

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

API 47-095-02091 County Tyler District McElroy
Quad Shirley 7 1/2' Pad Name T1-03 Field/Pool Name _____
Farm name Lisby, Donald J. and Judith Well Number T1-03-8
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 517,056 Easting 4,366,586
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing 515,308 Easting 4,368,280

Elevation (ft) 723.6' 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)
Enviromul

Date permit issued 5/24/2013 Date drilling commenced 7/23/2013 Date drilling ceased 10/14/2013
Date completion activities began 12/10/2013 Date completion activities ceased 3/25/2014
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 65-90' 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

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Reviewed by:
Dmf
AK 02/12/16

API 47-095 - 02091 Farm name Lisby, Donald J. and Judith Well number T1-03-8

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"	60'	New	20/32/24		Y
Surface	15"	11 3/4"	358.50'	New	20/23/24	50'	Y
Coal							
Intermediate 1	11"	8 5/8"	2040.65'	New	20/17/24	1500'	Y
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	14429'	New	20/24/24		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	230	15.4	1.26	290	CTS	08
Coal							
Intermediate 1	Class A	585	14.5	1.40	819	CTS	08
Intermediate 2							
Intermediate 3							
Production	Class A	1813	14.3	1.35	2448	300' from surface	08
Tubing							

Drillers TD (ft) 14429' Loggers TD (ft) 14429'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5550

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	12/11/2013	14184	14417	96	Marcellus
2	2/14/2014	13922	14149	72	Marcellus
3	2/15/2014	13624	13887	72	Marcellus
4	2/17/2014	13304	13589	72	Marcellus
5	2/18/2014	13048	13269	72	Marcellus
6	2/19/2014	12770	13013	72	Marcellus
7	2/19/2014	12464	12735	72	Marcellus
8	2/19/2014	12172	12429	72	Marcellus
9	2/19/2014	11929	12137	72	Marcellus
10	2/19/2014	11682	11894	72	Marcellus
11	2/19/2014	11432	11647	72	Marcellus
12	2/20/2014	11218	11386	72	Marcellus
13	2/20/2014	11008	11183	72	Marcellus
14	2/20/2014	10722	10937	72	Marcellus
15	2/25/2014	10494	10687	72	Marcellus
16	2/25/2014	10191	10447	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)
1	12/12/13	71	6926	8900	4705	176,434	8411	N/A
2	2/15/14	68.3	6750	7219	5164	185,000	10075	N/A
3	2/16/14	64	6875	7004	5113	180,000	8293	N/A
4	2/18/14	66	6854	7007	5396	179000	8487	N/A
5	2/18/14	65.3	7047	7047	5373	179,700	8386	N/A
6	2/19/14	66.9	6808	7128	5329	180,000	8839	N/A
7	2/19/14	66.5	6872	7073	4915	151,300	7004	N/A
8	2/19/14	68	6853	6980	5387	164,650	7009	N/A
9	2/19/14	68.9	6752	6933	5368	181,700	7969	N/A
10	2/19/14	69.1	6706	7041	5382	181,600	8159	N/A
11	2/20/14	70	6844	7063	5434	172,000	7735	N/A
12	2/28/14	68.4	6816	6816	5136	180,100	9623	N/A
13	2/28/14	66.9	6596	6870	4944	136,000	5847	N/A
14	2/28/14	69.7	7076	6911	5324	180,800	7678	N/A
15	3/1/14	69.3	6803	6977	4888	160,400	7804	N/A
16	3/1/14	69.9	6590	6942	5420	180,900	7326	N/A

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Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	2/25/2014	9922	10156	72	Marcellus
18	2/26/2014	9620	9866	72	Marcellus
19	2/26/2014	9364	9585	72	Marcellus
20	2/28/2014	9121	9320	72	Marcellus
21	2/28/2014	8754	9086	72	Marcellus
22	2/28/2014	8536	8700	72	Marcellus
23	3/1/2014	8272	8501	72	Marcellus
24	3/1/2014	8070	8220	72	Marcellus
25	3/1/2014	7831	8035	72	Marcellus
26	3/2/2014	7563	7789	72	Marcellus
27	3/3/2014	7210	7528	72	Marcellus
28	3/3/2014	6870	7144	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	3/1/14	70.9	6647	6875	5645	182,100	7513	N/A
18	3/2/14	69.3	6845	7023	5457	181,700	7810	N/A
19	3/2/14	69.5	6844	7039	5518	180,700	7101	N/A
20	3/2/14	68.9	6382	7006	5518	140,550	6850	N/A
21	3/4/14	69.9	6519	6577	5292	181,500	8517	N/A
22	3/5/14	69.8	6435	6577	5403	180,500	7292	N/A
23	3/5/14	69	6525	6579	5448	110,000	4744	N/A
24	3/5/14	71.1	6297	6444	5493	180,200	6270	N/A
25	3/5/14	70	6384	6478	5542	181,200	6243	N/A
26	3/5/14	70.2	6442	6761	5086	179,500	6088	N/A
27	3/6/14	69.4	6413	6634	5440	179,800	6203	N/A
28	3/6/14	69.7	6351	6608	5267	180,000	6144	N/A

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus	6383'	TVD	14429' MD
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,500 psi Bottom Hole N/A psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 5,000 mcfpd Oil N/A bpd NGL 20 bpd Water 40 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)
See Attached.	0		0		
Injun	1699	1799	1699	1799	
Gordon	2402	2422	2402	2422	
Upper Marcellus	6274	6306	6190	6224	
Parcell Lime	6306	6328	6224	6240	

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Please insert additional pages as applicable.

Drilling Contractor HWD
Address 2915 Oklahoma 74 City Purcell State OK Zip 73080

Logging Company Precise
Address 1426 Barth Rd. City Belpre State OH Zip 45714

Cementing Company Nabors
Address PO Box 975682 City Dallas State TX Zip 75397-5682

Stimulating Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

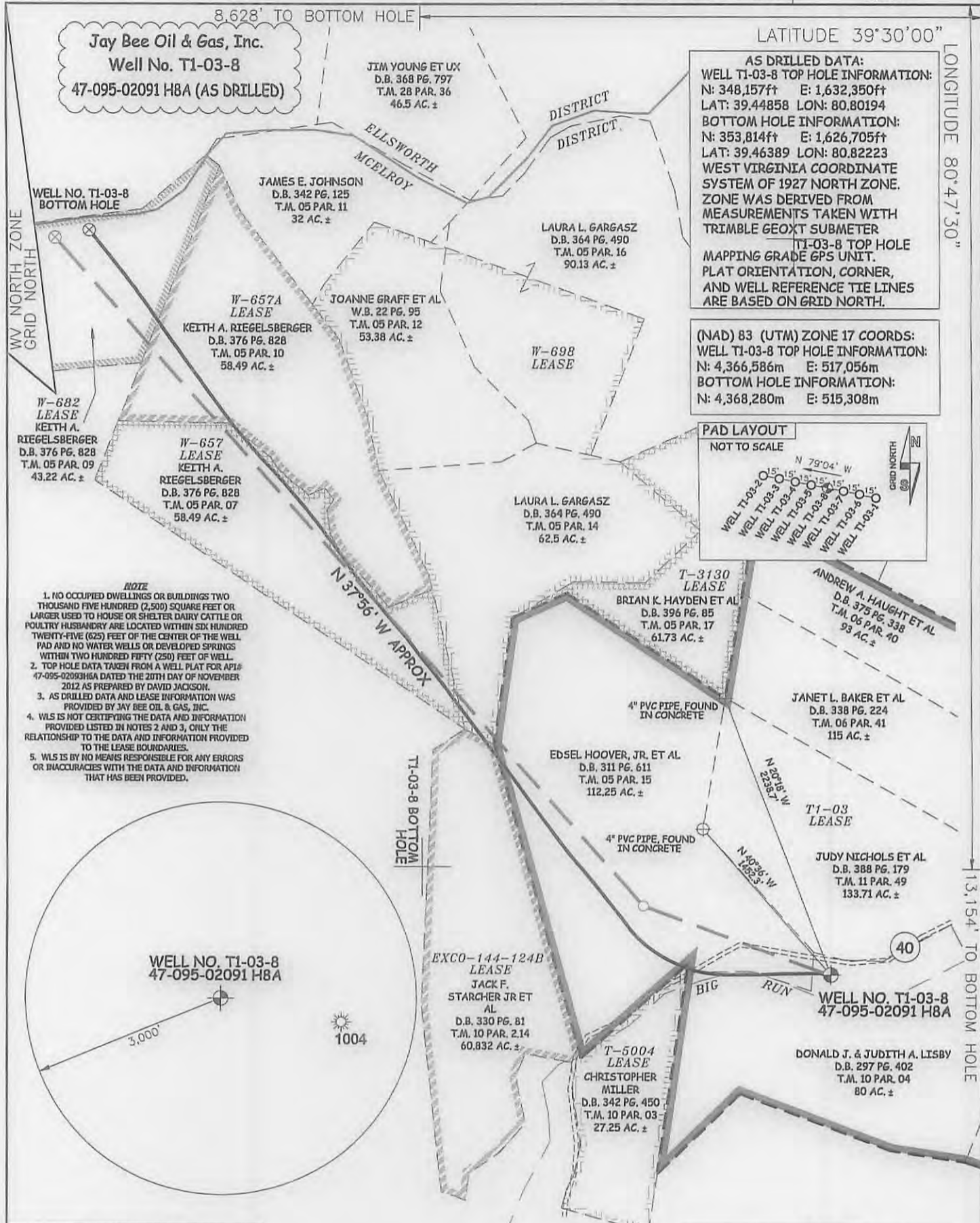
Completed by Randy Broda Telephone 304-628-3111
Signature _____ Title President Date 12-2-2015

LATITUDE 39°27'30" 2,902'

LONGITUDE 80°47'30"

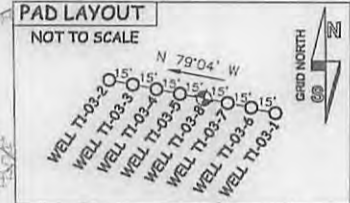
LONGITUDE 80°47'30"

13,154' TO BOTTOM HOLE

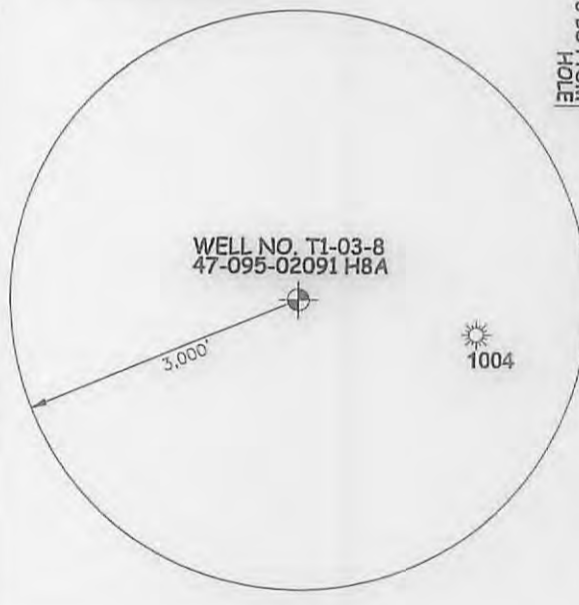


AS DRILLED DATA:
WELL T1-03-8 TOP HOLE INFORMATION:
 N: 348,157ft E: 1,632,350ft
BOTTOM HOLE INFORMATION:
 N: 353,814ft E: 1,626,705ft
 LAT: 39.44858 LON: 80.80194
 LAT: 39.46389 LON: 80.82223
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER
T1-03-8 TOP HOLE MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL T1-03-8 TOP HOLE INFORMATION:
 N: 4,366,586m E: 517,056m
BOTTOM HOLE INFORMATION:
 N: 4,368,280m E: 515,308m



- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD AND NO WATER WELLS OR DEVELOPED SPRINGS WITHIN TWO HUNDRED FIFTY (250) FEET OF WELL.
 2. TOP HOLE DATA TAKEN FROM A WELL PLAT FOR API# 47-095-02091H8A DATED THE 20TH DAY OF NOVEMBER 2012 AS PREPARED BY DAVID JACKSON.
 3. AS DRILLED DATA AND LEASE INFORMATION WAS PROVIDED BY JAY BEE OIL & GAS, INC.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # **JAYBEET1-03**
 DRAWING # **T1-03-8AD**
 SCALE **1" = 1000'**
 MINIMUM DEGREE OF ACCURACY **SUBMETER**
 PROVEN SOURCE OF ELEV. **SUBMETER MAPPING GRADE GPS**
 STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND
 - - - Surface Owner Boundary Lines +/-
 - - - Interior Surface Tracts +/-
 ⊕ Found monument, as noted
 ⊙ Proposed Well Path
 ⊗ As Drilled Well Path

DATE **12/04/15**
 OPERATOR'S WELL# **T1-03-8**

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL 47 - 095 - 02091 H8A
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION **723.6'** WATERSHED **OUTLET MIDDLE ISLAND CREEK**
 QUADRANGLE **SHIRLEY 7.5'** DISTRICT **MCELROY** COUNTY **TYLER**
 SURFACE OWNER **DONALD J. & JUDITH A. LISBY** ACREAGE **80 ACRES +/-**
 OIL & GAS ROYALTY OWNER **T1-03; T-5004; EXCO-144-124B; W-698; W657; W657A; W682** LEASE ACREAGE **639 ACRES±; 27.25 ACRES±; 60.832 ACRES±; 143 ACRES±; 58.48 ACRES±; 58.49 ACRES±; 43.23 ACRES±**

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) **(X) AS DRILLED** PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION **MARCELLUS** ESTIMATED DEPTH **6,383' TVD 14,429' MD**
 WELL OPERATOR **JAY BEE OIL & GAS, INC.** DESIGNATED AGENT **RANDY BRODA**
 ADDRESS **1720 ROUTE 22** ADDRESS **ROUTE 1, BOX 5**
FORM WW-6 EAST UNION, NJ 07083 CAIRO, WV 26337

COUNTY NAME

PERMIT

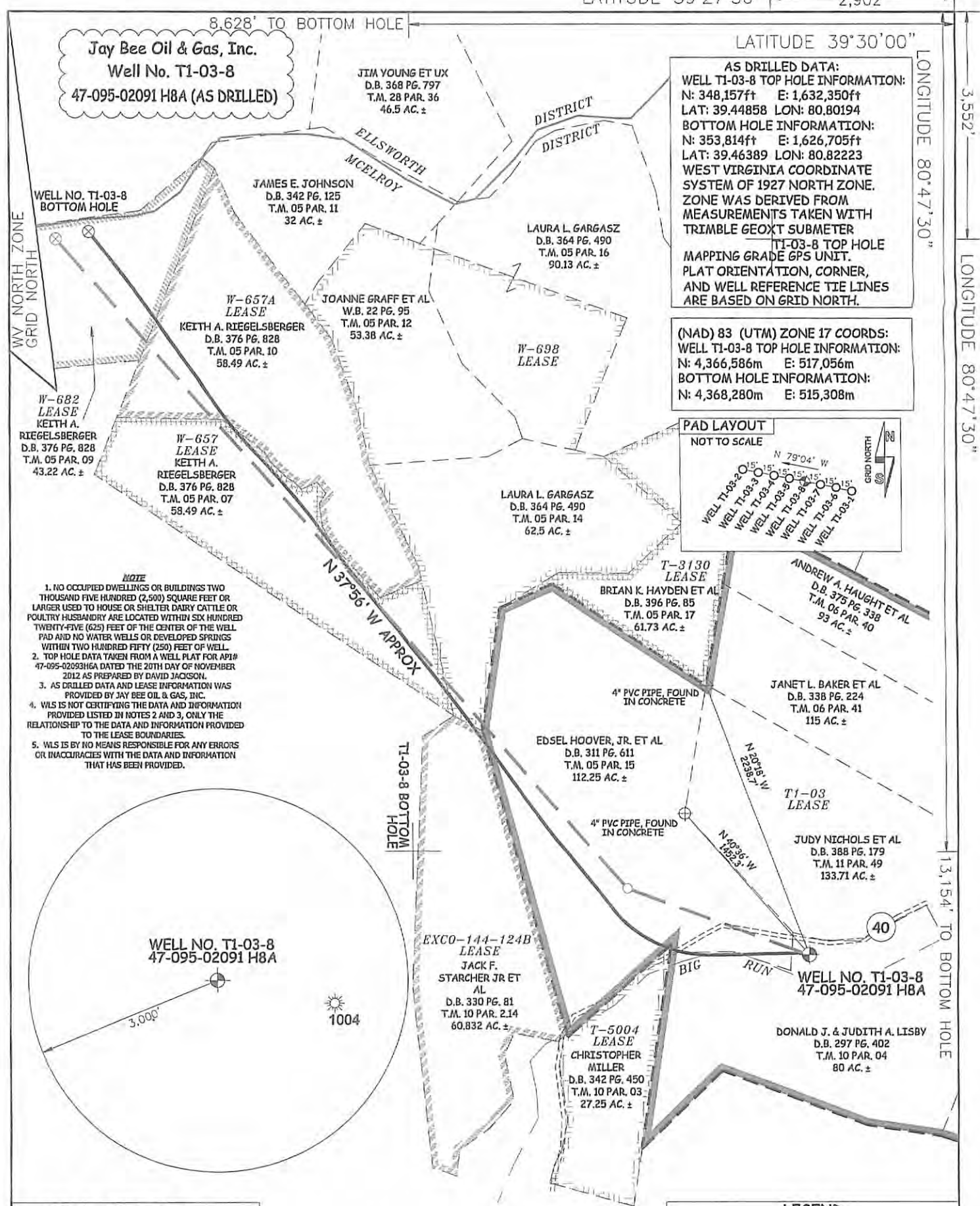
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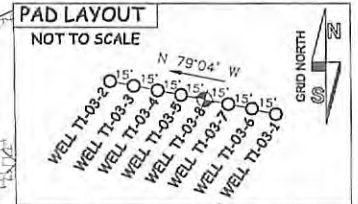
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 ADDRESS **1720 ROUTE 22** ADDRESS **ROUTE 1, BOX 5**
EAST UNION, NJ 07083 **CAIRO, WV 26337**

COUNTY NAME PERMIT

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
T1-03	George Spencer	Jay-Bee Production Company	12.5%	390/247
T5004	Virginia Waterman	JB Exploration I, LLC	12.5%	412/348
Exco-144-124B	JB Exploration I, LLC	JB Exploration I, LLC	12.5%	425/588
W698	Mary Ann Ketelson	JB Exploration I, LLC	12.5%	398/354
W657	Donald & Dora Seckman	JB Exploration I, LLC	12.5%	422/161
W657A	Keith Riegelsberger	JB Exploration I, LLC	12.5%	403/513
W682	Keith Riegelsberger	JB Exploration I, LLC	12.5%	403/513

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Jay-Bee Oil & Gas, Inc

By: Shane Dowell

Its: Office Manager



Directional Drilling Contractors, LLC.

Survey Report

Company: DDC

Well: T1 03-8

API or UWI: 47095020910000

State: WV

County: TYLER

Comment

Location: MCELROY TWP.

Rig: HWD 12

Job Number: DR130211

Operator: JAY BEE OIL & GAS

Magnetic Declination: 0.00

Proposed Azimuth: 321.10

North Reference: GRID

Tiein Survey Data:

MD	Inclination	Azimuth	TVD	NS	EW
5200.00	0.58	43.61	5199.56	10.19	1.91

MD	Inclination	Azimuth	TVD	NS	EW	VS	DLS
5323.00	0.70	16.90	5322.55	11.35	2.56	6.30	0.26
5367.00	0.60	340.90	5366.55	11.83	2.56	6.63	0.94
5412.00	0.60	329.50	5411.55	12.26	2.36	7.07	0.26
5456.00	0.60	314.10	5455.55	12.61	2.08	7.53	0.37
5501.00	0.10	54.20	5500.54	12.80	1.95	7.76	1.39
5546.00	0.30	289.00	5545.54	12.86	1.87	7.86	0.82
5590.00	0.30	53.40	5589.54	12.97	1.85	7.94	1.21
5634.00	0.40	19.80	5633.54	13.18	1.99	7.99	0.51
5679.00	2.60	258.10	5688.53	13.12	1.05	8.61	6.29
5723.00	6.30	261.20	5722.39	12.54	-2.32	10.56	8.42
5768.00	10.00	260.40	5766.93	11.51	-8.61	14.25	8.23
5813.00	12.20	263.10	5811.08	10.29	-17.18	19.40	5.02
5857.00	14.20	265.40	5853.92	9.30	-27.18	25.71	4.70
5902.00	16.70	265.30	5897.29	8.33	-39.13	33.40	5.56
5946.00	19.80	266.00	5939.07	7.29	-52.87	42.30	7.06
5991.00	23.70	267.80	5980.86	6.41	-69.51	53.36	8.79
6035.00	28.00	268.80	6020.45	5.85	-88.68	66.42	9.82
6079.00	31.60	269.20	6058.62	5.48	-110.54	81.50	8.19
6123.00	35.30	268.70	6095.33	5.03	-134.79	98.19	8.43
6168.00	39.00	268.30	6131.19	4.31	-161.95	116.75	8.24
6212.00	42.70	268.70	6164.47	3.56	-190.71	136.40	8.43
6257.00	47.10	269.40	6196.33	3.04	-222.47	158.32	9.84
6301.00	51.80	269.20	6224.93	2.63	-255.89	181.49	10.69
6345.00	57.10	268.30	6250.50	1.84	-291.66	206.04	12.16
6390.00	61.30	267.60	6273.54	0.46	-330.28	232.16	9.43
6434.00	64.00	267.80	6293.75	-1.11	-369.33	258.45	6.15
6479.00	67.40	267.70	6312.27	-2.72	-410.30	286.06	7.56

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6524.00	71.30	268.40	6328.14	-4.15	-452.38	314.58	8.79
6568.00	73.50	268.90	6341.44	-5.14	-494.31	343.30	5.12
6612.00	75.30	269.30	6353.27	-5.80	-536.68	372.57	4.18
6657.00	77.50	269.20	6363.85	-6.38	-580.41	402.86	4.89
6701.00	80.90	269.90	6372.10	-6.71	-623.62	432.95	7.88
6745.00	83.60	269.30	6378.03	-7.02	-667.22	463.33	6.28
6790.00	87.30	269.80	6381.60	-7.37	-712.07	494.56	8.30
6800.00	88.03	269.80	6382.01	-7.41	-722.06	500.08	7.30
6827.00	90.01	269.80	6382.47	-7.50	-749.05	518.91	7.33
6835.00	90.60	269.80	6382.42	-7.53	-757.05	526.02	7.38
6879.00	91.60	272.00	6381.58	-6.84	-801.03	557.38	5.49
6924.00	91.20	274.50	6380.48	-4.29	-845.94	590.72	5.62
6969.00	91.00	277.50	6379.62	0.42	-890.69	625.48	6.68
7013.00	90.20	280.80	6379.15	7.41	-934.12	660.94	7.72
7058.00	89.50	283.30	6379.27	16.80	-978.12	698.52	5.77
7102.00	89.40	285.70	6379.69	27.82	-1020.71	736.26	5.46
7146.00	90.10	288.80	6379.89	40.87	-1062.73	775.05	7.22
7191.00	90.70	291.20	6379.57	56.26	-1105.01	815.69	5.50
7236.00	91.50	293.90	6378.71	73.51	-1146.56	857.14	6.26
7280.00	91.50	296.80	6377.52	92.34	-1186.30	898.44	6.59
7324.00	91.70	299.90	6376.25	113.22	-1225.01	940.48	7.05
7369.00	91.30	301.80	6375.07	136.29	-1263.62	984.02	4.31
7413.00	89.80	303.00	6374.65	159.86	-1300.77	1026.88	4.37
7458.00	89.50	305.70	6374.92	185.25	-1337.92	1071.04	6.04
7502.00	90.20	308.70	6375.04	211.85	-1372.96	1114.58	7.00
7547.00	90.10	311.80	6374.92	240.92	-1407.30	1159.40	6.89
7591.00	90.50	315.20	6374.69	271.20	-1439.21	1203.36	7.78
7636.00	91.80	318.80	6373.79	304.10	-1469.89	1248.33	8.50
7680.00	92.00	321.50	6372.33	337.86	-1498.07	1292.15	6.15
7725.00	90.90	322.20	6371.19	373.23	-1525.86	1336.80	2.44
7770.00	91.20	322.30	6370.37	408.81	-1553.40	1381.53	0.70
7814.00	90.50	321.40	6369.71	443.41	-1580.58	1425.24	2.59
7859.00	90.60	321.50	6369.28	478.60	-1608.62	1469.99	0.31
7903.00	88.80	321.40	6369.51	513.01	-1636.04	1513.75	4.10
7948.00	89.00	320.40	6370.38	547.92	-1664.41	1558.53	2.27
7992.00	90.10	320.80	6370.72	581.92	-1692.34	1602.35	2.66
8037.00	91.00	321.00	6370.29	616.84	-1720.72	1647.14	2.05
8082.00	91.60	321.00	6369.27	651.80	-1749.03	1691.92	1.33
8127.00	90.10	320.60	6368.60	686.67	-1777.47	1736.71	3.45
8172.00	90.20	320.20	6368.48	721.34	-1806.15	1781.54	0.92
8215.00	89.80	320.80	6368.48	754.50	-1833.54	1822.19	1.46
8216.00	89.80	320.70	6368.49	755.27	-1834.17	1823.19	1.41
8262.00	90.00	319.50	6368.56	790.56	-1863.68	1871.22	2.64
8306.00	90.50	318.60	6368.37	823.79	-1892.51	1915.13	2.34
8351.00	90.60	319.50	6367.94	857.78	-1922.00	1960.04	2.01
8395.00	90.80	319.40	6367.40	891.21	-1950.61	2003.93	0.51
8440.00	90.10	322.00	6367.05	926.03	-1979.11	2048.73	5.98
8485.00	90.60	322.00	6366.77	961.49	-2006.81	2093.43	1.11
8527.00	89.80	322.80	6366.63	994.76	-2032.44	2135.12	2.69

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8571.00	90.30	322.90	6366.59	1029.83	-2059.01	2178.75	1.16
8615.00	89.50	324.00	6366.66	1065.18	-2085.21	2222.32	3.09
8660.00	89.50	324.00	6367.06	1101.59	-2111.66	2266.81	0.00
8702.00	89.70	323.00	6367.35	1135.34	-2136.64	2308.39	2.43
8746.00	89.80	322.90	6367.54	1170.46	-2163.15	2352.01	0.32
8790.00	90.50	323.20	6367.43	1205.62	-2189.60	2395.62	1.73
8835.00	90.90	323.90	6366.88	1241.82	-2216.33	2440.17	1.79
8880.00	90.90	323.80	6366.17	1278.15	-2242.87	2484.68	0.22
8924.00	90.40	323.80	6365.67	1313.65	-2268.86	2528.20	1.14
8969.00	90.50	323.60	6365.32	1349.92	-2295.50	2572.73	0.50
9014.00	90.40	323.60	6364.96	1386.14	-2322.20	2617.27	0.22
9058.00	90.60	323.58	6364.58	1421.46	-2348.44	2660.85	1.02
9102.00	90.90	323.70	6364.00	1456.80	-2374.64	2704.41	1.33
9147.00	89.30	323.20	6363.93	1492.95	-2401.43	2748.97	3.73
9192.00	89.80	323.60	6364.28	1529.08	-2428.26	2758.00	1.42
9236.00	89.60	323.30	6364.51	1564.42	-2454.47	2808.00	0.82
9280.00	90.00	322.90	6364.66	1599.61	-2480.88	2880.70	1.29
9322.00	90.20	322.30	6364.59	1632.97	-2506.39	2922.37	1.51
9367.00	90.00	322.20	6364.51	1668.55	-2533.94	2967.05	0.50
9411.00	89.10	321.80	6364.86	1703.23	-2561.03	3010.76	2.24
9456.00	89.90	322.80	6365.25	1738.83	-2588.55	3055.44	2.85
9500.00	89.90	322.90	6365.33	1773.90	-2615.12	3099.07	0.23
9544.00	89.60	322.50	6365.48	1808.90	-2641.78	3142.71	1.02
9589.00	89.60	322.30	6365.76	1844.55	-2669.24	3187.38	0.50
9633.00	90.20	322.40	6365.83	1879.39	-2696.12	3231.05	1.38
9675.00	89.80	322.60	6365.83	1912.71	-2721.68	3272.73	1.06
9719.00	89.80	322.10	6365.99	1947.55	-2748.56	3316.41	1.14
9764.00	89.60	321.60	6366.22	1982.93	-2776.36	3361.13	1.20
9809.00	89.60	322.10	6366.54	2018.32	-2804.15	3405.84	1.11
9854.00	90.40	322.40	6366.54	2053.90	-2831.70	3450.52	1.90
9898.00	91.30	323.20	6365.88	2088.94	-2858.30	3540.28	2.74
9943.00	90.80	323.20	6365.06	2124.97	-2885.25	3538.73	1.11
9987.00	91.30	322.40	6364.25	2160.01	-2911.85	3582.36	2.14
10032.00	90.80	322.30	6363.43	2195.63	-2939.33	3627.02	1.13
10076.00	91.40	322.20	6362.58	2230.42	-2966.27	3670.70	1.38
10121.00	89.50	321.30	6362.23	2265.75	-2994.12	3715.43	4.67
10165.00	90.00	320.80	6362.42	2299.97	-3021.78	3759.21	1.61
10210.00	89.50	320.90	6362.62	2334.87	-3050.19	3804.01	1.13
10254.00	90.00	321.30	6362.81	2369.11	-3077.82	3847.79	1.46
10299.00	90.10	321.80	6362.77	2404.35	-3105.81	3892.54	1.13
10343.00	90.90	322.20	6362.39	2439.02	-3132.89	3936.24	2.03
10388.00	91.60	322.80	6361.40	2474.72	-3160.28	3980.89	2.05
10432.00	91.30	322.20	6360.29	2509.61	-3187.06	4024.54	1.52
10477.00	89.80	320.70	6359.86	2544.80	-3215.10	4069.29	4.71
10521.00	89.60	320.30	6360.09	2578.75	-3243.09	4113.11	1.02
10565.00	89.80	320.20	6360.32	2612.58	-3271.22	4156.96	0.51
10610.00	90.30	320.30	6360.28	2647.18	-3300.00	4201.80	1.13
10654.00	90.80	320.20	6359.86	2681.01	-3328.13	4245.64	1.16
10699.00	90.20	320.60	6359.47	2715.68	-3356.71	4290.47	1.60

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10743.00	89.00	320.40	6359.77	2749.63	-3384.80	4334.29	2.76
10788.00	88.10	320.90	6360.91	2784.41	-3413.32	4379.09	2.29
10832.00	88.60	321.00	6362.18	2818.57	-3441.03	4422.87	1.16
10877.00	88.70	320.70	6363.24	2853.46	-3469.43	4467.65	0.70
10921.00	88.70	320.00	6364.24	2887.33	-3497.50	4511.48	1.59
10966.00	90.20	321.70	6364.67	2922.22	-3525.91	4556.27	5.04
11010.00	90.80	321.90	6364.29	2956.80	-3553.12	4600.00	1.44
11055.00	89.30	321.00	6364.25	2991.99	-3581.16	4644.75	3.89
11099.00	88.80	322.50	6364.98	3026.54	-3608.40	4686.46	3.59
11143.00	91.50	324.90	6364.86	3062.00	-3634.44	4732.00	8.21
11188.00	92.40	324.80	6363.33	3098.76	-3660.33	4776.37	2.01
11233.00	91.20	324.50	6361.92	3135.45	-3686.36	4820.76	2.75
11277.00	89.80	323.80	6361.53	3171.11	-3712.12	4864.25	3.56
11322.00	88.90	324.04	6362.04	3207.49	-3738.60	4908.75	2.11
11366.00	88.00	323.90	6363.23	3243.07	-3764.46	4952.24	2.10
11411.00	87.90	323.60	6364.53	3279.34	-3791.05	4996.74	0.70
11417.00	87.85	323.49	6365.07	3284.16	-3794.61	5001.54	2.01
11456.00	87.50	322.80	6366.65	3315.34	-3817.95	5041.29	1.99
11500.00	88.00	323.10	6368.38	3350.43	-3844.47	5084.87	1.32
11545.00	87.40	322.60	6370.18	3386.27	-3871.63	5129.46	1.74
11589.00	87.50	322.60	6371.87	3421.19	-3898.32	5173.06	0.23
11634.00	88.70	321.20	6373.63	3456.58	-3926.07	5217.76	4.10
11679.00	90.00	320.90	6374.14	3491.57	-3954.36	5262.54	2.96
11724.00	90.70	320.60	6373.87	3526.42	-3982.83	5307.34	1.69
11768.00	91.50	320.40	6373.02	3560.37	-4010.81	5351.16	1.87
11813.00	91.40	320.00	6371.88	3594.93	-4039.61	5395.99	0.92
11858.00	91.90	320.30	6370.59	3629.46	-4068.43	5440.82	1.30
11902.00	92.00	320.30	6369.09	3663.29	-4096.52	5484.63	0.23
11946.00	90.90	319.50	6367.98	3696.94	-4124.85	5528.48	3.09
11991.00	90.50	319.40	6367.43	3731.13	-4151.11	5573.37	0.92
12035.00	90.30	319.00	6367.12	3764.44	-4182.86	5617.27	1.02
12079.00	90.30	318.00	6366.89	3797.39	-4212.01	5661.20	2.27
12124.00	89.40	316.90	6367.01	3830.54	-4242.44	5706.17	3.16
12168.00	90.60	317.10	6367.01	3862.72	-4272.45	5750.16	2.76
12213.00	92.80	317.20	6365.67	3895.69	-4303.04	5839.04	4.89
12257.00	93.10	316.80	6363.41	3927.83	-4333.00	5795.11	1.14
12273.00	93.24	317.16	6362.53	3939.51	-4343.90	5854.06	2.41
12302.00	93.50	317.80	6360.82	3960.86	-4363.47	5883.94	2.39
12346.00	93.40	318.00	6358.17	3993.44	-4392.91	5927.82	0.51
12391.00	92.30	219.30	6355.93	4027.17	-4422.61	5972.69	3.78
12435.00	92.3	319.70	6354.17	4060.60	-4451.16	6016.54	0.91
12480.00	92.70	319.60	6352.20	4094.87	-4480.27	6061.38	0.92
12525.00	91.90	320.00	6350.40	4129.21	-4509.29	6106.21	1.99
12569.00	90.60	322.20	6349.44	4163.44	-4536.91	6149.98	-2.55
12617.00	90.40	322.90	6349.05	4199.16	-4564.27	6194.63	1.62
12658.00	89.60	323.70	6349.05	4234.44	-4590.57	6238.21	2.57
12702.00	90.10	324.40	6349.16	4270.06	-4616.40	6281.72	1.96
12747.00	90.00	324.50	6349.12	4306.67	-4642.56	6326.16	0.31
12791.00	89.40	324.40	6349.35	4342.47	-4668.14	6369.61	1.38

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12835.00	89.80	324.30	6349.66	4378.22	-4693.79	6413.08	0.94
12880.00	89.70	324.40	6349.86	4414.79	-4720.01	6457.53	0.31
12924.00	89.40	324.60	6350.20	4450.61	-4745.56	6500.98	0.82
12969.00	89.70	324.00	6350.55	4487.15	-4771.82	6545.44	1.49
13013.00	90.20	323.50	6350.59	4522.64	-4797.84	6588.97	1.61
13057.00	91.20	323.70	6350.06	4558.05	-4823.95	6632.52	2.32
13102.00	91.90	323.50	6348.84	4594.25	-4850.64	6677.04	1.62
13146.00	91.10	324.10	6347.69	4629.75	-4876.62	6720.56	2.27
13190.00	91.00	324.10	6346.88	4665.38	-4902.42	6764.05	0.23
13235.00	90.90	324.40	6346.13	4701.90	-4928.70	6808.51	0.70
13279.00	90.50	323.80	6345.60	4737.54	-4954.50	6852.00	1.64
13323.00	89.00	323.30	6345.79	4772.93	-4980.64	6895.56	3.59
13367.00	87.90	323.40	6346.48	4808.22	-5006.90	6939.12	2.51
13412.00	88.20	323.90	6348.51	4844.44	-5033.55	6983.63	1.30
13456.00	87.80	324.30	6350.05	4880.06	-5059.34	7027.10	1.29
13501.00	88.30	324.80	6351.58	4916.70	-5085.42	7071.51	1.57
13545.00	88.40	324.60	6352.84	4952.59	-5110.84	7114.91	0.51
13589.00	88.50	324.60	6354.03	4988.44	-5136.32	7158.33	0.23
13634.00	89.20	324.60	6354.94	5025.12	-5162.38	7202.75	1.56
13678.00	89.70	324.50	6355.36	5060.96	-5187.90	7246.19	1.16
13723.00	89.80	323.90	6355.56	5097.46	-5214.22	7290.56	1.35
13767.00	90.30	323.70	6355.52	5132.96	-5240.21	7334.19	1.22
13812.00	90.90	323.40	6355.05	5169.16	-5266.94	7378.73	1.49
13856.00	91.50	323.50	6354.12	5204.50	-5290.14	7422.29	1.38
13901.00	90.30	323.90	6353.42	5240.76	-5319.77	7466.82	2.81
13945.00	90.80	323.80	6353.00	5276.28	-5345.73	7510.34	1.16
13990.00	90.30	322.90	6352.56	5312.39	-5372.59	7554.91	2.29
14034.00	89.30	321.80	6352.72	5347.22	-5399.46	7598.58	3.38
14076.00	89.70	322.10	6353.08	5380.29	-5425.35	7640.31	1.19
14119.00	90.30	322.00	6353.08	5414.20	-5451.79	7683.02	1.41
14163.00	90.60	322.20	6352.74	5448.92	-5478.82	7726.72	0.82
14207.00	90.60	321.40	6352.28	5483.50	-5506.03	7770.45	1.82
14252.00	91.10	321.20	6351.61	5518.61	-5534.16	7815.21	1.20
14296.00	90.30	320.70	6351.07	5552.78	-5561.88	7859.00	2.14
14341.00	90.60	320.80	6350.72	5587.63	-5590.35	7903.80	0.70
14385.00	88.90	321.90	6350.91	5621.99	-5617.83	7947.56	4.60
14429.00	88.70	321.90	6351.83	5656.60	-5644.97	7991.27	0.45

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/12/2013
Job End Date:	12/12/2013
State:	West Virginia
County:	Tyler
API Number:	47-095-02091-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	T1-03-8 (Stage 1)
Longitude:	-80.80194300
Latitude:	39.44858300
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,870
Total Base Water Volume (gal):	336,504
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	93.34214	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		2.66220	
Sand, White, 30/50	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		2.54353	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.66555	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.59649	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08178	SmartCare Product
Scaletrol 720	Baker Hughes	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02873	SmartCare Product
Alpha 1427	Baker Hughes	Biocide	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02446	SmartCare Product

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InFlo 250G, 330 gl tote	Baker Hughes	Surfactant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02442	
Ferotrol 300L	Baker Hughes	Iron Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00420	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00193	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	5.86973	
			Water	7732-18-5	85.00000	0.58904	
			Hydrochloric Acid	7647-01-0	15.00000	0.08947	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.02453	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.02453	
			Ethylene Glycol	107-21-1	45.00000	0.01292	
			Glutaraldehyde	111-30-8	30.00000	0.00734	
			Methanol	67-56-1	100.00000	0.00681	
			Surfactant	9016-45-9	15.00000	0.00659	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00574	
			Sodium Chloride	7647-14-5	5.00000	0.00438	
			Citric Acid	77-92-9	60.00000	0.00252	
			Ammonium Chloride	12125-02-9	3.00000	0.00245	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00245	
			Oleamide DEA	93-83-4	2.00000	0.00164	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00164	
			Calcium Chloride	10043-52-4	5.00000	0.00144	
			Ethanol	64-17-5	5.00000	0.00122	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00122	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00058	
			Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000	0.00041	
			Sorbitan Monooleate	1338-43-8	0.50000	0.00041	
			Potassium Chloride	7447-40-7	1.00000	0.00029	
			Fatty Acids	61790-12-3	10.00000	0.00019	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00014	
			Olefin	64743-02-8	5.00000	0.00010	
			Propargyl Alcohol	107-19-7	5.00000	0.00010	
			Formaldehyde	50-00-0	1.00000	0.00002	

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* 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)

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/11/2013
Job End Date:	3/6/2014
State:	West Virginia
County:	Tyler
API Number:	47-095-02091-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	T1-03-8 (Stages 2 thru 31)
Longitude:	-80.80194300
Latitude:	39.44858300
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,870
Total Base Water Volume (gal):	9,497,880
Total Base Non Water Volume:	

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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	Jay-Bee Oil & Gas, Inc.	Water	Water	7732-18-5	100.00000	93.18906	
100 Mesh	FTS International, LLC	Frac Sand	Crystalline Silica	14808-60-7	99.00000	2.73797	
			Aluminum Oxide	1344-28-1	1.10000	0.03042	
			Iron Oxide	1309-37-1	0.10000	0.00277	
			Titanium Oxide	13463-67-7	0.10000	0.00277	
30/50 Mesh	FTS International, LLC	Frac Sand	Crystalline Silica	14808-60-7	99.90000	2.70530	
			Aluminum Oxide	1344-28-1	1.10000	0.03006	
			Titanium Oxide	13463-67-7	0.10000	0.00273	
			Iron Oxide	1309-37-1	0.10000	0.00273	
20/40 Mesh	FTS International, LLC	Frac Sand	Crystalline Silica	14808-60-7	99.90000	0.60573	
			Aluminum Oxide	1344-28-1	1.10000	0.00673	
			Titanium Oxide	13463-67-7	0.10000	0.00061	
			Iron Oxide	1309-37-1	0.10000	0.00061	
10.1-15% HCL	FTS International, LLC	Acid	Hydrochloric Acid	7647-01-0	15.00000	0.08830	

ICI-3240	FTS International, LLC	Biocide					
			Dazomet	533-74-4	24.00000	0.00565	
			Sodium Hydroxide	1310-73-2	4.00000	0.00094	
FRW-600	FTS International, LLC	Friction Reducer					
			Ammonium acetate	631-61-8	6.00000	0.00353	
CS-500 SI	FTS International, LLC	Scale Inhibitor					
			Ethylene Glycol	107-21-1	10.00000	0.00235	
CI-150	FTS International, LLC	Corrosion Inhibitor					
			Isopropanol	67-63-0	30.00000	0.00035	
			Ethylene Glycol	107-21-1	30.00000	0.00035	
			Dimethylformamide	68-12-2	10.00000	0.00012	
NE-100	FTS International, LLC	Non-Emulsifier					
			2-Propanol	67-63-0	10.00000	0.00006	
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00003	
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.							
10.1-15% HCL	FTS International, LLC	Acid					
			Water	7732-18-5	85.00000	0.50039	
FRW-600	FTS International, LLC	Friction Reducer					
			Water	7732-18-5	64.00000	0.03768	
			Hydrotreated light distillate	64742-47-8	30.00000	0.01766	
CS-500 SI	FTS International, LLC	Scale Inhibitor					
			Water	7732-18-5	90.00000	0.02119	
ICI-3240	FTS International, LLC	Biocide					
			Water	7732-18-5	72.00000	0.01695	
HVG-1	FTS International, LLC	Gel					
			Petroleum Distillate	64742-47-8	55.00000	0.00097	
			Guar Gum	9000-30-0	50.00000	0.00088	
			Clay	14808-60-7	2.00000	0.00004	
			Surfactant	68439-51-0	2.00000	0.00004	
FE 100L	FTS International, LLC	Iron Control					
			Citric Acid	77-92-9	55.00000	0.00097	
			Water	7732-18-5	45.00000	0.00079	
LEB-300	FTS International, LLC	Breaker					
			Proprietary	Proprietary	100.00000	0.00088	
CI-150	FTS International, LLC	Corrosion Inhibitor					
			Organic amine resin salt	Proprietary	30.00000	0.00035	
			Aromatic aldehyde	Proprietary	10.00000	0.00012	
			Quaternary ammonium compound	Proprietary	10.00000	0.00012	
NE-100	FTS International, LLC	Non-Emulsifier					
			Water	7732-18-5	75.00000	0.00044	
			2-Butoxyethanol	111-76-2	10.00000	0.00006	

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