

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

API 47-087-04759 County ROANE District SMITHFIELD
Quad LOONEYVILLE 7.5' Pad Name MCGRAW, CHARLES Field/Pool Name CLOVER
Farm name ATKINSON, DELORES Well Number 114
Operator (as registered with the OOG) H.G. ENERGY LLC
Address 5260 DuPONT ROAD City PARKERSBURG State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,285,136 M Easting 475,573 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing 4,284,937 M Easting 475,484 M

Elevation (ft) 1,111' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
N/A

Date permit issued 7/10/18 Date drilling commenced NA Date drilling ceased NA
Date completion activities began 7/23/18 Date completion activities ceased 7/27/18
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Open mine(s) (Y/N) depths None
Salt water depth(s) ft 1740' Void(s) encountered (Y/N) depths None
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

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Reviewed by

 4-30-19

Reviewed by: _____

WR-35
Rev. 8/23/13

API 47- 087 - 04759 Farm name ATKINSON, DELORES Well number 114

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	12 1/4"	11 5/8"	30'	Used	LS		Sand In
Surface	8 3/4"	7"	507'	New	LS	64'	N
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2450.4'	New	J-55		Y
Tubing							
Packer type and depth set							

Comment Details Grouted w/ Est. 25 sks to surface on 7" surface cement job. Circulated Est. 25 sks to surface on 4 1/2" cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Reg Neat	130	15.6	1.18	153	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	100/125	13.2/14.2	1.64/1.27	164/186	Surface	8
Tubing							

Drillers TD (ft) 2480' Loggers TD (ft) 2467'
 Deepest formation penetrated Big Injun Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 650'

Check all wireline logs run caliper density deviated/directional induction
 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 _____
20 Centralizers every 88 from bottom on 4 1/2", Centralizer placed mid string on 7"

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	7/24/18	2284'	2292'	48	Big Injun

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	7/27/18	3.5	1367	NA	490	01	12	2000 gals 15% HCL

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Big Injun</u>	<u>2120'- 2146'</u> TVD	<u>2272'- 2304'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd
GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Sand/Shale	0	1592	0	1644	
Sand	1592	1603	1644	1656	
Shale	1603	1640	1656	1698	
Sand	1640	1778	1698	1860	
Shale	1778	1788	1860	1872	
Sand	1788	1946	1872	2060	
Little Lime	1946	1964	2060	2080	
Pencil Cave	1964	1974	2080	2094	
Big Lime	1974	2100	2094	2248	
Keener	2100	2120	2248	2272	
Big Injun	2120	2146	2272	2304	Drilled directional S 22.6° W a distance of 642.5'
Shale	2146	2298	2304	2480	
TD	2298		2480		

Please insert additional pages as applicable.

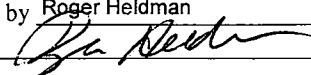
Drilling Contractor Decker Drilling
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Weatherford International
Address 777 North River Avenue City Weston State WV Zip 26452

Cementing Company Universal Services
Address Hall Rd City Buckhannon State WV Zip 26201

Stimulating Company Producers Service Corp.
Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107
Signature  Title Operations Manager Date 8/1/18

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WR-37
(REV. 9/94)

Date: July 31, 20 18 **05/03/2019**
 Operator's
 Well No. Charles McGraw #114
 API No. 47 - 087 - 04759
2R0870004AP

**STATE OF WEST VIRGINIA
 BUREAU OF ENVIRONMENT, OFFICE OF OIL AND GAS
 PRE-OPERATION CERTIFICATE
 FOR LIQUID INJECTION OR WASTE DISPOSAL WELL**

WELL OPERATOR HG Energy, LLC **DESIGNATED AGENT** Diane White
 Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

GEOLOGICAL TARGET FORMATION Big Injun Depth 2120 feet (top) to 2146 feet (bottom)
 Virgin reservoir pressure in target formation 80 psig (TVD) 2272 (MD) 2304 (MD)
 Source of information on virgin reservoir pressure: Estimated
 Perforation intervals 2284'-2292' Open-hole intervals _____

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: 782 psig Bottom hole pressure: 1,706 psig
 Volume per hour: 150 Barrels

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: Fresh water and/or produced water from waterflood operations.
 Wastes to be disposed of: None
 Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.)
Bactericides and other chemicals necessary to maintain water quality or
improve oil recovery.

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE & DEPTH SET)
CONDUCTOR									
FRESH WATER	<u>7</u>	<u>LS</u>	<u>17</u>	<u>X</u>		<u>507</u>	<u>507</u>	<u>130 Sks</u>	<u>Parmaco</u>
COAL									
INTERMEDIATE									
PRODUCTION	<u>4-1/2</u>	<u>J-55</u>	<u>10.5</u>	<u>X</u>		<u>2450.4</u>	<u>2450.4</u>	<u>225 Sks</u>	<u>2174.9</u>
TUBING	<u>2-3/8</u>	<u>J-55</u>	<u>4.7</u>	<u>X</u>		<u>2174.9</u>	<u>2174.9</u>		
LINERS									

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MECHANICAL INTEGRITY TEST

Test Method: Pressure tested tubing/casing annulus to 1740 psig for 20 minutes
See attached chart

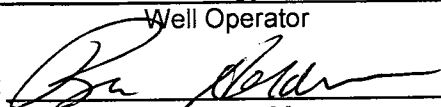
The undersigned certifies that the test was performed on July 25, 20 18 and demonstrated the mechanical integrity of the well. The test was witnessed by Joe Taylor representing the Office of Oil and Gas.

HG Energy, LLC 07/31/2018

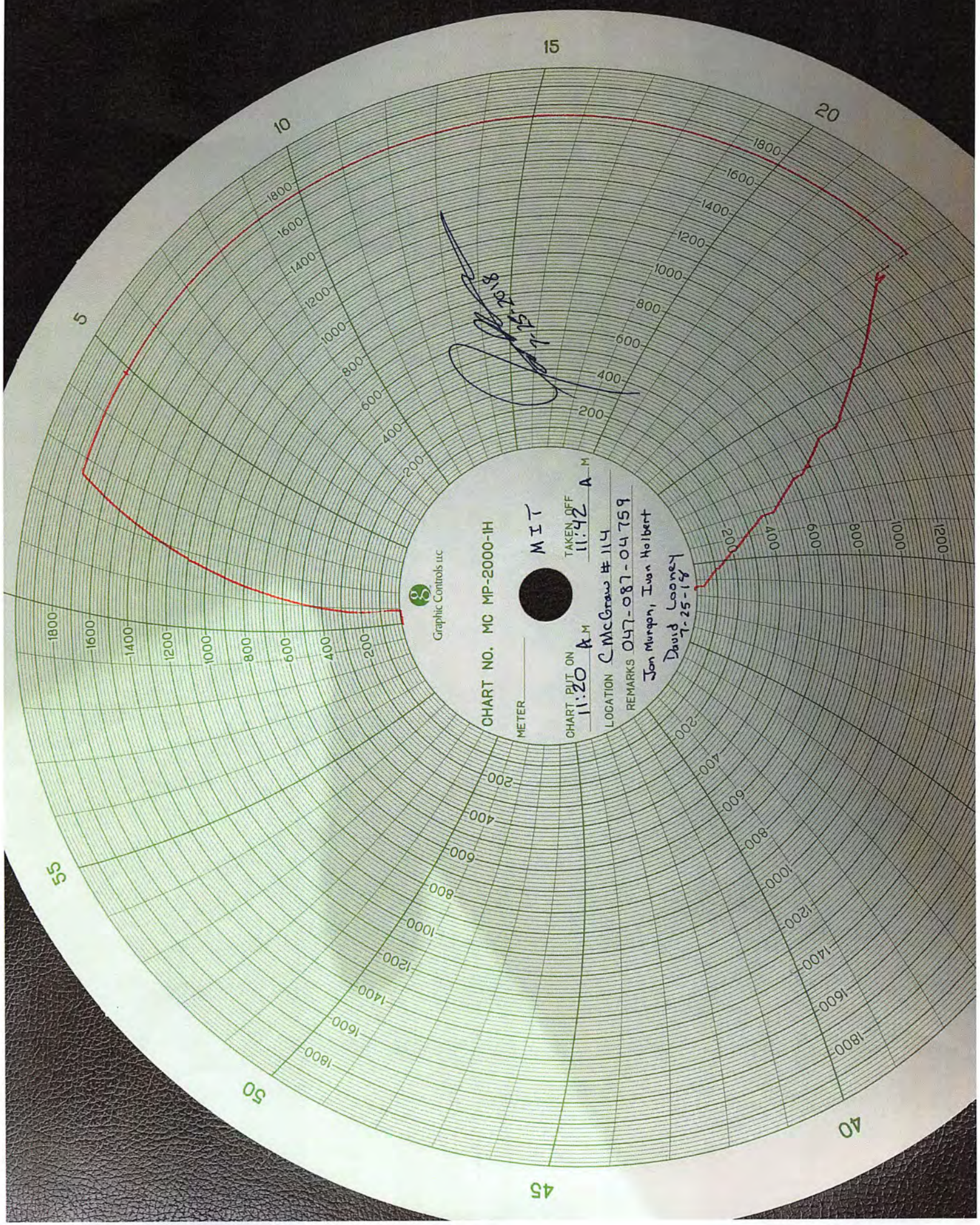
THIS WELL IS AUTHORIZED FOR INJECTION

Signed _____ UIC PROGRAM DIRECTOR
Date _____

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

HG Energy, LLC
Well Operator
By: 
Its Operations Manager

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Graphic Controls LLC

CHART NO. MC MP-2000-IH

METER

MIT

CHART PUT ON

11:20 A M

TAKEN OFF

11:42 A M

LOCATION

C McGraw # 114

REMARKS 047-087-04759

Jon Mueppel, Ivan Holbert

David Looney

7-25-18

81-02-18
David Looney



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

05/03/2019

Roger Heldman
Operations Manager

8/1/18

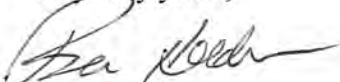
Ms. Melanie Hankins
West Virginia DEP
Office of Oil & Gas
601 57 th Street, SE
Charleston, WV 25304

Dear Melanie,

Enclosed please find the WR 37's and WR 35's for:
C McGraw 115 (47-087-04758)
S B Kinkead 109 (47-087-04753)
C B Ferrell 110 (47-0870-4754)
C McGraw 114 (47-087-04759)

Your attention to this matter is greatly appreciated. Please feel free to contact me with any questions or concerns.

Very truly yours,



Roger Heldman

Enclosures

Reviewed


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