



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

**Michael R. Pence**  
*Governor*

**Thomas W. Easterly**  
*Commissioner*

TO: Interested Parties / Applicant  
DATE: December 3, 2013  
RE: Jay Petroleum, Inc. / 179-33815-00041  
FROM: Matthew Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

## Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER-AM.dot 6/13/2013



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

Michael R. Pence  
Governor

Thomas W. Easterly  
Commissioner

Tim Castor  
Jay Petroleum, Inc.  
533 S 200 W  
P.O. Box 1285  
Portland, Indiana 47371

December 3, 2013

Re: Exempt Construction and Operation Status,  
E179-33815-00041

Dear Mr. Castor:

The application from Jay Petroleum, Inc., received on October 25, 2013, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary high vacuum dual phase extraction (DPE) system for the remediation of soil and groundwater located at 204 West Wabash Street, Bluffton, Indiana is classified as exempt from air pollution permit requirements:

- (a) One (1) high vacuum dual phase extraction (DPE) remediation system, identified as DPE-1, approved in 2013 for construction, for the remediation of soil and groundwater contaminated with petroleum hydrocarbons at a maximum air flow rate of 150 standard cubic feet per minute (scfm) and a maximum water flow rate of 10 gallons per minute (gpm) exhausting to stack EXHAUST-1.
- (b) Fugitive emissions from paved roads. [326 IAC 6-4]

The following conditions shall be applicable:

1. Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-1 (Opacity Limitations), except as provided in 326 IAC 5-1-2 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 of fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

2. Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line of boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

This exemption supersedes Exemption No. E179-31127-00041, issued on November 23, 2011.

A copy of the Exemption is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)



A State that Works

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Donald McQuigg, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-234-4240 or at 1-800-451-6027 (ext 4-4240).

Sincerely,



Chrystal Wagner, Section Chief  
Permits Branch  
Office of Air Quality

CW/dm

cc: File - Wells County  
Wells County Health Department  
Compliance and Enforcement Branch

# Indiana Department of Environmental Management Office of Air Quality

## Technical Support Document (TSD) for an Exemption

### Source Description and Location

**Source Name:** Jay Petroleum, Inc.  
**Source Location:** 204 West Wabash Street, Bluffton, Indiana 46714  
**County:** Wells  
**SIC Code:** 5541  
**Exemption No.:** E179-33815-00041  
**Permit Reviewer:** Donald McQuigg

On October 25, 2013, the Office of Air Quality (OAQ) received an application from Jay Petroleum, Inc. related to the construction and operation of a new stationary high vacuum dual phase extraction (DPE) system for the remediation of soil and groundwater contaminated with petroleum hydrocarbons.

### Existing Approvals

The source has been operating under Exemption No. E179-31127-00041, issued on November 23, 2011. This exemption was for the operation of a high vacuum dual phase extraction (DPE) system to remediate petroleum hydrocarbon impacted soil and ground water. The DPE system operated at the site between February 16, 2012 and September 4, 2012. The DPE system was shut down and all equipment was moved off-site on November 29, 2012.

### County Attainment Status

The source is located in Wells County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.

<sup>1</sup>Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

Unclassifiable or attainment effective April 5, 2005, for PM<sub>2.5</sub>.

- (a) **Ozone Standards**  
Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to ozone. Wells County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM<sub>2.5</sub>**  
Wells County has been classified as attainment for PM<sub>2.5</sub>. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct PM<sub>2.5</sub> significant level at ten (10) tons per year. This rule became effective June 28, 2011. Therefore, direct PM<sub>2.5</sub>, SO<sub>2</sub>,

and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (c) **Other Criteria Pollutants**  
 Wells County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

**Fugitive Emissions**

The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

**Background and Description of Emission Units and Pollution Control Equipment**

On October 25, 2013, the Office of Air Quality (OAQ) received an application from Jay Petroleum, Inc. related to the construction and operation of a new stationary high vacuum dual phase extraction (DPE) system for the remediation of soil and groundwater contaminated with petroleum hydrocarbons located at 204 West Wabash Street, Bluffton, Indiana.

The following is a list of the new emission units:

- (a) One (1) high vacuum dual phase extraction (DPE) remediation system, identified as DPE-1, approved in 2013 for construction, for the remediation of soil and groundwater contaminated with petroleum hydrocarbons at a maximum air flow rate of 150 standard cubic feet per minute (scfm) and a maximum water flow rate of 10 gallons per minute (gpm) exhausting to stack EXHAUST-1.
- (b) Fugitive emissions from paved roads. [326 IAC 6-4]

**Enforcement Issues**

There are no pending enforcement actions related to this source.

**Emission Calculations**

See Appendix A of this TSD for detailed emission calculations.

**Permit Level Determination – Exemption**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub> *	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHG as CO <sub>2e</sub> **	Total HAPs	Worst Single HAP
Remediation system DPE-1	-	-	-	-	-	1.57	-	-	8.1E-04	7.7E-04 (hexane)
Paved roads (mitigated fugitives)	0.24	0.05	0.01	-	-	-	-	-	-	-
<b>Total PTE of Entire Source</b>	<b>0.24</b>	<b>0.05</b>	<b>0.01</b>	-	-	<b>1.57</b>	-	-	<b>8.1E-04</b>	<b>7.7E-04 (hexane)</b>
Exemptions Levels**	< 5	< 5	< 5	< 10	< 10	< 10	< 25	< 100,000	< 25	< 10
Registration Levels**	< 25	< 25	< 25	< 25	< 25	< 25	< 100	< 100,000	< 25	< 10

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub> *	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHG as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
negl. = negligible *Under the Part 70 Permit program (40 CFR 70), PM <sub>10</sub> and PM <sub>2.5</sub> , not particulate matter (PM), are each considered as a regulated air pollutant". **The 100,000 CO <sub>2</sub> e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.										

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of all regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHG) is less than the Title V subject-to-regulation threshold of one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

**Federal Rule Applicability Determination**

New Source Performance Standards (NSPS)

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicable to this exemption.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Equipment Leaks, 40 CFR 63.160, Subpart H, are not included in the exemption for the extraction system pumps, connectors, sampling system, and control device. The extraction system will operate in hazardous air pollutant service more than 300 hours per year; however, the source is not subject to the provisions of a specific subpart in 40 CFR, part 63. Therefore, 40 CFR 63.160, Subpart H does not apply.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants: Site Remediation, 40 CFR 63, Subpart GGGGG (326 IAC 20-87), are not included in the exemption since the remediation system is not co-located with any other stationary sources that emit hazardous air pollutants (HAPs) and meet an affected source definition specified for a source category that is regulated by another subpart under 40 CFR Part 63, and is not a major source of HAPs.
- (d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) applicable to this exemption.

Compliance Assurance Monitoring (CAM)

- (e) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not applicable because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

### State Rule Applicability Determination

#### 326 IAC 2-1.1-3 (Exemptions)

Exemption applicability is discussed under the Permit Level Determination – Exemption section above.

#### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

#### 326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because, it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it has actual emissions of NO<sub>x</sub> and VOC of less than twenty-five (25) tons per year, and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year. Therefore, 326 IAC 2-6 does not apply.

#### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this exemption:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

#### 326 IAC 6-4 (Fugitive Dust Emissions Limitations)

The source is subject to the requirements of 326 IAC 6-4, because the paved roads have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

#### 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than twenty-five (25) tons per year. Therefore, 326 IAC 6-5 does not apply.

#### 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

The remediation system DPE-1 is not subject to the requirements of 326 IAC 8-1-6, since the unlimited potential VOC emissions are less than twenty-five (25) tons per year.

#### 326 IAC 12 (New Source Performance Standards)

See Federal Rule Applicability Section of this TSD.

#### 326 IAC 20 (Hazardous Air Pollutants)

See Federal Rule Applicability Section of this TSD.

### Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on October 25, 2013.

The construction and operation of this source shall be subject to the conditions of the attached proposed Exemption No. E179-33815-00041. The staff recommends to the Commissioner that this Exemption be approved.

<b>IDEM Contact</b>
---------------------

- (a) Questions regarding this exemption can be directed to Donald McQuigg at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-4240 or toll free at 1-800-451-6027 extension 4-4240.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem](http://www.in.gov/idem)

**Appendix A: Emissions Calculations  
Emission Summary**

**Company Name:** Jay Petroleum, Inc.  
**Source Address:** 204 West Wabash Street, Bluffton, IN 46714  
**Exemption No.:** E179-33815-00041  
**Reviewer:** Donald McQuigg  
**Date:** November 15, 2013

Process Description	Unlimited Potential to Emit (PTE) (tons/year)									
	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	VOC	CO	GHG as CO <sub>2</sub> e	Total HAPs	Worst Single HAP
Remediation system DPE-1	-	-	-	-	-	1.57	-	-	8.1E-04	7.7E-04 (hexane)
Paved roads (fugitives)	0.24	0.05	0.01	-	-	-	-	-	-	- (---)
<b>Total PTE</b>	<b>0.24</b>	<b>0.05</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>1.57</b>	<b>0.00</b>	<b>0.00</b>	<b>8.1E-04</b>	<b>7.7E-04 (hexane)</b>

**Appendix A: Emissions Calculations  
Remediation System DPE-1**

**Company Name:** Jay Petroleum, Inc.  
**Source Address:** 204 West Wabash Street, Bluffton, IN 46714  
**Exemption No.:** E179-33815-00041  
**Reviewer:** Donald McQuigg  
**Date:** November 15, 2013

**Contaminant Mass Calculations**

**Table 1: Dissolved Phase Contaminant Mass**

Dissolved Phase Gasoline				Dissolved Phase Diesel and/or Kerosene			
<i>Constants</i>				<i>Constants</i>			
Volume Conversion	7.48	gal per ft <sup>3</sup>		Volume Conversion	7.48	gallons per ft <sup>3</sup>	
Water Density	8.35	lbs per gal		Water Density	8.35	lbs per gal	
<i>Input</i>				<i>Input</i>			
Influence Area	Thickness	Soil Porosity	Contamination Concentration	Influence Area	Thickness	Soil Porosity	Contamination Concentration
(ft <sup>2</sup> )	(ft)		(ppb)	(ft <sup>2</sup> )	(ft)		(ppb)
10,296	7	0.30	397	10,296	7	0.30	284
	TPV:	72,072	ft <sup>3</sup>		TPV:	72,072	ft <sup>3</sup>
	IGWV:	21,622	ft <sup>3</sup>		IGWV:	21,622	ft <sup>3</sup>
	IGWV:	161,730	gal		IGWV:	161,730	gal
	IGWM:	1,350,442	lbs		IGWM:	1,350,442	lbs
	<b>DPHM-G:</b>	<b>1</b>	<b>lbs</b>		<b>DPHM-D:</b>	<b>0.38</b>	<b>lbs</b>

**Assumptions:**

- The influence area value is based on the remediation system vacuum radius of influence of 38 feet at each extraction well as determined in the IDEM approved Remediation Work Plan (July 25, 2011).
- Thickness of groundwater contamination is estimated conservatively at six (6) feet based on the fact that petroleum hydrocarbons have a specific gravity of less than one (1) and will therefore tend to float on the groundwater surface instead of distributing evenly within the water column.
- A typical soil porosity of 30% (0.30) is utilized.
- The contaminant concentration is the average of the historical maximum VOCs or PAHs concentration as measured in the five (5) monitoring wells located within remediation system vacuum radius of influence (NW-1, NW-8, TW-1, TW-2, and TW-3).

**Calculation Explanation:**

- TPV (Total Plume Volume) (ft<sup>3</sup>)= Plume Area (ft<sup>2</sup>) \* Thickness (ft)
- IGWV (Impacted Groundwater Volume) (ft<sup>3</sup>)= TPV (ft<sup>3</sup>) \* Soil Porosity
- IGWV (gallons) = IGWV (ft<sup>3</sup>) \* 7.48 (gal/ft<sup>3</sup>)
- IGWM (Impacted Groundwater Mass) (lbs) = IGWV (gal) \* Water Density (lbs/gal)
- DPHM-G/D (Dissolved Phase Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentrations (ppb) / 10<sup>6</sup>) \* IGWM (lbs)

**Appendix A: Emissions Calculations  
Remediation System DPE-1**

**Company Name:** Jay Petroleum, Inc.  
**Source Address:** 204 West Wabash Street, Bluffton, IN 46714  
**Exemption No.:** E179-33815-00041  
**Reviewer:** Donald McQuigg  
**Date:** November 15, 2013

**Contaminant Mass Calculations Continued**

**Table 2: Adsorbed Hydrocarbon Mass (Hydrocarbons adsorbed to soil above and below water table)**

Soil Adsorbed Gasoline				Soil Adsorbed Diesel and/or Kerosene			
Constants				Constants			
Solid Mineral Density (Quartz)	165.4	lbs/ft <sup>3</sup>		Solid Mineral Density (Quartz)	165.4	lbs/ft <sup>3</sup>	
Input				Input			
Influence Area	Thickness	Soil Porosity	Contamination Concentration	Influence Area	Thickness	Soil Porosity	Contamination Concentration
(ft <sup>2</sup> )	(ft)		(ppm)	(ft <sup>2</sup> )	(ft)		(ppm)
10,296	2.57	0.30	910.5	10,296	2.57	0.30	114.3
TISV: 26,461 ft <sup>3</sup>				TISV: 26,461 ft <sup>3</sup>			
SMV: 18,523 ft <sup>3</sup>				SMV: 18,523 ft <sup>3</sup>			
SMM: 3,063,622 lbs				SMM: 3,063,622 lbs			
<b>AHM-G: 2,789 lbs</b>				<b>AHM-D: 350.2 lbs</b>			

**Assumptions:**

- The influence area is based to the total vacuum radius of influence of the high vacuum remediation system.
- The contaminated thickness was estimated by summing the total thickness of all soil sample intervals exhibiting soil vapor concentrations greater than 100 parts per million (ppm) as measured by a MiniRae 2000 photoionization detector (PID). For calculations, the impacted soil thickness value used is the average contaminated thickness observed in borings within the influence area of the remediation system.
- A typical soil porosity of 30% (0.30) is utilized.
- The contaminant concentration is the average of the maximum VOCs or PAHs concentration measured in each boring located within the remediation system radius of influence.

**Calculation Explanation:**

TISV (Total Impacted Soil Volume) (ft<sup>3</sup>) = Plume Area (ft<sup>2</sup>) \* Thickness (ft)  
 SMV (Soil Mineral Volume) (ft<sup>3</sup>) = TISV (ft<sup>3</sup>) \* (1 - Soil Porosity)  
 SMM (Soil Mineral Mass) (lbs) = SMV (ft<sup>3</sup>) \* Solid Mineral Density (lbs/ft<sup>3</sup>)  
 AHM-G/D (Adsorbed Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentration (ppm) / 10<sup>6</sup>) \* SMM (lbs)

**Appendix A: Emissions Calculations  
Remediation System DPE-1**

**Company Name:** Jay Petroleum, Inc.  
**Source Address:** 204 West Wabash Street, Bluffton, IN 46714  
**Exemption No.:** E179-33815-00041  
**Reviewer:** Donald McQuigg  
**Date:** November 15, 2013

**Contaminant Mass Calculations Continued**

**Table 3: Total Volatile Organic Compounds (VOCs) Potential to Emit**

Potential Gasoline Range Mass (lbs):	2,790	(Sum of DPHM-G and AHM-G)
Potential Diesel Range Mass (lbs):	351	(Sum of DPHM-D and AHM-D)
<b>Total Hydrocarbon Mass (lbs):</b>	<b>3,141</b>	(Sum of Dissolved Phase and Adsorbed Hydrocarbons)

<b>Worst Case VOC PTE =</b>	<b>1.6</b>	<b>tons</b>
-----------------------------	------------	-------------

**Assumptions:**

- System Operational Period is the estimated time that will be required to reduce petroleum impacts at this site to below IDEM closure levels.
- It is assumed that all potential hydrocarbons that can be captured and emitted by the remediation system are composed of 100% VOCs.
- Worst case PTE assumes all VOC is removed during the first year of the remediation project.

**Calculation Explanation:**

AHM-G/D (Adsorbed Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentration (ppm) / 10<sup>6</sup>) \* SMM (lbs)  
 DPHM-G/D (Dissolved Phase Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentrations (ppb) / 10<sup>9</sup>) \* IGWM (lbs)  
 Potential Gasoline Range Mass (lbs) = DPHM-G + AHM-G  
 Potential Diesel Range Mass (lbs) = DPHM-D + AHM-D  
 VOC PTE (Total VOCs Potential to Emit) (tons/year) = Total Hydrocarbon Mass (lbs) / 2000 (lbs/ton) / System Operational Period (years)

**Table 4: Individual Hazardous Air Pollutants (HAPs) Potential to Emit**

Air Flow =	150 cfm
------------	---------

c=constant at standard condition at 68 F, 29.2 inches of Hg = 385,260,000 ppmv cu ft / lb-mole

Contaminant	HAP Concentration (ppmv)*	Molecular Weight (lb/lb-mol)	HAP Emission Rate (lbs/hour)	HAP Emission Rate (tons/year)
Benzene	0.00496	78.11	0.00000905	0.0000396
Hexane	0.0878	86.18	0.00017676	0.0007742

**Total HAP = 0.00081 tons**

\* HAP concentration as parts per million by volume

**Methodology**

Worst case PTE assumes all HAP is removed during the first year of the remediation project.  
 HAP Emission Rate (lbs/hr) = HAP Concentration (ppmv) \* HAP Molecular Weight (lb/lb-mol) \* Air Flow (cu ft/min) \* 60 min/hr \* 1/Constant (ppmv cu ft/lb-mol)  
 HAP Emission Rate (tons/yr) = HAP Emission Rate (lbs/hr) \* 8760 hr/yr \* 1 ton/2000 lbs

**Appendix A: Emission Calculations**  
**Fugitive Dust Emissions - Paved Roads**

**Company Name:** Jay Petroleum, Inc.  
**Source Address:** 204 West Wabash Street, Bluffton, IN 46714  
**Exemption No.:** E179-33815-00041  
**Reviewer:** Donald McQuigg  
**Date:** November 15, 2013

**Paved Roads**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	700	1.0	700.0	5.0	3500.0	150	0.028	19.9	7258.5
Vehicle (leaving plant) (one-way trip)	700	1.0	700.0	5.0	3500.0	150	0.028	19.9	7258.5
<b>Total</b>			<b>1400.0</b>		<b>7000.0</b>			<b>39.8</b>	<b>14517.0</b>

Average Vehicle Weight Per Trip =  $\frac{5.0}{0.03}$  tons/trip  
Average Miles Per Trip =  $\frac{150}{0.03}$  miles/trip

Unmitigated Emission Factor, Ef =  $[k * (sL)^{0.91} * (W)^{1.02}]$  (Equation 1 from AP-42 13.2.1)

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	5.0	5.0	5.0	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m <sup>2</sup> = silt loading value for ubiquitous baseline conditions - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext =  $E * [1 - (p/4N)]$  (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext =  $E_f * [1 - (p/4N)]$   
where p =  $\frac{125}{365}$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N = 365 days per year

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	
Unmitigated Emission Factor, Ef =	0.036	0.007	0.0018	lb/mile
Mitigated Emission Factor, Eext =	0.033	0.007	0.0016	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM <sub>10</sub> (tons/yr)	Unmitigated PTE of PM <sub>2.5</sub> (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM <sub>10</sub> (tons/yr)	Mitigated PTE of PM <sub>2.5</sub> (tons/yr)
Vehicle (entering plant) (one-way trip)	0.13	0.03	0.01	0.12	0.02	0.01
Vehicle (leaving plant) (one-way trip)	0.13	0.03	0.01	0.12	0.02	0.01
	<b>0.26</b>	<b>0.05</b>	<b>0.01</b>	<b>0.24</b>	<b>0.05</b>	<b>0.01</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Unmitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)

**Abbreviations**

PM = Particulate Matter  
PM10 = Particulate Matter (<10 um)  
PM2.5 = Particulate Matter (<2.5 um)  
PTE = Potential to Emit



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

**Michael R. Pence**  
*Governor*

**Thomas W. Easterly**  
*Commissioner*

## SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Tim Caster  
Jay Petroleum, Inc.  
53 S 200 W  
PO Box 1285  
Portland, IN 47371

DATE: December 3, 2013

FROM: Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

SUBJECT: Final Decision  
Exemption  
179-33815-00041

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:  
Mohamed Asif – Cree Run, LLC Environmental Engineering  
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at [jbrush@idem.IN.gov](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 6/13/2013

# Mail Code 61-53

IDEM Staff	GHOTOPP 12/3/2013 Jav Petroleum Inc 179-33815-00041 Final		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Tim Caster Jay Petroleum Inc 533 S 200 W, PO Box 1285 Portland 47371 (Source CAATS) via confirmed delivery										
2		MD Wells County Health Department 223 W. Washington St Bluffton IN 46714-1955 (Health Department)										
3		Ms. Joy Haney 5285 East 400 South Columbia City IN 46725 (Affected Party)										
4		Ms. Mary Shipley 10968 E 100 S Marion IN 46953 (Affected Party)										
5		Mrs. Tera Fredrickson 4860 W 900 S--90 Montpelier IN 47359-9559 (Affected Party)										
6		Mr. Christina Furnish 7539 W 1100 S--90 Montpelier IN 47359 (Affected Party)										
7		Dr. James Rybarczyk 9815 N. CR. 300 E. Muncie IN 47303 (Affected Party)										
8		Mr. Kevin E. Jackson 7858 South 450 West Poneto IN 46781 (Affected Party)										
9		Mr. Neil Potter Southern Wells Community Schools 9120 S 300 W Poneto IN 46781 (Affected Party)										
10		Mrs. Donna Runkle 7327 W 1000 S--90 Warren IN 46792 (Affected Party)										
11		Bluffton City Council and Mayors Office 128 East Market Street Bluffton IN 46714 (Local Official)										
12		Wells County Board of Commissioners 105 W Market Street, Suite 205, Courthouse Bluffton IN 46714 (Local Official)										
13		Mohamed Asif Creek Run LLC Environmental Engineering PO Box 114 Montpelier IN 47359 (Consultant)										
14		Bluffton Chamber of Commerce 211 Water Street Bluffton IN 46714 (Affected Party)										
15		Civic City of Bluffton 200 East Market Street Bluffton IN 46714 (Affected Party)										

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See <b>Domestic Mail Manual R900, S913, and S921</b> for limitations of coverage on inured and COD mail. See <b>International Mail Manual</b> for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
14			

# Mail Code 61-53

IDEM Staff	GHOTOPP 12/3/2013 Jav Petroleum Inc 179-33815-00041 Final		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		K&K LLP 135 West Market Street Bluffton IN 46714 (Affected Party)										
2		Arts Stag Bar 205 West Market Street Bluffton IN 46714 (Affected Party)										
3		Midland, LLC 3112 East SR 124 Bluffton IN 46714 (Affected Party)										
4		Rittenhouse Properties, LLC 2902 Oak Borough Run Fort Wayne IN 46804 (Affected Party)										
5		Wand Joyce Harvey 326 Willowbrook Trail Bluffton IN 46714 (Affected Party)										
6		Dean & Cynthia Feitcher 939 North High Pointe Court Bluffton IN 46714 (Affected Party)										
7		Rober & Mary Ellenberger Trust 4481 SE SR 116 Bluffton IN 6714 (Affected Party)										
8		Dennis & Joyce Accavallo 209 W Wabash Street Bluffton IN 46714 (Affected Party)										
9		FWD Investments, Inc 1400 S Wabash Street Wabash IN 46992 (Affected Party)										
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See <b>Domestic Mail Manual R900, S913, and S921</b> for limitations of coverage on inured and COD mail. See <b>International Mail Manual</b> for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
9			