

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

July 09, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502146, 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: SLEEPY 6

Farm Name: WEIMER, BRENT A. & EMMA

API Well Number: 47-9502146

Permit Type: Horizontal 6A Well

Date Issued: 07/09/2014

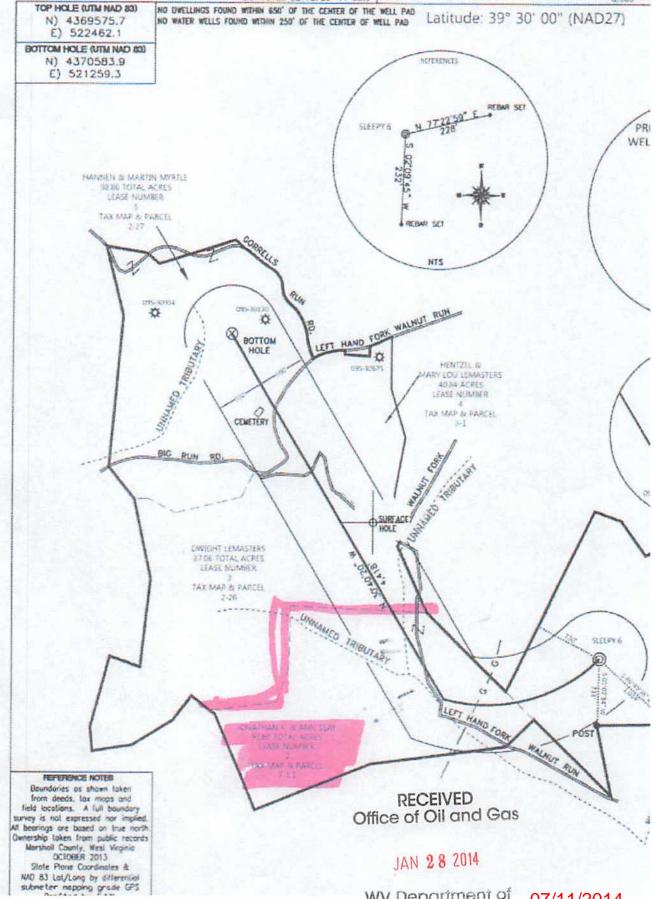
API Number: <u>95</u>-02146

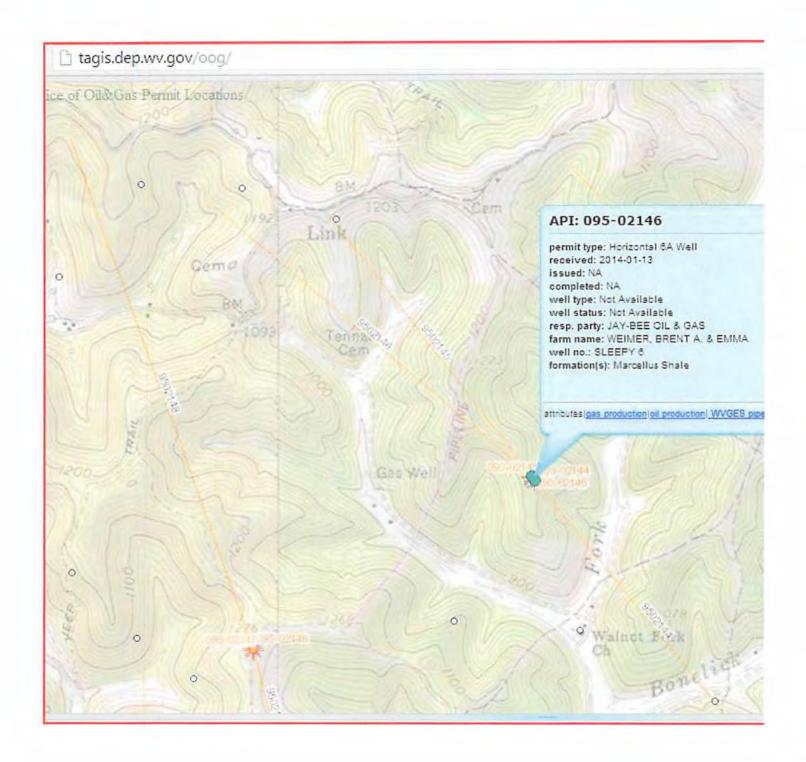
PERMIT CONDITIONS

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 (USACE). Through this permit, you are hereby being advised to consult with USACE 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.
- 9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.





RECEIVED
Office of Oil and Gas

JAN 28 2014

WV Department of Environmental Protection
 Jay-Bee Oil & Gas Inc.

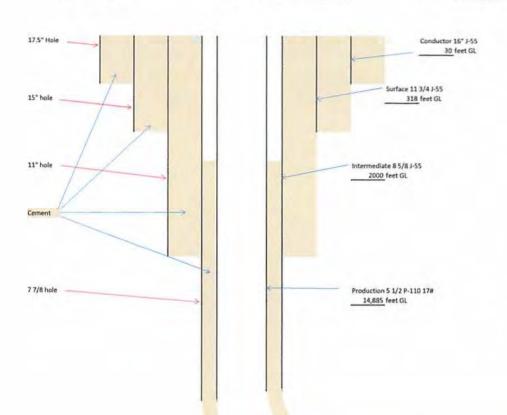
 Well Name
 Sleepy 6

 GL Elevation
 1108

 KB
 14 feet

Date District County State 1/3/2014 McElroy Tyler West Virginia

Input by: Shane Dowell



Total depth 14,885 feet GL



Applicant: JAY BEE OIL & GAS Reference ID: Sleepy 6 (12/11/2013)

Status: New

Type: Horizontal 6A Well

Permit ID: 9502146

Printed: Jul. 08, 2014 4:29 PM

DEP Findings - General Information

API Number: 47-095-02146								
☑ Check received								
Mylar plat received	☑ Mylar plat received							
UTM coordinates correct								
NOTTINGHAM, JUSTIN 1/17/2014								
Authorized Representative	Date							

WW-6B: General and Location Information

API Number:	95-02146 (47)	
Operator's Well Number:	Sleepy 6	
Filing Fee:	C First Well on Pad Subsequent Well on Pad	5,150.00
Well Pad Name:	Sleepy (T3036) Pad	
Surface Owner:	Brent A. & Wilma K. Weimer	-
Public Road Access:	Walnut Fork Rd	
Please attach each of the following	ng as seperate documents:	
Well Plat Wellhorn Schomatic		
	.g	

County:	Tyler		District:	McElroy-xx	<u> </u>
Quadrangle:	CENTER POINT		<u> </u>		
Top Hole(UTM N	IAD83):				
Easting:	522462.07	Northing:	4369575.69	Zone: 17 🔻	ST .
Proposed Landin	ng Point(UTM):				_
Easting:	521965.2	Northing:	4369437.7	Zone: 17 🔻	₫ [‡]
Proposed Bottom	n Hole(UTM):				

Easting: 5	21259.32 Northing: 437058	33.87 Zone:	17 💆 🏂	
Elevations (feet)	Current Ground: 1125.4	Propo	sed Post-Constructio	n: 1109.3
Well Type:	⊙ Gas	C Oil		
	C Underground Storage	Other		
Will well be drilled	more than 100 feet into the Onondage	a Group? C Yes 🌘	No	
Depth Type:	Shallow	C Deep		
Existing Pad?	C Yes	€ No		
DEP Findings - De	eep Well Approval		_	
This permit applica	ation has been reviewed by the WV Oi	l and Gas Conservatio	n Commission for De	eep Well Approval.
Comments:				4
Deep Well Approv	al: CApprove C Deny C I	Not Applicable		
Exception Location	n Hearing Date:			
				16
	Authorized Representat	ive		Date
Deep Well Site Sa	afety Plan Approved		. <u> </u>	
Beep Well one of	noty i tall reproved			-
				[6]
	Field Authorized Represen	tative		Date
WW-6B: Target Fo	ormations			
Complete the folio	owing table.	-		
	Target Formation	Depth-Top (ft)	Anticipated Thickness (ft)	Associated Pressure (psi)
Ма	rcellus	7108	40	3500
WW-6B: Well Wor	k and Mine Details			

Is proposed well location directly overlying or tributary to an active mine?

C Yes 🧖 I	No	
If Yes, indicate name.	, depth, coal seam and	l owner of mine:
Coal Seam:		Depth:
Mine Name:		Owner:
		·
		drilling and plugging back of any pilot hole.
rig, we will d conductor, fre	rill top hole t shwater and int	rizontal Well. Using a top hole to kick off point by drilling the termediate holes. Using a the production holes.
	····	<u> </u>
Describe fracturing/st	imulating methods in c	detail, including anticipated max pressure and anticipated max rate.
sand, friction	reducer, 1# pe	of water, 150,000-400,000lbs of er gallon, scale inhibitor and gallon 2000 gallons 15% vol acid.
	rbed, including roads, for well pad only, less	stockpile area, pits, etc, (acres): 10.8 access road (acres): 4.4
WW-6B: FRAC Addit	<u>ives</u>	· · · · · · · · · · · · · · · · · · ·
Please select the che	mical names of each a	additive used in your fracturing compounds.
		· · · · · · · · · · · · · · · · · · ·
You may opt to provid	de these compounds li	sted in the form of an attachment.
Chamical (CAS) Number	Namo(Description
Chemical (C	CAS) Number	Name/Description
<u> </u>	<u> </u>	
	Please list any and all	chemicals and compounds used not found in list above.
CAS Number		Chemical/Compound Name
07732-18-5	Water	
	Jyvatei	
00107-21-1		ene Glycol
00107-21-1	Ethyle	

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00064-17-5	Ethyl Alcohol
07647-01-0	Hydrochloric Acid
14808-60-7	Sand
64742-47-8	Distillates (petroleum),hydrotreated light(Friction Reducer)
10043-52-4	Calcium chloride
7173-51-5	Didecyldimethylammonium chloride
68424-85-1	Benzalkonium chloride

WW-6B: Depth Specifics

Proposed Post-Construction Elevation:	1108
Proposed Total Vertical Depth:	7108 (ft.)
Formation at Total Vertical Depth:	Marcellus
Proposed Total Measured Depth:	14885 (ft.)
Proposed Total Horizontal Leg Length:	7777 (ft.)
Method to Determine Fresh Water Depth:	
API 47-095-00010 for salt and creek at 840' elevation.	coal. Freshwater was closest
	 ▼

	Approximate Fresh Water Strata Depths	
268 (ft.)		

		Approximate Coal Seam Depths
602	(ft.)	Coal Seam Name, if known:
741	(ft.)	Coal Seam Name, if known:
835	(ft.)	Coal Seam Name, if known:
994	(ft.)	Coal Seam Name, if known:
1057	(ft.)	Coal Seam Name, if known: Pittsburgh

	Approximate Depth to F	Possible Void(coal mine, karst, other)
(ft.)	Not Anticipated:	F

07/11/2014

Approximate Saltwater Depths	
1620 (ft.)	

WW-6B: Casing and Cementing

Complete the following	table, adding as m	any rows o	f eact	Type as ne	eded.			,	
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Conductor 🔻	16	New	J55	Š	40	30		30	
	Wellbore Dia	meter (in)		Wall T	all Thickness (in)		Burst Pressure (psi)		
	17 1/2	_		.495		300	00	0	
	Cement Ty	pe	Yield (cu. ft./sk)		Fillup - Cubic Feet		Top of Cemen		
	Class A Cement		1.19		8.22		0		
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Fresh Water 💌	11 3/4	New	J55		32	318		318	
	Wellbore Dia	meter (in)		Wall T	hickness (in)		Burst Pre	ssure (psi)	
_	15	· -		.333		150	00		
	Cement Type		Yield (cu. ft./sk)		Fillup - Cubic Feet		Top of Cemen		
	Class A Cement		1.26		150.79		0		
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Intermediate 🔻	8 5/8	New	J55		24/23	2000		2000	
	Wellbore Dia	ameter (in)	Wall Thickness (in)				ssure (psi)		
	11		.264		2500				
	Cement Ty	ре	Yiel	Yield (cu. ft./sk) Fillup -		illup - Cubic Feet Top of Cemer			
	Class A Cement		1.45		508.43		0		
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Production 💌	5 1/2	New	P1	10	20/17	1488	5	14885	
	Wellbore Dia	meter (in)			Wall Thickness (in)		Burst Pressure (psi)		
_	7 7/8			.304			000		
	Cement Ty	ре	Yiel	d (cu. ft./sk)	Fillup - Cubic	Feet	Top of Cemen		
	Type 1 Cement		1.34	2578.9			1000		

WW-6B: Centralizers, Cement, Borehole

Describe 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.	
Centralizers Type and Placement.	
Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.	Å
Cement Additives.	
Superior Well Services - 15" hole for the 11 3/4 fresh water case, Class A Cement, 2% Calcium Chloride, 1/4# flake. 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	

DEP Findings - Casing and Cementing Plan (Inspector)

Comments:						+
Field Reviewed?	● Yes C No	Recommendation:	Approve	C Deny		
TAYLO	R, JOE			•	1/3/2014	<u>iā</u>
	Auth	orized Representative			Date	

WW-6B: Packers

07/11/2014

Will Packers be Used? C Yes	€ No	
If Yes, complete the following	g:	

Kind	Sizes	Depths Set

WW-9: Fluids, Cuttings Disposal and Reclamation Plan

r			
State:	West Virginia	County:	Tyler
District:	05	Quadrangle:	CENTER POINT
Zone:	<u>17</u>	Costings	E22462.07
Northing:	4369575.69	Easting:	<u>522462.07</u>
API Numi	ber: 95-02146		
	Well Number: Sleepy 6		
'	<u>——</u>		
l '	anticipate drilling/redrilling well work?		
·	€ Yes C No		
1			
Will a pit	be used for plugging activities?	C No	
lf	f so, please describe anticipated pit waste:		
	Drill Cuttings - Air Drilling T	Top Hole	A
Will a svi	nthetic liner be used in the pit?	C No	
1	·		
"	so, what ml.? 60		
D	d Disposal Method For Treated Pit Waste Wa	lar	
l .	•		
	Underground Injection (UIC Permit Num	ber 47-085-	09721
	Reuse (at API Number		
			(\$)
_		=	
	Other (explain)		
	Using Contract Haulers Nort	e/CES (AP	I's 47-085-05151)
Will close	ed loop system be used? Yes C	lo	
	f so, describe:		
	Centrifuge System (Boss, Newalt	a) Possil	ole, directional
	oonerrage bystem (2000, meme-	,	(▼ :
'		= = -	E E E E E E
Drilling n	nedium anticipated for this well (vertical and h	orizontal)? Ai	r, freshwater, oil based, etc.
l -	Brine Base Drilling Mud	<u> </u>	
l ľ	_		: ▼
ļ '			
If oil base	ed, what type? Synthetic, petroleum, etc.		
" " " " " "	ou, must type. Of initially positionally att.		

Water Ba	sed	•				
Additives to be used in drilling medium?						
Bentonit	e, Salt, Soda Ash					
J		· · · · · · · · · · · · · · · · · · ·				
	al method from Plugging Activities:					
,	dicate medium used: cement, sawdust, lime, etc):					
	permit number?) Meadowfill/Permit 101219WV					
	te (name/permit number?) Meadowfill/Permit 101219WV	<u>}</u>				
☐ Other: (please	explain)					
	Proposed Revegetation Treatment:					
Acres Disturbed:	10.8 Prevegetation pH: 6.8					
Lime Tons/acre to co	prrect to pH: 3					
Fertilizer (10-20-20 d	or equivalent): 750 lbs/acre					
Mulch	Hay 2000 lbs/acre					
Comments:		\$				
C Attach a Reclan	nation Plan/Drawing					
Area Type	Seed Mixtures Seed Type	lbs/acre				
Permanent >	KY-31	20				
Permanent -	Creeping Red Fescue	30				
Permanent _	Lathco Flat Pea/Perennial Ryegrass	30				
Temporary ▼	Annual Ryegrass	40				
DEP Findings - Fluids, Cuttings Disposal and Reclamation Plan (Inspector)						
Comments:		<u> </u>				
Field Reviewed?						
TAYLOR,	JOE	1/3/2014				
, , , , , , , , , , , , , , , , , , , ,	Authorized Representative	Date				

JAY -BEE OIL & GAS INC 3570 SHIELDS HILL RD CAIRO, WV 26337 OFFICE (304) 628-3111 FAX (304) 628-3107

WELL SITE DRILLING PROCEDURES AND SITE SAFETY PLAN Per 35CSR8/§22-6A

(Any changes or modifications to previously approved plans must be approved by the West Virginia Department of Environmental Protection - Office of Oil and Gas)

A copy of this plan will be provided to the local emergency planning committee or county emergency services offices at least 7 days prior to land disturbance from well work.

SITING STANDARDS

Well Name	Sleepy 6		
Well Pad	Sleepy (T3036) Pad		
Latitude/Longitude	NAD83- Lat. 39.475479 Long80.738841		
Location of Access Road	From WV18 and Indian Creek Rd, 6 miles east on Indian Creek Rd. 2.5 miles north on Walnut Fork. Lease road on left		
Detail of Actual Well Work	Drill and Stimulate a New Horizontal Well.		
Detail of Completion and Production Activities	Fracturing/ Stimulating Methods 300-350° per stage 8,500bbls of water, 150,000 – 400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor, and bacteria prevention ¼# per gallon 2000 gallons 15% vol acid		
Directions to Well	From Middlebourne city center, head south down WV 18 for 6.7 miles. Turn left onto Indian Creek Rd, and follow east for 6 miles. Turn left onto Walnut Fork and follow north for 2.5 miles, lease road on left.		
Prevailing Wind Direction	South/ South East Full copy of Site Safety		

Full copy of Site Safety Plan stored on OOG network drive:

west virginia department of environmental protection



Water Management Plan: Secondary Water Sources



WMP-01783

api/in Militabe

047-095-02146

Operator

Jay-Bee Oil & Gas, Inc.

Sleepy 6

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: 34232 Source Name W701 Fresh Water Centralized Impoundment

Source start date:

4/1/2014

Source end date:

4/1/2015

Source Lat:

39.438678

Source Long:

-80.720864

County

Tyler

Max. Daily Purchase (gal)

Total Volume from Source (gal):

7,845,000

DEP Comments:

095-FWC-00001

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-577

APPROVED FEB 0 3 2014

WMP-01783	API/ID Number	047-095-02146	Operator:	Jay-Bee Oil & Gas, Inc.
	SI	leepy 6		

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:

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- •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: 34233 Source Name Various

Source start date:

4/1/2014

Source end date:

4/1/2015

Source Lat:

Source Long:

County

Max. Daily Purchase (gal)

Total Volume from Source (gal):

7,845,000

DEP Comments:

