Affidavit Attached						
		<input checked="" type="checkbox"/> State Route (Not Required)						
17. DRILLING UNIT ACRES: <u>42.07</u>		25. ARE THE SURFACE RIGHTS OWNED BY THE STATE OF OHIO?						
18. ATTACH LANDOWNER ROYALTY LISTING:		Agency Name:						
19. IF PERMITTED PREVIOUSLY: API Number:		26. FOR PLUGGING APPLICATIONS: Date of Last Production:						
		Amount of Oil: _____ (bbl) Gas: _____ (mcf)						
27. PROPOSED CASING AND CEMENTING PROGRAM								
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"						<input type="checkbox"/>	<input type="checkbox"/>
Conductor	24"	100'	20"	100'	106		<input type="checkbox"/>	<input type="checkbox"/>
Mine String							<input type="checkbox"/>	<input type="checkbox"/>
Surface	17-1/2"	400'	13-3/8"	400'	306	Thur Fresh Water Zones	<input type="checkbox"/>	<input type="checkbox"/>
1 st Intermediate	12-1/4"	2,400'	9-5/8"	2,400'	706	Thur Gordon	<input type="checkbox"/>	<input type="checkbox"/>
2 nd Intermediate							<input type="checkbox"/>	<input type="checkbox"/>
Production	8-3/4"	6,450'	7"	6,400'	556	Thur Clinton-Medina	<input type="checkbox"/>	<input type="checkbox"/>
Liner	TUBING		4-1/2"	6,135'	NA	Set Packer 65' above top perf	<input type="checkbox"/>	<input type="checkbox"/>

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 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (5) 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. Moss Jr.
Name (Type or Print): John W. Moss 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.

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

Ann E. Kerenyi
(Notary Public)
2-13-23
(Date Commission Expires)



*DeepRock Disposal Solutions, LLC
637 State Rt 821, Complex 1, Bldg 1
Morieta, 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

- B. Indicate the method to be used to measure the actual daily injection pressure:

Barton-Chart meter along with Transducer/Pressure sensors data collect into Silver Smith/Meter Central system, in addition there will be an in-line flow meter to monitor and record injected volumes.

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

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:

According to area of review we do not find any corrective actions required.

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

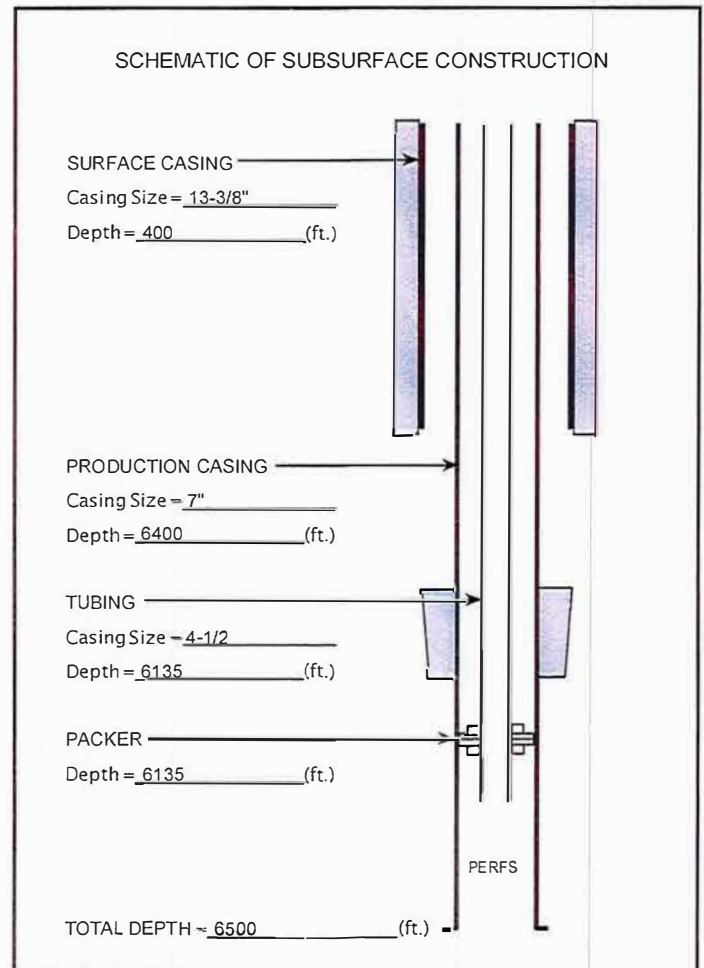
Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing 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 deposed 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: [Signature] 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

[Signature]
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'	

<u>CASING PROGRAM</u>				
<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"	(Through Gordon)
Longstring	8 3/4"	7"	6,400"	
Tubing	4 1/2"		6,135'	Set on packer

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

Pioneer #1

Elevation 842' GL

Section 11

Warren Township

Structural Depths

Formation Tops

Berea Sandstone ~ 1175

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"

100'

Surface

13³/₈"

17¹/₂"

400'

Intermediate

9⁵/₈"

12¹/₄"

2,400' (Through Gordon)

Longstring

7"

8³/₄"

6,400'

Tubing

4-1/2"

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

(13³/₈" 48lb-H40) in 17¹/₂" 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

(9⁵/₈" 36lb-J55) in 12¹/₄" hole

Cemented to Surface

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

(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

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

(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 8³/₄" hole

Cemented back to 2100'

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

(2,300')

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

$$\text{Tail Cement 50/50 Poz, 28 gel} = 1.26 \text{ Ft}^3/\text{sk}$$

(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-65
Inches	Inches	Lbs.	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI
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



PERFORMANCE PIPE
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 temperatures, ratings may differ. Refer to Engineering Manual for Chemical and Environmental Considerations.

Considerations.																										
Rating		DR 6.0				DR 7.0				DR 9.0				DR 11.0				DR 13.5				DR 17.0				IPS Pipe Size
IPS Pipe Size	Nom OD (in)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	Min Wall (in)	Avg ID (in)	Wgt (lbs/ft)	IPS Pipe Size
1"	1.315	0.219	0.851	0.33	0.180	0.933	0.29																			1 1/4"
1 1/4"	1.660	0.277	1.073	0.52	0.227	1.179	0.46	0.184	1.270	0.37	0.151	1.340	0.31	0.123	1.399	0.26										1 1/2"
1 1/2"	1.900	0.317	1.228	0.60	0.266	1.349	0.61	0.211	1.453	0.49	0.173	1.533	0.41	0.141	1.601	0.34										2"
2"	2.375	0.395	1.535	1.07	0.325	1.586	0.95	0.264	1.815	0.77	0.216	1.917	0.64	0.176	2.002	0.53	0.140	2.078	0.43							3"
3"	3.500	0.593	2.264	2.33	0.479	2.455	2.06	0.389	2.675	1.66	0.318	2.826	1.39	0.258	2.951	1.18	0.206	3.063	0.94							4"
4"	4.500	0.750	2.910	3.85	0.616	3.194	3.40	0.500	3.440	2.75	0.409	3.633	2.31	0.333	3.794	1.92	0.265	3.938	1.55							6"
6"	6.625	1.104	4.255	8.35	0.908	4.700	7.37	0.736	5.065	5.76	0.602	5.349	5.00	0.491	5.584	4.15	0.390	5.793	3.36							

26"	26.000							2.589	10.278	10.278		20.985	76.96	1.926	21.917											26"
28"	28.000							3.111	21.465	11.233	11.233	22.605	89.26	2.074	23.603	74										28"
30"	30.000							3.333	22.634	12.302	12.302	24.216	102.47	2.222	25.289	85	14									30"
32"	32.000											2.909	25.633	115.58	2.370	26.976	96	27								32"
34"	34.000											3.091	27.447	131.81	2.519	28.660	107	40								34"
36"	36.000											3.273	29.061	147.55	2.667	30.346	117	53								36"

Pressure ratings are calculated using 0.83 design factor for HDS at 73°F as listed in PPI TR-4 for PE4710 materials. Temperature considerations may require use of additional design factors. Environmental use

Other Sizes and Dimensions Available

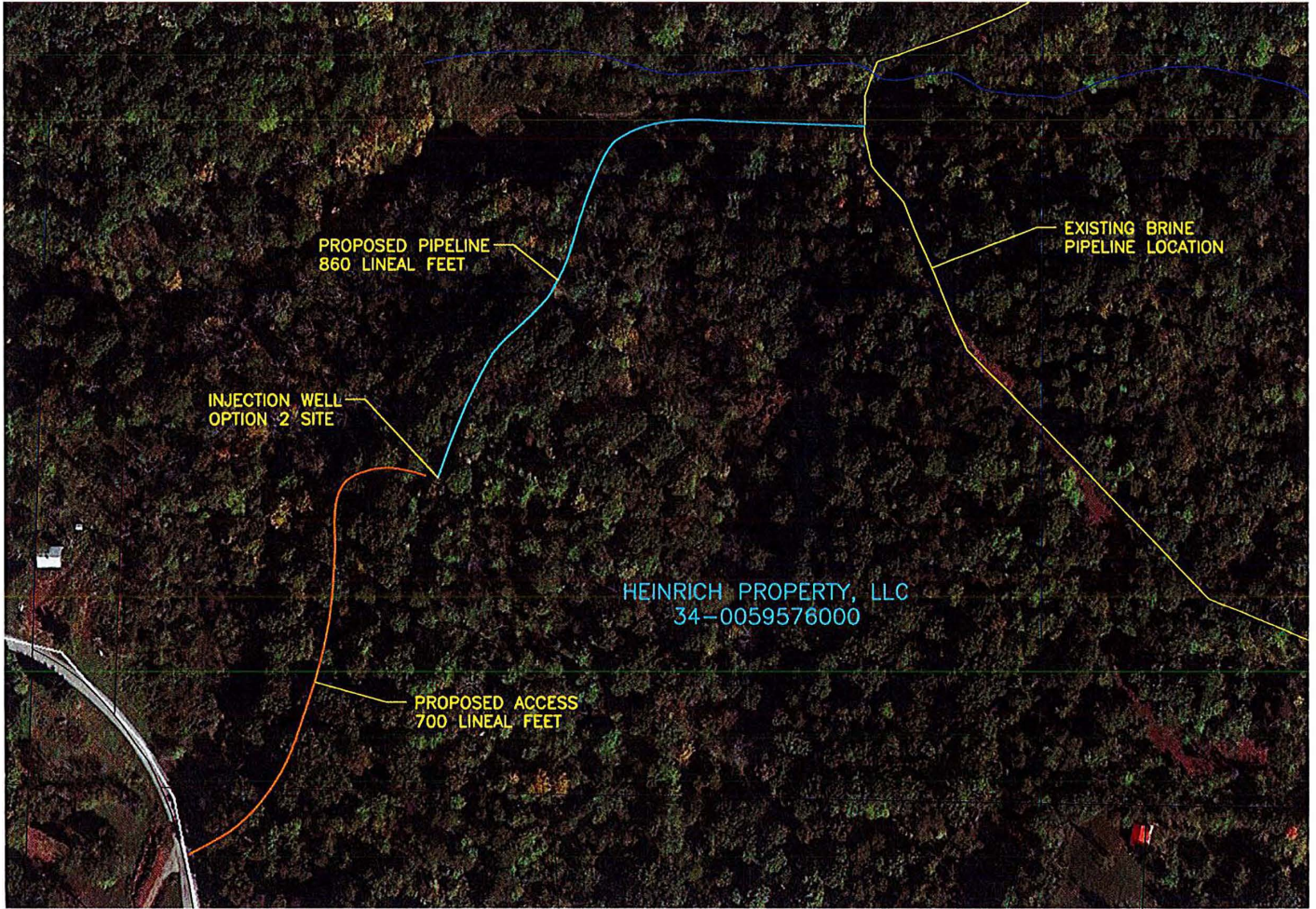
Substr: PP 135-4710 (PE 3408)

Page 1 of 1

www.performancepipe.com

March 2003 superseded all previous publications
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Performance Pipe, a division of



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

ODNR - Division of Oil & Gas

Q

?

County Bookmarks

Select A County:

Clear Result

Other Tools

Print

Search

By Attribute By Shape

Select A Layer:

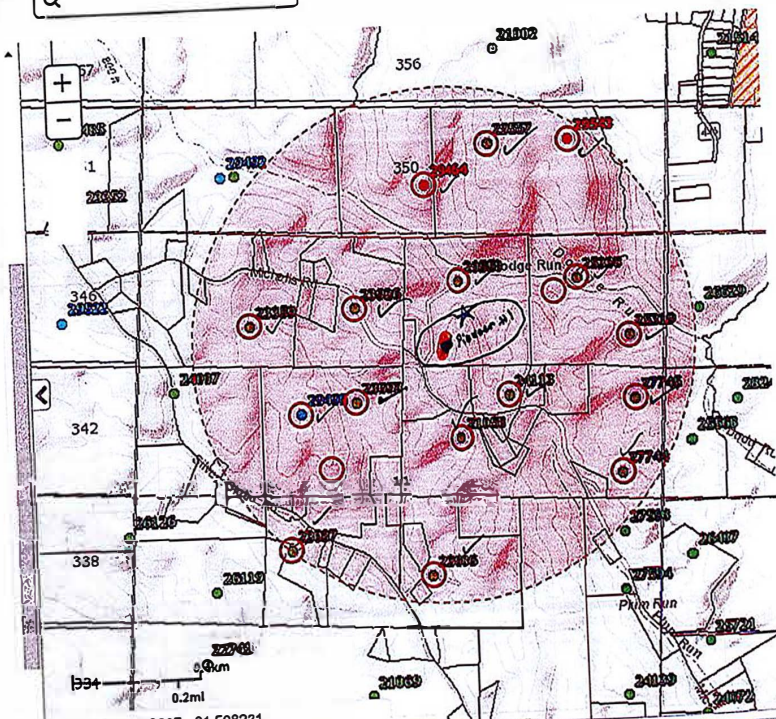
Oil & Gas Wells

Buffer: 0.5

Miles

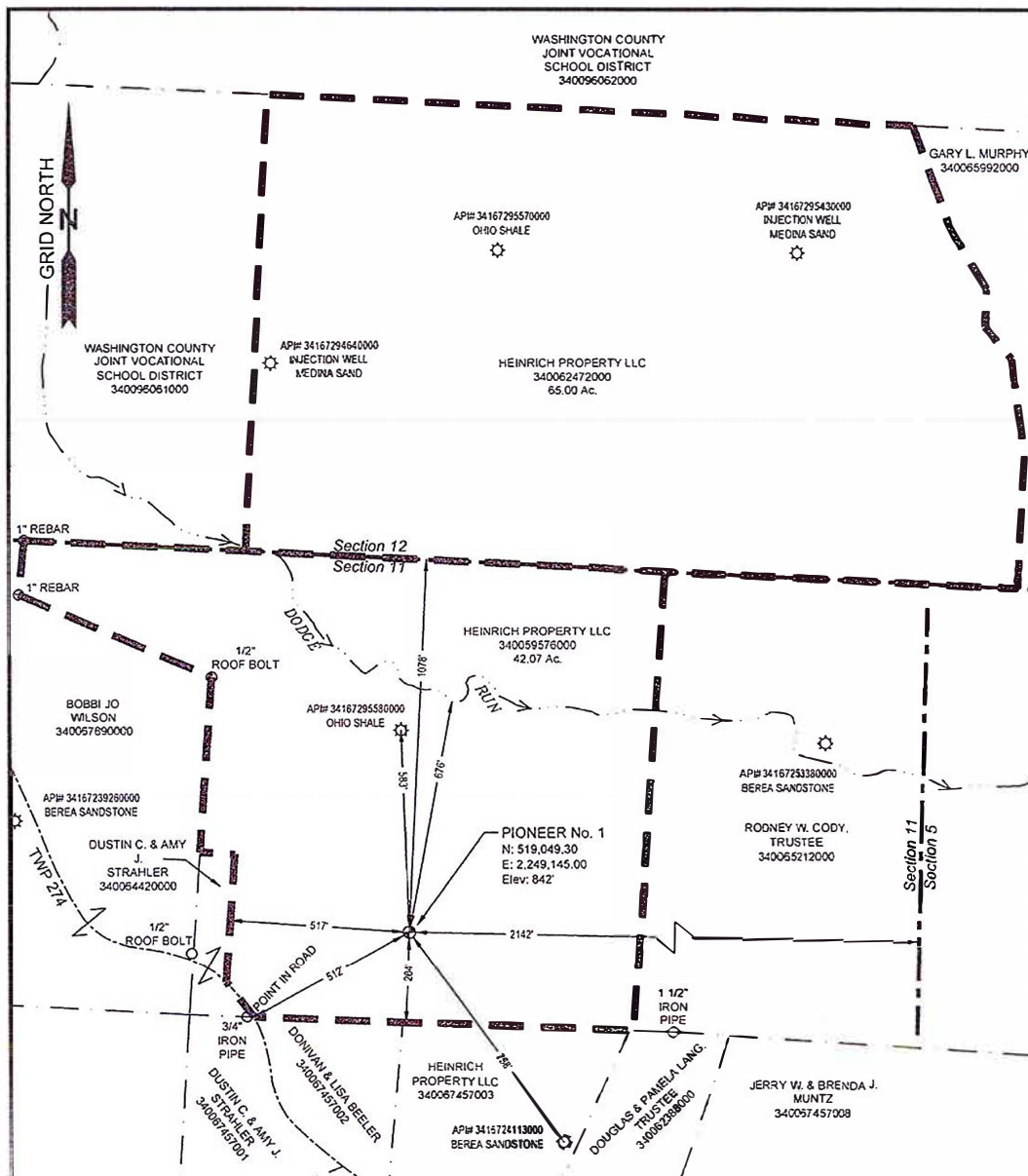
Display Buffer Only: ☐

Select Features By:

☐ ☐ ☐ ☐

1:18056 39.419687 -81.508231

Oil & Gas Wells [x]



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3932
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.9256
sles.com



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

DATE

Robert H. Roush
2-25-2020

LEGEND

- UNIT BOUNDARY
- SURFACE BOUNDARY
- SECTION LINE
- ROAD RIGHT OF WAY
- STREAMS
- FOUND MONUMENT (AS NOTED)
- PROPOSED WELL
- EXISTING WELL



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: 1" = 400'

Checked By: C.V. Moyers

Job Number: 8812

Sheet No. 1 of 2

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.



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

DATE

Robert H. Roush
2-25-2020



12 Vandermere Drive | P.O. Box 1908 | Glenville, WV 25811 | 304.462.5924
112 Kanawha Boulevard, East | Charleston, WV 25301 | 304.546.3912
15.4 East Oakley Bypass | Beckley, WV 25801 | 304.255.5296
slnr.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 10. LOT:	
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Wetlands <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Idle Land <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial		17. TYPE OF WELL: <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other	
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other: (explain)		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% <input type="checkbox"/> 10.1 to 24%	
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		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.	
14. SOIL & RESEILING 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 reseiling planned <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 crowlating tanks <input type="checkbox"/> Proposed alternative	
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input type="checkbox"/> No trees disturbed <input type="checkbox"/> Cut into firewood <input type="checkbox"/> Bury with landowner's approval <input checked="" type="checkbox"/> Mulch small trees and branches, erosion control <input type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative <input type="checkbox"/> Haul to landfill <input type="checkbox"/> Sell to lumber company		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"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <input type="checkbox"/> Proposed alternative	
		23. ADDITIONAL HOLES: <input type="checkbox"/> Rat/Mouse, if used, will be plugged	
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		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 checked="" type="checkbox"/> Idle land <input type="checkbox"/> Industrial <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike <input type="checkbox"/> Pasture <input type="checkbox"/> Wetlands <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Recreational	

**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. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <input checked="" type="checkbox"/> Diversions <input type="checkbox"/> Filter strips <input type="checkbox"/> Drains <input type="checkbox"/> Riprap <input type="checkbox"/> Open top culverts <input type="checkbox"/> Water breaks <input checked="" type="checkbox"/> Out sloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative _____	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 Diposa - 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	x	1.2	=	0.5196			
	P_m =	0.75	x (	6156 ) - (	0.5196) x (	6156) =	1418.342 psi		
							Round to the nearest multiple of five =	1420 psi	
Just type in the depth of the highest perforation.									