



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: December 5, 2012

RE: Herdrich Petroleum Corporation / 177-32421-00117

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

Notice of Decision: Approval - Registration

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 IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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 of 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
FN-REGIS.dot 1/2/08



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

REGISTRATION OFFICE OF AIR QUALITY

Herdrich Petroleum Corporation
4121 National Road West
Richmond, Indiana 47374

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 177-32421-00117

Issued by:

Chrystal Wagner, Section Chief
Permits Branch
Office of Air Quality

Issuance Date:

December 5, 2012

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.3 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary automobile refueling station.

Source Address:	4121 National Road West, Indiana 47374
General Source Phone Number:	(765) 932-3224
SIC Code:	5541
County Location:	Wayne County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Source Definition

This source consists of a source with an on-site contractor:

- (a) Herdrich Petroleum Corporation, the primary operation, is located at 4121 National Road West, Richmond, Indiana, Plant ID: 177-00117; and
- (b) Creek Run LLC, the supporting operation, is located at 4121 National Road West, Richmond, Indiana, Plant ID: 177-00117.

IDEM has determined that Herdrich Petroleum Corporation and Creek Run LLC are under the common control of Herdrich Petroleum Corporation, and therefore, will be considered one (1) source, as defined by 326 IAC 2-7-1(22), based on this contractual control. This determination was initially made under this Registration No. 177-32421-00117.

A.3 Emission Units and Pollution Control Equipment Summary

This stationary automobile refueling station source consists of the following emission units and pollution control devices:

- (a) One (1) high vacuum dual phase extraction (DPE) system, identified as DPE-1, approved for construction in 2012, with a maximum water flow rate of 20 gallons per minute for air stripping and 150 cubic feet per minute air flow for soil vacuum extraction, using one (1) electrically heated Falcon 300 Catalytic Oxidizer, identified as Catox-1, as control, and exhausting to stack 1.
- (b) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 177-32421-00117 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
- (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
- (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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 registration:

- (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.

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

The Registrant 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).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) high vacuum dual phase extraction (DPE) system, identified as DPE-1, approved for construction in 2012, with a maximum water flow rate of 20 gallons per minute for air stripping and 150 cubic feet per minute air flow for soil vacuum extraction, using one (1) electrically heated Falcon 300 Catalytic Oxidizer, identified as Catox-1, as control, and exhausting to stack 1.
- (b) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Opacity [326 IAC 5-1]

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 registration:

- (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.

D.1.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

Within ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, a Preventive Maintenance Plan is required for this facility and its control device. Section B - Preventive Maintenance Plan contains the Registrant's obligation with regard to the preventive maintenance plan required by this condition.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Herdrich Petroleum Corporation
Address:	4121 National Road West
City:	Richmond, Indiana 47374
Phone Number:	(765) 932-3224
Registration No.:	177-32421-00117

- I hereby certify that Herdrich Petroleum Corporation is : still in operation.
 no longer in operation.
- I hereby certify that Herdrich Petroleum Corporation is : in compliance with the requirements of Registration No. 177-32421-00117.
 not in compliance with the requirements of Registration No. 177-32421-00117.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Description and Location

Source Name: Herdrich Petroleum Corporation
Source Location: 4121 National Road West, Richmond, Indiana 47374
County: Wayne
SIC Code: 5541
Registration No.: 177-32421-00117
Permit Reviewer: Donald McQuigg

On October 16, 2012, the Office of Air Quality (OAQ) received an application from Herdrich Petroleum Corporation related to the construction and operation of new emission units and the continued operation of an existing automobile refueling station.

Source Definition

This source consists of a source with an on-site contractor:

- (a) Herdrich Petroleum Corporation, the primary operation, is located at 4121 National Road West, Richmond, Indiana, Plant ID: 177-00117; and
- (b) Creek Run LLC, the supporting operation, is located at 4121 National Road West, Richmond, Indiana, Plant ID: 177-00117.

IDEM has determined that Herdrich Petroleum Corporation and Creek Run LLC are under the common control of Herdrich Petroleum Corporation, and therefore, will be considered one (1) source, as defined by 326 IAC 2-7-1(22), based on this contractual control. This determination was initially made under this Registration No. 177-32421-00117.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Wayne County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective June 15, 2004, 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.

¹Unclassifiable 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. Wayne 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}**
Wayne 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**
Wayne 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 2-5.1-2 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Herdrich Petroleum Corporation on October 16, 2012, relating to the construction of a high vacuum dual phase extraction (DPE) system to remediate petroleum hydrocarbon contaminated soil and groundwater.

The following is a list of emission units and pollution control device:

- (a) One (1) high vacuum dual phase extraction (DPE) system, identified as DPE-1, approved for construction in 2012, with a maximum water flow rate of 20 gallons per minute for air stripping and 150 cubic feet per minute air flow for soil vacuum extraction, using one (1) electrically heated Falcon 300 Catalytic Oxidizer, identified as Catox-1, as control, and exhausting to stack 1.
- (b) Paved and unpaved roads and parking lots with public access. [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 – Registration

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 ₁₀ *	PM _{2.5}	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Groundwater Air stripper	-	-	-	-	-	1.84	-	-	1.84	1.066 (benzene)
Soil vacuum extraction	-	-	-	-	-	14.75	-	-	-	5.998 (toluene)
Fugitive Emissions	0.37	0.074	0.018	-	-	-	-	-	-	-
Total PTE of Entire Source	0.37	0.07	0.02	-	-	16.6	-	-	16	5.998 (toluene)
Registration Levels	25	25	25	25	25	25	100	100,000	25	10

negl. = negligible
 "-" denotes no emissions of the designated pollutant
 *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 ton 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) of VOC are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2 (Registrations). A Registration will be issued.
- (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 (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent (CO₂e) 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) 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 Equipment Leaks, 40 CFR 63.160, Subpart H, are not included in the permit 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 (NESHAPs) for Site Remediation, 40 CFR 63.7880, Subpart GGGGG (326 IAC 20-87-1), are not included in the permit. Pursuant to 40 CFR 63.7881(b)(4), site remediation conducted at a gasoline service station to clean up material from a leaking underground storage tank is exempt from the requirements of this subpart.

- (d) There are no 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)

- (e) 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 2-5.1-2 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration 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 five (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 twenty-five (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)
Each of the emission units 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 October 16, 2012.

The construction and operation of this source shall be subject to the conditions of the attached proposed Registration No. 177-32421-00117. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit 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

**Appendix A: Emission Calculations
Summary of VOC/HAP and Particulate Potential to Emit**

Company Name: Herdich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Emission Units	Unlimited Potential To Emit (tons/year)										
	PM	PM ₁₀	PM _{2.5}	SO ₂	NOx	VOC	CO	GHG as CO ₂ e	Total HAP	Single Worst HAP	
Groundwater air stripper	-	-	-	-	-	1.84	-	-	1.84	1.066 (benzene)	
Soil vacuum extraction ⁽¹⁾	-	-	-	-	-	14.75	-	-	14.75	5.998 (toluene)	
Fugitive dust	0.37	0.07	0.02	-	-	-	-	-	-	-	
TOTAL	0.37	0.07	0.02	0.00	0.00	16.6	0.0	0	<25	<10 (toluene)	

⁽¹⁾ worst case VOC missions using soil boring B-31 data.
 "-" denotes designated pollutant not emitted by the emission unit

Appendix A: Emissions Calculations
Air Stripper and Soil Vapor Extractor

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

1. PTE for Groundwater remediation system (air stripper)

Water Flow = 20 GPM

Contaminant	Concentration (ug/l)	Concentration (l/gal)	HAP Emission Rate						
			ug/min	ug/hr	g/hr	kg/hr	lbs/hr	lbs/yr	ton/yr
Benzene	24,300	91,975.50	1,839,510	110,370,600	110.37	0.1104	0.2433	2,131.5	1.066
Toluene	3,900	14,761.50	295,230	17,713,800	17.71	0.0177	0.0391	342.1	0.171
Ethylbenzene	2,610	9,878.85	197,577	11,854,620	11.85	0.0119	0.0261	228.9	0.114
Xylene	9,870	37,357.95	747,159	44,829,540	44.83	0.0448	0.0988	865.8	0.433
MTBE	500	1,892.50	37,850	2,271,000	2.27	0.0023	0.0050	43.9	0.022
Naphthalene	728	2,755.48	55,110	3,306,576	3.31	0.0033	0.0073	63.9	0.032

Total HAP = 1.838

Methodology

HAP PTE (tons/yr) = HAP Concentration (ug/l) * 3.785 l/gal * Water Flow Rate (gal/min) * 60 min/hr * 1 g/10⁶ ug * 1 kg/1000 g * 2.2046 lbs/kg
*8760 hr/yr * 1 ton/2000 lbs
Assumed 100% HAP removal

2. PTE for Soil vapor extraction system

Air Flow = 150 cfm

Worst Case VOC* = 2545 ppmv

c=constant at standard condition at 68 F, 29.2 inches of Hg = 365,260,000 ppmv cu ft / lb-mole

Contaminant	HAP Concentration (ppmv)**	Molecular Weight (lb/lb-mol)	Emission Rate (lbs/hour)	HAP Emission Rate (tons/year)
Benzene	124.7	78	0.2272	0.9953
Toluene	636.3	92.14	1.3695	5.9984
Ethylbenzene	76.4	106	0.1891	0.8281
Xylene	381.8	106.16	0.9467	4.1467
MTBE	127.3	85.15	0.2531	1.1087
Naphthalene	127.3	128.16	0.3810	1.6687

Total HAP = 14.746

* Highest VOC concentration (ppmv) of soil borings within the project radius of influence.

** HAP concentration as parts per million by volume

Methodology

Total VOC=Total HAP

HAP speciated using gasoline MSDS concentrations: 4.9% benzene; 25% toluene; 3.0% ethylbenzene; 15% xylene; 5.0% MTBE; 5.0% naphthalene

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

Total Dual-Phase Extraction HAP PTE

Total HAP PTE (tons/yr) = 16.58
Total HAP PTE (lbs/hr) = 3.79
Total HAP PTE (lbs/day) = 90.87

Appendix A: Emission Calculations
Summary of Boring Hole Organic Vapor Concentration (ppmv) Readings
within the Project Radius of Influence

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Boring ID	Depth (ft)	VOC (ppmv)
B-1	2	11.4
	4	34.6
	6	338.0
B-2	2	6.8
	4	99.2
	6	446.0
B-4	2	567.0
	4	1,256.0
	6	248.0
B-5	2	1,191.0
	4	1,177.0
	6	726.0
B-6	2	250.0
	4	1,246.0
	6	1,338.0
B-7	2	1,233.0
	4	1,286.0
	6	1,338.0
B-9	2	47.9
	4	158.0
	6	324.0
B-10	2	10.9
	4	-
	6	1,154.0
B-12	2	52.4
	4	25.0
	6	1,324.0
B-29	2	-
	4	1,488.0
	6	2,210.0
B-30	2	206.0
	4	2,135.0
	6	1,965.0
B-31	2	55.9
	4	1,984.0
	6	2,545.0
B-32	2	1,692.0
	4	1,551.0
	6	2,446.0
Worst Case VOC (ppmv)* =		2,545

* Worst case VOC (ppmv) used to calculate soil vacuum extraction emissions.

**Appendix A: Emission Calculations
Contaminant Mass Calculations**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

1) Free Product

Free Product has not been measured at this site.

Free Product		
Constants		
Volume Conversion	7.48	gal per ft ³
Product Density	6.8	lbs per gal
Input		
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)

**Appendix A: Emission Calculations
Contaminant Mass Calculations**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

2) Dissolved Phase Contaminant Mass

Dissolved Phase Gasoline			
Constants			
Volume Conversion	7.48	gal per ft ³	
Water Density	8.35	lbs per gal	
Input			
Influence Area (ft ²)	17,345	Thickness (ft)	14
		Soil Porosity	0.30
		Contam. Conc. (ppb)	15,160
	TPV:	242,830	ft ³
	IGWV:	72,849	ft ³
	IGWV:	544,911	gal
	IGWM:	4,550,003	lbs
	DPHM-G:	69	lbs

Assumptions:

- The influence area value is based on the remediation system vacuum radius of influence of 40 feet at each extraction well as determined in the IDEM approved Remediation Work Plan (June 8, 2010) and depicted on Figures 1 and 2 of submitted 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 GRO or DRO concentration as measured in the three (3) monitoring wells located within remediation system vacuum radius of influence (MW-1, MW-2, and MW-3) depicted on Figure 1 of submitted 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-G/D (Dissolved Phase Hydrocarbon Mass for Gasoline/Diesel) (lbs) = (Contaminant Concentrations (ppb) / 10⁹) * IGWM (lbs)

Appendix A: Emission Calculations
Maximum Contaminant Mass Calculations

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

3) 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 ³	Solid Mineral Density (Quartz)	165.4	lbs/ft ³
Input			Input		
Influence Area (ft ²)	18,313		Influence Area (ft ²)	18,313	
Thickness (ft)	7		Thickness (ft)	7	
Soil Porosity	0.30		Soil Porosity	0.30	
Contam. Conc. (ppm)	4,550		Contam. Conc. (ppm)	339	
TISV: ft ³	128,191		TISV: ft ³	128,191	
SMV: ft ³	89,734		SMV: ft ³	89,734	
SMM: lbs	14,841,954		SMM: lbs	14,841,954	
AHM-G: lbs	67,531		AHM-D: lbs	5,031	

Assumptions:

- The influence area value is based on the remediation system vacuum radius of influence of 40 feet at each extraction well as determined in the IDEM approved Remediation Work Plan (June 8, 2010) and depicted on Figures 1 and 2.
- 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 maximum contaminated thickness observed in borings within the influence area of the remediation system. The maximum contaminated thickness observed was 8 feet in boring SB-5.
- A typical soil porosity of 30% (0.30) is utilized.
- The contaminant concentration is the average of the maximum GRO or ERO concentration (Table 3) measured in each boring located within the respective estimated contaminant plumes (except boring SB-4) depicted on Figures 2. GRO and DRO were not detected in boring SB-4.

Calculation Explanation:

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

Appendix A: Emission Calculations
Contaminant Mass Calculations

Company Name: Herdich Petroleum Corporation
 Address City IN Zip: 4121 National Road West, Richmond, IN 47374
 Part 70 Permit Renewal No.: 177-32421-00117
 Reviewer: Donald McQuigg
 Date: 11/1/2012

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

Free Product Mass (lbs):	0
Potential Gasoline Range Mass (lbs):	67,600
Potential Extended Range Mass (lbs):	5,031
Total Hydrocarbon Mass (lbs):	72,631
Total VOC PTE (tons):	36.3 tons
System Operational Period:	5 years
VOC PTE:	7.3 tons/year

(Sum of DPHM-G and AHM-G)
 (Sum of DPHM-D and AHM-D)
 (Sum of Free Product, Dissolved Phase, and Adsorbed Hydrocarbons)

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
HAP Calculations**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

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)	lbs	tons
Benzene	4.9%	3312.39	1%	50.31	3362.71	1.68
Toluene	25.0%	16899.97	1%	50.31	16950.28	8.48
Ethylbenzene	3.0%	2028.00	1%	50.31	2078.31	1.04
Xylenes	15.0%	10139.98	1%	50.31	10190.29	5.10
MTBE	15.0%	10139.98	0%	0.00	10139.98	5.07
Naphthalene	5.0%	3379.99	0.01%	0.50	3380.50	1.69
				Sum:		23.05

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 Extended Range mass by the corresponding percentage composition in gasoline or diesel fuels.

Appendix A: Emission Calculations

Historical Groundwater Analytical Results - BTEX, MTBE, and Naphthalene

Company Name: Herdrich Petroleum Corporation
 Address City IN Zip: 4121 National Road West, Richmond, IN 47374
 Part 70 Permit Renewal No.: 177-32421-00117
 Reviewer: Donald McQuigg
 Date: 11/1/2012

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-1	11/12/09	838	16.8	124	18.1	55.3	256
	10/14/10	950	<100	85.2	<200	<40	233
	5/31/11	1,450	<100	105	<200	30.8	259
	8/29/11	1,010	<100	53.0	<200	46.0	188
	11/15/11	762	6.55	30.4	<10	17.7	191
	2/23/12	723	<100	<100	<200	38.0	272
	5/31/12	745	7.69	36.5	<10	<5	147
MW-2	11/12/09	<5	<5	<5	<10	336	<1.0
	10/14/10	<5	<5	<5	<10	14.6	<1.0
	5/31/11	<5	<5	<5	<10	6.85	<1.0
	8/29/11	<5	<5	<5	<10	8.99	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-3	11/12/09	6,380	2,050	640	1,475	183	149
	10/14/10	1,470	297	1,790	4,100	43.8	198
	5/31/11	10,600	2,190	2,810	6,870	24.0	495
	8/29/11	10,700	474	1,860	4,010	<40	188
	11/15/11	10,600	1,060	2,020	4,660	<40	245
	2/23/12	12,600	744	1,580	3,810	<40	<250
	5/31/12	11,600	546	1,650	3,200	<40	392
MW-4	11/12/09	NS	NS	NS	NS	NS	<1.0
	10/14/10	<5	<5	<5	<10	<5	<1.0
	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<1.0
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-5	11/12/09	NS	NS	NS	NS	NS	668
	10/14/10	2,730	866	288	2,298	67.0	209
	5/31/11	20,900	5,320	2,840	8,970	56.6	649
	8/29/11	21,200	1,970	2,390	8,760	<40	295
	11/15/11	18,900	2,380	2,000	5,890	<40	320
RISC RDCL		5	1,000	700	10,000	40	8.3
RISC I/CDCL		52	8,200	10,000	20,000	720	2,000

Table Cont.

Appendix A: Emission Calculations
 Historical Groundwater Analytical Results - BTEX, MTBE, and Naphthalene

Company Name: Herdrich Petroleum Corporation
 Address City IN Zip: 4121 National Road West, Richmond, IN 47374
 Part 70 Permit Renewal No.: 177-32421-00117
 Reviewer: Donald McQuigg
 Date: 11/1/2012

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-5 Cont.	2/23/12	20,800	4,600	2,740	10,140	<69	234
	5/31/12	24,300	3,990	2,610	9,870	<500	728
MW-6	10/14/10	116	9.00	14.7	38.36	865	<1.0
	5/31/11	6,830	84.3	408	583	101	18.6
	8/29/11	10,300	56.8	251	322	69.9	23.2
	11/15/11	10,400	67.3	261	317	39.7	<50
	2/23/12	14,700	<500	284	<1,000	<69	<500
	5/31/12	12,000	<500	<500	<1,000	<500	<500
MW-7	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-8	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-9	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-10	10/14/10	<5	<5	<5	<10	7.74	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-11	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
RISC RDCL		5	1,000	700	10,000	40	8.3
RISC I/CDCL		52	8,200	10,000	20,000	720	2,000

Table Cont.

Appendix A: Emission Calculations
Historical Groundwater Analytical Results - BTEX, MTBE, and Naphthalene

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-12	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
MW-13	10/14/10	<5	<5	<5	<10	<5	<1.0
	5/31/11	<5	<5	<5	<10	<5	<5
	8/29/11	<5	<5	<5	<10	<5	<5
	11/15/11	<5	<5	<5	<10	<5	<5
	2/23/12	<5	<5	<5	<10	<5	<5
	5/31/12	<5	<5	<5	<10	<5	<5
TP-2	6/10/10	1,600	2,780	784	2,930	<40	NS
TW-1	1/24/12	5,210	1,240	476	700	274	28.6
TW-2	1/24/12	4,170	1,440	337	1,384	100	95.6
TW-3	1/24/12	1,070	1,890	780	3,480	419	76.6
RISC RDCL		5	1,000	700	10,000	40	8.3
RISC I/CDCL		52	8,200	10,000	20,000	720	2,000

Results reported in parts per billion (ppb)

MTBE = Methyl tertiary-butyl ether

NS = Not sampled

RISC RDCL = Risk Integrated System of Closure Residential Default Closure Level

RISC I/CDCL = Risk Integrated System of Closure Industrial/Commercial Default Closure Level

Numbers in **BOLD** exceed RISC RDCL

**Historical Maximum COC Concentrations for Samples Collected Within
Remediation System Radius of Influence**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-1	5/31/11	1,450	<100	105	<200	30.8	259
MW-3	2/23/12	12,600	744	1,580	3,810	<40	<250
MW-5	5/31/12	24,300	3,990	2,610	9,870	<500	728
MW-6	2/23/12	14,700	<500	284	<1,000	<69	<500
TP-2	6/10/10	1,600	2,780	784	2,930	<40	NS
TW-1	1/24/12	5,210	1,240	476	700	274	28.6
TW-2	1/24/12	4,170	1,440	337	1,384	100	95.6
TW-3	1/24/12	1,070	1,890	780	3,480	419	76.6
Average		8,138	2,014	870	3,696	206	238

For dissolved phase contaminant mass calculations, the contaminant concentration is the average of the historical maximum benzene, toluene, ethylbenzene, xylenes, MTBE, and naphthalene concentration as observed in the seven wells (MW-1, MW-3, MW-5, MW-6, MW-7, DPE-1, DPE-2, DPE-3, and TP-1) located within the remediation system vacuum radius of influence depicted on Figure 1.

All concentrations measured in parts per billion (ppb)

**Appendix A: Emission Calculations
Historical Soil Analytical Results - GRO and DRO**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Sample ID	Depth (feet)	Date	GRO	DRO
B-1	4-8'	10/19/09	589	4,910
	20-22'	10/19/09	<16.5	22
B-2	4-6'	10/19/09	131	4,740
	14-16'	10/19/09	<16.5	19
	18-20'	8/19/10	<16.7	31
B-3	8-10'	10/19/09	<17.2	<11
B-4	2-4'	10/19/09	2,470	68
	14-16'	10/19/09	<16.5	20
B-5	2-4'	10/19/09	3,100	64
	14-16'	10/19/09	<16.5	42
B-6	4-6'	10/19/09	3,270	41
	14-16'	10/19/09	<16.7	28
B-7	4-6'	10/19/09	891	22
	14-16'	10/19/09	<16.7	22
B-8	4-6'	10/19/09	<17.0	1,396
	14-16'	11/9/09	<16.5	16
B-9	4-6'	10/19/09	693	37
	10-12'	10/19/09	<16.7	<11
B-10	6-8'	8/18/10	<16.7	44
	14-16'	8/18/10	<16.7	13
B-11	2-4'	8/18/10	71.3	106
	10-12'	8/18/10	<16.7	17
B-12	4-6'	8/18/10	519	138
	10-12'	8/18/10	<16.3	14
B-13	6-8'	8/18/10	125	17
	10-12'	8/18/10	<16.7	<11
B-14	8-10'	8/18/10	61.0	33
	12-14'	8/18/10	<16.9	<11
B-15	6-8'	8/18/10	<17.6	<12
	10-12'	8/18/10	<16.7	<11
B-16	6-8'	8/18/10	<16.9	<11
B-17	4-6'	8/18/10	<17.0	<11
B-18	0-2'	8/18/10	34.6	1,220
	4-6'	8/18/10	<16.9	421
	10-12'	8/18/10	<16.7	<11
RISC RDCL			120	230
RISC I/CDCL			1,500	2,300

Table Cont.

**Appendix A: Emission Calculations
Historical Soil Analytical Results - GRO and DRO**

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Sample ID	Depth (feet)	Date	GRO	DRO
B-19	2-4'	8/18/10	<16.9	<11
B-20	6-8'	8/19/10	328	43
	12-14'	8/19/10	<16.7	28
B-21	2-4'	8/19/10	<16.9	<11
B-22	2-4'	8/19/10	<16.9	<11
B-23	2-4'	8/19/10	<16.9	<11
	10-12'	8/19/10	<16.7	<11
B-24	4-6'	8/19/10	<17.6	26
B-25	2-4'	8/19/10	<18.1	<12
B-26	4-6'	10/6/10	<18.5	<12
B-27	4-6'	10/6/10	<17.4	<12
B-28	4-6'	10/6/10	<18.5	<12
B-29	4-6	1/17/12	891	128
	14-16	1/17/12	<16.7	11.4
B-30	2-4	1/17/12	4,550	339
	10-12	1/17/12	<16.7	<11
B-31	4-6	1/17/12	1,320	79.4
	10-12	1/17/12	30.9	<11
B-32	4-6	1/17/12	179	62.3
	10-12	1/17/12	<16.3	20.3
SP-1	4-6'	6/17/10	105	561
SP-2	4-6'	6/17/10	<16.9	<11
SP-3	4-6'	6/17/10	<17.2	<11
RISC RDCL			120	230
RISC I/CDCL			1,500	2,300

Depth in feet below grade

Results reported in parts per million (ppm) by weight (mg/kg).

GRO = Gasoline range organics

DRO = Diesel range organics

RISC RDCL = Risk Integrated System of Closure Residential Default Closure Level

RISC I/CDCL = Risk Integrated System of Closure Industrial/Commercial Default Closure Level

Results reported in **BOLD** exceed RISC RDCL

Appendix A: Emission Calculations
Average Concentrations Within Remediation System Radius of Influence

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

Boring	Depth (feet)	GRO	DRO
B-1	4-8'	589	4,910
B-2	4-6'	131	4,740
B-4	2-4'	2,470	68
B-5	2-4'	3,100	64
B-6	4-6'	3,270	41
B-7	4-6'	891	22
B-9	4-6'	693	37
B-10	6-8'	<16.7	44
B-11	2-4'	71.3	106
B-12	4-6'	519	138
B-20	6-8'	328	43
B-29	4-6'	891	128
B-30	2-4'	4,550	339
B-31	2-4'	1,320	79.4
B-32	4-6'	179	62.3
Worst Case Boring		4,550	339

The GRO and DRO contaminant concentration is the average of the maximum concentration measured in each boring located within the remediation system vacuum radius of influence. In cases where the laboratory results were below the detection limit, the detection limit value was used for averaging calculations.

All concentrations are measured in parts per million (ppm) by weight (mg/kg).

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

Company Name: Herdrich Petroleum Corporation
Address City IN Zip: 4121 National Road West, Richmond, IN 47374
Part 70 Permit Renewal No.: 177-32421-00117
Reviewer: Donald McQuigg
Date: 11/1/2012

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 (1/2011).

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)	1800.0	1.0	1800.0	5.0	9000.0	150	0.028	28.4	10369.3
Vehicle (leaving plant) (one-way trip)	1000.0	1.0	1000.0	5.0	5000.0	150	0.028	28.4	10369.3
Total			2800.0		14000.0			56.8	20738.6

Average Vehicle Weight Per Trip = $\frac{5.0}{1.0}$ tons/trip
Average Miles Per Trip = $\frac{0.03}{1.0}$ miles/trip

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

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = 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 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, $E_{ext} = E_f * [1 - (p/4N)]$

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	0.036	0.007	0.002	lb/mile
Mitigated Emission Factor, E_{ext} =	0.033	0.007	0.002	lb/mile
Dust Control Efficiency =	50%	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)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.19	0.04	0.01	0.17	0.03	0.01	0.08	0.02	0.00
Vehicle (leaving plant) (one-way trip)	0.19	0.04	0.01	0.17	0.03	0.01	0.08	0.02	0.00
Total	0.37	0.07	0.02	0.34	0.07	0.02	0.17	0.03	0.01

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)
PM2.5 = Particulate Matter (<2.5 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: Robert Herdrich
Herdrich Petroleum Corporation
PO Box 157
Rushville, IN 46173

DATE: December 5, 2012

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

SUBJECT: Final Decision
Registration
177-32421-00117

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:
Jeff Jacob, Consultant
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	DPABST 12/5/2012 Herdrich Petroleum Corporation 177- 32421-00117 (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		

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		Robert Herdrich Herdrich Petroleum Corporation PO Box 157 Rushville IN 46173 (Source CAATS) (CONFIRM DELIVERY)										
2		Mr. Thomas Lee Clevenger 4005 South Franks Lane Selma IN 47383 (Affected Party)										
3		Richmond City Council and Mayors Office 50 North 5th Street Richmond IN 47374 (Local Official)										
4		Wayne County Commissioners 401 East Main Street Richmond IN 47374 (Local Official)										
5		Mr. Randall Shrock 2764 Abington Pike Richmond IN 47374 (Affected Party)										
6		Wayne County Health Department 401 E. Main Street Richmond IN 47374-4388 (Health Department)										
7		Jeff Jacob Creek Run LLC Environmental Engineering PO Box 114 Montpelier IN 47359 (Consultant)										
8		Garland Mink Buds Auto Sales 4113 National Road West Richmond IN 47374 (Affected Party)										
9		James Rader Jims Car Wash 765 round Barn Road Richmond IN 47374 (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 Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
---	--	--	--