

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0137456

Owner: Hocker Oil Company
Address: 505 N. McArthur Street, Salem, MO 65560

Continuing Authority: Same as above
Address: Same as above

Facility Name: Hocker Oil Gas Plus
Facility Address: 1 Highway 63 N, Thayer, MO 65791

Legal Description: SE¼, SW¼, Sec. 5, T21N, R5W, Oregon County
UTM Coordinates: X= 631142, Y= 4040347

Receiving Stream: Tributary to Spring River (losing)
First Classified Stream and ID: Spring River (located in Arkansas)
USGS Basin & Sub-watershed No.: (11010010-0205)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – Discharge associated with fuel spill clean-up and Incidental Stormwater– SIC #1799, NAICS# 562910
The use or operation of this facility does not require a Certified Operator
Oil/Water Separator / Air stripper / Greensand filter
Design flow is 57,600 gallons per day (40 gallons per minute)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

July 1, 2015
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

September 28, 2017
Expiration Date

John Madros, Director, Water Protection Program

OUTFALL #001	TABLE A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 2 of 7	
	PERMIT NUMBER MO-0137456					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/month	24 hr. total
Chemical Oxygen Demand ₅	mg/L	120		90	once/month	grab
Total Suspended Solids	mg/L	50		30	once/month	grab
pH – Units	SU	**		**	once/month	grab
Ammonia as N	mg/L	1.0		1.0	once/month	grab
Benzene	µg/L	10		5	once/month	grab
Toluene	µg/L	286		143	once/month	grab
Ethylbenzene	µg/L	320		262	once/month	grab
Naphthalene	µg/L	40		20	once/month	grab
Xylenes (total)	µg/L	20,100		10,000	once/month	grab
Iron	µg/L	603		300	once/month	grab
Sulfide (Note 1)	µg/L	3.4 (1600 ML)		1.7 (1600 ML)	once/month	grab
Oil And Grease	mg/L	15		10	once/month	grab
Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO)	mg/L	10		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE <u>AUGUST 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #16		twice/year***	grab	
<u>WET TEST</u> REPORTS SHALL BE SUBMITTED <u>TWICE / YEAR</u> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2015</u> .						

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

*** First WET test must be performed within thirty (30) days of initial discharge.

Note 1 – This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved Sulfide methods. The Department has determined the current acceptable ML for total residual chlorine to be 1600 µg/L when using the Colorimetric Method #4500 – S D (Total) from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 1600 µg/L will be considered violations of the permit and values less than the minimum quantification level of 1600 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of sulfides in excess of the effluent limits stated in the permit.

TABLE B. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 3 of 7	
		PERMIT NUMBER MO-0137456	
The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine mass removal, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Benzene	µg/L	once/month	grab
Toluene	µg/L	once/month	grab
Ethylbenzene	µg/L	once/month	grab
Naphthalene	µg/L	once/month	grab
Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO)	mg/L	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2015</u> .			

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I standard conditions dated October 1, 1980 and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
 - (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publically Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Water Quality Standards
 - (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;

C. SPECIAL CONDITIONS (continued)

- (6) There shall be no acute toxicity to livestock or wildlife watering;
- (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established by the Director in accordance with 40 CFR 122.44(f).
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Reporting of Non-Detects

- (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
- (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
- (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
- (d) The permittee shall use one-half of the detection limit for the non-detect result when calculating and reporting monthly averages.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis

6. Report as no-discharge when a discharge does not occur during the report period.

7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

8. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office.

9. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

10. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

11. A daily logbook shall be maintained in the field office to record all actions taken during the clean-up operation. The log shall show the type of equipment used, personnel involved in the clean-up, and shall contain information which accounts for all wastes associated with the site.

12. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) before beginning activities under this permit. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

C. SPECIAL CONDITIONS (continued)

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

In order to comply with Antidegradation requirements, the SWPPP must include an analysis of the Best Management Practices (BMPs). This analysis is a structured evaluation of BMPs that are reasonable and cost effective. The evaluation should include practices that are designed to be either 1) non-degrading, such as no exposure 2) less degrading, such as sediment removal or other effective BMP, or 3) degrading water quality, meaning available BMPs will be deployed but some degradation is expected. It is not possible at all facilities to implement only non-degrading BMPs, therefore there must be an analysis to justify BMPs that will allow some degradation. The chosen BMPs will be the most reasonable and cost effective while ensuring that the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the Antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(2). For further guidance please consult the Antidegradation Implementation Procedure.

For both new facilities, the treatment or control technologies chosen through the Alternative Analysis must be implemented and maintained at the facility. Failure to implement and maintain the chosen alternative is a permit violation. For the purposes of this permit, a new facility is one that is first permitted after May 19, 2010.

The pollutants of concern to which antidegradation applies are Chemical Oxygen Demand, Ammonia, Benzene, Toluene Ethylbenzene, Xylenes, Naphthalene, Iron, Sulfides, Total Petroleum Hydrocarbons - Gasoline Range Organics, Oil & Grease, and Total Suspended Solids.

The SWPPP must include the following:

- (a) An assessment of all storm water discharges associated with this facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
- (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in REQUIREMENTS #9 below.
- (c) The SWPPP must include a schedule for site inspections at least once per week when materials are exposed to stormwater, and a brief written report included in the log book referenced in REQUIREMENTS #6. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct should be detailed in the written notification.
- (d) A provision for designating an individual to be responsible for environmental matters.
- (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.

13. Permittee shall adhere to the following minimum Best Management Practices:

- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, etc, and thereby prevent the contamination of storm water from these substances.
- (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
- (c) Store all petroleum products and petroleum waste products and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
- (d) Provide good housekeeping practices on the site to keep solid waste from entry into waters of the state.
- (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.

14. The purpose of the SWPPP and the BMPs listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR20-2.010(56)] of waters of the state, or failed to achieve compliance with effluent limits. Corrective action means the facility took steps to eliminate the deficiency.

15. No wastewater with a sheen may be discharged. If the water has a sheen it must either be treated so as to remove the pollutants causing the sheen, or hauled to a permitted treatment facility.

C. SPECIAL CONDITIONS (continued)

16. The permittee shall develop and implement a program for maintenance and repair of the air stripper media to prevent bio-fouling from affecting the treatment unit. The permittee shall submit a report annually in January to the Southeast Regional Office with the Discharge and Monitoring reports which address measures taken during the previous year.
17. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	Twice/year	grab	Any. First WET test must be performed within thirty (30) days of initial discharge.

Dilution Series							
AEC 100%	100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department’s WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (i) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (ii) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.
 - (iii) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
- (2) The WET test will be considered a failure if mortality observed in effluent concentrations for either specie, equal to or less than the AEC, is significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available, synthetic laboratory control water may be used.
- (3) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.
 - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (5) Follow-up tests do not negate an initial failed test.
- (6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

C. SPECIAL CONDITIONS (continued)

- (1) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test. The permittee should contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of the automatic trigger or DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (2) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (3) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (4) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
 - (5) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) Test Conditions
- (1) Test Type: Acute Static non-renewal
 - (2) All tests, including repeat tests for previous failures, shall include both test species listed below unless approved by the department on a case by case basis.
 - (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
 - (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
 - (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
 - (6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.
 - (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
 - (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.
 - (9) Whole-effluent-toxicity test shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF NEW PERMIT
OF
MO-0137456
HOCKER OIL GAS PLUS

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Minor .

Part I – Facility Information

Facility Type: NON-POTW – Discharge associated with fuel spill clean-up and Incidental Stormwater
Facility SIC Code: 1799
NAICS Code: 562910

Facility Description:

Oil/Water Separator / Air stripper / Greensand filter

The remediation system will consist of thirteen extraction wells which will remove light non-aqueous phase liquid (LNAPL) and petroleum-impacted vapors and groundwater. An air compressor will power a submersible pump in each well. The submersible pumps will transfer the liquid phase (water and LNAPL) to an oil/water separator. Oil will be transferred to the external product tank, while water will be transferred to a greensand filter to remove precipitated matter. The filter will be periodically backwashed and precipitated matter will be stored in drums on-site to await proper disposal. The water will then go to the air stripper, which will process water and discharge vapor to the atmosphere. Filtered water will be pumped to a receiver tank to await discharge.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

N/A – new facility

Application Date: 05/10/2013

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.09	Secondary	Treated Wastewater from Fuel Spill Clean-Up

Facility Performance History:

This is a new treatment facility, so there is no history for the facility.

Comments:

The site was first developed as a gasoline/diesel service station in the late 1950s to early 1960s. Reportedly, approximately 800 gallons of diesel fuel was released from the Arkansas above ground storage tanks in 1977. However the applicant states that no official records of this release were found in the files of the MDNR or the Arkansas Department of Environmental Quality (ADEQ). Hocker Oil leased the property and began operating the facility in August 1983. In January of 1984, a suspected release of approximately 5,200 gallons of gasoline was reported to MDNR. MDNR concluded that the missing product was due to accounting error or theft and no further action was required. The property was purchased by Hocker Oil on October 31, 1991. Complaints of petroleum odors were made by visitors to Mammoth Spring State Park during the spring of 1991, and ADEQ and MDNR were notified. Numerous wells have been installed to investigate the extent of the release and to aid in remediation. An oxygen injection pilot system was installed in February and March of 2009, but was suspected of worsening the iron biofouling appearing at the State Park and was therefore shutdown in October 2011.

The Department’s Hazardous Waste Program is also involved with this remediation project.

Disinfection is not being required as bacteria is not a pollutant of concern for this facility.

This project is expected to take approximately three years.

Part II – Operator Certification Requirements

Not Applicable ; This facility is not required to have a certified operator.

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4)], the facility is not required to conduct operational monitoring.

Part IV – Receiving Stream Information

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES**	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Spring River (losing)	-	-	General Criteria		
Spring River (Arkansas)	P*	-	*WBC(A), SCR, AQL, IRR, IND, DWS, LWW General Criteria	11010010-0205	0.0 miles to losing ~0.02 miles to classified

* Spring River is located in Arkansas and is classified as an Extraordinary Resource Water and Ecologically Sensitive Waterbody, with trout fisheries. Arkansas’s designated uses for Spring River include propagation of fish and wildlife, primary and secondary contact recreation, and domestic, agriculture, and industrial water supplies. Arkansas’s Water Quality Standards and designated uses for Spring River can be found at: http://www.adeg.state.ar.us/regs/files/reg02_final_110926.pdf. Equivalent Missouri class and designated uses are listed.

** - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND). Groundwater (GRW).

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Spring River (U)	0.0	0.0	0.0

MIXING CONSIDERATIONS

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
 Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

The site currently has numerous groundwater monitoring wells, six of which will be sampled quarterly along with a sample from the footbridge at Mammoth Spring State Park. All of the wells will be gauged and sampled annually.

Receiving Water Body’s Water Quality

Spring River is located in Fulton County, Arkansas. Please see comments under **Part I – Facility Information** for more details.

Part V – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Applicable ; This facility discharges to a Losing Stream, as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], and has submitted an alternatives evaluation as part of their Antidegradation Report (see **APPENDIX – ANTIDegradation REVIEW**).

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- New facility, backsliding does not apply.

ANTIDegradation:

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- New discharge, please see **APPENDIX – ANTIDegradation REVIEW**. The Antidegradation review was originally completed for a design flow of 20 gallons per minute (28,800 gallons per day). However, the applicant has decided to assume a discharge rate of 40 gallons per minute (57,600 gallons per day) instead. Because the effluent limitations will not be affected by this change, the antidegradation review has not been updated.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Not applicable; This condition is not applicable to the permittee for this facility.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ; The permittee/facility is not currently under Water Protection Program enforcement action.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Not Applicable ; The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ; A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ; Influent monitoring is not being required to determine percent removal of BOD₅ and TSS.

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- Not applicable. This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ; This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when:
(1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ; A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ; This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ; Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C_e = \frac{(Q_e + Q_s)C - (C_s \times Q_s)}{(Q_e)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ; A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable : Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

Not Applicable : This facility does not anticipate bypassing.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable : This facility does not discharge to a 303(d) listed stream.

Part VI – Effluent Limits Determination

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

OUTFALL #001 – MAIN FACILITY OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Flow	MGD	1	*		*
Chemical Oxygen Demand ₅	mg/L	6, 9	120		90
Total Suspended Solids	mg/L	6, 9	50		30
pH – Units	SU	1	6.5 – 9.0		6.5 – 9.0
Ammonia as N	mg/L	9	1.0		1.0
Benzene	µg/L	3, 9	10		5
Toluene	µg/L	3, 9	286		143
Ethylbenzene	µg/L	3, 9	320		262
Naphthalene	µg/L	3, 9	40		20
Xylenes (total)	µg/L	3, 9	20,100		10,000
Iron	µg/L	3, 9	603		300
Sulfide	µg/L	3, 9	3.4 (1600 ML)		1.7 (1600 ML)
Oil And Grease	mg/L	1	15		10
TPH-GRO	mg/L	9	10		10
Whole Effluent Toxicity (WET) Test	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.		

* - Monitoring requirement only.

Basis for Limitations Codes:

- | | |
|------------------------------------------|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Antidegradation Review | |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).** Effluent limitations of 120 mg/L daily maximum and 90 mg/L monthly average have been demonstrated to be protective in most settings, and have been demonstrated to be attainable utilizing existing technology. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).
- **Total Suspended Solids (TSS).** 30 mg/L monthly average and 50 mg/L daily maximum. Solids are present in the wastewater from excavation or other clean-up activities. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).
- **pH.** pH shall be maintained in the range from six and one-half to nine (6.5– 9.0) standard units [10 CSR 20-7.031(4)(E)].
- **Total Ammonia Nitrogen.** 1.0 mg/L monthly average and 1.0 mg/L daily maximum. Extreme temperatures and pH values that would result in a water quality standard below 1.0 mg/L are not expected from pumped groundwater. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).
- **Benzene.** 5 µg/L monthly average and 10 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied (see **APPENDIX – ANTIDegradation Review**).

Applicant Proposed Limits

Applicant proposed effluent limits of 530 µg/L daily maximum and 53 µg/L monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Monthly average and daily maximum limits were calculated below using the water quality-based method outlined in the Derivation and Discussion of Limits section in the Antidegradation Review (see **APPENDIX – ANTIDegradation Review**).

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 53 µg/L. EPA Region 4 acute screening value is 530 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)53 - (0.0 * 0.0)) / 0.09$
 $C_e = 53 \mu\text{g/L}$

Acute WLA: $C_e = ((0.09 + 0.0)530 - (0.0 * 0.0)) / 0.09$
 $C_e = 530 \mu\text{g/L}$

$LTA_c = 53 \mu\text{g/L} (0.527) = 28 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$LTA_a = 530 \mu\text{g/L} (0.321) = 170 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

MDL = **28 µg/L** (3.11) = 87 µg/L [CV = 0.6, 99th Percentile]

AML = **28 µg/L** (1.55) = 43 µg/L [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 5 µg/L [10 CSR 20-7.031, Table A].

WLA = 5 µg/L

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = **5 µg/L**

MDL = AML * 2.01

MDL = 10.05 = **10 µg/L** [CV = 0.6, 95th Percentile]

- **Toluene.** 143 µg/L monthly average and 286 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied (see **APPENDIX – ANTIDEGRADATION REVIEW**).

Applicant Proposed Limits

Applicant proposed effluent limits of 1750 µg/L daily maximum and 175 µg/L monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Limits were calculated below using the water quality-based method outlined in the Derivation and Discussion of Limits section in the Antidegradation Review (see **APPENDIX – ANTIDEGRADATION REVIEW**).

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 175 µg/L. EPA Region 4 acute screening value is 1750 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)175 - (0.0 * 0.0)) / 0.09$
 $C_e = 175 \mu\text{g/L}$

Acute WLA: $C_e = ((0.09 + 0.0)1750 - (0.0 * 0.0)) / 0.09$
 $C_e = 1750 \mu\text{g/L}$

$LTA_c = 175 \mu\text{g/L} (0.527) = \mathbf{92 \mu\text{g/L}}$ [CV = 0.6, 99th Percentile]

$LTA_a = 1750 \mu\text{g/L} (0.321) = 562 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$MDL = \mathbf{92 \mu\text{g/L}} (3.11) = 286 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$AML = \mathbf{92 \mu\text{g/L}} (1.55) = 143 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 1,000 µg/L [10 CSR 20-7.031, Table A].

WLA = 1,000 µg/L
 Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

$AML = \mathbf{1,000 \mu\text{g/L}}$
 $MDL = AML * 2.01$
 $MDL = \mathbf{2,010 \mu\text{g/L}}$ [CV = 0.6, 95th Percentile]

- **Ethylbenzene.** 262 µg/L monthly average and 320 µg/L daily maximum. Applicant proposed effluent limits of 320 µg/L monthly average and 320 µg/L daily maximum. Because the average monthly limit calculated below is more protective than the applicant proposed limit, we are applying the water quality-based monthly average limit below (see **APPENDIX – ANTIDEGRADATION REVIEW**). Effluent limits established in order to meet water quality criteria for protection of aquatic life, 320 µg/L, 10 CSR 20-7.031 Table A.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)320 - (0.0 * 0.0)) / 0.09$
 $C_e = 320 \mu\text{g/L}$

$LTA_c = 320 \mu\text{g/L} (0.527) = \mathbf{169 \mu\text{g/L}}$ [CV = 0.6, 99th Percentile]

$MDL = \mathbf{169 \mu\text{g/L}} (3.11) = 526 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$AML = \mathbf{169 \mu\text{g/L}} (1.55) = 262 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

- **Naphthalene**, 20 µg/L monthly average and 40 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied (see **APPENDIX – ANTIDegradation Review**).

Applicant Proposed Limits

Applicant proposed effluent limits of 230 µg/L daily maximum and 62 µg/L monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Limits were calculated below using the water quality-based method outlined in the Derivation and Discussion of Limits section in the Antidegradation Review (see **APPENDIX – ANTIDegradation Review**).

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 62 µg/L. EPA Region 4 acute screening value is 230 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)62 - (0.0 * 0.0)) / 0.09$
 $C_e = 62 \text{ µg/L}$

Acute WLA: $C_e = ((0.09 + 0.0)230 - (0.0 * 0.0)) / 0.09$
 $C_e = 230 \text{ µg/L}$

$LTA_c = 62 \text{ µg/L (0.527)} = \mathbf{33 \text{ µg/L}}$ [CV = 0.6, 99th Percentile]

$LTA_a = 230 \text{ µg/L (0.321)} = 74 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

$MDL = \mathbf{33 \text{ µg/L (3.11)}} = 103 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

$AML = \mathbf{33 \text{ µg/L (1.55)}} = 51 \text{ µg/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 20 µg/L [10 CSR 20-7.031, Table A].

WLA = 20 µg/L
Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = **20 µg/L**
MDL = AML * 2.01
MDL = 40.2 = **40 µg/L** [CV = 0.6, 95th Percentile]

- **Xylenes (total)**, 10,000 µg/L monthly average and 20,100 µg/L daily maximum. The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 10,000 µg/L [10 CSR 20-7.031, Table A].

WLA = 10,000 µg/L
Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = **10,000 µg/L**
MDL = AML * 2.01
MDL = 20,100 = **20,100 µg/L** [CV = 0.6, 95th Percentile]

- **Iron.** 300 µg/L monthly average and 603 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied (see **APPENDIX – ANTIDegradation Review**).

Applicant Proposed Limits

Applicant proposed effluent limit of 1000 µg/L monthly average with no daily maximum limit. 1000 µg/L is the EPA Region 4 Chronic Screening Value. Limits were calculated below using the water quality-based method outlined in the Derivation and Discussion of Limits section in the Antidegradation Review (see **APPENDIX – ANTIDegradation Review**).

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)1000 - (0.0 * 0.0)) / 0.09$
 $C_e = 1000 \mu\text{g/L}$

$LTA_c = 1000 \mu\text{g/L} (0.527) = 527 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$MDL = 527 \mu\text{g/L} (3.11) = 1639 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]
 $AML = 527 \mu\text{g/L} (1.55) = 817 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 300 µg/L [10 CSR 20-7.031, Table A].

WLA = 300 µg/L
 Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

$AML = 300 \mu\text{g/L}$
 $MDL = AML * 2.01$
 $MDL = 603 \mu\text{g/L}$ [CV = 0.6, 95th Percentile]

- **Sulfide.** 1.7 µg/L monthly average and 3.4 µg/L daily maximum. Applicant proposed effluent limit of 2 µg/L monthly average with no daily maximum limit. 2 µg/L is the EPA Region 4 Chronic Screening Value. Limits were calculated below using the water quality-based method outlined in the Derivation and Discussion of Limits section in the Antidegradation Review (see **APPENDIX – ANTIDegradation Review**). Missouri does not have numeric water quality criteria for sulfides.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.09 + 0.0)2 - (0.0 * 0.0)) / 0.09$
 $C_e = 2 \mu\text{g/L}$

$LTA_c = 2 \mu\text{g/L} (0.527) = 1.1 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$MDL = 1.1 \mu\text{g/L} (3.11) = 3.4 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]
 $AML = 1.1 \mu\text{g/L} (1.55) = 1.7 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

Below is the 40 CFR Part 136 method for total sulfides. We are assuming that sample results for total sulfides are entirely hydrogen sulfide. Hydrogen sulfides have a water quality standard chronic value (un-ionized) of 2 µg/L.

Anion	Sulfide	Titrimetric (iodine) - 4500-S2-F-2000, I-3480-85 or Colorimetric (methylene blue) 4500-S\2
-------	---------	--------------------------------------------------------------------------------------------

https://www.nemi.gov/methods/method_summary/9886/ or https://www.nemi.gov/methods/method_summary/7418/

The EPA Method 4500 Titrimetric has a MDL = 1.0 mg/L; however, the Hocker Oil’s laboratory Teklab, Inc. will be able to achieve a lower reporting level of 0.5 mg/L and lower by dilution and use of the colorimetric method (MDL = 0.1 mg/L to 20 mg/L). From the WPP Permit Manual procedure for developing minimum levels (MLs): To calculate the estimated ML, multiply the more stringent of the method-specified MDL by 3.18.

Therefore, ML for Sulfides will be 1.6 mg/L or 1600 µg/L.

- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Total Petroleum Hydrocarbons - Gasoline Range Organics (TPH-GRO).** Effluent limitations of 10 mg/L daily maximum and 10 mg/L monthly average were added to provide an indicator for volatiles and semi volatiles being discharged. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/month	once/month
Chemical Oxygen Demand ₅	once/month	once/month
Total Suspended Solids	once/month	once/month
pH – Units	once/month	once/month
Ammonia as N	once/month	once/month
Benzene	once/month	once/month
Toluene	once/month	once/month
Ethylbenzene	once/month	once/month
Naphthalene	once/month	once/month
Xylenes (total)	once/month	once/month
Iron	once/month	once/month
Sulfide	once/month	once/month
Oil And Grease	once/month	once/month
TPH-GRO	once/month	once/month
WET Test	twice/year	twice/year

Part VII – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Not Applicable;

The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works.**

Part VIII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from July 12, 2013 to August 12, 2013. Responses to the Public Notice of this operating permit warrant the modification of effluent limits and/or the terms and conditions of this permit. The WET testing frequency has been increased from once per year to twice per year and a requirement has been added that the first WET test must be performed within thirty (30) days of initial discharge.

Due to the major modifications of this permit, this operating permit was placed on Public Notice again from August 16, 2013 through September 16, 2013. No responses were received.

DATE OF FACT SHEET: 08/12/2013

COMPLETED BY:

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Appendices

APPENDIX – ANTIDegradation REVIEW:

Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Tributary to Spring River*

by

Hocker Oil Gas + Remediation



December 2012

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1. FACILITY INFORMATION

FACILITY NAME: Hocker Oil Gas + Remediation NPDES #: NEW FACILITY

FACILITY TYPE/DESCRIPTION: This project is being proposed to remediate a site impacted by a petroleum release. As a result of the submitted alternative analysis, the applicant’s preferred alternative is a multi-phase extraction system with surface water discharge. The extraction system will include an oil/water separator, air stripper, and greensand filter. Groundwater/LNAPL will be extracted at a rate of approximately 10 gallons per minute (gpm). The pumping rate may be increased to 20 gpm if remediation goals are not being met. Therefore, the design flow for this Water Quality and Antidegradation Review will be 20 gpm (28,800 GPD).

COUNTY:	<u>Oregon</u>	UTM COORDINATES:	<u>X= 631142 / Y= 4040347</u>
12- DIGIT HUC:	<u>11010010-0205</u>	LEGAL DESCRIPTION:	<u>SE ¼ , SW ¼, Section 5, T21N, R05W</u>
EDU*:	<u>Ozark/Black/Current</u>	ECOREGION:	<u>Ozark Highlands: Central Plateau</u>

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body’s available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri’s Antidegradation Rule and Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

This is a new facility, so there is no history for the facility. Spring River is located in Fulton County, Arkansas. The receiving stream is an unnamed tributary to Spring River. It originates in Missouri and is referred to as “North Fork Spring River” in Arkansas. There is a classified stream named North Fork Spring River (WBID 3188 and 3186) in Jasper County, MO, so the receiving stream will not be referred to by that name in this review in order to avoid confusion. The receiving stream flows approximately 650 feet southward, across the Missouri-Arkansas state border, and into Mammoth Springs which, in turn, discharges into Spring River. Flow data for Spring River was obtained from USGS station number 07069190 for November 1, 1990 through November 1, 2012.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT
001	0.04	Secondary	Tributary to Spring River (losing)	130 feet (Approx. 0.02 mi.)

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES **
			1Q10	7Q10	30Q10	
Tributary to Spring River (losing)	-	-	0.0	0.0	0.0	General Criteria
Spring River (Arkansas)	P*	-	189.1	190.8	195.1	*WBC(A), SCR, AQL, IRR, IND, DWS, LWW General Criteria

* Spring River is located in Arkansas and is classified as an Extraordinary Resource Water and Ecologically Sensitive Waterbody, with trout fisheries. Arkansas’s designated uses for Spring River include propagation of fish and wildlife, primary and secondary contact recreation, and domestic, agriculture, and industrial water supplies. Equivalent Missouri class and designated uses are listed.

** Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cold Water Fishery (CDF), Cool Water Fishery (CLF), Drinking Water Supply (DWS), Industrial (IND), Irrigation (IRR), Livestock & Wildlife Watering (LWW), Secondary Contact Recreation (SCR), Whole Body Contact Recreation (WBC).

RECEIVING WATER BODY SEGMENT #1: Tributary to Spring River
Upper end segment* UTM coordinates: X= 631142 / Y= 4040347 (Outfall)
Lower end segment* UTM coordinates: X= 631210 / Y= 4040208 (Mammoth Spring State Park)

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. GENERAL COMMENTS

Smith & Co. Engineers prepared, on behalf of Hocker Oil Company, the *Antidegradation Review Report for Hocker Oil Gas* + dated October, 2012. Geohydrological Evaluation was submitted with the request and the receiving stream is losing for discharge purposes (Appendix A: Map). Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the receiving stream. An alternative analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix D was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no records of endangered species were found for the area.

The facility was first developed as a gasoline/diesel service station in the late 1950s to early 1960s. Reportedly, approximately 800 gallons of diesel fuel was released from the Arkansas above ground storage tanks in 1977. However the applicant states that no official records of this release were found in the files of the MDNR or the Arkansas Department of Environmental Quality (ADEQ). Hocker Oil leased the property and began operating the facility in August 1983. In January of 1984, a suspected release of approximately 5,200 gallons of gasoline was reported to MDNR. MDNR concluded that the missing product was due to accounting error or theft and no further action was required. The property was purchased by Hocker Oil on October 31, 1991. Complaints of petroleum odors were made by visitors to Mammoth Spring State Park during the spring of 1991 and ADEQ and MDNR were notified. Numerous wells have been installed to investigate the extent of the release to aid in remediation. An oxygen injection pilot system was installed in February and March of 2009, but was suspected of worsening the iron biofouling appearing at the State Park and was therefore shutdown in October 2011.

5. ANTIDegradation REVIEW INFORMATION

The following is a review of the *Antidegradation Review Report for Hocker Oil Gas* + dated October, 2012.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix D: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix D).

TABLE 1. POLLUTANTS OF CONCERN AND TIER DETERMINATION

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
Chemical Oxygen Demand (COD ₅)	2	Significant	
Total Suspended Solids (TSS)	**	Significant	
Ammonia	2	Significant	
pH	***	Significant	Permit limits applied
Benzene	2	Significant	
Toluene	2	Significant	
Ethylbenzene	2	Significant	
Naphthalene	2	Significant	
Xylenes (total)	2	Significant	
Iron	2	Significant	
Sulfide	2	Significant	
Oil and Grease	2	Significant	
Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO)	**	Significant	

* Tier assumed.

Tier determination not possible: ** No in-stream standards for these parameters. *** Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix D were used by the applicant:

- Tier Determination and Effluent Summary
- For pollutants of concern, the attachments are:
- Attachment A, Tier 2 with significant degradation.

5.2. EXISTING WATER QUALITY

Thirty groundwater monitoring wells, five vapor wells, and 12 oxygen injection wells have been installed at this site. The applicant provided sampling data from numerous monitoring wells. The data presented in Table 2 are from wells in the source area, which had the highest pollutant concentrations. All POCs were considered to be Tier 2 and significantly degrading.

There are no water quality criteria for any of the pollutants in Table 2 in the Water Quality Standards for Surface Waters of the State of Arkansas. The Arkansas Water Quality Standards state that the ADEQ may consider other literature values as appropriate. ADEQ has requested that the EPA Region 4 Chronic Screening Values (CSV) be used as clean-up criteria for properties in Arkansas. Arkansas is located in EPA Region 6 and Missouri is located in EPA Region 7; however neither Region 6 nor Region 7 have posted full tables of chronic screening values as Region 4 has.

Missouri Fuel Spill Cleanup General Permit MO-G940000 (MO-G94) effluent limits and the most protective Missouri WQS for the applicable designated uses are shown for comparison purposes. The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable (Appendix C). The Spring River has a designated use of “domestic water supply” in Arkansas, however Arkansas has no specific water quality criteria for the POCs in Table 2 for this designated use.

The MO-G94 effluent limit for ethylbenzene is more protective than the Region 4 CSV. The Missouri water quality criteria for protection of groundwater are more protective for benzene, naphthalene, total xylenes, and iron than either the CSVs or MO-G94 limits [10 CSR 20-7.031 Table A].

TABLE 2: GROUNDWATER ANALYTICAL DATA (APRIL 2012) IN MG/L

	MW1	MW2	MW7	MW22	Average	MO-G94*	CSV**	WQS *** (designated use)
Benzene	1.04	1.15	<.002	1.15	0.836	N/A	0.053	.005 (GRW)
Toluene	11.6	0.669	0.00120	2.27	3.64	N/A	0.175	1.00 (GRW)
Ethylbenzene	1.45	1.37	0.00280	1.29	1.03	0.320	0.453	.320 (AQL)
Naphthalene	0.672	0.620	0.00560	0.532	0.457	N/A	0.062	.020 (GRW)
Xylenes (total)	18.1	5.67	0.0541	4.98	7.20	N/A	N/A	10.0 (GRW)
Iron	9.07	14.5	3.54	19.8	11.7	N/A	1.00	0.300 (GRW)
Sulfide	<.75	<.75	0.0900	0.210	0.450	N/A	0.002	N/A
TPH-GRO	82.5	30.0	2.73	31.7	36.7	10.0	N/A	N/A

* Missouri Fuel Spill cleanup General Permit MOG940000 Effluent Limits (MO-G94).

** EPA Region 4 Chronic Screening Values (CSV).

*** Missouri Water Quality Standard (WQS); Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Groundwater (GRW).

5.3. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri’s antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required.

The requirements of the ADEQ and the MDNR Hazardous Waste Program will direct the selection of the remediation technology. The remediation system will consist of thirteen extraction wells which will remove light non-aqueous phase liquid (LNAPL) and petroleum-impacted vapors and groundwater. An air compressor will power a submersible pump in each well. The submersible pumps will transfer the liquid phase (water and LNAPL) to an oil/water separator. Oil will be transferred to the external product tank, while water will be transferred to a greensand filter to remove precipitated matter. The filter will be periodically backwashed and precipitated matter will be stored in drums on-site to await proper disposal. The water will then go to the air stripper, which will process water and discharge vapor to the atmosphere. Filtered water will be pumped to a receiver tank to await discharge. Vapor will be extracted at a rate of 240 cubic feet per minute (CFM) and groundwater/LNAPL will be extracted at a rate of approximately 10 gallons per minute (gpm). The pumping rate may be increased to 480 CFM and 20 gpm if remediation goals are not being met.

The goal is to achieve remediation in a two year timeframe. For the purpose of this report, the design flow used is 20 gpm. This review will evaluate alternatives for how remediated groundwater will be discharged. Four alternatives from non-degrading to less degrading to degrading alternatives were evaluated.

A no-discharge, land application alternative was evaluated. Cost for this alternative included a 20,000 gallon high density polyethylene (HDPE) tank, land application apparatus, and a truck driver. It was noted by the applicant that this size tank was the largest available and would require emptying every day with a flow rate of 20 gpm. It would also require constant attention during normal business hours. This alternative is not considered economically efficient.

Discharge into the City of Mammoth Spring WWTP (AR0023850) was the second alternative evaluated. A sanitary sewer pump connection to Mammoth Spring POTW is located near the southwest corner of Hocker Oil property. The City of Mammoth Spring would accept the flow for \$1.50 per 1000 gallons. With the two year expected operation period, the total discharge volume at 20 gpm (0.0288 MGD) would be 21 million gallons. The Mammoth Spring WWTP design flow is 0.12 MGD and the actual average daily flow was reported as 0.06 MGD on their permit renewal application dated March 2012. The flow from the proposed remediation system would use almost half of the remaining capacity at the Mammoth Spring plant. The ADEQ Enforcement Branch is currently working with the facility. The Mammoth Spring WWTP has had

difficulty meeting permit limits and a consent administrative order (CAO) is being proposed for the facility at this time. The pump station to Mammoth Springs WWTP was not designed for the magnitude of flows that the remediation system would impose and would potentially need to be upgraded. The cost to upgrade the pump station is not included in the cost estimate. Due to the concerns noted above, this alternative was considered not practicable.

Discharge into the Thayer Municipal WWTF (MO0023132) was the third alternative evaluated. A sanitary sewer manhole connected to the WWTF is located due west of the proposed remediation system on the west side of US Highway 63. It is likely that the expected discharge would require pumping, a road bore, and the acquisition of easements. The design flow for the Thayer WWTF is 0.5 MGD and the actual flow is 0.276 MGD. The City has indicated that they will accept the effluent on a 30 day trial basis for a fee of \$0.171/100 gallons. This alternative was considered not practicable by the applicant due to the possibility that City of Thayer could ultimately decide not to accept the flow, which would require additional time and funds to decide upon another option for discharge.

The fourth alternative was surface water discharge into an unnamed tributary to Spring River located approximately 120 feet east of the proposed remediation system. A north-south trending road is located between the proposed system and the receiving stream, so the discharge pipe would be extended beyond this road to allow the discharge to flow the remaining distance overland so as to reduce the velocity and scour potential before reaching the receiving stream. Beyond the installation and maintenance costs for the treatment system, there are no additional costs for this alternative. This alternative is considered practicable and economically efficient.

The alternatives analysis in Table 3 shows that only surface water discharge was considered both practicable and economically efficient (see Appendix D, Attachment A). Surface water discharge was the preferred alternative based on this analysis.

TABLE 3: ALTERNATIVES ANALYSIS COMPARISON

	Alternative 1: Land Application	Alternative 2: Mammoth Springs POTW	Alternative 3: Thayer POTW	Alternative 4: Surface Water Discharge
Practicable	Y	N	N	Y
Economical	N	Y	Y	Y
Total Cost*	\$680,559	\$510,910	\$548,157	\$468,359
Ratio	1:1.45	1:1.09	1:1.17	1:1 (base)

*The remediation project is expected to take two years to complete. These costs include the cost of the remediation system

5.3.1. REGIONALIZATION ALTERNATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. The applicant provided discussion of this alternative. The alternative analysis mentions the City of Mammoth Spring WWTP and the Thayer Municipal WWTF. Discharging to Mammoth Spring was determined to be not practicable, and discharging to Thayer Municipal WWTF was considered not economically efficient. The proposed system is not located within the city limits of Mammoth Spring or Thayer.

NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

5.3.2. SOCIAL AND ECONOMIC IMPORTANCE EVALUATION

The applicant first identified the community that will be affected by the proposed degradation of water quality as the adjoining properties that have been or could be impacted by the petroleum release and those properties onto which remediated discharge will flow. The affected properties are the Porter Property and Mammoth Spring State Park (Appendix A). The remediation system will remove LNAPL and remediate groundwater so as to eliminate the potential for off-site drift of petroleum-impacted groundwater. This remediation will have a positive impact on the economic and recreational value of the adjoining properties. The local population and visitors will benefit from the possible improvement in the appearance of certain locales at the state park suspected of being impacted and the elimination of future potential impacts to the park.

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.

7. MIXING CONSIDERATIONS

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION
STUDY CONDUCTED (Y OR N):

N

USE ATTAINABILITY
ANALYSIS CONDUCTED (Y OR N):

N

WHOLE BODY CONTACT
USE RETAINED (Y OR N):

Y

OUTFALL #001

WET TEST (Y OR N):

Y

FREQUENCY:

ONCE/YEAR

AEC:

100%

METHOD:

MULTIPLE

TABLE 4. EFFLUENT LIMITS OUTFALL #001

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 1)	MONITORING FREQUENCY
FLOW	MGD	*		*	FSR	ONCE/MONTH
CHEMICAL OXYGEN DEMAND ₅	MG/L	120		90	PEL	ONCE/MONTH
TOTAL SUSPENDED SOLIDS	MG/L	50		30	PEL	ONCE/MONTH
PH	SU	6.5–9.0		6.5–9.0	FSR	ONCE/MONTH
AMMONIA AS N	MG/L	1.0		1.0	PEL	ONCE/MONTH
BENZENE	µG/L	10		5	WQBEL	ONCE/MONTH
TOLUENE	µG/L	286		143	WQBEL	ONCE/MONTH
ETHYLBENZENE	µG/L	320		262	WQBEL	ONCE/MONTH
NAPHTHALENE	µG/L	40		20	WQBEL	ONCE/MONTH
XYLENES (TOTAL)	µG/L	20,100		10,000	WQBEL	ONCE/MONTH
IRON	µG/L	603		300	WQBEL	ONCE/MONTH
SULFIDE	µG/L	3.4		1.7	WQBEL	ONCE/MONTH
OIL AND GREASE	MG/L	15		10	PEL	ONCE/MONTH
TPH-GRO	MG/L	10		10	PEL	ONCE/MONTH

NOTE 1 – WATER QUALITY-BASED EFFLUENT LIMITATION - WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT - MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT - PEL; OR TECHNOLOGY-BASED EFFLUENT LIMIT - TBEL; OR NO DEGRADATION EFFLUENT LIMIT - NDEL; OR FEDERAL/STATE REGULATION - FSR; OR NOT APPLICABLE – N/A. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQAR #4 & #5**.
 * - Monitoring requirements only.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration

C_s = upstream concentration

Q_s = upstream flow

C_e = effluent concentration

Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration). EPA Region 4 Chronic and Acute Screening Values were used instead of CCC and CMC for some POCs.

Water quality-based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA’s “Technical Support Document For Water Quality-based Toxics Control” (EPA/505/2-90-001).

2) Alternative Analysis-based – Using the preferred alternative’s treatment capacity for conventional pollutants such as BOD5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA’s “Technical Support Document For Water Quality-based Toxics Control” (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #001 – MAIN FACILITY OUTFALL

10.2. LIMIT DERIVATION

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).** Effluent limitations of 120 mg/L daily maximum and 90 mg/L monthly average have been demonstrated to be protective in most settings, and have been demonstrated to be attainable utilizing existing technology. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).
- **Total Suspended Solids (TSS).** 30 mg/L monthly average and 50 mg/L daily maximum. Solids are present in the wastewater from excavation or other clean-up activities. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).
- **pH.** pH shall be maintained in the range from six and one-half to nine (6.5– 9.0) standard units
 - [10 CSR 20-7.031(4)(E)].
- **Total Ammonia Nitrogen.** 1.0 mg/L monthly average and 1.0 mg/L daily maximum. Extreme temperatures and pH values that would result in a water quality standard below 1.0 mg/L are not expected from pumped groundwater. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).

- **Benzene.** 5 µg/L monthly average and 10 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied.

Applicant Proposed Limits

Applicant proposed effluent limits of 530 µg/L daily maximum and 53 µg/L monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Monthly average and daily maximum limits were calculated below using the water quality-based method outlined earlier in the Derivation and Discussion of Limits section.

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 53 µg/L. EPA Region 4 acute screening value is 530 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.04 + 0.0)53 - (0.0 * 0.0)) / 0.04$
 $C_e = 53 \text{ µg/L}$

Acute WLA: $C_e = ((0.04 + 0.0)530 - (0.0 * 0.0)) / 0.04$
 $C_e = 530 \text{ µg/L}$

$LTA_c = 53 \text{ µg/L} (0.527) = \mathbf{28 \text{ µg/L}}$ [CV = 0.6, 99th Percentile]

$LTA_a = 530 \text{ µg/L} (0.321) = 170 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

$MDL = \mathbf{28 \text{ µg/L}} (3.11) = 87 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

$AML = \mathbf{28 \text{ µg/L}} (1.55) = 43 \text{ µg/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 5 µg/L [10 CSR 20-7.031, Table A].

WLA = 5 µg/L

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = **5 µg/L**

MDL = AML * 2.01

MDL = 10.05 = **10 µg/L** [CV = 0.6, 95th Percentile]

- **Toluene.** 143 µg/L monthly average and 286 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied.

Applicant Proposed Limits

Applicant proposed effluent limits of 1750 µg/L daily maximum and 175 µg/L monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Limits were calculated below using the water quality-based method outlined earlier in the Derivation and Discussion of Limits section.

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 175 µg/L. EPA Region 4 acute screening value is 1750 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.04 + 0.0)175 - (0.0 * 0.0))/0.04$
 $C_e = 175 \mu\text{g/L}$

Acute WLA: $C_e = ((0.04 + 0.0)1750 - (0.0 * 0.0))/0.04$
 $C_e = 1750 \mu\text{g/L}$

$LTA_c = 175 \mu\text{g/L} (0.527) = 92 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$LTA_a = 1750 \mu\text{g/L} (0.321) = 562 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

MDL = **92 $\mu\text{g/L}$** (3.11) = 286 $\mu\text{g/L}$ [CV = 0.6, 99th Percentile]

AML = **92 $\mu\text{g/L}$** (1.55) = 143 $\mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 1,000 $\mu\text{g/L}$ [10 CSR 20-7.031, Table A].

WLA = 1,000 $\mu\text{g/L}$

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = **1,000 $\mu\text{g/L}$**

MDL = AML*2.01

MDL = **2,010 $\mu\text{g/L}$** [CV = 0.6, 95th Percentile]

- **Ethylbenzene.** 262 $\mu\text{g/L}$ monthly average and 320 $\mu\text{g/L}$ daily maximum. Applicant proposed effluent limits of 320 $\mu\text{g/L}$ monthly average and 320 $\mu\text{g/L}$ daily maximum. Because the average monthly limit calculated below is more protective than the applicant proposed limit, we are applying the water quality-based monthly average limit below. Effluent limits established in order to meet water quality criteria for protection of aquatic life, 320 $\mu\text{g/L}$, 10 CSR 20-7.031 Table A.

$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$

Chronic WLA: $C_e = ((0.04 + 0.0)320 - (0.0 * 0.0))/0.04$

$C_e = 320 \mu\text{g/L}$

$LTA_c = 320 \mu\text{g/L} (0.527) = 169 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

MDL = **169 $\mu\text{g/L}$** (3.11) = 526 $\mu\text{g/L}$ [CV = 0.6, 99th Percentile]

AML = **169 $\mu\text{g/L}$** (1.55) = 262 $\mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

- **Naphthalene.** 20 $\mu\text{g/L}$ monthly average and 40 $\mu\text{g/L}$ daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied.

Applicant Proposed Limits

Applicant proposed effluent limits of 230 $\mu\text{g/L}$ daily maximum and 62 $\mu\text{g/L}$ monthly average. These limits are the EPA Region 4 Chronic and Acute Screening Values. Limits were calculated below using the water quality-based method outlined earlier in the Derivation and Discussion of Limits section.

Chronic ambient water quality criteria value for the protection of aquatic life (EPA Region 4 Chronic Screening Value) is 62 µg/L. EPA Region 4 acute screening value is 230 µg/L.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.04 + 0.0)62 - (0.0 * 0.0)) / 0.04$
 $C_e = 62 \mu\text{g/L}$

Acute WLA: $C_e = ((0.04 + 0.0)230 - (0.0 * 0.0)) / 0.04$
 $C_e = 230 \mu\text{g/L}$

$LTA_c = 62 \mu\text{g/L} (0.527) = 33 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$LTA_a = 230 \mu\text{g/L} (0.321) = 74 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$MDL = 33 \mu\text{g/L} (3.11) = 103 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$AML = 33 \mu\text{g/L} (1.55) = 51 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 20 µg/L [10 CSR 20-7.031, Table A].

WLA = 20 µg/L

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = 20 µg/L

MDL = AML * 2.01

MDL = 40.2 = 40 µg/L [CV = 0.6, 95th Percentile]

- **Xylenes (total).** 10,000 µg/L monthly average and 20,100 µg/L daily maximum. The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 10,000 µg/L [10 CSR 20-7.031, Table A].

WLA = 10,000 µg/L

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

AML = 10,000 µg/L

MDL = AML * 2.01

MDL = 20,100 = 20,100 µg/L [CV = 0.6, 95th Percentile]

- **Iron.** 300 µg/L monthly average and 603 µg/L daily maximum. Limits were calculated below based on the applicant proposed limits (EPA Region 4 CSV) and the applicable Missouri water quality criteria, and the more protective limits were applied.

Applicant Proposed Limits

Applicant proposed effluent limit of 1000 µg/L monthly average with no daily maximum limit.

1000 µg/L is the EPA Region 4 Chronic Screening Value. Limits were calculated below using the water quality-based method outlined earlier in the Derivation and Discussion of Limits section.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.04 + 0.0)1000 - (0.0 * 0.0)) / 0.04$

$C_e = 1000 \mu\text{g/L}$

$$LTA_c = 1000 \mu\text{g/L} (0.527) = \mathbf{527 \mu\text{g/L}} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = \mathbf{527 \mu\text{g/L}} (3.11) = 1639 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = \mathbf{527 \mu\text{g/L}} (1.55) = 817 \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

Missouri Water Quality Criteria

The receiving stream is losing and the site is located near springs and sinkholes, and is situated within the Thayer Fault Zone, thus groundwater criteria is applicable, 300 µg/L [10 CSR 20-7.031, Table A].

$$WLA = 300 \mu\text{g/L}$$

Set the Average Monthly Limit equal to the WLA [per EPA/505/2-90-001 Section 5.4.4]

$$AML = \mathbf{300 \mu\text{g/L}}$$

$$MDL = AML * 2.01$$

$$MDL = \mathbf{603 \mu\text{g/L}} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}]$$

- **Sulfide.** 1.7 µg/L monthly average and 3.4 µg/L daily maximum. Applicant proposed effluent limit of 2 µg/L monthly average with no daily maximum limit. 2 µg/L is the EPA Region 4 Chronic Screening Value. Limits were calculated below using the water quality-based method outlined earlier in the Derivation and Discussion of Limits section. Missouri does not have numeric water quality criteria for sulfides.

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.04 + 0.0)2 - (0.0 * 0.0)) / 0.04$
 $C_e = 2 \mu\text{g/L}$

$$LTA_c = 2 \mu\text{g/L} (0.527) = \mathbf{1.1 \mu\text{g/L}} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = \mathbf{1.1 \mu\text{g/L}} (3.11) = 3.4 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = \mathbf{1.1 \mu\text{g/L}} (1.55) = 1.7 \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Total Petroleum Hydrocarbons - Gasoline Range Organics (TPH-GRO).** Effluent limitations of 10 mg/L daily maximum and 10 mg/L monthly average were added to provide an indicator for volatiles and semi volatiles being discharged. These limits were determined based on the limits in the Missouri Fuel Spill Cleanup General Permit (MO-G94).

11. ANTIDegradation Review Preliminary Determination

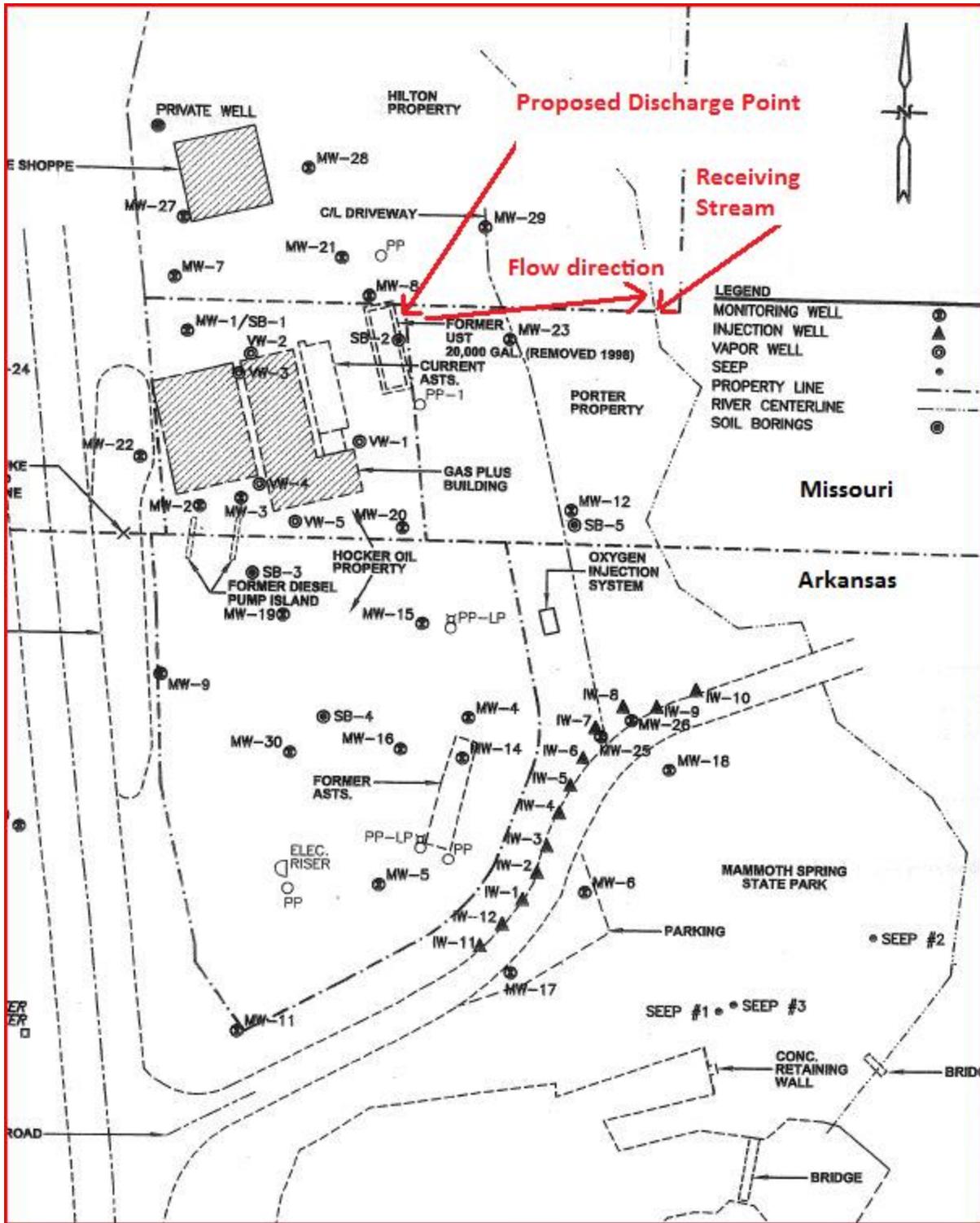
The proposed new discharge, Hocker Oil Gas + Remediation, 0.0288 MGD will result in significant degradation of the segment identified in unnamed tributary to Spring River. A multi-phase extraction system with surface water discharge was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations. The cost effectiveness of the other technologies were evaluated, and the multi-phase extraction system with surface water discharge was found to be cost effective and was determined to be the preferred alternative.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Cailie McKinney
Date: 12/27/2012
Unit Chief: John Rustige, P.E.

APPENDIX A: MAP OF DISCHARGE LOCATION





APPENDIX B: NATURAL HERITAGE REVIEW

 Amber Shrader ambers@shsmithco.com	Missouri Department of Conservation Natural Heritage Review Report June 21, 2012 -- Page 1 of 2		Resource Science Division P. O. Box 180 Jefferson City, MO 65102 Prepared by: Emily Clancy Emily.Clancy@mdc.mo.gov (573) 522 – 4115 ext. 3182
	Project type:	Other	
	Location/Scope:	Section 5 of T21N R05W	
	County:	Oregon	
	Query reference:	Hocker Oil Gas + (ST # 3940)	
Query received:	June 14, 2012		
<p>This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and sensitive resources known to have been located close to and/or potentially affected by the proposed project. On-site verification is the responsibility of the project. Natural Heritage records were identified at some date and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed in order to avoid or minimize impacts. More information is at http://mdc.mo.gov/discover-nature/places-go/natural-areas and mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. Contact information for the department's Natural History Biologist is online at http://mdc.mo.gov/contact-us.</p>			
<p>Level 3 (federal-listed) and Level 2 (state-listed) issues: Records of listed species or critical habitats:</p> <p>Heritage records identify <u>no</u> wildlife preserves, <u>no</u> designated wilderness areas or critical habitats, <u>no</u> federal or state-listed species records within one mile of the site, or in the public land survey section listed above or sections adjacent</p> <p><small>FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Consult with the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132).</small></p>			
<p>General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific heritage records):</p> <ul style="list-style-type: none"> ➤ The project is within a large recharge area for Mammoth Springs. Minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions. Revegetate areas in which the natural cover is disturbed to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Pollutants, including sediment, can have significant impacts far downstream. Use silt fences and/or vegetative filter strips to buffer streams and drainages, and monitor those after rain events and until a well-rooted ground cover is reestablished. ➤ Oregon county has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See http://mdc.mo.gov/nathis/caves/manaq_construc.htm for best management information. ➤ Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at http://mdc.mo.gov/79. ➤ Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites. <ul style="list-style-type: none"> ♦ Remove any mud, soil, trash, plants or animals from equipment before leaving any water body 			

or work area.

- ♦ Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- ♦ When possible, wash and rinse equipment thoroughly with hard spray or HOT water ($\geq 104^{\circ}$ F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

APPENDIX C: GEOHYDROLOGIC EVALUATION



Missouri Department Of Natural Resources

Division of Geology and Land Survey
 P.O. Box 250
 Rolla, Missouri 65402-0250
 Phone - 573.368.2161 Fax - 573.368.2111
 E-mail - gspgeol@dnr.mo.gov

Project ID Number

LWE13034

County

OREGON

Geohydrologic Evaluation of Liquid Waste Treatment Site

Project **Hocker Oil - Thayer** Quadrangle **THAYER**
 Location **NE1/4,SE1/4,SW1/4** Section **5** Township **21 N** Range **5 W**
 Additional Location Information
 Latitude **36 Deg 29 Min 58 Sec** Longitude **91 Deg 32 Min 10 Sec**

Owner: Hocker Oil Company (573) 729-9951
 505 South Macarthur Avenue Salem MO 65560

Requestor: Smith & Co. (573) 785-9621
 Shannon Todd
 901 Vine Street Poplar Bluff MO 63091

Previous Report Not Applicable
 Date
 Identification Number
 Fiscal Year

Facility Type	Type of Waste	Funding Source
<input type="radio"/> Mechanical treatment plant <input type="radio"/> Recirculating filter bed <input type="radio"/> Earthen lagoon with discharge <input type="radio"/> Earthen holding basin <input type="radio"/> Land application <input checked="" type="radio"/> Other type of facility	<input type="radio"/> Animal <input type="radio"/> Human <input type="radio"/> Process or industrial <input type="radio"/> Leachate <input checked="" type="radio"/> Other waste type	<input checked="" type="radio"/> PPG <input type="radio"/> WWLF-SRF <input type="radio"/> Non-Point Source
		Other Information
		<input type="radio"/> Plans were submitted <input type="radio"/> Site was investigated by NRCS <input type="radio"/> Soil or geotechnical data were submitted

Date of Field Visit: 10/18/2012 **Stream Classification:** Gaining Losing No discharge

Overall Geologic Limitations	Collapse Potential	Topography	Landscape Position
<input type="radio"/> Slight <input type="radio"/> Moderate <input type="radio"/> Severe	<input checked="" type="radio"/> Not applicable <input type="radio"/> Slight <input type="radio"/> Moderate <input type="radio"/> Severe	<input checked="" type="radio"/> < 4% <input type="radio"/> 4% to 8% <input checked="" type="radio"/> 8% to 15% <input type="radio"/> > 15%	<input type="radio"/> Broad uplands <input type="radio"/> Floodplain <input type="radio"/> Ridgetop <input type="radio"/> Alluvial plain <input checked="" type="radio"/> Hillslope <input type="radio"/> Terrace <input type="radio"/> Narrow ravine <input type="radio"/> Sinkhole

Bedrock: The uppermost bedrock at the site is Ordovician-age Jefferson City Dolomite.

Surficial Materials: Surficial material at the site consists of silty clay residuum.

Project ID Number **LWE13034**

Page 2

Recommended Construction Procedures

- Installation of clay pad Diversion of subsurface flow Rock excavation
 Compaction Artificial sealing Limit excavation depth

Required Geologic Exploration

(Missouri Clean Water Commission - 10 CSR 20 - 8.200 Wastewater Treatment Ponds)

Determine Overburden Properties

- Particle size analysis Standard Proctor density Permeability coefficient for undisturbed sample
 Atterburg limits Overburden thickness Permeability coefficient for remolded sample

Determine Hydrologic Conditions

- Groundwater elevation Direction of groundwater flow 25-year flood level 100-year flood level

Notify Geologist

- Before exploration During constructio After construction Not necessary

Remarks

On October 18, 2012, two geologists with the Missouri Geological Survey Program conducted a geohydrologic evaluation for a proposed discharging groundwater remediation system for Hocker Oil in Thayer. The proposed discharge location is approximately 250 feet east of Hocker Oil gas station on US Hwy 63 north of the Missouri-Arkansas state line. The goal of this evaluation is to determine the geologic stream classification of a small unnamed tributary to Mammoth Spring, the receiving stream for the proposed discharge location for the groundwater remediation system.

The uppermost bedrock at the site is Ordovician-age Jefferson City Dolomite. The Jefferson City Dolomite in this area is light gray to buff colored, in excess of 100 feet thick. The bedrock unit in this area exhibits high secondary permeability due to significant solution weathering. Springs, sinkholes, and losing streams are features of solution weathering. These features are all found within four miles of the site. Several sinkholes are recorded north of the site, Mammoth Spring is 650 feet south of the site and a segment of Warm Fork of Spring River has been previously classified as losing approximately two miles from of the site. Also, the site is situated within the Thayer Fault Zone. Faults and fractures in bedrock also promote high secondary permeability.

Surface water runoff from the site is east into an unnamed tributary and southward for approximately 650 feet to the Arkansas state line and into Mammoth Spring and, subsequently, into Warm Fork of Spring River. The proposed discharge point is approximately 20 feet higher in elevation than Mammoth Spring spring. The unnamed tributary exhibited losing characteristics and will be classified as such.

This document is a preliminary report. It is not a permit. Additional data may be required by the Department of Natural Resources prior to the issuance of a permit. This report is valid only at the above location and becomes invalid one year after the report date below.

Report By: Jeremiah Jackson

Report Date: 11/5/2012

CC WPP; SERO



APPENDIX D: ANTIDegradation REVIEW SUMMARY ATTACHMENTS

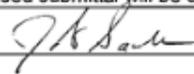
The attachments that follow contain summary information provided by the applicant, Hocker Oil – Gas +. MDNR staff determined that changes must be made to the information contained within these attachments. The following were modified and can be found within the MDNR WQAR:

- 1) Tier Determination and Effluent Limit Summary Sheet: The proposed monthly average effluent limit for sulfide is 1000 µg/L. This was supposed to be 2 µg/L monthly average.
- 2) Water Quality Review Assistance/Antidegradation Review Request Form and Attachment A: Tier 2 – Significant Degradation: The proposed design flow was reduced from 40 gpm (20 gpm with the option to increase to 40 gpm if remediation goals are not being met) to 20 gpm (10 gpm with the option to increase to 20 gpm if remediation goals are not being met).



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
WATER QUALITY REVIEW ASSISTANCE/ANTIDEGRADATION REVIEW REQUEST
 PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

TYPE OF PROJECT <input type="checkbox"/> Grant <input type="checkbox"/> SRF Loan <input checked="" type="checkbox"/> All Other Projects			
REQUESTER Shannon Todd, Smith&Co.		TELEPHONE NUMBER WITH AREA CODE (573) 785-9621	
PERMITTEE Mr. Jack Sachs, Hocker Oil Company		TELEPHONE NUMBER WITH AREA CODE (573) 729-6651	
REASON FOR REQUEST			
<input checked="" type="checkbox"/> New Discharge (See Instruction #9) <input type="checkbox"/> Upgrade (No expansion) (See AIP) <input type="checkbox"/> Expansion			
DESCRIPTION OF PROPOSED ACTIVITY: A remediation system is planned will extract vapor, LNAPL, and groundwater and will discharge remediated groundwater to the surface.			
FACILITY INFORMATION			
FACILITY NAME Hocker Oil - Thayer		MSOP NUMBER (IF APPLICABLE) N/A	
COUNTY Oregon		SIC / NAICS CODE 1799/562910	
METHOD OF BACTERIA COMPLIANCE <input type="checkbox"/> Chlorine Disinfection <input type="checkbox"/> Ultraviolet Disinfection <input type="checkbox"/> Ozone <input checked="" type="checkbox"/> Not Applicable			
WATER QUALITY ISSUES Elevated levels of petroleum hydrocarbons.			
Water quality issues include: effluent limit compliance issues, notice (s) of violation, water body beneficial uses not attained or supported, etc.			
OUTFALL	LOCATION (LAT/LONG OR LEGAL DESCRIPTION)	MAPPED ¹ (CHECK)	RECEIVING WATER BODY ²
1	36 degrees, 29', 58.23" N, 91 degrees, 32', 9.46" W	<input type="checkbox"/>	Unnamed, intermittent stream
		<input type="checkbox"/>	
		<input type="checkbox"/>	
¹ Attach topographic map (See www.dnr.mo.gov/internetmapviewer/) with outfall location(s) clearly marked. For additional outfalls, attach a separate form. ² See general instructions for discharges to streams.			
OUTFALL	NEW DESIGN FLOW ** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
1	0.0576	Oil/water separator, oxidation/filtration, aeration	Petroleum-impacted groundwater
* Describe predominating character of effluent. Example: domestic wastewater, municipal wastewater, industrial wastewater, storm water, mining leachate, etc. ** If expansion, indicate new design flow.			
<input checked="" type="checkbox"/> Checked for rare or endangered species and provided determination with this request. See Instruction #8.			
ANTIDEGRADATION REVIEW SUBMISSION:			
See attached Antidegradation instructions. Applicant supplied a summary within:			
<input checked="" type="checkbox"/> Tier Determination and Effluent Limit Summary <input checked="" type="checkbox"/> Attachment A – Significant Degradation <input type="checkbox"/> Attachment B – Minimal Degradation <input type="checkbox"/> Attachment C – Temporary degradation <input type="checkbox"/> Attachment D – Tier 1 Review <input type="checkbox"/> No Degradation Evaluation – Conclusion of Antidegradation Review			

See general instructions. Additional information may be needed to complete your request. Your request may be returned if items are missing. Revised submittal will be considered a new submittal.	
SIGNATURE 	DATE 10/15/12
PRINT NAME Jack Sachs, Hocker Oil	
E-MAIL ADDRESS jsachs.hockeroil@embarqmail.com	
Submit request to:	Missouri Department of Natural Resources Water Protection Program Attn: Permits and Engineering Section P.O. Box 176 Jefferson City, MO 65102-0176 Phone: 573-751-1300 Fax: 573-522-9920
The water quality review assistance is a process to determine effluent limits for new facilities or existing facilities seeking to increase loading into the receiving stream. Limits can be calculated by the permittee and submitted for review the department.	
GENERAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1. Please attach: <ol style="list-style-type: none"> A. A list of pollutants expected to be discharged. B. The location of each outfall clearly shown on map(s). A U.S. Geological Survey topographic map is available at www.dnr.mo.gov/internetmapviewer/. 2. Discharge(s) to all gaining streams: Applicant must submit dissolved oxygen analysis (i.e., using Missouri Department of Natural Resources approved models such as Streeter Phelps (www.ecy.wa.gov/programs/eap/pwspread/pwspread.html) or Qual2K/Qual2E (Q2K/Q2E) stream water quality study (www.epa.gov/athens/wwqtsc/index.html)) indicating that the preferred alternative's BOD₅ effluent limitations from the alternative analysis or the technology-based/regulatory BOD₅ effluent limits are protective of Missouri's water quality standard for dissolved oxygen. Note: If Q2K/Q2E is used, wasteload allocation for ammonia must be assumed. All Q2K/Q2E studies must have department approved Quality Assurance Project Plans. Recommended modeling procedures from the department (may differ with discharge) for this analysis are available upon request. 3. Discharge(s) to unclassified gaining stream: Applicant may provide the time of travel to the confluence with the classified stream segment for modeling pollutant decay (See <i>Total Ammonia Nitrogen Criteria Implementation Guidance Policy</i> at www.dnr.mo.gov/env/wpp/permits/antideg-implementation.htm). Otherwise, the applicant may determine limits based on no decay of discharge pollutants, which typically results in lower permit limits. Please use the TR-55 method (<i>Natural Resource Conservation Service, Urban Hydrology for Small Watersheds, Technical Release No. 55, June 1986</i>) for time of travel determination (http://directives.sc.egov.usda.gov/22162.wba). Please include a map, schematic or description of flow segments with your calculations. A worksheet with instructions is available upon request. 4. For all discharges, the chronic water quality criteria point of compliance is the classified stream or the confluence with the classified stream. No mixing is allowed for streams with seven-day Q10 low flow less than 0.1 cfs (10 CSR 20-7.031(4)(A)B(I)), while mixing is allowed for streams with seven-day Q10 low flow greater than 0.1 cfs (10 CSR 20-7.031(4)(A)B(II)). 5. For industrial facilities, a list of all chemicals, compounds, elements, etc. found in the discharge must be submitted with the request. Proprietary names of chemicals are not sufficient, as these chemicals may contain several pollutants for which the department must evaluate separate effluent limits. A pre-construction review meeting is highly recommended. 6. Do not submit water quality review assistance requests for renewals. All water quality-based effluent limits will be determined during the renewal process. 7. 10 CSR 20-7.015(8)(B)3. allows alternative limitations (i.e., lagoon or trickling filters) if a water quality impact study is conducted. This impact study should indicate that equivalent to secondary treatment for lagoons or trickling filters are protective of Missouri Water Quality standards for dissolved oxygen and ammonia. 8. Applicant must check for rare and endangered aquatic species that may be affected by the discharge at http://mdcgis.mdc.mo.gov/heritage/newheritage/heritage.htm. 9. Additional requirements for new facilities: <ol style="list-style-type: none"> A. Division of Geology and Land Survey Geohydrologic Evaluations must be submitted with the request. B. Coordinates of outfall (s) in lat/long or in the public land survey system must be provided. C. Please submit a letter with project timeframe. <p>Note: Lack of response for additional informational within a reasonable timeframe will result in return of request.</p>	

MO 780-1693 (03-09)



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ANTIDEGRADATION REVIEW SUMMARY
TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY

1. FACILITY			
NAME Hocker Oil - Thayer		TELEPHONE NUMBER WITH AREA CODE 417-264-7952	
ADDRESS (PHYSICAL) 1 Highway 63 South		CITY Thayer	STATE MO
			ZIP CODE 65791
2. RECEIVING WATER BODY SEGMENT #1			
NAME Unnamed tributary of Spring River			
2.1	UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat _____, Long _____	36° 29' 58.00" N, 91° 32' 8.34" W	
2.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____	36° 29' 53.46" N, 91° 32' 5.75" W	
Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."			
3. WATER BODY SEGMENT #2 (IF APPLICABLE)			
NAME			
3.1	UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
3.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
4. WATER BODY SEGMENT #3 (IF APPLICABLE)			
NAME			
4.1	UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
4.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
5. PROJECT INFORMATION			
Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.			
Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.			
Will the discharge result in temporary degradation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete Attachment C.			
Has the project been determined as non-degrading? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete No Degradation Evaluation – Conclusion of Antidegradation Review form. Submit with the appropriate Construction Permit Application as no antidegradation review is required.			
If yes to one of the above questions, skip to Section 8 - Wet Weather.			

6. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data by approved the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Water Quality Monitoring and Assessment Section.

Date existing water quality data was provided by the Water Quality Monitoring and Assessment Section:

Approval date of the QAPP by the Water Quality Monitoring and Assessment Section:

Approval date of the project sampling plan by the Water Quality Monitoring and Assessment Section:

Approval date of the data collected for all appropriate pollutants of concern by the Water Quality Monitoring and Assessment Section:

Comments/Discussion:

Significant Degradation (Tier 2) assumed.

7. POLLUTANTS OF CONCERN AND TIER DETERMINATION(S)

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.S. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

Water Body Segment One Pollutants of Concern and Tier Determination(s)		
Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation
See attached.		

Note: Add an asterisk to items that you only assume are Tier 2 with significant degradation.

Water Body Segment Two Pollutants of Concern and Tier Determination(s)		
Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation

- For pollutants of concern that are Tier 2 with significant degradation, complete Attachment A.
- For pollutants of concern that are Tier 2 with minimal degradation, complete Attachment B.
- For pollutants of concern that are Tier 1, complete Attachment D. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment.

8. WET WEATHER ANTICIPATIONS

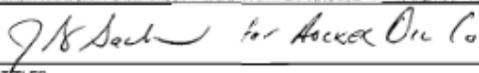
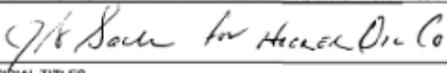
If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to this report.

What is the Wet Weather Flow Peaking Factor in relation to design flow?

N/A

Wet Weather Design Summary:

Proposed system will discharge remediated groundwater and wet weather is not expected to affect the discharge rate.

9. SUMMARY OF THE PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS				
What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:				
Pollutant of Concern	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	See attached.			
TSS				
Dissolved Oxygen				
Ammonia				
Bacteria (E. Coli)				
These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.				
Attach the Antidegradation Review report and all supporting documentation.				
CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.				
SIGNATURE 			DATE 10/12/12	
NAME AND OFFICIAL TITLES Shannon Todd, Environmental & Geotechnical Manager				
COMPANY NAME Smith&Co.				
ADDRESS 901 Vine Street		CITY Poplar Bluff	STATE MO	ZIP CODE 63901
TELEPHONE NUMBER WITH AREA CODE 573-785-9621		E-MAIL ADDRESS shannont@shsmithco.com		
OWNER: I have read and reviewed the prepared documents and agree with this submittal.				
SIGNATURE 			DATE 10/15/12	
NAME AND OFFICIAL TITLES Mr. Jack Sachs, Vice President				
ADDRESS Hocker Oil Company		CITY Salem	STATE MO	ZIP CODE 65560
TELEPHONE NUMBER WITH AREA CODE 573-729-6651		E-MAIL ADDRESS jsachs.hockeroil@embarqmail.com		
CONTINUING AUTHORITY: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf .				
I have read and reviewed the prepared documents and agree with this submittal.				
SIGNATURE 			DATE 10/15/12	
NAME AND OFFICIAL TITLES Mr. Jack Sachs				
ADDRESS 505 South Macarthur Avenue		CITY Salem	STATE MO	ZIP CODE 65560
TELEPHONE NUMBER WITH AREA CODE 573-729-6651		E-MAIL ADDRESS jsachs.hockeroil@embarqmail.com		

MO 780-2025 (05-09)

Hocker Oil – Thayer
 Pollutants of Concern – All Assumed Tier 2

- Five-day chemical oxygen demand (COD₅)*
- Total Suspended Solids (TSS)*
- Ammonia (as N)*
- Benzene*
- Toluene*
- Ethylbenzene*
- Naphthalene*
- Iron*
- Sulfide*
- Oil and Grease*
- Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-GRO)*

Hocker Oil – Thayer
 Proposed Effluent Limits

POC	Units	Effluent Limit	
		Daily Maximum (Acute)	Monthly Average (Chronic)
COD ₅	mg/L	120	90
TSS	mg/L	50	30
Ammonia (as N)	mg/L	1.0	1.0
Benzene	µg/L	530	53
Toluene	µg/L	1750	175
Ethylbenzene	µg/L	320	320
Naphthalene	µg/L	230	62
Oil & Grease	mg/L	15	10
TPH-GRO	mg/L	10	10
Iron	µg/L	N/A	1000
Sulfide	µg/L	N/A	1000



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME Hocker Oil - Thayer		TELEPHONE NUMBER WITH AREA CODE 417-264-7952	
ADDRESS (PHYSICAL) 1 Highway 63 South	CITY Thayer	STATE MO	ZIP CODE 65791

2. RECEIVING WATER BODY SEGMENT #1

NAME
Unnamed tributary of Spring River

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

NAME

4. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Non-degrading alternatives: Land application

Alternatives ranging from less-degrading to degrading including Preferred Alternative (All must meet water quality standards):

Alternatives	Level of Treatment Attainable for each Pollutant of Concern				
	BOD	TSS	Ammonia as N	Bacteria (E. Coli)	
	(mg/L)	(mg/L)	(mg/L)	(#/100mL)	
Mammoth Spring POTW	N/A	<50	<1.0	N/A	
Thayer POTW	N/A	<50	<1.0	N/A	
Surface water discharge	N/A	50	1.0	N/A	

Identifying Alternatives Summary: _____

Alternatives to surface water discharge were rejected on the basis of cost and practicality. The clean-up rate would have to be significantly decreased to make land application practical. The POTWs may not have sufficient capacity to treat the proposed 40 gpm discharge rate.

5. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report.

Practicability Summary:

"The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.

The alternatives considered add to the basic system with different groundwater disposal options and the basic system with surface water discharge as the basic and most reasonable alternative.

Economic Efficiency Summary:

Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.

The increased costs (beyond the basic remediation system installation and maintenance) for no-discharge, Mammoth Spring POTW, and Thayer POTW are approximately 45%, 16%, and 25% (respectively).

Affordability Summary:

Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."

The remediation system requirements and clean-up rate are as directed by Arkansas Department of Environmental Quality and MDNR Hazardous Waste Program.

Preferred Chosen Alternative:

The preferred chosen alternative is discharge of remediated groundwater to a nearby intermittent stream.

Reasons for Rejecting the other Evaluated Alternatives:

Other alternatives were rejected on the basis of cost and practicality.

Comments/Discussion:

See Antidegradation Review Report.

6. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."

The affected community are the adjoining properties to the east and south (Porter Property and Mammoth Spring State Park).

Identify relevant factors that characterize the social and economic conditions of the affected community:

Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.

Relevant factors are to remove LNAPL and remediate groundwater so as to eliminate the potential for off-site drift of petroleum-impacted groundwater.

Describe the important social and economic development associated with the project:

Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.

The Porter Property will be positively impacted by the clean-up in terms of the value of the property.
 Mammoth Spring State Park will be positively impacted by the clean-up in terms of eliminating the potential for petroleum impact.

PROPOSED PROJECT SUMMARY:

A multi-phase extraction system is proposed so as to clean up a petroleum release and eliminate the potential for petroleum to impact adjoining properties.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE 	DATE 10/12/12
--------------------------------------------------------------------------------------------------	------------------

PRINT NAME Shannon Todd	LICENSE #: PE 2004017257
----------------------------	-----------------------------

TELEPHONE NUMBER WITH AREA CODE 573-785-9621	E-MAIL ADDRESS: shannont@shsmithco.com
-------------------------------------------------	-------------------------------------------

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE 	DATE 10/15/12
--------------------------------------------------------------------------------------------------	------------------

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE 	DATE 10/15/12
--------------------------------------------------------------------------------------------------	------------------

**STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION**

**Revised
October 1, 1980**

**PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING**

1. **Representative Sampling**
 - a. Samples and measurements taken as required herein shall be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
 - b. Monitoring results shall be recorded and reported on forms provided by the Department, postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the respective Department Regional Office, the Regional Office address is indicated in the cover letter transmitting the permit.
2. **Schedule of Compliance**

No later than fourteen (14) calendar days following each date identified in the "Schedule of Compliance", the permittee shall submit to the respective Department Regional Office as required therein, either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements, or if there are no more scheduled requirements, when such noncompliance will be corrected. The Regional Office address is indicated in the cover letter transmitting the permit.
3. **Definitions**

Definitions as set forth in the Missouri Clean Water Law and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein.
4. **Test Procedures**

Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.
5. **Recording of Results**
 - a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
 - (i) the date, exact place, and time of sampling or measurements;
 - (ii) the individual(s) who performed the sampling or measurements;
 - (iii) the date(s) analyses were performed;
 - (iv) the individual(s) who performed the analyses;
 - (v) the analytical techniques or methods used; and
 - (vi) the results of such analyses.
 - b. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or both.
 - c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
6. **Additional Monitoring by Permittee**

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monitoring Report Form. Such increased frequency shall also be indicated.

7. **Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

SECTION B - MANAGEMENT REQUIREMENTS

1. **Change in Discharge**
 - a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
 - b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before each such change, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.
2. **Noncompliance Notification**
 - a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
 - (i) a description of the discharge and cause of noncompliance, and
 - (ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
 - b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
3. **Facilities Operation**

Permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions. Operators or supervisors of operations at publicly owned or publicly regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 209.020(2) and any other applicable law or regulation. Operators of other wastewater treatment facilities, water contaminant source or point sources, shall, upon request by the Department, demonstrate that wastewater treatment equipment and facilities are effectively operated and maintained by competent personnel.
4. **Adverse Impact**

The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

- a. Any bypass or shut down of a wastewater treatment facility and tributary sewer system or any part of such a facility and sewer system that results in a violation of permit limits or conditions is prohibited except:
 - (i) where unavoidable to prevent loss of life, personal injury, or severe property damages; and
 - (ii) where unavoidable excessive storm drainage or runoff would catastrophically damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit;
 - (iii) where maintenance is necessary to ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance.
 - b. The permittee shall notify the Department in writing of all bypasses or shut down that result in a violation of permit limits or conditions. This section does not excuse any person from liability, unless such relief is otherwise provided by the statute.
6. **Removed Substances**
Solids, sludges, filter backwash, or any other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from entering waters of the state unless permitted by the Law, and a permanent record of the date and time, volume and methods of removal and disposal of such substances shall be maintained by the permittee.
 7. **Power Failures**
In order to maintain compliance with the effluent limitations and other provisions of this permit, the permittee shall either:
 - a. in accordance with the "Schedule of Compliance", provide an alternative power source sufficient to operate the wastewater control facilities; or,
 - b. if such alternative power source is not in existence, and no date for its implementation appears in the Compliance Schedule, halt or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.
 8. **Right of Entry**
For the purpose of inspecting, monitoring, or sampling the point source, water contaminant source, or wastewater treatment facility for compliance with the Clean Water Law and these regulations, authorized representatives of the Department, shall be allowed by the permittee, upon presentation of credentials and at reasonable times;
 - a. to enter upon permittee's premises in which a point source, water contaminant source, or wastewater treatment facility is located or in which any records are required to be kept under terms and conditions of the permit;
 - b. to have access to, or copy, any records required to be kept under terms and conditions of the permit;
 - c. to inspect any monitoring equipment or method required in the permit;
 - d. to inspect any collection, treatment, or discharge facility covered under the permit; and
 - e. to sample any wastewater at any point in the collection system or treatment process.
 9. **Permits Transferable**
 - a. Subject to Section (3) of 10 CSR 20-6.010 an operating permit may be transferred upon submission to the Department of an application to transfer signed by a new owner. Until such time as the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
 - b. The Department, within thirty (30) days of receipt of the application shall notify the new permittee of its intent to revoke and reissue or transfer the permit.
 10. **Availability of Reports**
Except for data determined to be confidential under Section 308 of the Act, and the Law and Missouri Clean Water Commission Regulation for Public Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-6.020, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by statute, effluent data shall not be considered confidential. Knowingly making any false statement on any such report shall be subject to the imposition of criminal penalties as provided in Section 204.076 of the Law.
 - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - (i) violation of any terms or conditions of this permit or the Law;
 - (ii) having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
 - (iii) a change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge, or
 - (iv) any reason set forth in the Law and Regulations.
 - b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
12. **Permit Modification - Less Stringent Requirements**
If any permit provisions are based on legal requirements which are lessened or removed, and should no other basis exist for such permit provisions, the permit shall be modified after notice and opportunity for a hearing.
 13. **Civil and Criminal Liability**
Except as authorized by statute and provided in permit conditions on "Bypassing" (Standard Condition B-5) and "Power Failures" (Standard Condition B-7) nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.
 14. **Oil and Hazardous Substance Liability**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, and the Law and Regulations. Oil and hazardous materials discharges must be reported in compliance with the requirements of the Federal Clean Water Act.
 15. **State Laws**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state statute or regulations.
 16. **Property Rights**
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of or violation of federal, state or local laws or regulations.
 17. **Duty to Reapply**
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to expiration of this permit.
 18. **Toxic Pollutants**
If a toxic effluent standard, prohibition, or schedule of compliance is established, under Section 307(a) of the Federal Clean Water Act for a toxic pollutant in the discharge of permittee's facility and such standard is more stringent than the limitations in the permit, then the more stringent standard, prohibition, or schedule shall be incorporated into the permit as one of its conditions, upon notice to the permittee.
 19. **Signatory Requirement**
All reports, or information submitted to the Director shall be signed (see 40 CFR-122.6).
 20. **Rights Not Affected**
Nothing in this permit shall affect the permittee's right to appeal or seek a variance from applicable laws or regulations as allowed by law.
 21. **Severability**
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

C20001520

AP15417 C11452



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM A - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	14044
DATE RECEIVED	5-10-13
FEE SUBMITTED	\$ 750.00 TS

Note PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

An operating permit and antidegradation review public notice

A construction permit following an appropriate operating permit and antidegradation review public notice

A construction permit and concurrent operating permit and antidegradation review public notice

A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)

An operating permit for a new or unpermitted facility Construction Permit # _____

An operating permit renewal: permit # MO- _____ Expiration Date _____

An operating permit modification: permit # MO- _____ Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) YES NO

2. FACILITY

NAME		TELEPHONE WITH AREA CODE	
Hocker Oil Gas Plus		(417) 264-7952	
ADDRESS (PHYSICAL)		CITY	FAX
1 Highway 63 N		Thayer	
		STATE	ZIP CODE
		MO	65791

3. OWNER

NAME		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
Hocker Oil Company			(573) 729-6651
ADDRESS (MAILING)		CITY	FAX
505 N McArthur Street		Salem	
		STATE	ZIP CODE
		MO	65560

3.1 Request review of draft permit prior to public notice? YES NO

4. CONTINUING AUTHORITY

NAME		TELEPHONE WITH AREA CODE	
Hocker Oil Company		(573) 729-6651	
ADDRESS (MAILING)		CITY	FAX
505 N McArthur Street		Salem	
		STATE	ZIP CODE
		MO	65560

5. OPERATOR

NAME		CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
Smith & Company		N/A	(573) 785-9621
ADDRESS (MAILING)		CITY	FAX
901 Vine Street		Poplar Bluff	(573) 785-2651
		STATE	ZIP CODE
		MO	63901

6. FACILITY CONTACT

NAME		TITLE	TELEPHONE WITH AREA CODE
Jack Sachs		Vice President	(573) 729-6651
			FAX

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 SE 1/4 SW 1/4 Sec 5 T 21N R 5W County _____
 UTM Coordinates Easting (X): 631142mE Northing (Y): 4040347mN
 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NA83)

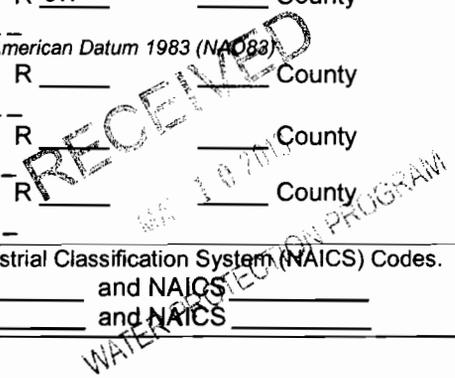
002 1/4 1/4 Sec T R County _____
 UTM Coordinates Easting (X): Northing (Y):

003 1/4 1/4 Sec T R County _____
 UTM Coordinates Easting (X): Northing (Y):

004 1/4 1/4 Sec T R County _____
 UTM Coordinates Easting (X): Northing (Y):

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 - SIC 1799 and NAICS 562910 002 - SIC and NAICS
 003 - SIC and NAICS 004 - SIC and NAICS



8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
 (Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES NO
 If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES NO
 If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES NO
 If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES NO
 If yes, complete Form R.

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See instructions.
 (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME James Porter			
ADDRESS PO Box 104	CITY Thayer	STATE MO	ZIP CODE 65791

10. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Jack Sachs, Vice President, Hocker Oil Company	TELEPHONE WITH AREA CODE (573) 729-6651
SIGNATURE <i>J. Sachs, Vice President Hocker Oil Co</i>	DATE SIGNED 5/10/13

MO 780-1479 (01-09)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?

Figure 1 - Hocker Oil Thayer, 1"=2,000'



WATER PROTECTION PROGRAM

MAY 1 0 2013

RECEIVED

