

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

RECEIVED
Office of Oil and Gas

MAR 04 2019

WV Department of
Environmental Protection

API 47 - 095 - 02227 County Tyler District McElroy
Quad Shirley Pad Name Happy Field/Pool Name Happy
Farm name Bloom, Arthur & Lois Well Number Happy 3
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 4368947.92 Easting 521438.40
Landing Point of Curve Northing 4368768.32 Easting 521638.90
Bottom Hole Northing 4367124.15 Easting 522134.4

Elevation (ft) 1253.5 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)
Synthetic OBM

Date permit issued 06/23/2015 Date drilling commenced 09/22/2016 Date drilling ceased 04/19/17
Date completion activities began 05/17/2017 Date completion activities ceased 07/23/2017
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 60-90' Open mine(s) (Y/N) depths N
Salt water depth(s) ft N/A 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

Reviewed

Reviewed by:
JEB
3/14/2019

WR-35
Rev. 8/23/13

API 47-095 - 02227 Farm name Bloom, Arthur & Lois Well number Happy 3

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	J55-40		Y
Surface	15"	11 3/4"	441'	New	J55-32	50'	Y
Coal							
Intermediate 1	11"	8 5/8"	2483'	New	J55-24	1500'	Y
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	13210	New	P110-17		Y
Tubing							
Packer type and depth set							

Comment Details _____

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	Class A	353	15.6	1.17	413	CTS	8
Coal							
Intermediate 1	Class A	705	15.2	1.27	895	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	1900	14.5	1.19	2261	CTS	8
Tubing							

Drillers TD (ft) 13215' Loggers TD (ft) 13215'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6290'

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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API 47- 095 - 02227

Farm name Bloom, Arthur & Lois

Well number Happy 3

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	5/27/17	13208	13088	97	Marcellus
2	5/28/17	13053	12895	84	Marcellus
3	5/28/17	12860	12669	84	Marcellus
4	5/29/17	12634	12457	84	Marcellus
5	5/29/17	12422	12242	84	Marcellus
6	5/29/17	12207	12074	84	Marcellus
7	5/29/17	12039	11870	84	Marcellus
8	5/30/17	11835	11674	84	Marcellus
9	5/30/17	11639	11487	84	Marcellus
10	5/30/17	11452	11273	84	Marcellus
11	5/31/17	11238	11083	84	Marcellus
12	5/31/17	11048	10868	84	Marcellus
13	5/31/17	10833	10682	84	Marcellus
14	6/1/17	10647	10488	84	Marcellus
15	6/1/17	10454	10293	84	Marcellus
16	6/1/17	10234	10077	84	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)
1	5/27/17	74	7462	8590	3954	179400	6515	N/A
2	5/28/17	80	7443	7204	4758	182900		N/A
3	5/28/17	78	7171	7851	4450	183100	5993	N/A
4	5/29/17	79	7155	7495	4715	183300	6562	N/A
5	5/29/17	80	6938	6780	4658	179600	5752	N/A
6	5/29/17	80	6800	6950	4217	179200	5974	N/A
7	5/29/17	80	6851	7126	4977	181800	6104	N/A
8	5/30/17	81	7097	7491	4531	177000	5727	N/A
9	5/30/17	69	8023	7934	4349	183300	6756	N/A
10	5/30/17	81	6867	7139	4047	177500	5911	N/A
11	5/31/17	80	6487	7455	4903	183500	6198	N/A
12	5/31/17	79	6467	7196	4741	176900	6119	N/A
13	5/31/17	80.6	6686	7308	4770	178600	6307	N/A
14	6/1/17	79.8	6530	7247	5583	178400	6304	N/A
15	6/1/17	81	6692	7331	4874	179100	6020	N/A
16	6/1/17	80	6660	7555	5133	184400	5824	N/A

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Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	6/2/17	10041	9909	84	Marcellus
18	6/2/17	9872	9712	84	Marcellus
19	6/3/17	9667	9511	84	Marcellus
20	6/3/17	9464	9292	84	Marcellus
21	6/3/17	9261	9130	84	Marcellus
22	6/4/17	9078	8904	84	Marcellus
23	6/4/17	8866	8686	84	Marcellus
24	6/4/17	8631	8479	84	Marcellus
25	6/4/17	8420	8288	84	Marcellus
26	6/5/17	8238	8081	84	Marcellus
27	6/5/17	8045	7896	72	Marcellus
28	6/6/17	7857	7686	84	Marcellus
29	6/6/17	7638	7459	84	Marcellus

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17	6/2/17	81	6541	6530	4962	179400	5842	N/A
18	6/2/17	80	6640	8497	4539	182100	5440	N/A
19	6/3/17	80	6826	8186	4872	179000	6053	N/A
20	6/3/17	81	6615	8173	4545	178500	5942	N/A
21	6/3/17	81	6897	7301	4251	186400	6108	N/A
22	6/4/17	81	7308	7920	4669	181100	5926	N/A
23	6/4/17	80	7066	8190	4403	183100	5955	N/A
24	6/4/17	79	6448	7998	4936	180300	6085	N/A
25	6/4/17	81	7044	6601	5191	183200	5812	N/A
26	6/5/17	80	6556	6820	5045	182800	6294	N/A
27	6/5/17	79	7242	8411	3869	179100	4005	N/A
28	6/6/17	79	7242	8411	3869	179100	4005	N/A
29	6/6/17	81	6855	6843	4211	142500	4247	N/A
30								N/A
31								N/A
32								N/A

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>7075</u>	<u>TVD</u>	<u>13215</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2350 psi Bottom Hole N/A psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 5500 mcfpd Oil 9 bpd NGL _____ bpd Water 45 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)
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See Attached.	0		0		

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling LLC
Address 3400 South Radio Road City El Reno State OK Zip 73036

Logging Company Stratagraph Northeast, Inc.
Address 116 Ellsworth Ave. Marietta City Marietta State OH Zip 45750

Cementing Company Baker Hughes
Address 717 17th Street Suite 2000 City Denver State CO Zip 80202

Stimulating Company Producers Service Corp.
Address 107 South Graham St. City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Tyler DuFour Telephone 304-628-3111
Signature Tyler Title Office Manager Date 3-1-19

Lithology		
Happy 3 47-095-02227		
FORMATION	TOP	BOTTOM
MISC. RED ROCK & SHALES	0	2349
LIME	2349	2449
INJUN	2449	2566
SHALE	2566	2913
GORDON STRAY	2913	2933
SHALE	2933	3129
GORDON	3129	3159
SHALE	3159	3438
BAYARD	3438	3447
SHALE	3447	3776
WARREN	3776	3874
SHALE	3874	4110
BALLTOWN	4110	4273
SHALE	4273	4711
2ND RILEY	4711	4819
SHALE	4819	4970
3RD RILEY	4970	5011
SHALE	5011	5068
BENSON	5068	5071
SHALE	5071	5313
ALEXANDER	5313	5484
SHALE	5484	5729
ELK	5729	5777
SHALE	5777	6141
HAMILTON	6141	6315
SHALE	6315	6971
UPPER MARCELLUS	6971	6977
PARCELL LIME	6977	7012
SHALE	7012	7053
LOWER MARCELLUS	7053	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/27/2017
Job End Date:	6/6/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02227-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	HAPPY 3
Latitude:	39.46977200
Longitude:	-80.75093800
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,057
Total Base Water Volume (gal):	7,056,084
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	Company 1	Carrier/Base Fluid	Water	7732-18-5	100.00000	91.59439	None
Sand (Proppant)	Producers Service Corp	Proppant					
	Producers Service Corp		Silica Substrate	14808-60-7	100.00000	7.87581	None
15% IC Acid	Producers Service Corp	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.06041	None
SUPERSLIK	Producers Service Corp	Friction Reducer	Distillates	64742-47-8	18.00000	0.01215	None
SCALECLEAR 112	Producers Service Corp	Scale Inhibitor	Ethylene Glycol	107-21-1	40.00000	0.01012	None
MB-7530	Producers Service Corp	Biocide	Tetrahydro-3, 5-dimethyl-2H-1,3,5-thiadiazine-2-thione Sodium Hydroxide	533-74-4 1310-73-2	24.00000 4.00000	0.00664 0.00111	None None
STIMLUBE F	Producers Service Corp	Friction Reducer					



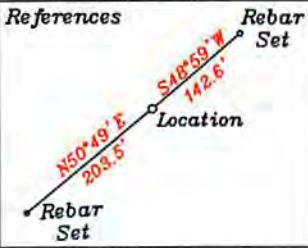
			Petroleum Distillates	64742-47-8	30.00000	0.00119	None
			Alcohol, ethoxylated	68551-12-2	3.10000	0.00012	None
			Alcohol, ethoxylated	68002-97-1	3.10000	0.00012	None
			Alcohol, ethoxylated	68439-50-9	3.10000	0.00012	None
PRO GEL 4.0L	Producers Service Corp	Gel					
			Guar Gum Blend	9000-30-0	100.00000	0.00138	None
BIOCLEAR 1430	Producers Service Corp	Bioicide					
			Glutaraldehyde	111-30-8	20.00000	0.00024	None
			Alkyl dimethyl benzyl ammonium chloride	68424-85-1	5.00000	0.00006	None
			Dimethylamine	68439-70-3	0.50000	0.00001	None
PRO BREAK 4	Producers Service Corp	Gel Breaker					
			Surcose	57-50-1	46.00000	0.00001	None
			Ethylene Glycol	107-21-1	14.00000	0.00000	None
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.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Sodium Hydroxide	1310-73-2	4.00000	0.00111	
			Alcohol, ethoxylated	68439-50-9	3.10000	0.00012	
			Alcohol, ethoxylated	68551-12-2	3.10000	0.00012	
			Alcohol, ethoxylated	68002-97-1	3.10000	0.00012	
			Alkyl dimethyl benzyl ammonium chloride	68424-85-1	5.00000	0.00006	
			Dimethylamine	68439-70-3	0.50000	0.00001	
			Ethylene Glycol	107-21-1	14.00000	0.00000	

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

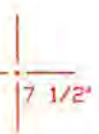
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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

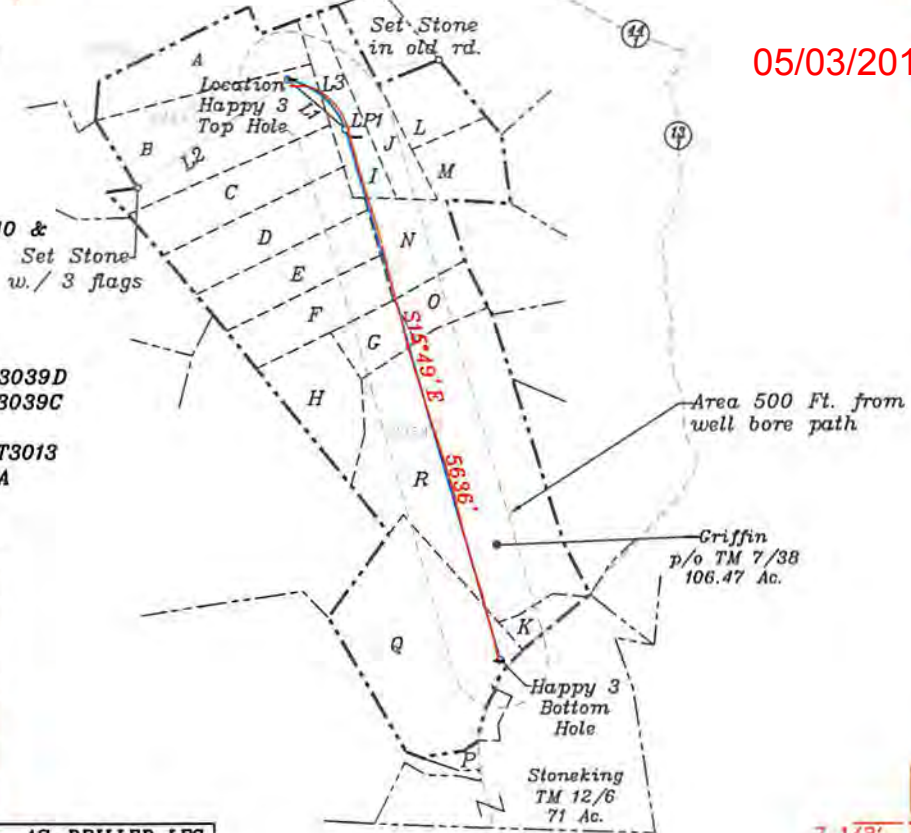
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



Bottom Hole 9,713'
 LATITUDE 39-30-00 N (TH)
 LATITUDE 39-27-30 N (BH)



- A- Eidle TM 6/17 26.36 Ac.
- B- Bloom TM 6/18 59.76 Ac. Ls. T3042A1
- C- Eidle TM 7/17 23.73 Ac.
- D- Bessinger TM 7/18 26.36 Ac.
- E- Hufford TM 7/19 22.85 Ac.
- F- Hufford TM 7/20 20.21 Ac.
- G- Hufford TM 7/22 10 Ac. Ls. T3039B
- H- Hufford TM 7/21 20 Ac.
- I- R. Thompson TM 7/2 17.5 Ac. Ls. T3040 & T3041AA
- J- R. Thompson TM 7/3 17.5 Ac.
- K- O'Neil TM 7/38.2 5.030 Ac.
- L- R. Thompson TM 7/5 11.66 Ac.
- M- R. Thompson TM 7/6 11.66 Ac.
- N- R. Thompson TM 7/23 15.34 Ac. Ls. T3039D
- O- Hufford & Crew TM 7/24 10 Ac. Ls. T3039C
- P- W. Thompson TM 7/48 4.326 Ac.
- Q- Hufford TM 7/39 & 49 52.88 Ac. Ls. T3013
- R- Griffen TM 7/38 106.47 Ac. Ls. T1-04A



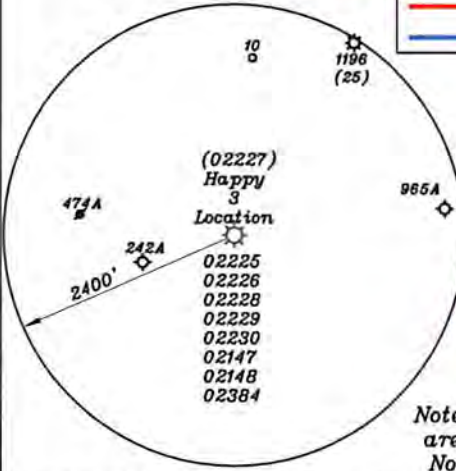
05/03/2019

Bottom Hole 1,798'

Top Hole 11,005'

Proposed	
Top Hole	UTM NAD 83(Meters)- 4368948.4 N, 521438.4 E
Landing Point	UTM NAD 83(Meters)- 4368793.3 N, 521623.0 E
Bottom Hole	UTM NAD 83(Meters)- 4367124.8 N, 522138.4 E
As Drilled	
Top Hole	UTM NAD 83(Meters)- 4368947.92 N, 521438.40 E
Landing Point	UTM NAD 83(Meters)- 4368768.32 N, 521638.90 E
Bottom Hole	UTM NAD 83(Meters)- 4367124.15 N, 522134.40 E

NORTH



AS-DRILLED LEG
 PROPOSED LEG

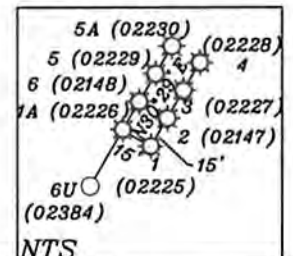
Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	S47°11'E	883'
L2	N54°20'E	1933'
L3	S82°39'W	1588'

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

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.



LONGITUDE 80-45-00 N (TH)
 LONGITUDE 80-42-30 N (BH)

FILE NO. _____
 DRAWING NO. 1
 SCALE 1" = 2000'
 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.L.S. 708



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

DATE December 22, 2017
 OPERATOR'S WELL NO. Happy 3
 API WELL NO. AsDrilled

WELL TYPE: OIL X GAS X LIQUID INJECTION WASTE DISPOSAL 47 — 095 — 02227
 (IF 'GAS') PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT

LOCATION: ELEVATION 1256.5' WATER SHED Walnut Fork & Woodburn Run
 DISTRICT McElroy COUNTY Tyler
 QUADRANGLE TH Shirley 7 1/2', BH Center Point 7 1/2'

SURFACE OWNER Arthur & Lois Bloom ACREAGE 59.76 ac.
 OIL & GAS ROYALTY OWNER John Lambert Ice LEASE ACREAGE 271.95 ac.

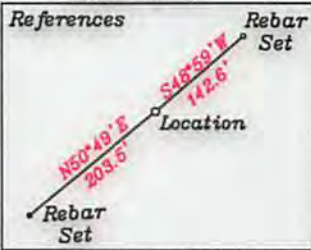
LEASE NO. & ACREAGE: "See ownership list above for lease numbers"

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

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION Marcellus ESTIMATED DEPTH TVD=7.075' - TMD=13.215' +

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



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05/03/2019

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NORTH

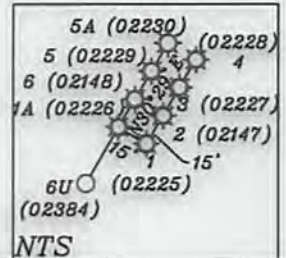
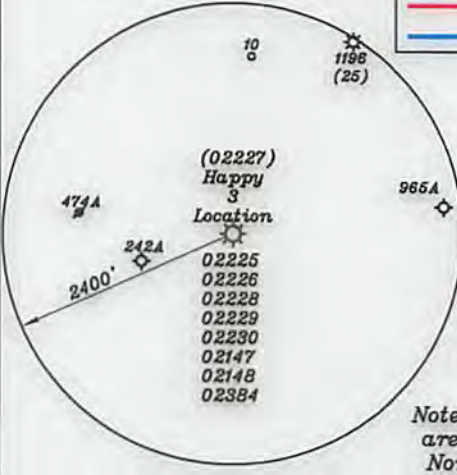
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LONGITUDE 80-45-00 N (TH)
LONGITUDE 80-42-30 N (BH)

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

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 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.L.S. 708



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

DATE December 22, 2017
 OPERATOR'S WELL NO. Happy 3
 API WELL NO. AsDrilled

WELL TYPE: OIL X GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02227
 (IF 'GAS') PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT

LOCATION: ELEVATION 1256.5' WATER SHED Walnut Fork & Woodburn Run
 DISTRICT McElroy COUNTY Tyler
 QUADRANGLE TH Shirley 7 1/2', BH Center Point 7 1/2'

SURFACE OWNER Arthur & Lois Bloom ACREAGE 59.76 ac.
 OIL & GAS ROYALTY OWNER John Lambert Ice LEASE ACREAGE 271.95 ac.

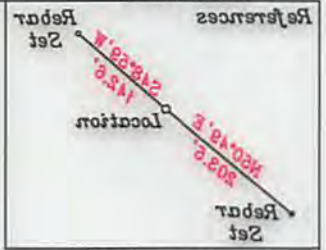
LEASE NO. & ACREAGE: "See ownership list above for lease numbers"

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

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION Marcellus ESTIMATED DEPTH TVD=7,075' - TMD=13,215'

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

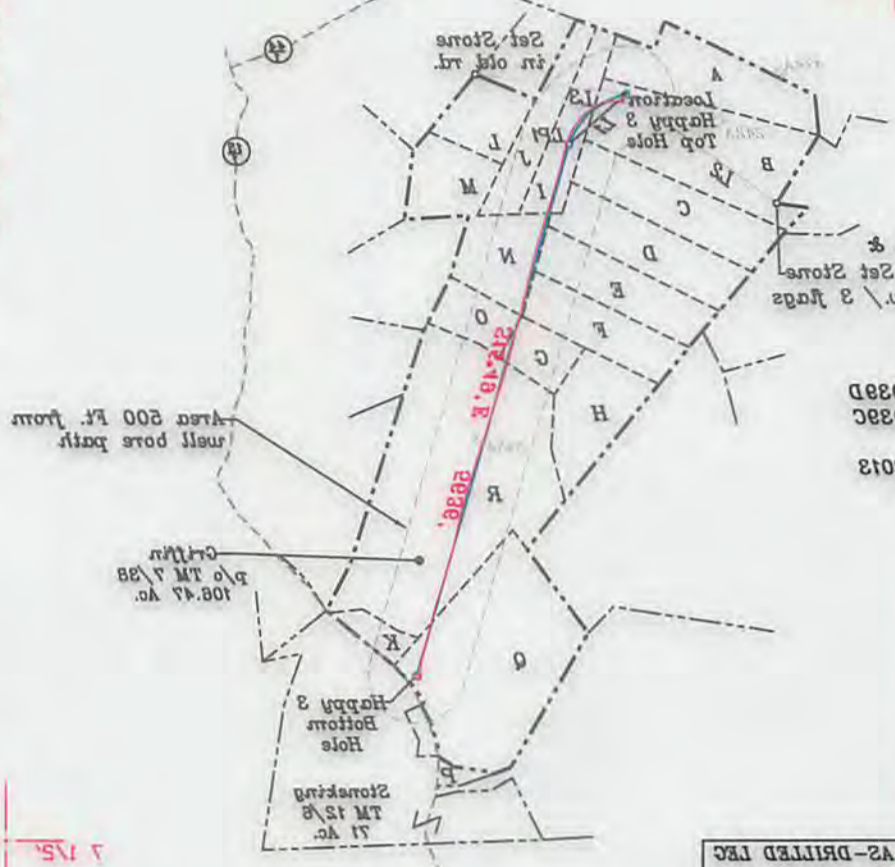


LATITUDE 39-27-30 N (BH)
 LATITUDE 39-30-00 N (TH)
 Bottom Hole 9.713'
 Top Hole 418'

Top Hole 11' 200'
 Bottom Hole 1' 882'

- A- Erdle TM 6/17 28.38 Ac.
- B- Bloom TM 6/18 28.78 Ac. Ls. T3042A1
- C- Huford TM 7/17 23.73 Ac.
- D- Bessinger TM 7/18 28.38 Ac.
- E- Huford TM 7/19 22.85 Ac.
- F- Huford TM 7/20 20.21 Ac.
- G- Huford TM 7/22 10 Ac. Ls. T3039B
- H- Huford TM 7/21 20 Ac.
- I- R. Thompson TM 7/2 17.5 Ac. Ls. T3040 & T3041AA
- J- R. Thompson TM 7/3 17.5 Ac.
- K- O. Neil TM 7/28.2 5.030 Ac.
- L- R. Thompson TM 7/5 11.68 Ac.
- M- R. Thompson TM 7/8 11.68 Ac.
- N- R. Thompson TM 7/23 15.34 Ac. Ls. T3039D
- O- Huford & Czerw TM 7/24 10 Ac. Ls. T3039C
- P- W. Thompson TM 7/18 4.328 Ac.
- Q- Huford TM 7/39 & 49 52.88 Ac. Ls. T3013
- R- Griffin TM 7/38 108.47 Ac. Ls. T-04A

10/5/2019



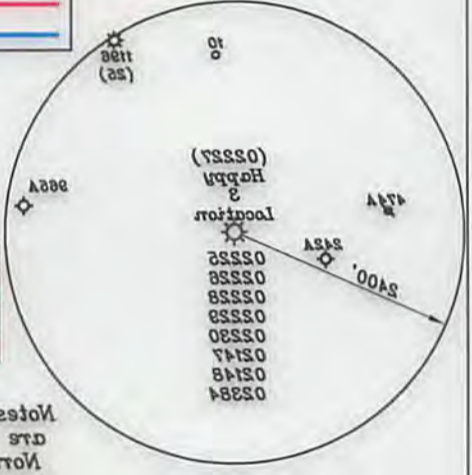
Proposed	As-Drilled
Top Hole UTM NAD 83 (Meters) - 438848.4 N 521438.4 E	Top Hole UTM NAD 83 (Meters) - 438712.8 N 521288.4 E
Landing Point UTM NAD 83 (Meters) - 438872.3 N 521230.0 E	Landing Point UTM NAD 83 (Meters) - 438788.32 N 521238.90 E
Bottom Hole UTM NAD 83 (Meters) - 438712.8 N 521288.4 E	Bottom Hole UTM NAD 83 (Meters) - 438712.12 N 521284.40 E

AS-DRILLED LAC
 PROPOSED LAC

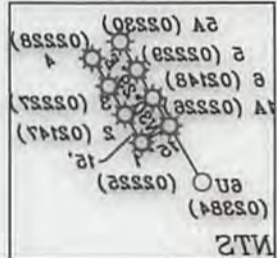
Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	247°11' E	883'
L2	N64°20' E	1933'
L3	282°39' W	1588'

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



Note: No water wells were found within 250' of the location. No dwellings or agricultural buildings were found within 825' of the center of the well pad.



TO WCLLND 80-45-30 N (BH)
 TO WCLLND 80-42-00 N (TH)



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FILE NO. _____
 DRAWING NO. 1
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION GPS
 submeter unit

STATE OF WEST VIRGINIA
 Division of Environmental Protection
 OFFICE OF OIL AND GAS
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT
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