

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

API 47 - 095 - 02161 County Tyler District McElroy  
Quad Shirley Pad Name Grumpy Field/Pool Name \_\_\_\_\_  
Farm name Woodburn Well Number Grumpy 5  
Operator (as registered with the OOG) Jay-Bee Oil & Gas, Inc.  
Address 3570 Shields Hill Rd. City Cairo State WV Zip 26337

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,368,711.9 Easting 520,280.8  
Landing Point of Curve Northing 4,368,975.4 Easting 520,296.7  
Bottom Hole Northing 4,370,498.8 Easting 519,710.8

Elevation (ft) 1297' 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)  
ABS 40

Date permit issued 5/16/2014 Date drilling commenced 7/16/2014 Date drilling ceased 11/26/2014  
Date completion activities began 2/5/2015 Date completion activities ceased 3/28/2015  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 90-120' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 840-870' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) N

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Reviewed by:

**APPROVED**

NAME: Jaquelin Shunta

DATE: 6/7/16

Ax 06/17/2016

API 47- 095 - 02161 Farm name Woodburn Well number Grumpy 5

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	17"	16"	30'	New	20/32/24		Y
Surface	15"	11 3/4"	535'	New	20/23/24	50'	Y
Coal							
Intermediate 1	11"	8 5/8"	2506'	New	20/17/24	1500'	Y
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	12,877'	New	20		Y
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	300	15.6	1.18	252	CTS	8
Coal							
Intermediate 1	Class A	776	14.7	1.36	634	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	1610	14.4	1.36	2190	289' from surface	8
Tubing							

Drillers TD (ft) 12,877 Loggers TD (ft) 12,877

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6320'

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 Spiral centralizer every joint from TD back to start of 90 degree.  
90 - 70 degree every second joint.  
70 degree - KOP every third joint.  
KOP - Surface centralizer placed every 500'.

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

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	2/5/15	12865	12746	96	Marcellus
2	2/7/15	12700	12620	72	Marcellus
3	2/7/15	12568	12434	72	Marcellus
4	2/9/15	12392	12207	72	Marcellus
5	2/9/15	12158	11994	72	Marcellus
6	2/10/15	11931	11782	72	Marcellus
7	2/10/15	11734	11563	72	Marcellus
8	2/10/15	11520	11379	72	Marcellus
9	2/11/15	11344	11214	72	Marcellus
10	2/12/15	11170	10982	72	Marcellus
11	2/12/15	10946	10826	72	Marcellus
12	2/12/15	10782	10665	72	Marcellus
13	2/12/15	10622	10482	72	Marcellus
14	2/14/15	10437	10271	72	Marcellus
15	2/15/15	10235	10109	72	Marcellus
16	2/16/15	10077	9978	72	Marcellus

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 (bbbls)	Amount of Nitrogen/other (units)
1	2/5/15	70.9	6907	7482	4160	178984	7681	N/A
2	2/7/15	70.7	6628	7382	4972	180134	7574	N/A
3	2/7/15	70.7	6575	6959	4937	180081	8685	N/A
4	2/9/15	69.7	6836	7319	4085	180706	8062	N/A
5	2/9/15	70.7	6720	6927	4741	180208	8734	N/A
6	2/10/15	70.3	6793	7610	4424	178188	6956	N/A
7	2/10/15	71.4	7249	7482	5051	173457	7408	N/A
8	2/10/15	72.0	6843	7221	4241	180750	6712	N/A
9	2/11/15	70.5	6643	6979	4050	179326	7175	N/A
10	2/12/15	71.4	6642	7634	4050	165508	6636	N/A
11	2/12/15	73.0	6657	6909	4421	179498	7476	N/A
12	2/12/15	72.9	6805	7421	4516	170951	6925	N/A
13	2/12/15	69.3	6698	8004	4646	146736	8391	N/A
14	2/14/15	70.0	6676	7021	3936	178631	7146	N/A
15	2/15/15	69.8	6592	6857	4676	181373	6823	N/A
16	2/16/15	70.0	6734	7239	4142	180160	7023	N/A

Please insert additional pages as applicable.

WV Department of Environmental Protection  
Oil and Gas  
2015

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	2/16/15	9936	9781	72	Marcellus
18	2/16/15	9744	9609	72	Marcellus
19	2/17/15	9562	9438	72	Marcellus
20	2/17/15	9394	9307	72	Marcellus
21	2/18/15	9272	9118	72	Marcellus
22	2/19/15	9086	8958	72	Marcellus
23	2/20/15	8926	8802	72	Marcellus
24	2/21/15	8754	8608	72	Marcellus
25	2/21/15	8564	8394	72	Marcellus
26	2/22/15	8328	8177	72	Marcellus
27	2/23/15	8134	7960	72	Marcellus
28	2/23/15	7906	7710	72	Marcellus
29	2/23/15	7666	7499	72	Marcellus

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)
17	2/16/15	75.0	6882	7196	4835	181851	6699	N/A
18	2/16/15	75.7	6914	6545	4971	180636	7404	N/A
19	2/17/15	74.9	6686	7592	4793	155052	6297	N/A
20	2/17/15	73.8	6372	6802	5208	177289	6663	N/A
21	2/18/15	73.8	6312	6690	4962	183501	6818	N/A
22	2/19/15	73.8	6359	7494	5103	177976	6372	N/A
23	2/20/15	72.1	6124	6333	4196	179171	6454	N/A
24	2/21/15	71.6	5897	6376	5157	178830	6588	N/A
25	2/21/15	73.0	6036	6434	5081	179072	6741	N/A
26	2/22/15	72.8	6135	6574	5113	178128	6455	N/A
27	2/23/15	74.6	6331	6558	3850	177919	6394	N/A
28	2/23/15	74.1	6496	6991	4354	178536	6200	N/A
29	2/23/15	74.0	6247	6488	4400	188900	6100	N/A

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>7,075'</u> TVD	<u>12,877'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable. Flowback not Initiated

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3034 psi Bottom Hole N/A psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 5500 mcfpd Oil 46 bpd NGL N/A bpd Water 65 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
<u>See Attached</u>	<u>0</u>		<u>0</u>		

Please insert additional pages as applicable.

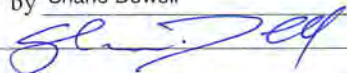
Drilling Contractor Horizontal Well Drillers  
Address 2915 SH 74 South City Purcell State OK Zip 73080

Logging Company Precise Well Analysis  
Address PO Box 542 City Belpre State OH Zip 45714

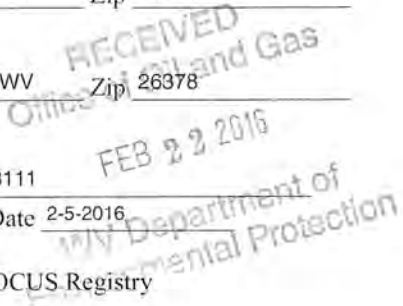
Cementing Company Nabors Completion & Production  
Address 1650 Hackers Creek Rd. City Jane Lew State WV Zip 26378

Stimulating Company Baker Hughes  
Address 837 Phillipi Rd. City Clarksburg State WV Zip 26378

Please insert additional pages as applicable.

Completed by Shane Dowell Telephone 304-628-3111  
Signature  Title Office Manager Date 2-5-2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry



**OIL AND GAS RECLAMATION NOTICE**

TO:

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Pursuant to West Virginia Code 22-7, notice is hereby given that the undersigned well operator is commencing the reclamation of the surface disturbance caused by well work required by West Virginia Code 22-6-30 on the tract of land as follows:

API Permit No. 47- 095 - 02161 \_\_\_\_\_;

Acreage \_\_\_\_\_;

Watershed \_\_\_\_\_;

District McElroy \_\_\_\_\_;

County Tyler \_\_\_\_\_;

Public Road Access \_\_\_\_\_;

Generally used farm name Woodburn \_\_\_\_\_.

This tract of land was utilized in connection with the well work authorized by the permit listed above issued by the Office of Oil and Gas of the West Virginia Department of Environmental Protection.

Any claim for oil and gas production damage compensation from the undersigned must be made within 2 years of the publication of this notice.

Well Operator Jay-Bee Oil & Gas, Inc. \_\_\_\_\_

Address 3570 Shields Hill Rd. \_\_\_\_\_

Cairo, WV 26337 \_\_\_\_\_

Telephone 304-628-3111 \_\_\_\_\_

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**Lithology**

Grumpy 5 47-095-02161

<u>FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>
MISC. RED ROCK & SHALES	0	2396
LIME	2396	2496
INJUN	2496	2613
SHALE	2613	2960
GORDON STRAY	2960	2980
SHALE	2980	3176
GORDON	3176	3206
SHALE	3206	3485
BAYARD	3485	3494
SHALE	3494	3823
WARREN	3823	3921
SHALE	3921	4157
BALLTOWN	4157	4320
SHALE	4320	4758
2ND RILEY	4758	4866
SHALE	4866	5017
3RD RILEY	5017	5058
SHALE	5058	5115
BENSON	5115	5118
SHALE	5118	5360
ALEXANDER	5360	5531
SHALE	5531	5776
ELK	5776	5824
SHALE	5824	6158
HAMILTON	6158	6332
SHALE	6332	6988
UPPER Marcellus	6988	6994
PARCELL LIME	6994	7029
SHALE	7029	7053
LOWER MARCELLUS	7053	

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# Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	2/5/2015
Job End Date:	2/24/2015
State:	West Virginia
County:	Tyler
API Number:	47-095-02161-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	GRUMPY 5
Longitude:	-80.76439000
Latitude:	39.46767000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,075
Total Base Water Volume (gal):	8,238,174
Total Base Non Water Volume:	0

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Water	7732-18-5	100.00000	92.32011	
Sand, White, 30/50	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		3.08686	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		3.08498	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.72767	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.53644	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.07121	SmartCare Product
GW-3LDF	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.03421	SmartCare Product
Scaletrol 720	Baker Hughes	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02630	SmartCare Product



Alpha 1427	Baker Hughes	Biocide					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02308	SmartCare Product
Enzyme G-NE	Baker Hughes	Breaker					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01663	SmartCare Product
Calcium Chloride	Baker Hughes	Salts					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01143	
Ferrotrol 300L	Baker Hughes	Iron Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00373	SmartCare Product
InFlo 250G, 330 gl tote	Baker Hughes	Surfactant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00339	
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00172	SmartCare Product
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Ingredients in Additive(s) (MSDS and non-MSDS)	Baker Hughes	See Trade Name(s) List					
			Crystalline Silica (Quartz)	14808-60-7	100.00000	6.89562	
			Water	7732-18-5	95.00000	0.53137	
			Hydrochloric Acid	7647-01-0	15.00000	0.08044	
			Mineral Oil	8042-47-5	70.00000	0.02393	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.02135	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.02135	
			Guar Gum	9000-30-0	60.00000	0.02051	
			Calcium Chloride	10043-52-4	100.00000	0.01274	
			Ethylene Glycol	107-21-1	45.00000	0.01183	
			Petroleum Distillates	64742-47-8	30.00000	0.01026	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000	0.01026	
			Glutaraldehyde	111-30-8	30.00000	0.00692	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00526	
			Sodium Chloride	7647-14-5	5.00000	0.00439	
			Methanol	67-56-1	100.00000	0.00239	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00231	
			Citric Acid	77-92-9	60.00000	0.00224	
			Ammonium Chloride	12125-02-9	3.00000	0.00214	
			Crystalline Silica: Quartz	14808-60-7	5.00000	0.00171	
			1-butoxy-2-propanol	5131-66-8	5.00000	0.00171	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00171	
			Oleamide DEA	93-83-4	2.00000	0.00142	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00142	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00115	

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		Ethanol	64-17-5	5.00000	0.00115
		Surfactant	9016-45-9	15.00000	0.00091
		Potassium Chloride	7447-40-7	5.00000	0.00083
		Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00083
		Polyoxyalkylenes	68951-67-7	30.00000	0.00051
		Sorbitan Monooleate	1338-43-8	0.50000	0.00036
		Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000	0.00036
		Fatty Acids	61790-12-3	10.00000	0.00017
		Modified Thiourea Polymer	68527-49-1	7.00000	0.00012
		Olefin	64743-02-8	5.00000	0.00009
		Propargyl Alcohol	107-19-7	5.00000	0.00009
		2-butoxy-1-propanol	15821-83-7	0.10000	0.00003
		Formaldehyde	50-00-0	1.00000	0.00002

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39-30-00 N (TH)

Top Hole 4,015'  
Bottom Hole 5,870'

References



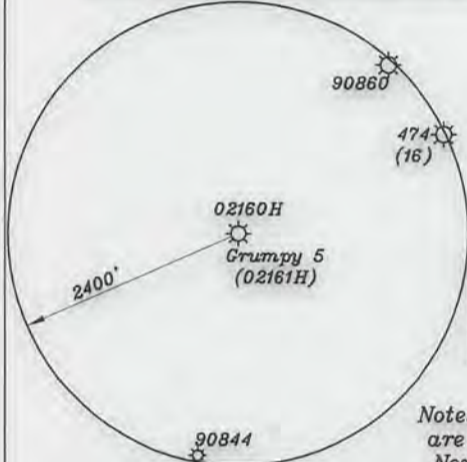
Note: No water wells were found within 250' of the location. No dwellings or agricultural buildings were found within 625' of the center of the well pad.

- A-Rush T.M. 2/13 8.88 Ac.
- B-Jones T.M. 2/12 93 Ac.
- C-Thomaselli T.M. 2/14 29 Ac.
- D-Lemaster et al. T.M. 6/26 87.06 Ac.
- E-McHenry Trust T.M. 6/15 15.81 Ac.
- F-Bowser T.M. 6/16 15.82 Ac.
- G-Thompson T.M. 6/17 26.36 Ac.
- H-Bloom T.M. 6/18 59.76 Ac.
- I-Eidle T.M. 7/17 23.73 Ac.

Note: Lease numbers are in red.

<b>Top Hole</b>	
Geo NAD 83-	39.467750 N, 80.764228 W
UTM NAD 83 (Meters)-	4368711.9 N, 520280.8 E
UTM NAD 83 (Feet)-	14333015.6 N, 1706954.7 E
<b>LPI</b>	
Geo NAD 83-	39.470124 N, 80.764036 W
UTM NAD 83 (Meters)-	4368975.4 N, 520296.7 E
UTM NAD 83 (Feet)-	14333880.1 N, 1707006.7 E
<b>Bottom Hole</b>	
Geo NAD 83-	39.483864 N, 80.770802 W
UTM NAD 83 (Meters)-	4370498.8 N, 519710.8 E
UTM NAD 83 (Feet)-	14338878.1 N, 1705084.6 E

NORTH



Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	N04°21'E	867'
L2	S37°04'W	3,408'
L3	N78°13'W	1,932'

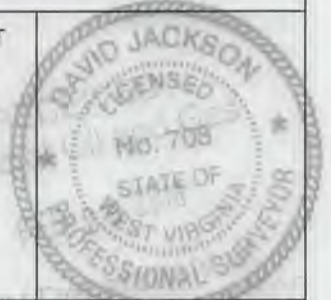
Notes: Ties to wells and corners are based on State Plane Grid North-WV North Zone NAD 27.

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. \_\_\_\_\_  
DRAWING NO. 1  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1 in 200  
PROVEN SOURCE OF ELEVATION GPS  
submeter unit

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 DEPARTMENT OF ENERGY.

(SIGNED) David E Jackson  
R.P.E. \_\_\_\_\_ L.L.S. 708



STATE OF WEST VIRGINIA  
Division of Environmental Protection  
OFFICE OF OIL AND GAS

DATE February 5, 2016  
OPERATOR'S WELL NO. Grumpy 5  
API WELL NO. As-Drilled

WELL TYPE: OIL    GAS X LIQUID INJECTION    WASTE DISPOSAL    47 — 095 — 02161H  
(IF "GAS") PRODUCTION X STORAGE    DEEP    SHALLOW X STATE COUNTY PERMIT

LOCATION: ELEVATION 1297.0 WATER SHED Elder Run & Woodburn Run  
DISTRICT McElroy COUNTY Tyler  
QUADRANGLE Shirley 7 1/2'

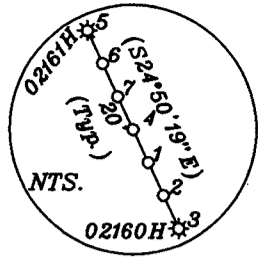
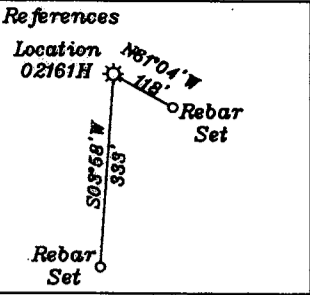
SURFACE OWNER Diana Woodburn Samson ACREAGE 42.00 ac.  
OIL & GAS ROYALTY OWNER Diana Woodburn Samson LEASE ACREAGE 42.00 ac.

06/17/2016

LEASE NO. & ACREAGE: "See ownership list above for lease numbers"

PROPOSED WORK: DRILL X CONVERT    DRILL DEEPER    REDRILL    FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION    PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled

PLUG AND ABANDON    CLEAN OUT AND REPLUG     
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD=7,082 TMD=12,877'  
WELL OPERATOR Jay-Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda  
ADDRESS 1720 Rt. 22, East Union, NJ 07083 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337

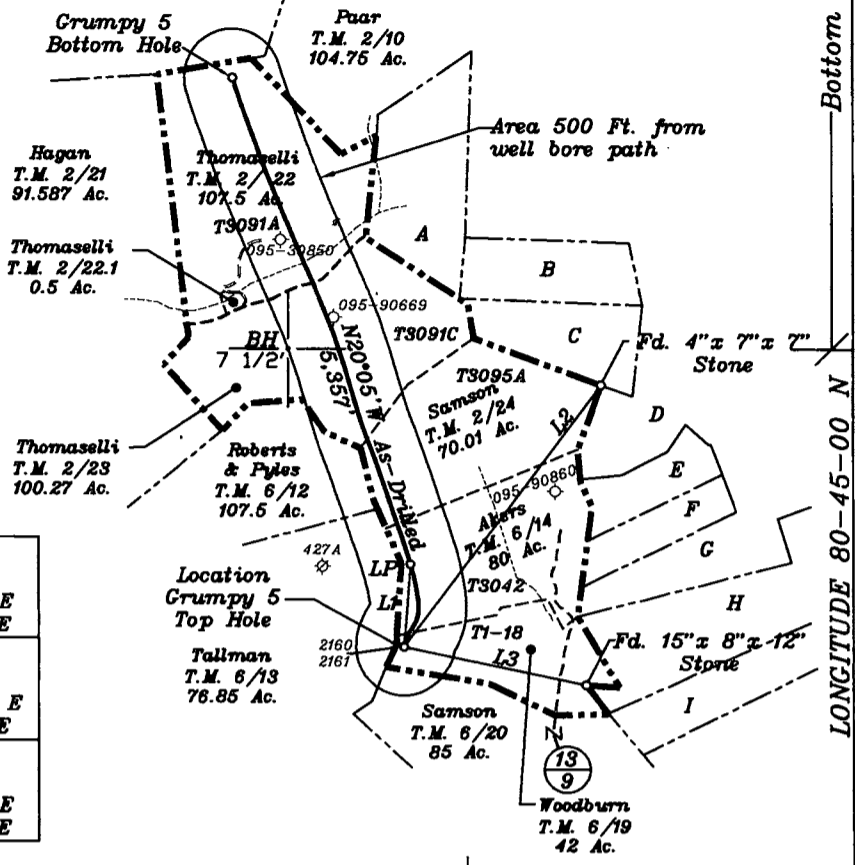


Note: No water wells were found within 250' of the location. No dwellings or agricultural buildings were found within 625' of the center of the well pad.

- A-Rush T.M. 2/13 8.88 Ac.
- B-Jones T.M. 2/12 93 Ac.
- C-Thomaselli T.M. 2/14 29 Ac.
- D-Lemaster et al. T.M. 6/26 87.06 Ac.
- E-McHenry Trust T.M. 6/15 15.81 Ac.
- F-Bowser T.M. 6/16 15.82 Ac.
- G-Thompson T.M. 6/17 26.36 Ac.
- H-Bloom T.M. 6/18 59.76 Ac.
- I-Eidle T.M. 7/17 23.73 Ac.

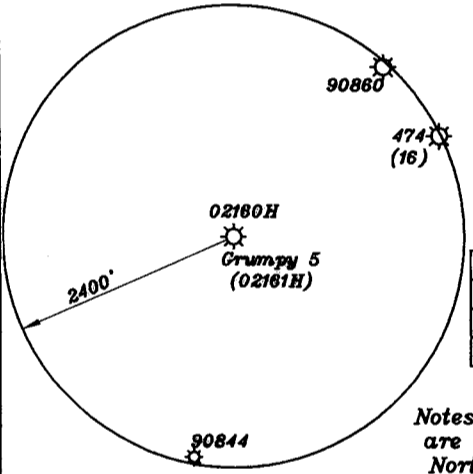
Note: Lease numbers are in red.

<b>Top Hole</b>
Geo NAD 83- 39.467750 N, 80.764228 W
UTM NAD 83 (Meters)- 4368711.9 N, 520280.8 E
UTM NAD 83 (Feet)- 14333015.6 N, 1706954.7 E
<b>LP1</b>
Geo NAD 83- 39.470124 N, 80.764036 W
UTM NAD 83 (Meters)- 4368975.4 N, 520296.7 E
UTM NAD 83 (Feet)- 14333880.1 N, 1707006.7 E
<b>Bottom Hole</b>
Geo NAD 83- 39.483864 N, 80.770802 W
UTM NAD 83 (Meters)- 4370498.8 N, 519710.8 E
UTM NAD 83 (Feet)- 14338878.1 N, 1705084.6 E



NORTH

LONGITUDE 80-45-00 N Top Hole 11,747'



Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	N04°21' E	867'
L2	S37°04' W	3,408'
L3	N78°13' W	1,932'

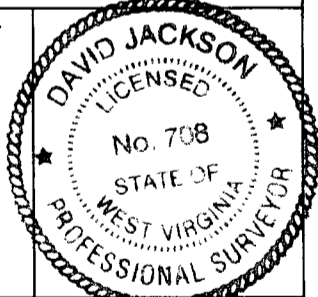
Notes: Ties to wells and corners are based on State Plane Grid North-WV North Zone NAD 27.

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

NOTES:  
 1. CORNER TIES, REFERENCES, PROPERTY LINE INFORMATION, 2400' CIRCLE AND SURFACE OWNERSHIPS WERE TAKEN FROM PLAT BY ERNEST J. BENCHER III DATED JUNE 06, 2014. FILE NO. 201369.  
 2. WELL HEAD WAS FIELD LOCATED BY JACKSON SURVEYING USING RTK GPS AND IS BASED UPON AN OPUS SOLUTION.  
 3. LSC AND BH LOCATIONS ARE BASED UPON A DRILLING REPORT BY PANTHER DRILLING SYSTEMS DATED 11-08-14 WITH JOB NUMBER NE140033H.

FILE NO. \_\_\_\_\_  
 DRAWING NO. 1  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION GPS  
submeter unit

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 DEPARTMENT OF ENERGY.  
 (SIGNED) David L Jackson  
 R.P.E. \_\_\_\_\_ L.S. 708



STATE OF WEST VIRGINIA  
 Division of Environmental Protection  
 OFFICE OF OIL AND GAS

DATE February 5, 2016  
 OPERATOR'S WELL NO. Grumpy 5  
 API WELL NO. As-Drilled

WELL TYPE: OIL X GAS X LIQUID INJECTION    WASTE DISPOSAL    47 095 02161H  
 (IF 'GAS') PRODUCTION X STORAGE    DEEP    SHALLOW X STATE COUNTY PERMIT

LOCATION: ELEVATION 1297.0' WATER SHED Elder Run & Woodburn Run  
 DISTRICT McElroy COUNTY Tyler  
 QUADRANGLE Shirley 7 1/2'

SURFACE OWNER Diana Woodburn Samson ACREAGE 42.00 ac.  
 OIL & GAS ROYALTY OWNER Diana Woodburn Samson LEASE ACREAGE 42.00 ac.

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