

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

Austin Caperton, Cabinet Secretary www.dep.wv.gov

Tuesday, December 3, 2019 WELL WORK PERMIT Vertical / Re-Work

HG ENERGY, LLC 5260 DUPONT ROAD PARKERSBURG, WV 26101

Re: Permit approval for M.A. BAYS NO. 124

47-043-03468-00-00

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

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

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

James A. Martin

Chief

Operator's Well Number: M. A. BAYS N. 124

Farm Name: ALLEN, TERRY & DAWNA

U.S. WELL NUMBER: 47-043-03468-00-00

Vertical Re-Work Date Issued: 12/3/2019

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 permit conditions may result in enforcement action.</u>

CONDITIONS

- 1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
- 2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
- 3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
- 4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
- 5. 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.
- 6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours
- 7. Well work activities shall not constitute a hazard to the safety of persons.
- 8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

FORM WW-3 (B) 1/12



1)	Date: 10/01/2	2019				
2)	Operator's Wel	l No.	MA	Bays 124	sistember (vo	
3)	API Well No.:	47	-	043	-	03468
		State	-	County	_	Permit
4)	UIC Permit No	· UIC2I	R0430	1AP		

STATE OF WEST VIRGINIA NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE 6) LOCATION:		id Injecti	on 🗸	/		ction (not stora	age)	/ v	Vaste Disposal
O) LOCATION.							orter Fork		1
7) WELL OPEN		t: Duval			Co	unty Lincoln	A MED A CE		ngle Griffithsville 7.5'
7) WELL OPER						8) DESIGNA			
Ac		260 Dupont					Addre	-	ipont Road
		arkersburg,							burg, WV 26101
9) OIL & GAS I		OR TO BI	ENOTIFI	ED		10) DRILLIN			
	y Smith					-	Be Determine	d Upon Approva	al of Permit
	Big Tyler Roa					Address			
Cross	Lanes, WV 2	5313				7 			
11) PROPOSED				hysical		/ Perfo	SMALL	ormation	
12) GEOLOGIC						Depth		_ Feet (top	
13) Estimated De						- · · · · · · · · · · · · · · · · · · ·		Feet	
14) Approximate				esh NA		_ Feet	Salt _	1170', 1480'	Feet
15) Approximate			729' - 7	35'					
16) Is coal being					_ No .		The state one and		
17) Virgin reserv					psig	g Source	Estimated		
18) Estimated res			-						psig (BHFP)
19) MAXIMUM									nole pressure 2400 psig
20) DETAILED							CLUDING	ADDITIVE	ES Fresh water, produced water,
bactericides and of						oil recovery			
21) FILTERS (IF									
22) SPECIFICAT	TIONS FO	R CATH	ODIC PR	ROTECT	TION AND	OTHER COR	ROSION C	ONTROL	8
23) CASING AND	TUBING I	PROGRAM	M						
CASING OR		SP	ECIFICATI	ONS		FOOTAGE IN	TERVALS	CEMENT	PACKERS
TUBING TYPE	Size	Grade	Weight	New	Used	For Drilling	Left In	FILL –UP	
			per ft.				Well	OR SACKS	
								(CU. FT.)	
Conductor	11 5/8"	LS	NA		x	30'	30'	Sand In	Kinds
Fresh Water	7"	LS	17#	x		802'	802'	CTS	
Coal									Sizes
Intermediate									2.375" x 4.5"
Production	4 1/2"	J-55	10.5#	x		2739'	2739'	CTS	Depths set
Tubing	2 3/8"	J-55	4.6#	x		2425'	2425'		2325'
Liners									Perforations 40
								-	Top 2622 Bottom2632
-									
24) APPLICANT	"S OPER	ATING R	IGHTS v	vere acq	nired from	Isaac and Laura	Bavs	Ш	
by deed		ease ×		other co			05/07/1904		of record in the
Lincoln			ounty Cle			ease / dated		Book 33	
- Lincoll			ounty Cit	ork 9 OII				DOOK	1 age _ 554
									(15)

FORM WW-3 (A) 1/12



1) Date:	October 1,	2019				
2) Operato	or's Well	No.	МАВа	ays 124		
3) API We	ell No.:	47	_	043	-	03468
		State	-	County	_	Permit

4) UIC Permit No. UIC2R04301AP

STATE OF WEST VIRGINIA

NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Ow (a) Name Address	ner(S) To Be Served Terry & Dawna Allen 28 Russell Road	7) (a) Coal O Name Address	perator NA	
(b) Name Address	Yawkey, WV 25573	7) (b) Coal O Name Address	wner(S) With D	Declaration Of Record
(c) Name Address		Name Address		
6) Inspector Address Telephone	Jeffery Smith 5369 Big Tyler Road Cross Lanes, WV 25313 681-313-6743	7) (c) Coal Lo Name Address	NA NA	aration Of Record
(1) The Appl parties inv (2) The plat ((3) The Cons plan for en	ERSONS NAMED ABOVE: You shication For A Liquid Injection or Waste Polyed in the drilling or other work; surveyor's map) showing the well location truction and Reclamation Plan on Form Wrosion and sediment control and for reclam proposed for the first injection or waste	Oisposal Well on Form WW- W-9 (unless th ation for the sit	Work Permit of 6; and e well work is of e and access roa	n Form WW-3(B), which sets out the only to plug a well), which sets out the ad.
APPLICATION	N YOU HAVE RECEIVED THESE DON N WHICH ARE SUMMARIZED IN THE ATION [(FORM WW-3(B)] DESIGNATE LL.	"INSTRUCTI	ONS" ON THE	E REVERSE SIDE OF THE COPY OF
Notice and Ap West Virginia Application and and Reclamation	t under Chapter 22-6 of the West Virginia plication and accompanying documents for Department of Environmental Protection depicted on the attached Form WW-6. On Plan have been mailed by registered or in certain circumstances) on or before the definition of the desired of the definition of the defini	or a Well Work , with respect Copies of this is certified mail of	Permit with the to a well at the Notice, the Applor delivered by I	ne Chief of the Office of Oil and Gas, ne location described on the attached lication, the plat, and the Construction hand to the person(s) named above (or
	The person signing this docum	ent shall mak	e the following	g certification:
am familiar wit	penalty of law that I have personally exame the have information submitted in this docume that, based on my inquiry of those individual	ent and all	Vell Operator Address	HG Energy, LLC 5260 Dupont Road Parkersburg, WV 26101
immediately re- the information are significant	sponsible for obtaining the information, I be is true, accurate and complete. I am award penalties for submitting false information, is of fine and imprisonment.	e that there It including	By: is: ignature:	Diane White Diane White

WR-35 Rev. 8/23/13 Page 1_ of 4 RECEIVED Office of Oil and Gas

State of West Virginia Department of Environmental Protection - Office of Oil and Gas Well Operator's Report of Well Work

MOV 1 2 2019

WV Department of Environmental Protection

API 47 - 043 _ 03468	County LINCOLN	District DUVAL	
Quad GRIFFITHSVILLE 7.5'		Field/Pool Name	GRIFFITHSVILLE
Farm name ALLEN, TERRY & DAW		Well Number 12	
Operator (as registered with the OOG)		Well Italihoot	
Address 5260 DuPONT ROAD	City PARKERSBURG	State WV	Zip 26101
	Attach an as-drilled plat, profile vorthing 4,231,867 M	iew, and deviation survey Easting 416,287 M	
	orthing	Easting	······································
Bottom Hole No	orthing	Easting	
Elevation (ft) 1,140' GL	Type of Well ■New □ Exis	ing Type of Repor	t ⊐Interim BFinal
Permit Type Deviated Hor	izontal 🗆 Horizontal 6A 🗂 Ve	rtical Depth Type	□ Deep Bhallow
Type of Operation □ Convert □ Dec	epen 🖪 Drill 🗆 Plug Back	□ Redrilling □ Rework	□ Stimulate
Well Type ☐ Brine Disposal ☐ CBM	□ Gas □ Oil ■ Secondary Recover	ry 🗆 Solution Mining 🗆 S	torage Other
Type of Completion ■ Single □ Multip Drilled with □ Cable ■ Rotary	ole Fluids Produced □ Brine	□Gas □ NGL 🖪 Oil	□ Other
Drilling Media Surface hole A Air Production hole A Air Mud F Mud Type(s) and Additive(s) N/A		ediate hole ª Air □ Mu	d B Fresh Water □ Brine
Date permit issued6/13/2013	Date drilling commenced 6/13	3/2014 Date drilling	ceased 6/18/14
Date completion activities began		on activities ceased	
14	te permission granted	Granted by	
Please note: Operator is required to subn	nit a plugging application within 5 da	ys of verbal permission to	plug
Toshwator doptm(s) It		Y/N) depths	N
Salt water depth(s) ft1,170',	1,480' Void(s) encour	tered (Y/N) depths	N
Coal depth(s) ft 729'- 73	Cavern(s) enco	untered (Y/N) depths	
s coal being mined in area (Y/N)			Reviewed by:

WV Department of Environmental Protection

Page 2 of 4 WR-35 Rev. 8/23/13 Farm name ALLEN, TERRY & DAWNA Well number 124 API 47-043 03468 CASING Hole Casing New or Grade Basket Did cement circulate (Y/N) **STRINGS** * Provide details below* Size Size Depth Used wt/ft Depth(s) Conductor 12 1/4" 11 5/8" 30' Sand In Used LS Surface 8 3/4" 7" 802' New LS 84 Υ Coal Intermediate 1 Intermediate 2 Intermediate 3 Production 6 1/4" 4 1/2" 2739' New J-55 N Tubing Packer type and depth set Comment Details Circulated Est. 50 sks to surface on 7" surface cement job. CEMENT Class/Type woc Number Slurry Yield Volume Cement DATA of Cement of Sacks (ft 3/sks) (ft^3) Top (MD) wt (ppg) (hrs) Conductor Surface 200 15.6 1.18 Surface Reg Neat 236 8 Coal Intermediate 1 Intermediate 2 Intermediate 3 Production 50:50 Pozmix/ Econo 150 14.2 1.27 254 1300' 8 Tubing Drillers TD (ft) 2750' Loggers TD (ft) 2754' Deepest formation penetrated Berea Plug back to (ft) NA Plug back procedure N/A Kick off depth (ft) N/A Check all wireline logs run ■ deviated/directional **■** caliper ■ density induction **四** neutron ■ resistivity 🖪 gamma ray **₫** temperature □sonic Well cored □ Yes 🖪 No Conventional Sidewall Were cuttings collected ■ Yes □ No DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 10 Centralizers every 84 from bottom on 4 1/2", Centralizer placed mid string on 7" WAS WELL COMPLETED AS SHOT HOLE □ Yes 🚇 No DETAILS . RECEIVED Office of Oil and Gas WAS WELL COMPLETED OPEN HOLE? □ Yes

No DETAILS NOV 1 2 2019 WERE TRACERS USED - Yes - No TYPE OF TRACER(S) USED

WR-35 Rev. 8/23/13 Page 3 of 4

API 47- 043 - 03468 Farm name ALLEN, TERRY & DAWNA Well number 124

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/27/14	2622'	2632'	40	Berea
				·	
					
					
			<u> </u>		

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	6/27/14	4.5	888	1332	586		42	15 bbls HCL
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L							NOV-1	. %

Page 4 of 4 WR-35 Rev. 8/23/13 Farm name ALLEN, TERRY & DAWNA API 47- 043 _ 03468 Well number_124 **DEPTHS** PRODUCING FORMATION(S) 2622'-2632' 2622'-2632' Berea TVD MD Please insert additional pages as applicable. □ Build up □ Drawdown OIL TEST - Flow - Pump □ Open Flow **GAS TEST** DURATION OF TEST psi Bottom Hole SHUT-IN PRESSURE Surface psi Oil NGL Water **OPEN FLOW** Gas GAS MEASURED BY □ Estimated □ Orifice □ Pilot bpd bpd bpd mcfpd воттом TOP LITHOLOGY/ TOP **BOTTOM** DEPTH IN FT DEPTH IN FT DESCRIBE ROCK TYPE AND RECORD QUANTITYAND **FORMATION** DEPTH IN FT DEPTH IN FT TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC) NAME TVD TVD MD MD Sand/Shale 729 O 0 Pittsburgh Coal 729 735 Sand/Shale 735 1892 **Big Lime** 1892 2098 Big Injun 2098 2203 2203 2598 Shale Coffee Shale 2598 2619 Berea 2619 2640 RECEIVED Shale 2640 2750 Office of Oil and Gas TD 2750 NOV 1 2 2019 WV Department of Environmental Protection Please insert additional pages as applicable. Drilling Contractor Decker Drilling Address 11565 State Route 676 Zip 45784 OH Vincent City State Logging Company Weatherford International Zip 26452 wv Weston Address 777 North River Avenue State City Cementing Company Universal Services KY Zip 41601 Allen Address 5252 Rt 1428 State City Stimulating Company Producers Service Corp. Zip 43701 Address 109 South Graham Street State OH Zanesville City Please insert additional pages as applicable. Telephone 304-420-1107 Completed by Roger Heldman Title Operations Manager Date 7/21/14 Signature

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

			Ŀ	repared by:	+ 1 / 1 · 1
epared for:			I	Producers Servi	ce Corp
G Energy			(Chris Bryan	
ustin Hendershot				109 S. Graham	St.
04 771 5432	PRODUCERS			Zanesville, OH	
	SERVICE CORP. ·				20702
				740-454-6253	
INVOICE #: 16737					
WELL NAME: M A Bays #124				•	
STATE & COUNTY: Lincoln,WV					
TOWNSHIP/FIELD: Griffthsville					
DATE of SERVICE: 6/27/2014					
CUSTOMER PO#	· ·				
	Notes	Amount	Units	Unit Cost	Total Cost
Description	1,000	- 4		A 4000 00	+ 4 300 0C
ACID PUMP CHARGE 1000-2000 PSI	TO BOY	50			
WILEAGE CHARGE PER UNIT ONE WAY	1 Unit @ 50 Miles	500			
C ACID 15%		2			
ACID DELIVERY		0.5			Det .
PRO HIB II		0.5			
PRO CLA FIRM LP		0.5			
PRO NE-1		0.8			
PRO PEN			[
DATA VAN					920
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Customer Approval:					
			-		
Same and the same					820

NOV 1 2 2019

WV Department of Environmental Protection

WW-9 (2/15)

NOV 1 2 2019

API Number 47 - 043 Operator's Well No. M A Bays 124

- 03468

STATE OF WEST VIRGINIA

WV Department of Environmental Protection

Environmental Protection OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy LLC	OP Code 494497948
	Quadrangle Griffithsville 7.5'
Do you anticipate using more than 5,000 bbls of water to Will a pit be used? Yes No No No Will a pit be used? Yes No Will a synthetic liner be used in the pit? Yes	complete the proposed well work? Yes No V
Proposed Disposal Method For Treated Pit Wast Land Application Underground Injection (UIC) Reuse (at API Number Off Site Disposal (Supply form Other (Explain No wastes antic) Will closed loop system be used? If so, describe: No Drilling medium anticipated for this well (vertical and hor	Permit Number) m WW-9 for disposal location) cipated, should there be any cuttings or fluids they will be hauled for disposal rizontal)? Air, freshwater, oil based, etc. NA
	tc. NA
-If left in pit and plan to solidify what medium w -Landfill or offsite name/permit number? NA	noved offsite, etc. None anticipated; If any, remove off site to an approved landfill vill be used? (cement, lime, sawdust) NA
	and Gas of any load of drill cuttings or associated waste rejected at any wided within 24 hours of rejection and the permittee shall also disclose
on August 1, 2005, by the Office of Oil and Gas of the We provisions of the permit are enforceable by law. Violatically or regulation can lead to enforcement action. I certify under penalty of law that I have personapplication form and all attachments thereto and that, obtaining the information, I believe that the information penalties for submitting false information, including the p	
Company Official Signature Diane White	
Company Official (Typed Name) Diane White	
Company Official Title Agent	
Subscribed and sworn before me this 1st day	of October , 20_19 Notary Public OFFICIAL SEAL
My commission expires 7/31/2022	STATE OF WEST VIRGINIA NOTARY PUBLIC CASSIDY A. BOARDMAN 5301 13th Ave Vienna, WV 26105 My Commission Expires July 31, 202:

Operator's Well No. M A Bays 124

Proposed Revegetation	Treatment: Acres Distur	bed 0.1 acres Prevegetation	on pH
Lime	3 Tons/acre or to		
Fertilizer type			
Fertilizer amou	nt	500 lbs/acre	
Mulch_ Stra	W	2 Tons/acre	
		Seed Mixtures	
	Temporary	Pe	rmanent
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5
Ladino Clover	5	Ladino Clover	5
**Sediment Cont attach: Drawing(s) of road, local	rol Plan will be in	effect at all times ** ea for land application (unless engineered plans	
ttach: Orawing(s) of road, local rovided) hotocopied section of ir	rol Plan will be in	effect at all times ** ea for land application (unless engineered plans	s including this info have bee
attach: Orawing(s) of road, locat rovided)	rol Plan will be in	effect at all times ** ea for land application (unless engineered plans	s including this info have bee
**Sediment Cont Attach: Drawing(s) of road, local rovided) hotocopied section of ir	rol Plan will be in	effect at all times ** ea for land application (unless engineered plans	s including this info have bee
ttach: brawing(s) of road, local rovided) hotocopied section of ir	rol Plan will be in	effect at all times ** ea for land application (unless engineered plans	s including this info have bee







