west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

November 06, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502123, issued to JAY-BEE OIL & GAS, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: CURLY 1
Farm Name: JAY-BEE OIL & GAS , INC.
API Well Number: 47-9502123
Permit Type: Horizontal 6A Well
Date Issued: 11/06/2013

API Number: 9502123

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

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(3/13)

95-0002123

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Jay-Bee Oil & Gas, Inc	24610	Tyler	Ellsworth	Middlebourne 7.5'
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: Curly 1 Well Pad Name: Curly Pad

3 Elevation, current ground: 1127.52' Elevation, proposed post-construction: 1121'

4) Well Type: (a) Gas ■ Oil _____ Underground Storage _____
Other _____
(b) If Gas: Shallow ■ Deep _____
Horizontal ■

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Marcellus, Target Depth 7,500', Total Depth 15,000', 41-60' thick, .25-.30 pressure gradient.

7) Proposed Total Vertical Depth: 7,500'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 15,000'

10) Approximate Fresh Water Strata Depths: 456.2'

11) Method to Determine Fresh Water Depth: Well Record 47-095-01127 & 47-095-00864

12) Approximate Saltwater Depths: N/A

13) Approximate Coal Seam Depths: N/A

14) Approximate Depth to Possible Void (coal mine, karst, other): None

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: No

16) Describe proposed well work: Drill and Stimulate a new Horizontal Well.

17) Describe fracturing/stimulating methods in detail:
300-350' per stage 8,500bbls of water, 150,000-400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor and bacteria prevention 1/4# per gallon 2000 gallons 15% vol acid.

Received

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 3.8 acres

19) Area to be disturbed for well pad only, less access road (acres): 3.5 acres

Office of Oil and Gas
WV Dept. of Environmental Protection

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20) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	16	New	J55	40	30	30	-
Fresh Water	11 3/4	New	J55	32	520	520	CTS +25%
Coal							
Intermediate	8 5/8	New	J55	24	2,000	2,000	CTS +25%
Production	5 1/2	New	P110	17	15,000	15,000	Cement up to 1000' From Surface
Tubing							
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	16	17 1/2	.495	3,000#	Class A Cement	1.19CF per Sack
Fresh Water	11 3/4	15	.333	1,500#	Class A Cement	1.19CF per Sack
Coal						
Intermediate	8 5/8	11	.264	2,500#	Class A Cement	1.19CF per Sack
Production	5 1/2	7 7/8	.304	15,000#	Type 1 Cement	1.19CF per Sack
Tubing						
Liners						

PACKERS

Kind:	N/A			
Sizes:				
Depths Set:				

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Office of Oil and Gas
WV Dept. of Environmental Protection

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Curly 1 - 47-095-02123

21) Describe centralizer placement for each casing string.

Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.

22) Describe all cement additives associated with each cement type.

Superior Well Services - 15" hole for the 11 3/4 fresh water case, Class A Cement, 2% Calcium Chloride

Superior Well Services - 11" hole for the 8 5/8 intermediate base, Class A Cement, 2% Calcium Chloride

Baker Hughes - 7 7/8" hole for the 5 1/2 production case, Type 1 Cement, Fly Ash, Barite, Finetol 300L, R-3 Celio Flake, Sugar, CD-32, FL-62

23) Proposed borehole conditioning procedures.

Air Hole: 15" hole for the 11 3/4 fresh water case - Circulate until clean with air. If soaping, slug then dry.

Air Hole: 11" hole for the 8 5/8 intermediate base - Circulate until clean with air. If soaping, slug then dry.

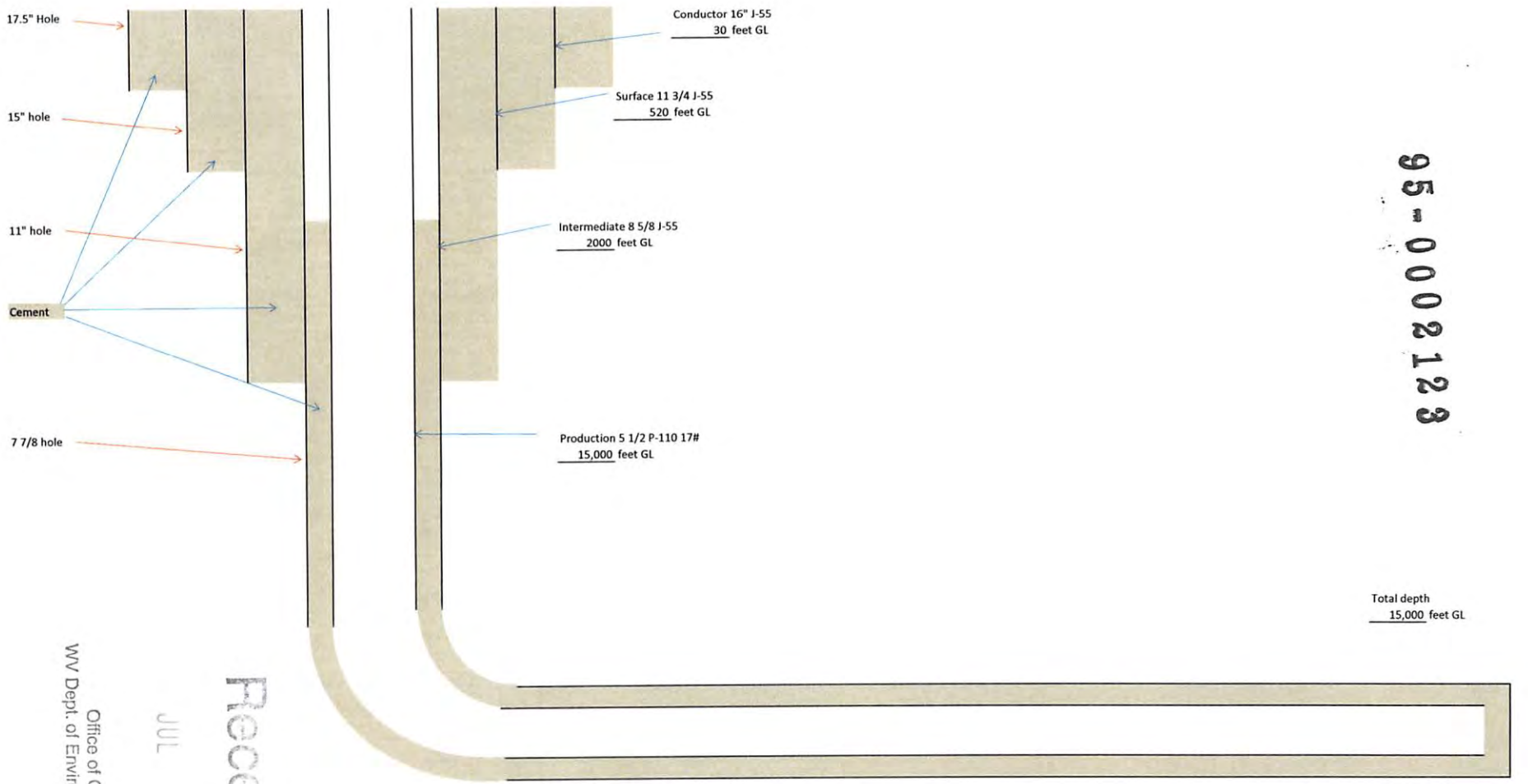
7 7/8" hole for the 5 1/2 production case - Circulate with mud and sweeps for two times bottoms up.
If needed weight up mud until no cuttings retrieved, then circulate with mud and sweeps for two times bottoms up.

*Note: Attach additional sheets as needed.

Jay-Bee Oil & Gas Inc.
Well Name Curly 1
GL Elevation 1,121'
KB 14 feet

Date 6/28/2013
District Ellsworth
County Tyler
State West Virginia

Input by: Shane Dowell



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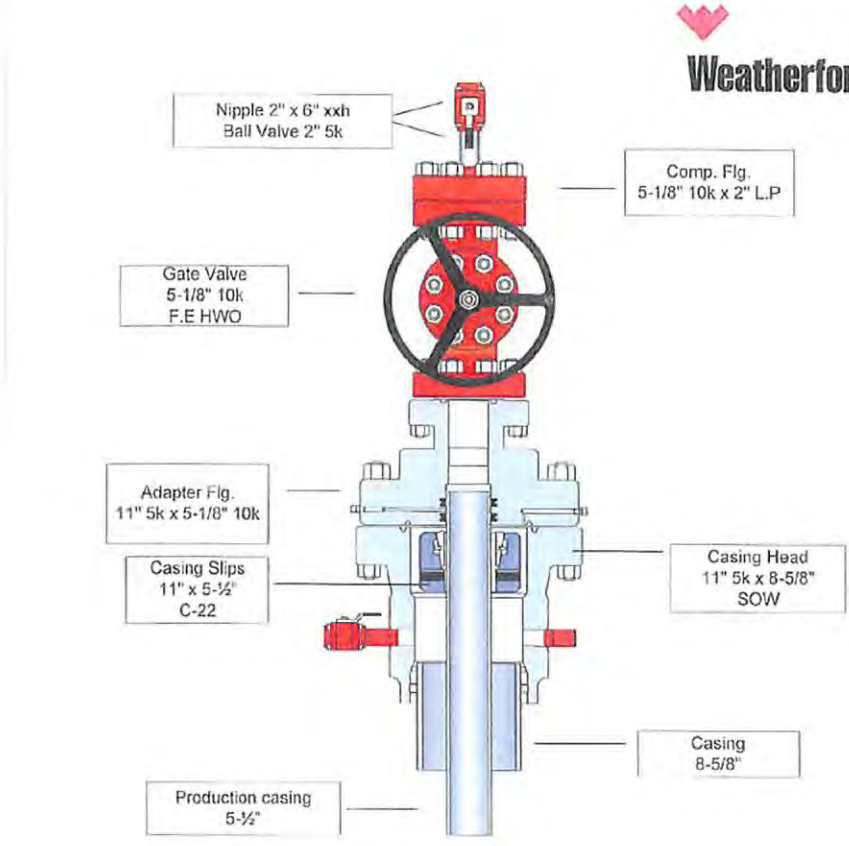


WELL FLARING OPERATIONS STANDARDS

(Operations and Process Completed by Weatherford International, Inc)

We do not anticipate using flaring for flow-back of the well. However, in the drilling process flaring may be used in situations required for safely drilling the well.

1. PURPOSE

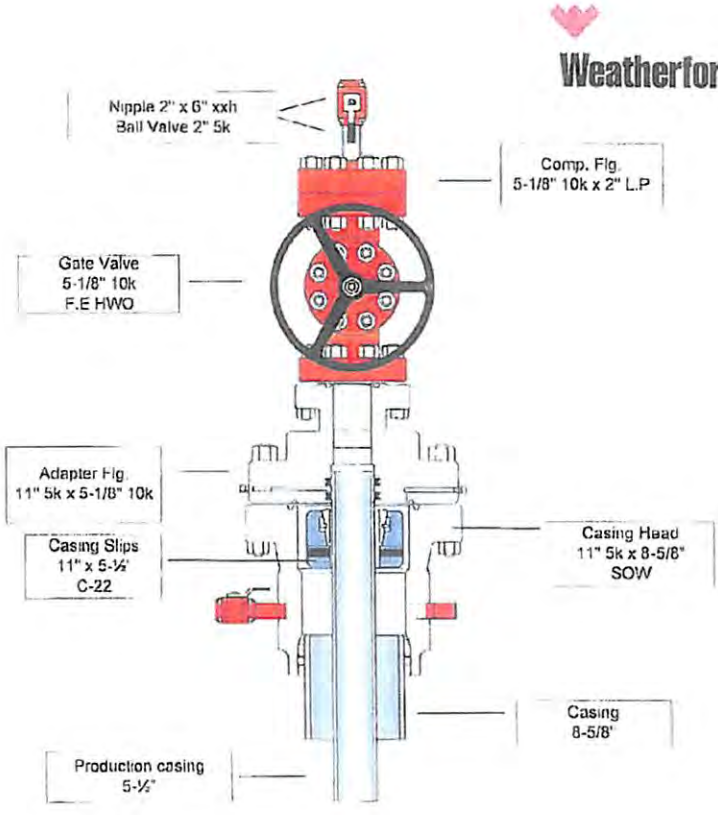
• This procedure shall apply to the commissioning of Surface Well Testing equipment received at a Well Testing location or base operation. • To clearly define Safe Operating Recommendations for all Weatherford employees, Clients and Contractors.

2. SCOPE

This procedure shall apply to the onsite rig up of Surface Well Testing equipment received at a Surface Well Testing location or base operation.

3. RESPONSIBILITY

95-0008123



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This procedure shall apply to the onsite rig up of Surface Well Testing equipment received at a Surface Well Testing location or base operation.

3. RESPONSIBILITY

WW-9
(5/13)

Page _____ of _____

API Number 47 - _____ - _____

Operator's Well No. copy 95 - 0002123

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Jay-Bee Oil & Gas, Inc OP Code 24610

Watershed (HUC 10) Middle Island Creek Quadrangle Middlebourne 7.5'

Elevation 1,121' County Tyler District Ellsworth

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes x No _____

Will a pit be used for drill cuttings? Yes x No _____

If so, please describe anticipated pit waste: Drill Cuttings

Will a synthetic liner be used in the pit? Yes x No _____ If so, what ml.? 60 mil

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
■ Underground Injection (UIC Permit Number 2d0857652, drilling fluid)
■ Reuse (at API Number other wells on same location)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Using Contract Haulers Magnum Hunter (API's 34-121-23995, 34-121-24086) hauling to their disposal wells

Will closed loop system be used? Possible Centrifuge

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Brine Base Drilling Mud

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? Bentonite, Salt, Soda Ash

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. land fill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) hauled to land fill

-Landfill or offsite name/permit number? Waste Management Meadowfill/Permit 101219WV

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

Received

Company Official (Typed Name) Shane Dowell

Company Official Title Office Manager

Subscribed and sworn before me this 28 day of June, 20 [illegible]

Notary Public _____

My commission expires 10/23/2020

OFFICIAL SEAL
Danielle L. Butler
Notary Public
State of West Virginia
My Commission Expires
October 23, 2020
125 Ash Tree Lane
St. Mary's, WV 26170

Oil and Gas
WV Department of Environmental Protection

8-24-13

Form WW-9

Operator's Well No. Curly 1

95-0002123

Proposed Revegetation Treatment: Acres Disturbed 3.8 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3ton lbs/acre (500 lbs minimum)

Mulch hay/2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Gr	15
Alsike Clover	5	Alsike Clover	5
Annual Rye Gras	15		

Attach:
Drawing(s) of road, location,pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Joseph P. Taylor

Comments:

Title: OOG Inspector Date: 7-24-13

Field Reviewed? (X) Yes ( ) No

Received

AUG 12 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

Water Management Plan:
Primary Water Sources

WMP-01425 API/ID Number: 047-095-02123 Operator: Jay-Bee Oil & Gas, Inc.

Curly 1

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED SEP 0 9 2013

Source Summary

WMP-01425	API Number:	047-095-02123	Operator:	Jay-Bee Oil & Gas, Inc.
		Curly 1		

Stream/River

- Source **Middle Island Creek @ Ridgetop Capital** Tyler Owner: **Ridgetop Capital, LP**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	2,100,000		39.47417	-80.878271

☐ Regulated Stream? Ref. Gauge ID: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 5,260 **Min. Gauge Reading (cfs): 79.22** **Min. Passby (cfs) 0.47**

DEP Comments: **This withdrawal site is located adjacent to The Jug (DNR Wildlife Management Area). While formally part of Middle Island Creek, this location is treated as ungauged.**

- Source **Indian Creek @ Donahue Withdrawal Site** Tyler Owner: **Cathleen @ Vicki Donahue**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	2,100,000		39.443152	-80.809027

☐ Regulated Stream? Ref. Gauge ID: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 5,260 **Min. Gauge Reading (cfs): 79.22** **Min. Passby (cfs) 3.81**

DEP Comments:

- Source **Indian Creek @ Ricketts Withdrawal Site** Tyler Owner: **Mark Ricketts**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	2,100,000		39.436856	-80.799125

☐ Regulated Stream? Ref. Gauge ID: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 5,260 **Min. Gauge Reading (cfs): 79.22** **Min. Passby (cfs) 3.75**

DEP Comments:

Source Detail

WMP-01425 | API/ID Number: 047-095-02123 | Operator: Jay-Bee Oil & Gas, Inc.

Curly 1

Source ID: 23909 | Source Name: Middle Island Creek @ Ridgetop Capital

Ridgetop Capital, LP

Source Latitude: 39.47417

Source Longitude: -80.878271

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 3.14 | County: Tyler

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Total Volume from Source (gal): 2,100,000

Max. Pump rate (gpm): 5,260

Max. Simultaneous Trucks: 2

Max. Truck pump rate (gpm) 420

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

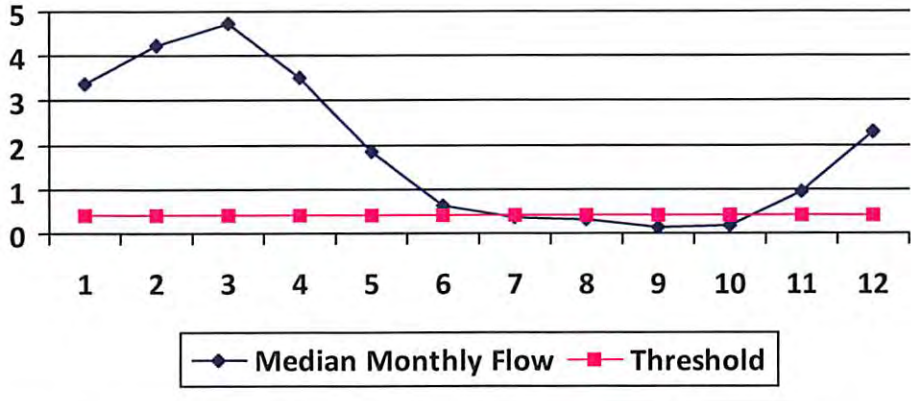
Reference Gaug 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.) 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	3.37	12.18	-8.51
2	4.24	12.18	-7.64
3	4.74	12.18	-7.13
4	3.52	12.18	-8.35
5	1.86	12.18	-10.02
6	0.65	12.18	-11.23
7	0.37	12.18	-11.51
8	0.30	12.18	-11.57
9	0.15	12.18	-11.72
10	0.19	12.18	-11.68
11	0.95	12.18	-10.93
12	2.32	12.18	-9.55

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	0.31
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.72
Headwater Safety (cfs):	0.08
Ungauged Stream Safety (cfs):	0.08
Min. Gauge Reading (cfs):	**79.22**
Passby at Location (cfs):	**0.46**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01425 | API/ID Number: 047-095-02123 | Operator: Jay-Bee Oil & Gas, Inc.

Curly 1

Source ID: 23910 | Source Name: Indian Creek @ Donahue Withdrawal Site
Cathleen @ Vicki Donahue

Source Latitude: 39.443152
Source Longitude: -80.809027

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25.87 | County: Tyler

Anticipated withdrawal start date: 11/1/2013
Anticipated withdrawal end date: 11/1/2014
Total Volume from Source (gal): 2,100,000
Max. Pump rate (gpm): 5,260
Max. Simultaneous Trucks: 2
Max. Truck pump rate (gpm) 420

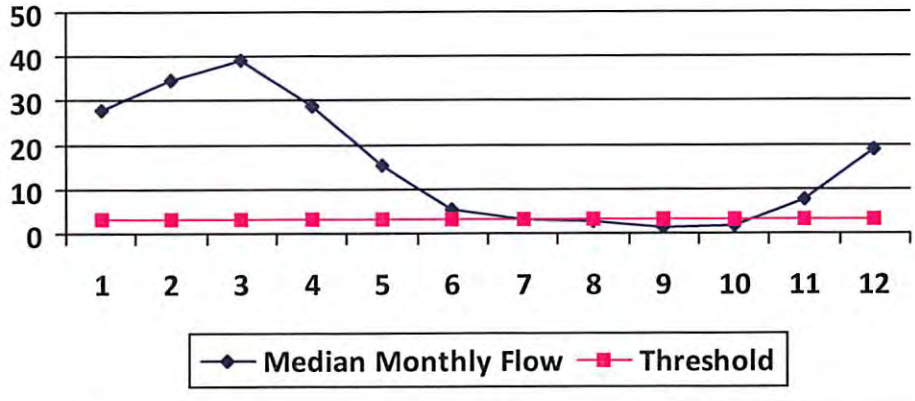
- ☐ Endangered Species?
- ☐ Trout Stream?
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?
- ☑ Mussel Stream?
- ☐ Tier 3?

Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00 | Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	27.74	15.53	12.50
2	34.90	15.53	19.66
3	39.05	15.53	23.81
4	29.00	15.53	13.76
5	15.30	15.53	0.06
6	5.34	15.53	-9.90
7	3.02	15.53	-12.22
8	2.49	15.53	-12.75
9	1.27	15.53	-13.97
10	1.60	15.53	-13.64
11	7.82	15.53	-7.42
12	19.11	15.53	3.87

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	2.54
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.72
Headwater Safety (cfs):	0.64
Ungauged Stream Safety (cfs):	0.64
Min. Gauge Reading (cfs):	**79.22**
Passby at Location (cfs):	**3.81**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01425 | API/ID Number: 047-095-02123 | Operator: Jay-Bee Oil & Gas, Inc.

Curly 1

Source ID: 23911 Source Name: Indian Creek @ Ricketts Withdrawal Site
Mark Ricketts

Source Latitude: 39.436856
Source Longitude: -80.799125

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25.41 County: Tyler

Anticipated withdrawal start date: 11/1/2013
Anticipated withdrawal end date: 11/1/2014
Total Volume from Source (gal): 2,100,000
Max. Pump rate (gpm): 5,260
Max. Simultaneous Trucks: 3
Max. Truck pump rate (gpm) 420

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

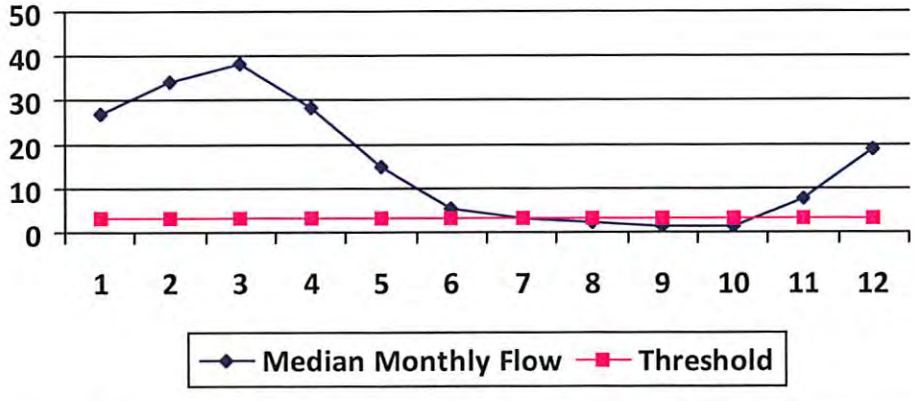
Reference Gaug 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.) 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	27.25	15.47	12.03
2	34.28	15.47	19.06
3	38.35	15.47	23.14
4	28.48	15.47	13.26
5	15.02	15.47	-0.19
6	5.25	15.47	-9.97
7	2.97	15.47	-12.25
8	2.44	15.47	-12.77
9	1.25	15.47	-13.97
10	1.57	15.47	-13.65
11	7.68	15.47	-7.54
12	18.77	15.47	3.55

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	2.50
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.72
Headwater Safety (cfs):	0.62
Ungauged Stream Safety (cfs):	0.62
Min. Gauge Reading (cfs):	**79.22**
Passby at Location (cfs):	**3.74**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP-01425 | API/ID Number 047-095-02123 | Operator: Jay-Bee Oil & Gas, Inc.

Curly 1

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID: 23912 Source Name RPT8 Centralized Freshwater Impoundment #1

Source start date: 11/1/2013

Source end date: 11/1/2014

Source Lat: 39.482507 Source Long: -80.785834 County Tyler

Max. Daily Purchase (gal)

Total Volume from Source (gal): 5,000,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-910

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 23913 Source Name RPT8 Centralized Freshwater Impoundment #2 Source start date: 11/1/2013 Source end date: 11/1/2014

Source Lat: 39.482678 Source Long: -80.786906 County Tyler

Max. Daily Purchase (gal) Total Volume from Source (gal): 5,000,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-909**

Source ID: 23914 Source Name Indian Creek Centralized Freshwater Impoundment Source start date: 11/1/2013 Source end date: 11/1/2014

Source Lat: 39.437369 Source Long: -80.796631 County Tyler

Max. Daily Purchase (gal) Total Volume from Source (gal): 5,000,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-963**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 23915 Source Name Various

Source start date: 11/1/2013
Source end date: 11/1/2014

Source Lat: Source Long: County

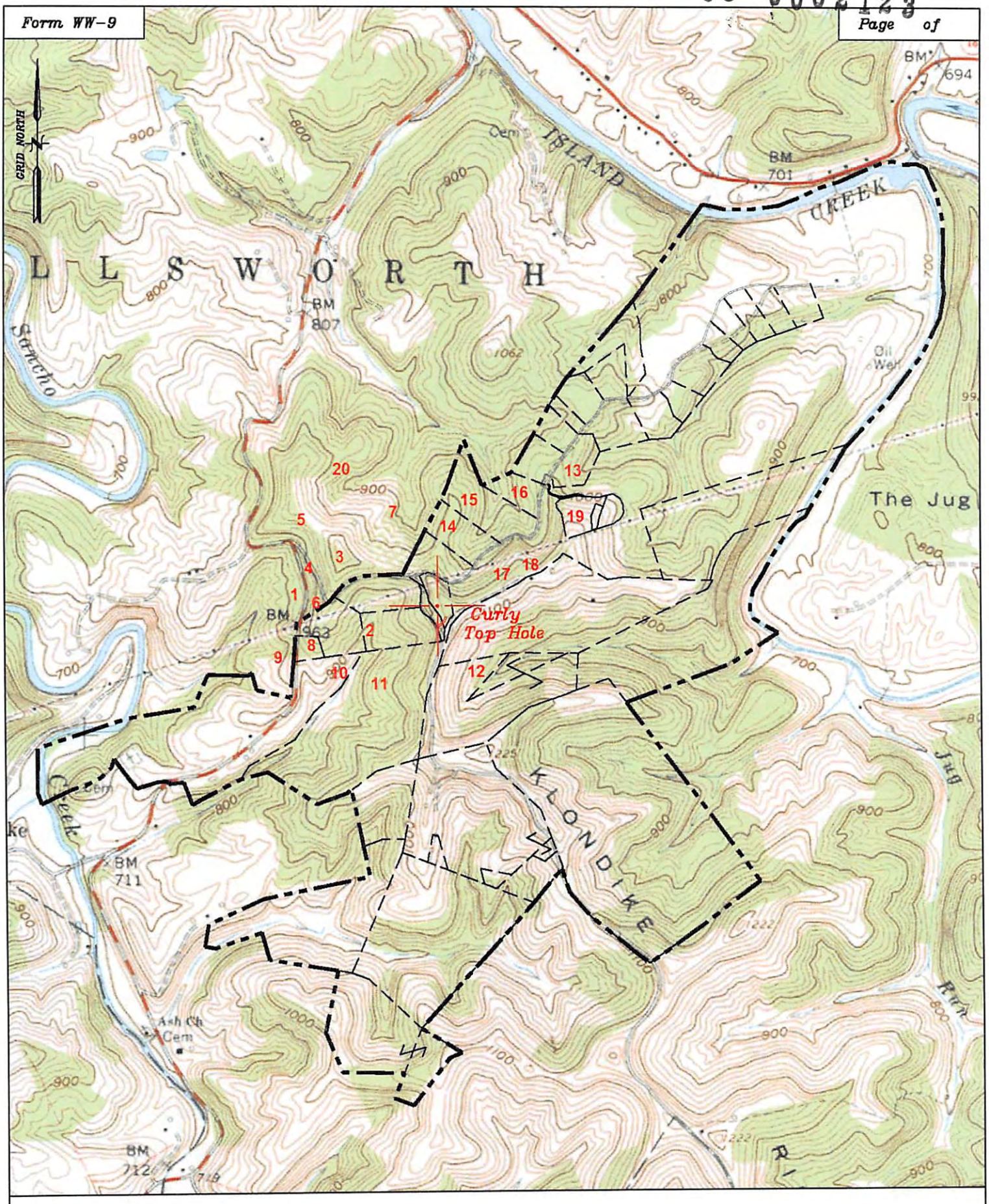
Max. Daily Purchase (gal) Total Volume from Source (gal): 210,000

DEP Comments:

95-0002123

Form WW-9

Page of

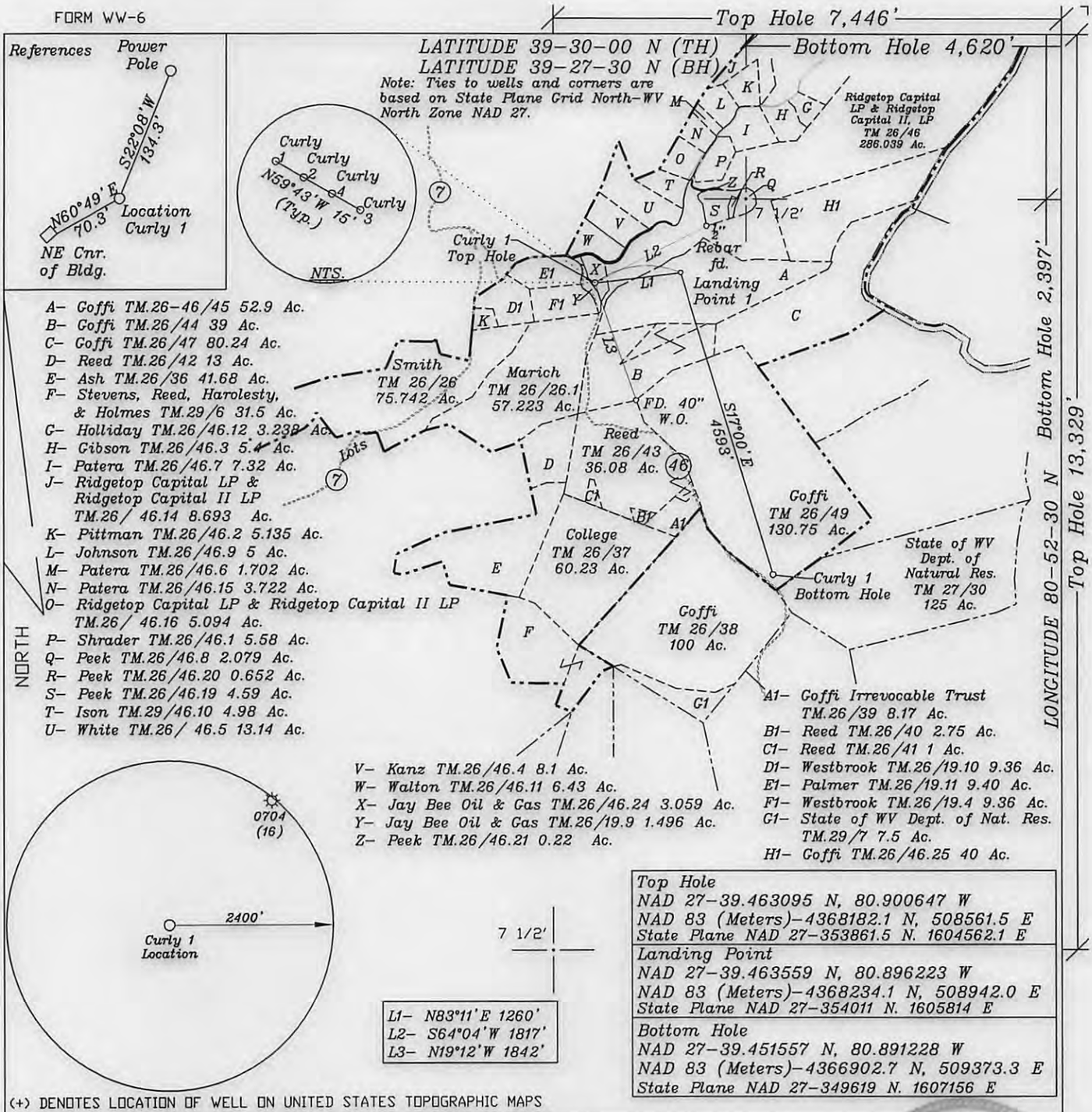


Well: Curly
Quad: Middlebourne 7 1/2'
District: Ellsworth
County: Tyler

0 750' 1,500' 3,000'

Scale: 1"=1,500'

FORM WW-6



Top Hole	NAD 27-39.463095 N, 80.900647 W
	NAD 83 (Meters)-4368182.1 N, 508561.5 E
	State Plane NAD 27-353861.5 N. 1604562.1 E
Landing Point	NAD 27-39.463559 N, 80.896223 W
	NAD 83 (Meters)-4368234.1 N, 508942.0 E
	State Plane NAD 27-354011 N. 1605814 E
Bottom Hole	NAD 27-39.451557 N, 80.891228 W
	NAD 83 (Meters)-4366902.7 N, 509373.3 E
	State Plane NAD 27-349619 N. 1607156 E

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

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) David L. Jackson

R.P.E. _____ L.L.S. 708

DAVID JACKSON LICENSED No. 708 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE June 28, 2013
OPERATOR'S WELL NO. Curly 1
API WELL NO. H6A
47 — 095 — 02123
STATE COUNTY PERMIT

WELL TYPE: OIL__ GAS X LIQUID INJECTION__ WASTE DISPOSAL__
(IF "GAS") PRODUCTION X STORAGE__ DEEP__ SHALLOW X
LOCATION: ELEVATION 1,121.0' WATER SHED Middle Island Creek
DISTRICT Ellsworth COUNTY Tyler
QUADRANGLE Middlebourne 7 1/2'
SURFACE OWNER Jay-Bee Oil & Gas Inc. ACREAGE 4.555 ac.
OIL & GAS ROYALTY OWNER Jay-Bee Oil & Gas Inc. LEASE ACREAGE 4.555 ac.
LEASE NO. RT2B and RT2C
PROPOSED WORK: DRILL X CONVERT__ DRILL DEEPER__ REDRILL__ FRACTURE OR STIMULATE__ PLUG OFF OLD FORMATION__ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY)_____

PLUG AND ABANDON__ CLEAN OUT AND REPLUG__
TARGET FORMATION Marcellus ESTIMATED DEPTH 15,000'
WELL OPERATOR Jay-Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda
ADDRESS 1720 Route 22 E, Union, NJ 07083 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337