



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: September 25, 2012

RE: Herdrich Petroleum Corporation / 003-32228-00394

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.dot12/3/07



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September 25, 2012

Mr. Bob Herdrich
Herdrich Petroleum Corporation
210 East US Highway 52
Rushville, IN 46173

Re: Exempt Construction and Operation Status,
E003-32228-00394

Dear Mr. Herdrich:

The application from Herdrich Petroleum Corporation., received on August 20, 2012, 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 soil and groundwater remediation system located at 437 West Jefferson Boulevard, Fort Wayne, IN 46802 is classified as exempt from air pollution permit requirements:

- (a) One (1) Dual Phase Extraction System (DPE-1), approved for construction in 2012, with a maximum soil vapor extraction airflow rate of 150 actual cubic feet per minute and a maximum groundwater pump-and-treat flow rate of 10 gallons per minute, for remediation of soil and groundwater contaminated with petroleum hydrocarbons, exhausting through stack DPE-1.
- (b) Fugitive emissions from paved roads and parking lots with public access.

The following conditions shall be applicable:

1. Opacity [326 IAC 5-1]
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (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 or 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 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 (Fugitive Dust Emissions).

This exemption is the first air approval issued to this source. 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

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 Charles Sullivan, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-232-8422 or at 1-800-451-6027 (ext 2-8422).

Sincerely,



Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document (TSD), Appendix A

NCB/cbs

cc: File - Allen County
Allen County Health Department
Compliance and Enforcement Branch
Billing, Licensing and Training Section

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Description and Location
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Source Name:	Herdrich Petroleum Corporation
Source Location:	437 West Jefferson Boulevard, Fort Wayne, IN 46802
County:	Allen
SIC Code:	4959 (Sanitary Services, Not Elsewhere Classified) 5171 (Petroleum Bulk Stations and Terminals)
Exemption No.:	E003-32228-00394
Permit Reviewer:	Charles Sullivan

On August 20, 2012, the Office of Air Quality (OAQ) received an application from Herdrich Petroleum Corporation related to the construction and operation of a new dual phase extraction (DPE) system for remediation of soil and groundwater contaminated with petroleum hydrocarbons.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Allen County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective February 12, 2007, for the Fort Wayne area, including Allen County, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ 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 _{2.5} .	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Allen County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM_{2.5}**
 Allen County has been classified as attainment for PM_{2.5}. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} 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_{2.5} significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

- (c) Other Criteria Pollutants
 Allen County has been classified as attainment or unclassifiable in Indiana for all regulated 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 August 20, 2012, the Office of Air Quality (OAQ) received an application from Herdrich Petroleum Corporation, related to the construction and operation of a new dual phase extraction (DPE) system for remediation of soil and groundwater contaminated with petroleum hydrocarbons.

The source consists of the following existing emission unit:

- (a) One (1) Dual Phase Extraction System (DPE-1), approved for construction in 2012 with a maximum soil vapor extraction airflow rate of 150 actual cubic feet per minute and a maximum groundwater pump-and-treat flow rate of 10 gallons per minute, for remediation of soil and groundwater contaminated with petroleum hydrocarbons, exhausting through stack DPE-1.
- (b) Fugitive emissions from paved roads and parking lots with public access.

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	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Dual Phase Extraction System (DPE-1)	0.0	0.0	0.0	0.0	0.0	1.84	0.0	0.0	0.97	0.35 (Toluene)
Paved Roads (fugitive)	0.36	0.95	0.18	0.0	0.0	0.0	0.0	0.0.0	0.0	0.0
Total PTE of Entire Source	0.36	0.95	0.18	0.0	0.0	1.84	0.0	0.0	0.97	0.35 (Toluene)
Exemptions Levels**	5	5	5	10	10	10	25	100,000	25	10

*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

**The 100,000 CO₂e 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(16)) 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(16)) 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 (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) 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) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Site Remediation, 40 CFR 63.7880-40 through CFR 63.7957, Subpart GGGGG (326 IAC 20-87), are not included in the permit, since the source does not have the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year of any combination of hazardous air pollutants and since the remediation is conducted at a gasoline service station in order to clean up remediation material from a leaking underground storage tank (40 CFR 63.7881(b)(4)).
- (c) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, 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

The following state rules are applicable to the source:

- (a) 326 IAC 2-1.1-3 (Exemptions)
Exemption applicability is discussed under the Permit Level Determination – Exemption section above.
- (b) 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.
- (c) 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 is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

- (d) 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 permit:
- (1) 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.
 - (2) 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.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
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.
- (f) 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 25 tons per year. Therefore, 326 IAC 6-5 does not apply.
- (g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The DPE emission unit at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.
- (h) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (i) 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 August 20, 2012.

The construction and operation of this source shall be subject to the conditions of the attached proposed Exemption No. E003-32228-00394. The staff recommends to the Commissioner that this Exemption be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Charles Sullivan 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) 232-8422 or toll free at 1-800-451-6027 extension 2-8422.
- (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.idem.in.gov

**TSD Appendix A: Emission Calculations
Potential to Emit**

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Exemption No.: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Potential to Emit (PTE) VOCs

	Gasoline
Free Product Mass (lbs)	0.0
Potential Gasoline Range Mass (lbs):	5,449
Potential Diesel Range Mass (lbs):	1,903
Total VOC (lbs)	7,352
Total VOC (tons)	3.68
Remediation Time in Years	2
PTE of VOCs (tons/year)	1.84

Potential to Emit (PTE) HAPs

HAPs	PTE of HAPs (tons/year)
Benzene	0.07
Toluene	0.35
Ethylbenzene	0.05
Xylenes	0.21
MTBE	0.20
Naphthalene	0.07
Isopropyl-benzene	0.03
Total HAPs	0.97
Worst Case HAP (Toluene)	0.35

Methodology:

The potential emissions rate for VOCs emitted from the DPE system was assumed to be constant during the remediation time period.
 Remediation time is assumed to be approximately 2 years
 Each petroleum hydrocarbon is considered a VOC.
 Soil is assumed to have a soil bulk density of 90 lbs/ft³

Total of VOCs (lbs) = [Total weight of contamination (lbs) (including separate phase hydrocarbons, groundwater, and soil)]
 PTE of VOCs (tons/yr) = [Total VOCs (lbs) / 2,000 lbs/ton / 2 years]

TSD Appendix A: Emission Calculations

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Exemption No.: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Contaminant Mass Calculations

1) Free Product

Free Product has not been measured at this site.

Free Product		
<i>Constants</i>		
Volume Conversion	7.48	gal per ft ³
Product Density	6.8	lbs per gal
<i>Input</i>		
Plume Area	Thickness	Soil Porosity
(ft ²)	(ft)	
0	0	0.30
	FPPV:	0 ft ³
	FPV:	0 ft ³
	FPV:	0 gal
	FPM:	0 lbs

Assumptions:

-A typical soil porosity of 30% (0.30) is utilized.

Calculation Explanation:

FPPV (Free Product Plume Volume) (ft³) = Plume Area (ft²) * Thickness (ft)

FPV (Free Product Volume) (ft³) = FPPV (ft³) * Soil Porosity

FPV (gal) = FPV (ft³) * 7.48 (gal/ft³)

FPM (Free Product Mass) (lbs) = FPV (gal) * Product Density (6.8 lbs/gal)

TSD Appendix A: Emission Calculations

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Exemption No.: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

2) Dissolved Phase Contaminant Mass

Dissolved Phase Gasoline			
<i>Constants</i>			
Volume Conversion	7.48	gal per ft ³	
Water Density	8.35	lbs per gal	
<i>Input</i>			
Influence Area	Thickness	Soil Porosity	Contam. Conc.
(ft ²)	(ft)		(ppb)
11,976	6	0.30	19,311
	TPV:	71,856	ft ³
	IGWV:	21,557	ft ³
	IGWV:	161,245	gal
	IGWM:	1,346,395	lbs
	DPHM:	26	lbs

Assumptions:

-The influence area value is based on the remediation system vacuum radius of influence of 20 feet at each extraction well as determined during pilot testing activities and depicted in Figure 1 of the application package.

-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 BTEX, MTBE, and naphthalene concentration as measured in 16 wells (MW 6, MW-7, MW-11R, MW-12, OW-1, OW-2, OW-3, and EW-1 through EW-9) and six temporary wells installed in soil borings (B-12, B-16, B-17, B-24, B-25, and B-26) located within remediation system vacuum radius of influence depicted on Figure 1 of the application package.

Calculation Explanation:

TPV (Total Plume Volume) (ft³) = Plume Area (ft²) * Thickness (ft)

IGWV (Impacted Groundwater Volume) (ft³) = TPV (ft³) * Soil Porosity

IGWV (gallons) = IGWV (ft³) * 7.48 (gal/ft³)

IGWM (Impacted Groundwater Mass) (lbs) = IGWV (gal) * Water Density (lbs/gal)

DPHM-(Dissolved Phase Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentrations (ppb) / 10⁰) * IGWM (lbs)

**Appendix A: Emission Calculations
Dual Phase Extraction System**

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Permit Number: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Contaminant Mass Calculations - Continued

3) Adsorbed Hydrocarbon Mass (Hydrocarbons adsorbed to soil above and below water table)

Soil Adsorbed Gasoline				Soil Adsorbed Diesel and/or Kerosene			
<i>Constants</i>				<i>Constants</i>			
Solid Mineral Density (Quartz)		165.4	lbs/ft ³	Solid Mineral Density (Quartz)		165.4	lbs/ft ³
<i>Input</i>				<i>Input</i>			
Influence Area	Thickness	Soil Porosity	Contam. Conc.	Influence Area	Thickness	Soil Porosity	Contam. Conc.
(ft ²)	(ft)		(ppm)	(ft ²)	(ft)		(ppm)
11,976	4.44	0.30	885.1	11,976	4.44	0.30	309
TISV:		53,173	ft ³	TISV:		53,173	ft ³
SMV:		37,221	ft ³	SMV:		37,221	ft ³
SMM:		6,156,421	lbs	SMM:		6,156,421	lbs
AHM-G:		5,449	lbs	AHM-D:		1,903	lbs

Assumptions:

-The influence area value is based on the total vacuum radius of influence of the high vacuum remediation system as depicted in Figure 1 of the application package.

-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) (Table 1). For calculations, the impacted soil thickness value used is the average 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 GRO or DRO concentration (Table 3) measured in each boring located within the remediation system radius of influence as depicted on Figure 3 of the application package.

Calculation Explanation:

TISV (Total Impacted Soil Volume) (ft³) = Plume Area (ft²) * Thickness (ft)

SMV (Soil Mineral Volume) (ft³) = TISV (ft³) * (1 - Soil Porosity)

SMM (Soil Mineral Mass) (lbs) = SMV (ft³) * Solid Mineral Density (lbs/ft³)

AHM-G/D (Adsorbed Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentration (ppm) / 10⁶) * SMM (lbs)

**Appendix A: Emission Calculations
Dual Phase Extraction System**

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Permit Number: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Contaminant Mass Calculations - Continued

4) Total Volatile Organic Compounds (VOCs) Potential to Emit

Potential Gasoline Range Mass (lbs):	5,449	(Sum of DPHM-G and AHM-G)
Potential Diesel Range Mass (lbs):	1,903	(Sum of DPHM-D and AHM-D)
Total Hydrocarbon Mass (lbs):	7,352	(Sum of Free Product, Dissolved Phase, and Adsorbed Hydrocarbons)
System Operational Period :	2	years
VOC PTE:	1.84	tons/year

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.

Calculation Explanation:

VOC PTE (Total VOCs Potential to Emit) (tons/year) = Total Hydrocarbon Mass (lbs) / 2000 (lbs/ton) / System Operational Period (years)

**Appendix A: Emission Calculations
Dual Phase Extraction System**

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Permit Number: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Contaminant Mass Calculations - Continued

5) Individual Hazardous Air Pollutants (HAPs) Potential to Emit

HAP	Gasoline		Diesel		Total Hydrocarbon Mass	
	Concentration	Total Mass PTE (lbs)	Concentration	Total Mass PTE (lbs)	Totals lbs	tons/year (2 years)
Benzene	4.9%	267.00	1%	19.03	286.03	0.07
Toluene	25.0%	1362.26	1%	19.03	1381.29	0.35
Ethylbenzene	3.0%	163.47	1%	19.03	182.50	0.05
Xylenes	15.0%	817.36	1%	19.03	836.39	0.21
MTBE	15.0%	817.36	0%	0.00	817.36	0.20
Naphthalene	5.0%	272.45	0.01%	0.19	272.64	0.07
Isopropyl- benzene	2.0%	108.98	0%	0.00	108.98	0.03
					Sum:	0.97

Assumptions:

-Maximum HAPs percentages in gasoline based on attached MSDS (benzene 4.9%, toluene 25%, ethylbenzene 3.0%, xylene 15%, MTBE 5%)
 ASSUMED maximum concentrations in gasoline of other HAPs constituents detected at the site: naphthalene 5%, isopropylbenzene 2%

-Maximum HAPs percentages in diesel based on attached MSDS (naphthalene 0.01%). ASSUMED maximum concentrations in diesel of other HAPs constituents detected at the site: benzene 1.0%, toluene 1.0%, ethylbenzene 1.0%, xylenes 1.0%

Calculation Explanation:

-The individual HAP PTE is estimated by multiplying the total Potential Gasoline Range Mass or Potential Diesel Range mass by the corresponding percentage composition in gasoline or diesel fuels.

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

Company Name: Herdrich Petroleum Corporation
Source Address: 437 West Jefferson Boulevard, Fort Wayne, IN 46802
Permit Number: E003-32228-00394
Reviewer: Charles Sullivan
Date: 9/11/2012

Paved Roads at Industrial Site

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 (12/2003).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	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)	1500.0	1.0	1500.0	5.0	7500.0	250	0.047	71.0	25923.3
Vehicle (leaving plant) (one-way trip)	1500.0	1.0	1500.0	5.0	7500.0	250	0.047	71.0	25923.3
Total			3000.0		15000.0			142.0	51846.6

Average Vehicle Weight Per Trip = $\frac{5.0}{0.05}$ tons/trip
 Average Miles Per Trip = $\frac{5.0}{0.05}$ miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	
where k =	0.082	0.016	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	5.0	5.0	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 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

Unmitigated Emission Factor, $E_f =$	$\frac{0.08}{0.07}$	$\frac{0.02}{0.01}$	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.07	0.01	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle (entering plant) (one-way trip)	1.04	0.20	0.95	0.18	0.48	0.09
Vehicle (leaving plant) (one-way trip)	1.04	0.20	0.95	0.18	0.48	0.09
Total	2.08	0.40	1.90	0.36	0.95	0.18

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)
 Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

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

TO: Bob Herdrich
Herdrich Petroleum Corporation
210 E US Highway 52
Rushville, IN 46725

DATE: September 25, 2012

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

SUBJECT: Final Decision
Exemption
003-32228-00394

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:
Sean Coats – Creek 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.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 9/25/2012 Herdrich Petroleum Corporation 003-32228-00394 Final		Type of Mail: CERTIFICATE OF MAILING ONLY	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		

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1		Bob Herdrich Herdrich Petroleum Corporation 210 E US Hwy 52 Rushville IN 46173 (Source CAATS) via confirmed delivery										
2		Daniel & Sandy Trimmer 15021 Yellow River Road Columbia City IN 46725 (Affected Party)										
3		Duane & Deborah Clark Clark Farms 6973 E. 500 S. Columbia City IN 46725 (Affected Party)										
4		Fort Wayne City Council and Mayors Office 200 E Berry Street Ste 120 Fort Wayne IN 46802 (Local Official)										
5		Mr. John E. Hampton Plumbers & Steamfitters, Local 166 2930 W Ludwig Rd Fort Wayne IN 46818-1328 (Affected Party)										
6		Allen Co. Board of Commissioners 200 E Berry Street Ste 410 Fort Wayne IN 46802 (Local Official)										
7		Fort Wayne-Allen County Health Department 200 E Berry St Suite 360 Fort Wayne IN 46802 (Health Department)										
8		Sean Coats Creek Run LLC Environmental Engineering PO Box 114 Montpelier IN 47359 (Consultant)										
9		Fort Wayne Redevelopment Authority 1211 Ewing St Fort Wayne IN 46802 (Affected Party)										
10		James & Lona Antil 119 & 1123 Fairfield Ave Fort Wayne IN 46802 (Affected Party)										
11		Salvation Army 416 W Jefferson Blvd Forth Wayne IN 46802 (Affected Party)										
12		Victor & Rista Macdonald 405 W Jefferson Blvd Fort Wayne IN 46802 (Affected Party)										
13		City of Fort Wayne 409 W Jefferson Blvd Fort Wayne IN 46802 (Affected Party)										
14		Evelyn Hafft 402 W Jefferson Blvd Fort Wayne IN 46802 (Affected Party)										
15		Steven Koch 1018 Ewing St Fort Wayne IN 46802 (Affected Party)										

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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		Archland Property 1 LLC, AMF Ohare 515 W Jefferson St Fort Wayne IN 46802 (Affected Party)										
2		Scott Stellhorn 1126 Fairfield Ave Fort Wayne IN 46802 (Affected Party)										
3		Elisa M Brubaker 1202 Fairfield Ave Fort Wayne IN 46802 (Affected Party)										
4		Conde Louis Raymond 502 W Jefferson Blvd Fort Wayne IN 46802 (Affected Party)										
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