

west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary www.dep.wv.gov

Thursday, May 13, 2021 WELL WORK PLUGGING PERMIT Vertical Plugging

SIGMA CORPORATION 8 CAPITOL STREET, SUITE 500 CHARLESTON, WV 25301

Re: Permit approval for 5 47-045-00858-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304)-926-0450.

James A. Martin Chief S.

Operator's Well Number: 5 Farm Name: ALDREDGE, LUCILLE U.S. WELL NUMBER: 47-045-00858-00-00 Vertical Plugging Date Issued: 5/13/2021

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. <u>Failure to adhere to the specified</u> permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.

7

- 2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
- 3. Well work activities shall not constitute a hazard to the safety of persons.

WW-41 Rev.	3 2/01		
	DEPARTMENT OF ENVI	EST VIRGINIA RONMENTAL PROTECTION OIL AND GAS	
	APPLICATION FOR A PERI Well Type: Oil/ Gas X/ Liquid (If "Gas, Production X or Und Location: Elevation 973'	d injection/ W	aste disposal/) Deep/ Shallow <mark>×</mark>
5)	District Triadelphia		Quadrangle Mallory 7.5'
6)	Well OperatorSigma Corp.Address8 Capitol St., Ste. 500Charleston, WV 25301		Tom Hansen 8 Capitol St. Charleston, WV 25301
8)	Oil and Gas Inspector to be notified Name Terry Urban Address PO Box 1207 Clendenin, WV 25045	Name Stalnake Address 220 V	r Energy Corp.

10) Work Order: The work order for the manner of plugging this well is as follows:

See attached plugging procedure. Decotor to Cover All perfs, Oiligns Deuring Zones, Salt's Elevations, Coul & Freshwater with Cenut. Displace & head with 6% Coel

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OCT 26 2020

WV Department of Environmental Protection

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

m) the

Work order approved by inspector

Date 10.26.20

05/14/2021

4704500858P

PLUGGING PROCEDURE

DISPLOCE CENENT WITH GEL. I WHICH IS FRESH WATER WITH A MINIMUM OF 6% BENJONITE (BENEGHT).

Boyd O & G, Inc Aldredge #5 API #47-045-00858 Elevation 959'

DATA:

4-1/2" Casing to 3211'

PRODECURE:

DAY ONE

DAY TWO

DAY THREE

- 8. Rig up Nine Energy and tag top of cement to be sure cement top is above 2422'
- 9. Pull CBL and free point to determine free point of pipe above cement top estimated at 2500'.
- 10. Run in with Nine Energy and cut $4\frac{1}{2}$ " casing. Make sure it is free.
- - b. Displace with 38 barrels of 6% gelled water.
- 13. Pull 4 ¹/₂" casing to 1000' **\$50**' \$50' - 750'
- 14. Set 100' cement plug at warra i from 1000' to 900'.

 - b. Displace with 22 barrels of gelled water.
- 15. Pull 4-1/2" Casing to 350!
- 16. Set 350, Cement Plug From 350, to Surface
 - a. 68 sks of cement'
 - b. Grout to surface
- 17. Pull Remaining 4-1/2" Casing from Well
- 18. Set Monument 6" casing, 30" above surface and 10' below surface, identified with the API number and filled with concrete.

14 C) SET 100' CLASS A CENEWS PLUG FROM 630 --530' TO COVER WATER @ 600'.

Hew Uhh 10-26-20

- 11. Because of the amount of open hole estimated between the casing cut at 2500' and the bottom of the 7" casing, recommend using the 4 ¹/₂" casing as the plugging string to prevent the hole caving in on top of the cut.
- 12. Mix and pump 200 foot cement plug for casing cut plug.
 - a. 70 ft³, 60 sacks of Class A Cement with 2% CaCl2, 12.45Bbl Cement.

a. 25 ft³, 21 Sacks of Cement, 4.5 barrels of Cement.

CAPACITIES:

2-3/8" Tubing - 262 Ft./Bbl

4-1/2" Casing - 62 Ft./Bbl

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05/14/2021





STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION /()

WELL RECORD

Oil or Gas Well Gas

an

West

4704

Rotary

Spudder

Storage

Cable Tools 関

Quadrangle <u>Gilbert</u>	
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Permit No. Log-858

		Man Provide Color Control of Color State State State State	(KIND)
Casing and Tubing	Used in Drilling	Left in Well	Packers
Size		n ar an ann an an ann an ann an ann ann	1
16			Kind of Packer
13	11'-8"	11'-8"	a Handroom bil and an
10	472'	4721	Size of
8¼			
10 TH	22621		Depth set
		3211.23	I
3			Perf. top 3126
2			Perf. bottom 3142
Liners Used			Perf. top 2522
×			Perf. bottom 2534
	ENTED 42"	_{SIZE} 3211	_No. Ft. 8-24-65
		Neme	
FEET	INC	CHES	FEETINCHES
	Tubing Size 16 13 10 8 ¹ / ₄ 2 Liners Used CASING CEMI Dowell COAL WAS E	Tubing Distant Tubing Drilling Size 16 13 11'-8" 10 472' 8¼ 2 2 2 Liners Used 2 CASING CEMENTED 42" Dowell COAL WAS ENCOUNTERED FEETINC FEETINC	Tubing Drilling Deter in Size 16 13 11'-8" 10 472' 8¼ 472' 2 3211.23 3 2 Liners Used 512E CASING CEMENTED 4½" SIZE 3211 Dewell 32

RESULT AFTER TREATMENT 3,500,000 Cu. ft. ROCK PRESSURE AFTER TREATMENT 635 psi 17 hrs.

Fresh Water	3 bailers/h	rs. Feet 85	* & 315'	Salt Water	13 BPH	Feet 8401
Formation	Color	Hard or Soft	Тор	Bottom	Oil, Gas or Water	Depth RECEIVEEmarks Office of Oil and Gas
soil			0	10		OCT 28 2020
sandston	e		10	33		WV Department of
slate			33	80		Environmental Protection
sand			80	260	water	85 fresh
slate			260	300	1	
sand			300	399	water	315 increased
slate			399	4.07		
sand			407	560	1	
slate			560	592		
sand			592	676	water	600 depleted i
slate			676	752		3 days
sand			752	1049	water	849 Jul
slate			1049	1060		G5/14/2021
lime			1060	1100	l l	RECEIVED
sand			1100	1348		West VIANING Cot
slate			1348	1405		Dopt of Miles

47045008589

Formation	Color	Hard or Soft	Top //)	Bottom	Oil, Gas or Water	Depth Found	Remarks *
late & shells			1405	1510			
sand			1510	1575			
slate			1575	1614			
sand			1614	1755			
slate			1755	1795			
red rock			1795	1801			
late & shells			1801	1826			
sand			1826	1977			
late & shells			1977	1986			
red rock			1986	1992			
lime shells			1992	2000			
slate			2000	2063			
red rock			2063	2080			
shells			2080	2103			
sand			2103	2137			
late & shells			2137	2166			
lime			, 2166	2193			
slate			2193	2195			
big lime			2195	2553	gas	2519-37	58/10w-2
red injun		¢	- 2553	2603	0		
gray injun			2603	2686			
late & shells			2686	3103			
coffee shale			3103	3119			••
Berea sand			3119	3133			
slate & shell	8		3133	3213			Td
						•	1
-	t		4				
			a	7			
	•		•		1.		
	 .			•			
•	•		,				
							11/2021

Date 2.7 , 19<u>4 (</u> APPROVED Robert Le: Udams 1 4550 C. wne: Ling org-gritle) Enginee ву 6.0

47045008588

WW-4A Revised 6-07

1) Date: 2) Operator's W Aldredge 5	10/20/20 /ell Number	<u> </u>			
3) API Well No.	: 47 -	045	-	00858	-

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4)	Surface Ow	ner(s) to be served:	5)/(a)	Coal Operator	·
	(a) Name	Christian Fork Land Company, Inc.		Name	N/A
	Address	PO Box 219		Address	
		Coalton, WV 26257	V		
	(b) Name			(b) Coal Own	ner(s) with Declaration
	Address			Name	None
		••••••••••••••••••••••••••••••••••••••		Address	
	(c) Name			Name	
	Address			Address	
6).]	Inspector	Terry Urban		(c) Coal Less	ee with Declaration
	Address	PO Box 1207		Name	NA
		Clendenin, WV 25045	······································	Address	
ì	Telephone	304-549-5915			

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and

(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

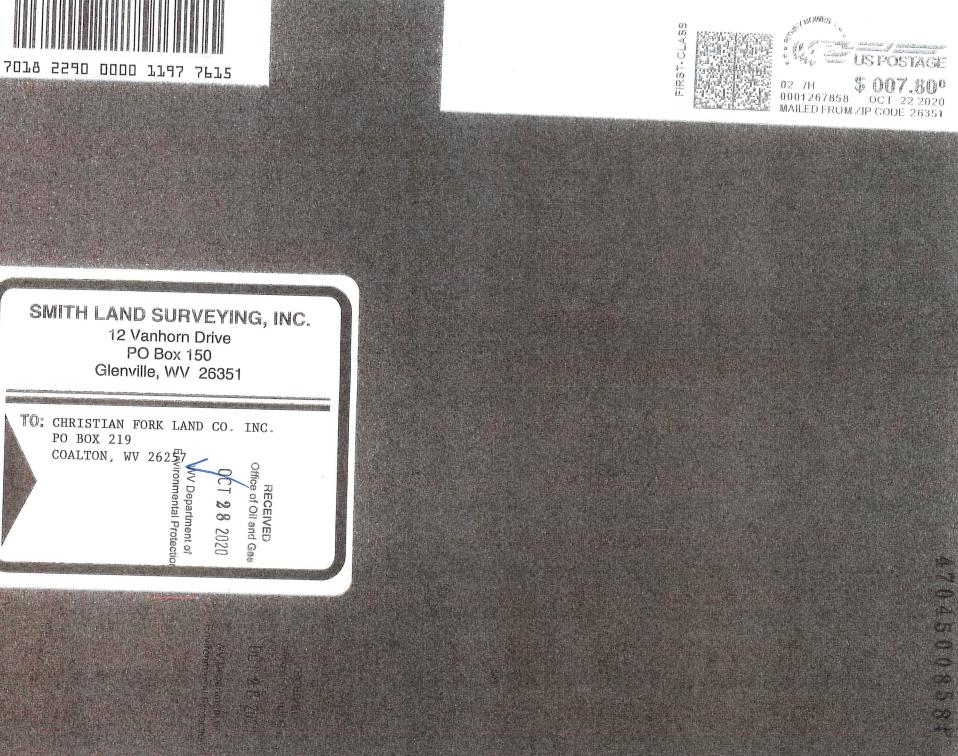
Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

	Well Operator	Sigma Corp.	
MARIA CORMANY	By:	Tom Hansen IC/Im Ham	
Notary Public Official Seal	Its:	President	
State of West Virginia My Comm. Bapires Jun 19, 2023	Address	8 Capitol St., Ste. 500	<u> </u>
Harman & Cormany CPASAL		Charleston, WV 25301	
8 Capitol St Suite 600 Charleston WV 25301	Telephone		
Subscribed and sworn before me t	his 28 da	avor October, 2020	OCT 30 2020
- Varia Corman	wy	Notary Public	
My Commission Expires	0 6/19/2	023	WV Department of
			Environmental Protection

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information. If you have any questions about our use of your personal information.





4704500858

10-24-20

00858

No 🖌

(5/16)	API Number 47 - 045 - 00 Operator's Well No. <u>Aldredge 5</u>
DEPARTMENT OFF	TE OF WEST VIRGINIA FENVIRONMENTAL PROFECTION ICE OF OIL AND GAS I DISPOSAL & RECLAMATION PLAN
Operator Name_Sigma Corp.	OP Code. 306472
Watershed (HUC 10) Guyandotte River	Quadrangle Mallory 7.5'
Do you anticipate using more than 5,000 bbls of water to	o complete the proposed well work? Yes No

Will a synthetic liner be used in the pit? Yes No If so, what ml.? Proposed Disposal Method For Treated Pit Wastes: Land Application (if selected provide a completed form WW-9-GPP)

> Underground Injection (UIC Permit Number Reuse (at API Number

Off Site Disposal (Supply form WW-9 for disposal location)

Other (Explain AST hauled to Approved Wastewater Disposal Site .

Will closed loop system be used? If so, describe: Well will be plumbed into a closed tank and disposed at an approved facility.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh Water

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

Additives to be used in drilling medium? Bentonite Get

Will a pit be used? Yes No 🖌

If so, please describe anticipated pit waste:

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

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

-Landfill or offsite name/permit number?

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

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

	RECEIVED Office of Oil and Gas
	<u>oct</u> 30 2020
. <u>20 J.O</u>	WV Department of Environmental Protection
Notary Public	
-	
A STATE	MARIA CORMANY Notary Public Official Seal
	State of West Virginia My Comm. Bxpires Jun 19, 2023 Herman & Corman) CP/s Ac1 / 2021
	_ Notary Public

ww.o (5/

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Form WW-9

Operator's Well No. <u>Gibson 1</u>

Proposed Revegetation Trea	tment: Acres Disturbed _1	Preveg etation p	ън <u>7</u>				
Lime <u>3</u>	Tons/acre or to corre	ect to pH 6.5					
Fertilizer type 10-	20-20						
Fertilizer amount 1	/3 ton	lbs/acre					
_{Mulch} _Hay	2	Tons/acre					
Seed Mixtures							
Te	emporary	Perm	anent				
Seed Type	lbs/acre	Seed Type	lbs/acre				
KY-31	40	Orchard Grass	15				
Alsike Clover 5		Alsike Clover	5				
Annual Rye 15							
	10						

Attach:

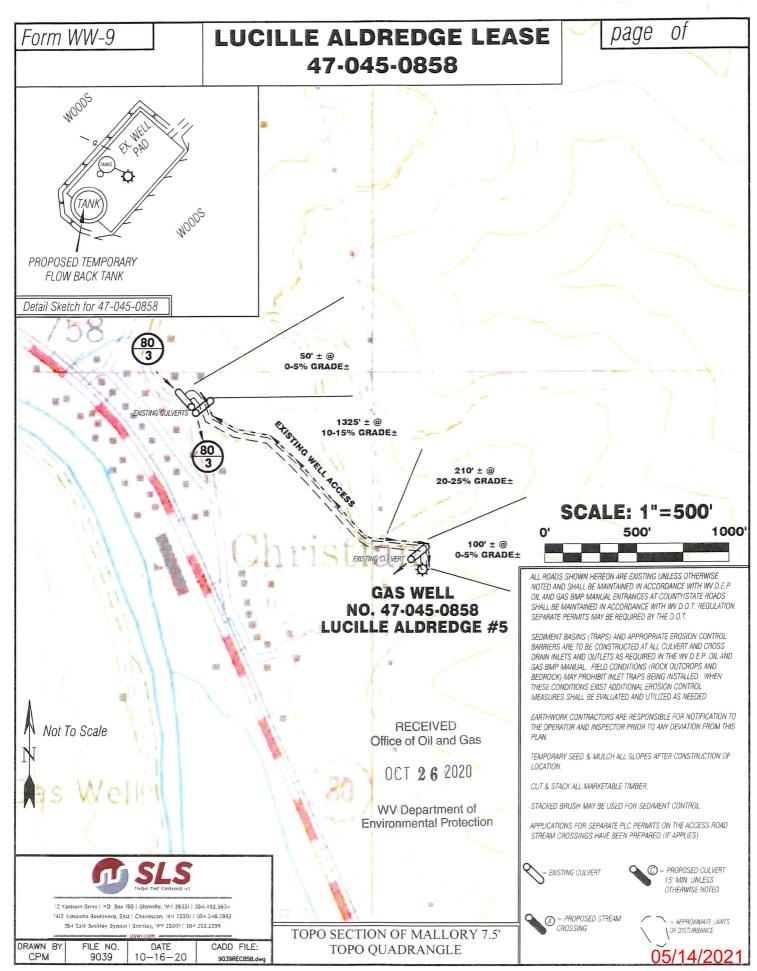
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application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

Photocopied section of involved 7.5' topographic sheet.

Plan Approver by: Kuyw Ull	
Comments:	
Operator to USE State's BPM	ou peclamen
	RECEIVED
	Office of Oil and Gas
	OCT 26 2020
Title: Thysch Wels Date: 10.26.20	WV Department of
June P	Environmental Protection
Field Reviewed? () Yes () No	

05/14/2021

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		4704500858P
FORM WW 6		
LUCILLE ALDREDGE LEASE		LATITUDE 37°42'30"
1305 ACRES		834 834
ALDREDGE NO. 5		834
47-045-00858		
47-045-00838	all a start and a start	47-045-00858 2400'
i	8-152-9 V	/ 47-045-00858
	50.00 AC. (DEED) 35.00 AC. (CALC.)	
	55.00 Re. (ende.)	23-1
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	BILLIS	\ ¢ /
		816
En Cur		
		8-153-5
		CHRISTIAN FORK
		770.344 AC.
	N 81°35' W	21112
HER VOI UN B B-152-27 UN JACKIE TOMBLIN S B 60.00 AC.	2423.09'	
© JACKIE TOMBLIN © 60.00 AC.		47-045-00858
NAD'		NAL O
		NUL 3
j j		TUER L
í í	S 80°53' W	RECEIVED
47-045-00835	/ 3466.12	Office of Oil and Gas
¢ /		DCT 26 2020
8-152-28		
JACKIE L. WHITE, / S ET AL	8-153-1	WV Department of
51.00 AC.	LOYD R. HILBERT, ET AL	Environmental Protection
i j	32.00 AC.	80
. NOTES ON SURVEY /	817-0	
SCALE IS 1"=2000'.		SURFACE LINE
		CREEK
	(S.P.C. NORTH ZONE) (UTM(M) ZONE 17	
Construction and the same day is a subscription of the Construction of the Construc	AD'83 S.P.C.(FT) N. 252,103.1 E. 1,722,61 AD'83 GEO. LAT-(N) 37.689240 LONG-(W)	
	AD'83 UTM (M) N. 4,170,676.1 E. 425,080.	.9 PERMITTED WELL O TAX MAP-PARCEL 00-00
I THE UNDERSIGNED, HEREBY CERTIFY THAT	No. 849 No. 9039P0858.dwg	DENOTES LOCATION OF WELL ON UNITED
THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL	LICENSON ED I	STATES TOPOGRAPHIC MAPS. ATEOCTOBER 19, 2020
THE INFORMATION REQUIRED BY LAW AND	No. 849	EVISED, 20
THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECT	ION.	PERATORS WELL NO ALDREDGE NO. 5
	A	PI
P.S. C. Victor Moy	VIRO. VIRO. N	$\frac{1}{0}$ 47 - 045 - 00858 $\frac{1}{2}$
040		STATE COUNTY PERMIT
MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE N	O. 9039P0858.dwg	STATE OF WEST VIRGINIA
	DIV	VISION OF ENVIRONMENTAL PROTECTION
HORIZONTAL & VERTICAL SCAL CONTROL DETERMINED BY DGPS (SUBMETER MA		OFFICE OF OIL AND GAS
WELL LIQUID	WASTE IF	
10 I I I I I I I I I I I I I I I I I I I	DISPOSAL "GAS" PRODUCTION _	X STORAGE DEEP SHALLOW_ X
LOCATION : ELEVATION973'	_ WATERSHED GUYONDOTTE RIVER	٦
DISTRICT TRIADELPHIA		QUADRANGLE MALLORY 7.5'
SURFACE OWNERCHRISTIAN FORK LAND C		ACREAGE770.344±
ROYALTY OWNERLUCILLE ALDREDGE HEIR	S OR ASSIGNS	ACREAGE1,305±
PROPOSED WORK :		LEASE NO05/14/2021
DRILL CONVERT DRILL DE	EPER REDRILL FRA	CTURE OR STIMULATE PLUG OFF OLD
FORMATION PERFORATE NEW FORMAT	ION PLUG AND ABANDONX	
PHYSICAL CHANGE IN WELL (SPECIFY)		ET FORMATIONBEREA PR MATED DEPTH3,213' PR
	ESTI	MATED DEPTH3,213' 4
WELL OPERATOR SIGMA CORPORATION	DESIGNATED AGE	ENT TOM HANSEN
ADDRESS 8 CAPITOL ST., STE 500	ADDRE	B CAPITOL ST., STE 500
CHARLESTON, WV 25301		CHARLESTON, WV 25301

