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 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0132837
Owner:	S.H. Smith & Company, Incorporated
Address:	901 Vine St., P.O. Box 72, Poplar Bluff, MO 63901
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Smith & Co. Landfarm
Facility Address:	County Road 236, Advance, MO 63730
Legal Description:	See following page(s)
UTM Coordinates:	See following page(s)
Receiving Stream:	See following page(s)
First Classified Stream and ID:	See following page(s)
USGS Basin & Sub-watershed No.:	See following page(s)

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

FACILITY DESCRIPTION

Landfarm; SIC # 4953; Stormwater runoff from a surface treatment cell for remediation of soil and water contaminated with petroleum hydrocarbons is captured by a detention basin downslope of the treatment cell. The treatment cell is lined with an impermeable liner to prevent groundwater contamination and is bermed to prevent inflow of surface water. This permit does not regulate soil remediation or disposal activities; these aspects of the treatment are regulated by the Waste Management Program. This facility does not require a certified wastewater operator per 10 CSR 20-9.030 as this facility is privately owned. Domestic waste is not produced at this facility.

This permit authorizes only stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas.

December 1, 2021
Effective Date

September 30, 2025
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – Impacted Stormwater
Stormwater detention basin/sedimentation

Legal Description:	NW¼, NW¼, Sec.4, T27N, R10E, Stoddard County
UTM Coordinates:	X = 769231, Y = 4101911
Receiving Waterbody:	100K Extent –Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)
Design Flow:	0.12 MGD
Average Flow:	0.06 MGD

PERMITTED FEATURE #002 – MW01
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769261, Y = 4101964
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #003 – MW02
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769224, Y = 4101982
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #004 – MW03
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769265, Y = 4101986
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #005 – MW04
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769229, Y = 4101970
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #006 – MW05
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769226, Y = 4102047
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #007 – MW06
Monitoring Groundwater below the Landfarm

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769223, Y = 4102087
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

PERMITTED FEATURE #S1 – Instream Monitoring
Sample to be take approximately 5 yards above confluence of effluent with 100K Extent Remaining Stream.

Legal Description:	NW¼, NW¼, Sec.27, T21N, R10E, Stoddard County
UTM Coordinates:	X = 769231, Y = 4101911
Receiving Waterbody:	100K Extent-Remaining Stream (C)
First Classified Waterbody and ID:	Wolf Creek (C) WBID# 3077
USGS Basin & Sub-watershed No.:	Little River Ditches (08020204-0204)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001
Impacted Stormwater Outfall

TABLE A-1
FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **December 1, 2021** and remain in effect until expiration of the permit. Discharges shall be controlled, limited, and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: Q						
PHYSICAL						
Flow	MGD	*			once/quarter◊	24 hr. total
CONVENTIONAL						
Chemical Oxygen Demand	mg/L	*			once/quarter◊	grab
Oil & Grease	mg/L	15			once/quarter◊	grab
pH †	SU	6.5 to 9.0			once/quarter◊	grab
Settleable Solids	ml/L/hr	1.5			once/quarter◊	grab
Total Suspended Solids	mg/L	50			once/quarter◊	grab
METALS						
Lead, Total Recoverable	µg/L	*			once/quarter◊	grab
OTHER						
Benzene	µg/L	*			once/quarter◊	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
LIMIT SET: WA						
OTHER						
Whole Effluent Toxicity, Acute -See Special Condition #1	TU_a	1			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2023. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

PERMITTED FEATURES #002-007 & S1
Instream & Groundwater Monitoring

TABLE A-2
FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **December 1, 2021** and remain in effect until expiration of the permit. Discharges shall be controlled, limited and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: Q						
PHYSICAL						
Depth to Groundwater Φ	Feet	*			once/quarter◊	measured
OTHER						
Benzene	µg/L	*			once/quarter◊	measured
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

Φ Depth to groundwater will only be recorded for permitted features #002 through #007 only.

* Monitoring and reporting requirement only

† pH: the facility will report the minimum and maximum values; pH is not to be averaged.

◊ Quarterly sampling

MINIMUM QUARTERLY SAMPLING REQUIREMENTS			
QUARTER	MONTHS	QUARTERLY EFFLUENT PARAMETERS	REPORT IS DUE
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I standard conditions dated August 1, 2014, respectively, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
      - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
      - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
   (b) Chemical and physical analysis of the upstream control sample 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 required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water should be used.
   (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The laboratory shall not chemically dechlorinate the sample.
   (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50% (LC_{50}) is the effluent concentration causing death in 50% of the test organisms at a specific time.
   (g) Accelerated Testing Trigger: If the regularly scheduled acute WET test exceeds the TU_a limit, the permittee shall conduct accelerated follow-up WET testing as prescribed in the following conditions. Results of the follow-up accelerated WET testing shall be reported in TU_a. This permit requires the following additional toxicity testing if any one test result exceeds a TU_a limit.
      (1) A multiple dilution test shall be performed for both test species within 60 calendar days of becoming aware the regularly scheduled WET test exceeded a TU_a limit, and once every two weeks until one of the following conditions are met:
         i. Three consecutive multiple-dilution tests are below the TU_a limit. No further tests need to be performed until the next regularly scheduled test period.
         ii. A total of three multiple-dilution tests exceed the TU_a limit (do not need to be sequential)
      (2) Follow-up tests do not negate an initial test result.
      (3) The permittee shall submit a summary of all accelerated WET test results for the test series along with complete copies of the laboratory reports as received from the laboratory within 14 calendar days of the availability of the third test exceeding a TU_a limit.
      (4) The facility may begin a TIE or TRE during the follow-up testing phase.

C. SPECIAL CONDITIONS (CONTINUED)

(h) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_a limit in three accelerated follow-up WET tests. The permittee should contact the Department 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 Department upon the third follow up test exceeding a TU_a limit, 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 within 60 calendar days of the date of the automatic trigger or the Department's direction to perform either a TIE or TRE. The plan shall be based on EPA Methods and include a schedule for completion. This plan must be approved by the Department before the TIE or TRE is begun.

2. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
   (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.

3. Electronic Discharge Monitoring Report (eDMR) Submission System
   Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.
   (a) The facility must register in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/mogem. Information about the eDMR system can be found at https://dnr.mo.gov/env/wpp/edmr.htm.The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, §B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department.
   (b) To access the eDMR system, use: https://apps5.mo.gov/mogems/welcome.action For assistance using the eDMR system, contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082.
   (c) The facility must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. Only facilities with an approved waiver request may submit monitoring data and reports on paper through the mail to the Department for the period the approved electronic reporting waiver is effective. Facilities may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The department will either approve or deny this electronic reporting waiver request within 120 calendar days.

4. Stormwater Pollution Prevention Plan (SWPPP).
   The facility's SIC code or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) and hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated annually or if site conditions affecting stormwater change. The facility shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002); 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf The purpose of the SWPPP and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was ineffective at providing the necessary protections for which it was designed. Corrective action describes the steps the facility took to eliminate the deficiency.
   The SWPPP must include:
   (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
   (b) A map with all outfalls and structural BMPs marked.
   (c) A schedule for at least once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
      (1) Operational deficiencies must be corrected within seven (7) calendar days.
      (2) Minor structural deficiencies must be corrected within fourteen (14) calendar days.
      (3) Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim

C. SPECIAL CONDITIONS (CONTINUED)

measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the Department, the facility shall work with the regional office to determine the best course of action. The facility should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.

(4) All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.

(5) BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.

(6) Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department personnel upon request. Electronic versions of the documents and photographs are acceptable.

(d) A provision for designating a responsible individual for environmental matters and a provision for providing training to all personnel involved in housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the Department.

5. Site-wide minimum Best Management Practices (BMPs). At a minimum, the facility shall adhere to the following:
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, and thereby prevent the contamination of stormwater from these substances.
   (b) Ensure adequate provisions are provided to prevent surface water intrusion into the wastewater storage basin, to divert stormwater runoff around the wastewater storage basin, and to protect embankments from erosion.
   (c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
   (d) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. 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. Spill records should be retained on-site.
   (e) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
   (f) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
   (g) Remove sediment from stormwater sediment pond(s) no less than every ten years, or more frequently dependent on the amount of sediment received; sediment accumulated shall be no more than 20% total volume or as prescribed in the engineering design, whichever is less. Records must be retained since last cleanout.

6. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with 644.051.16 RSMo for permit shield, and the CWA §402(k) for toxic substances. This permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under CWA §§301(b)(2)(C) and (D), §304(b)(2), and §307(a)(2), if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not already limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause, including determination new pollutants found in the discharge not identified in the application for the new or revised permit. The filing of a request by the facility for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

7. All outfalls and permitted features must be clearly marked in the field.

8. Report no discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred.

9. The Department may require sampling and reporting as a result of illegal discharges from the site, compliance issues related to water quality concerns or BMP effectiveness, or evidence of off-site impacts from activities or discharges at the facility.

10. Changes in Discharges of Toxic Pollutant.
    In addition to the reporting requirements under 40 CFR 122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

C. SPECIAL CONDITIONS (CONTINUED)

(a) An activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, 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;
  (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
  (4) One milligram per liter (1 mg/L) for antimony;
  (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  (6) The notification level established by the Department in accordance with 40 CFR 122.44(f)

(b) Any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  (1) Five hundred micrograms per liter (500 µg/l);
  (2) One milligram per liter (1 mg/l) for antimony;
  (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  (4) The level established by the Director in accordance with 40 CFR 122.44(f).

11. Reporting of Non-Detects.
  (a) Compliance analysis conducted by the facility or any contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated. See sufficiently sensitive test method requirements in Standard Conditions Part I, §A, No. 4 regarding proper testing and detection limits used for sample analysis. For the purposes of this permit, the definitions in 40 CFR 136 apply; method detection limit (MDL) and laboratory established reporting limit (RL) are used interchangeably in this permit.
  (b) The facility shall not report a sample result as "non-detect" without also reporting the MDL. Reporting "non-detect" without also including the MDL will be considered failure to report, which is a violation of this permit.
  (c) For the daily maximum, the facility shall report the highest value; if the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method detection limit (MDL) or the highest reporting limit (RL); whichever is higher (e.g. <6).
  (d) When calculating monthly averages, zero shall be used in place of any value(s) not detected. Where all data used in the average are below the MDL or RL, the highest MDL or RL shall be reported as "<#" for the average as indicated in item (c).

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

13. To protect water quality, the permittee shall not landfarm soils contaminated with hazardous waste. Permittee must analyze all waste accepted prior to landfarming to ensure it is not hazardous waste.

14. Remediated soil may not be placed in contact with groundwater or surface water. Permittee must provide sediment and erosion control to the entire facility, including any remediated soils that are placed on site. This could include the use of seeding, mulching, straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits. The entrance to the cell may remain without vegetation or mulch so long as solids are not allowed to erode offsite.

15. This permit does not cover land disturbance activities.

16. This permit does not authorize the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course. The facility must contact the U.S. Army Corps of Engineers (Corps) to determine if a CWA §404 Department of Army permit or §401 water quality certification is required for the project.

17. All records required by this permit may be maintained electronically per 432.255 RSMo. These records should be maintained in a searchable format.

18. Renewal Application Requirements.
  (a) This facility shall submit an appropriate and complete application to the Department no less than 180 days prior to the expiration date listed on page 1 of the permit.
  (b) Application materials shall include complete Form A, and Form C. If the form names have changed, then the facility should ensure they are submitting the correct forms as required by regulation.
  (c) The facility must sample the stormwater outfalls and provide analysis for every parameter contained in the permit at any outfall for at the site in accordance with 10 CSR 20-6.200(2)(C)1.E(I) and (II)
  (d) The facility may use the electronic submission system to submit the application to the Program, if available.

C. SPECIAL CONDITIONS (CONTINUED)

(e) This facility must submit all corrective action reports completed for the last permit term if a benchmark exceedance occurred.

D. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0132837
SMITH & CO. LANDFARM

The Federal Water Pollution Control Act (Clean Water Act (CWA) §402 Public Law 92-500 as amended) established the National Pollutant 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 stormwater from certain point sources. All such discharges are unlawful without a permit (§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 644 RSMo as amended). MSOPs may also cover underground injection, non-discharging facilities, and land application facilities. Permits are issued for a period of five (5) years unless otherwise specified for less.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.] a factsheet shall be prepared to give pertinent information regarding applicable regulations, rationale for the development of limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or permit) listed below. A factsheet is not an enforceable part of a permit.

PART I. FACILITY INFORMATION

Facility Type: Industrial Stormwater, <1 MGD
SIC Code(s): 4953
Application Date: 06/12/2020
Expiration Date: 09/30/2020
Last Inspection: 11/05/2019; Out of compliance

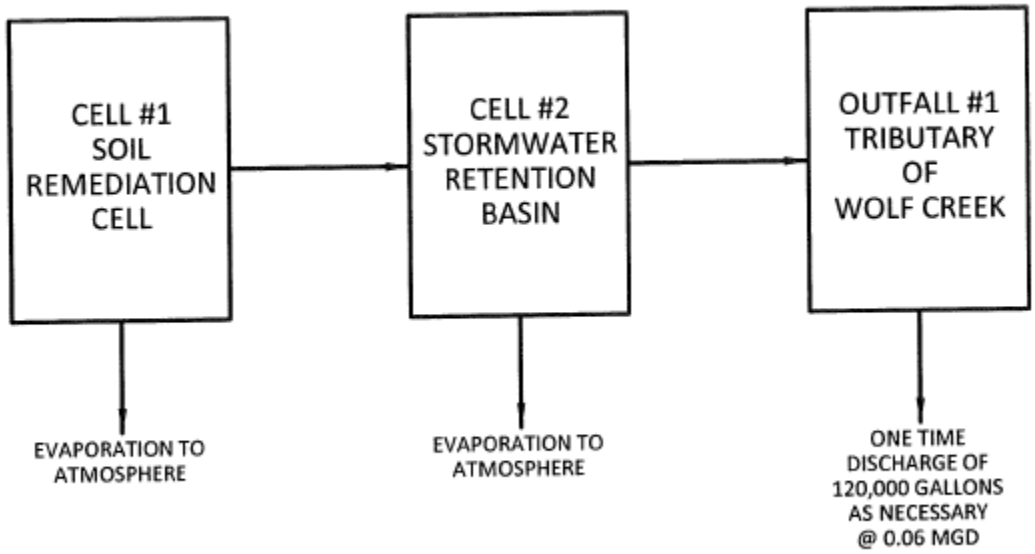
FACILITY DESCRIPTION:
A landfarm is a facility designed to remediate soil contaminated with petroleum products. This facility is limited to receiving soil contaminated with gasoline, diesel fuel, fuel oil, kerosene, or aviation fuel. Soil is cleaned by placing the soil in a shallow layer and allowing soil microbes to break down the petroleum. The soil is occasionally plowed. Before the soil is removed, it is tested to demonstrate that it meets state standards, as determined by the Waste Management Program. Stormwater run-off is contained in a basin, tested, and if it meets permitted effluent limitations for Outfall #001, it is released.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.06 MGD	0.12 MGD	BMPs	Industrial – Stormwater Runoff
#002 - #007	N/A	N/A	N/A	Monitoring Wells
#S1	N/A	N/A	N/A	In-Stream Monitoring

FACILITY MAP:

WATER BALANCE DIAGRAM:



FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last permit term. There were three exceedances of water quality standards during the previous permit term: one exceedance of Oil & Grease of 10.9 mg/L in April of 2018, one exceedance of Total Suspended Solids of 72 mg/L in 2017 and another exceedance of Total Suspended Solids of 33 mg/L in 2019.

This facility was last inspected on November 5, 2019. The inspection showed the following unsatisfactory features: a copy of the SWPPP was not available for review at the time of the inspection as required by special condition 7 in the Missouri State Operating Permit. On January 7, 2020, sufficient response was received to the required actions in the November 15, 2019, inspection report. The facility had returned to compliance and no further response was required.

CONTINUING AUTHORITY:
The Missouri Secretary of State continuing authority charter number for this facility is 00223158; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility.

OTHER ENVIRONMENTAL PERMITS:
In accordance with 40 CFR 122.21(f)(6), the Department evaluated other environmental permits currently held by this facility. This facility holds no other permits.

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#001 & S1	Tributary to Wolf Cr.	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	0.0 mi	08020204-0204 Little River Ditches

Classes are representations of hydrologic flow volume or lake basin size as defined in 10 CSR 20-7.031(1)(F). L1: Lakes with drinking water supply - wastewater discharges are not permitted to occur to L1 watersheds per 10 CSR 20-7.015(3)(C); L2: major reservoirs; L3: all other public and private lakes; P: permanent streams; C: streams which may cease flow in dry periods but maintain pools supporting aquatic life; E: streams which do not maintain surface flow; and W: wetland. Losing streams are defined in 10 CSR 20-7.031(1)(O) and are designated on the losing stream dataset or determined by the Department to lose 30% or more of flow to the subsurface.

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 100K Extant-Remaining Streams or newer; data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.

HUC: Hydrologic Unit Code; TMDLs and lake nutrient criteria are the two most common watershed based limits. https://dnr.mo.gov/env/wpp/watersheds.htm will have additional information about the watersheds in Missouri

Designated Uses:
10 CSR 20-7.031(1)(C)1.: **ALP** = Aquatic Life Protection (formerly AQL); current uses are defined to ensure the protection and propagation of fish shellfish and wildlife, further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses ALP effluent limitations in 10 CSR 20-7.031 Table A1-B3 for all habitat designations unless otherwise specified.
10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = whole body contact recreation supporting swimming uses and has public access;
WBC-B = whole body contact recreation not included in WBC-A;
SCR = Secondary Contact Recreation (like fishing, wading, and boating)
10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish and drinking of water;
IRR = irrigation for use on crops utilized for human or livestock consumption, includes aquifers per 10 CSR 20-7.031(6)(A);
LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection), includes aquifers per 10 CSR 20-7.031(6)(A);
DWS = Drinking Water Supply, includes aquifers per 10 CSR 20-7.031(6)(A);
IND = industrial water supply
10 CSR 20-7.031(1)(C)8. to 11.: Wetlands (10 CSR 20-7.031 Tables A1-B3 currently does not have corresponding habitat use criteria for these defined uses): WSA = storm- and flood-water storage and attenuation; WHP = habitat for resident and migratory wildlife species; WRC = recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = hydrologic cycle maintenance.
10 CSR 20-7.015(7) and 10 CSR 20-7.031(6): **GRW** = Groundwater
10 CSR 20-7.031(4): **GEN** = general criteria; acute toxicity criteria applicable to all waters even those lacking designated uses
n/a = not applicable

WATERS OF THE STATE DESIGNATIONS:
Waters of the state are divided into seven categories per 10 CSR 20-7.015(1)(B)1 through 7. The applicable water of the state category is listed below. Missouri's technology-based effluent regulations are found in [10 CSR 20-7.015] and are implemented in 10 CSR 20-7.015(2) through (8). When implementing technology regulations, considerations are made for the facility type, discharge type, and category of waters of the state. Effluent limitations may not be applicable to certain waters of the state, facility type, or discharge type. In these cases, effluent limitations may be based on a best professional judgment evaluation. The best professional judgment evaluation will take site specific conditions into consideration; including facility type, the receiving water body classification, and type of discharge. Stormwater discharges and land application sites are not directly subject to limitations found in 10 CSR 20-7.015, but may be subject to limitations determined by the best professional judgment evaluation. Effluent limitation derivations are discussed in PART IV: EFFLUENTS LIMITS DETERMINATIONS.

✓ All other waters; identified at 10 CSR 20-7.015(B)7 and 10 CSR 20-7.015(8)

EXISTING WATER QUALITY:
The receiving waterbody has no relevant water quality data available.

UPSTREAM OR DOWNSTREAM IMPAIRMENTS:
The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

✓ The permit writer has noted no upstream or downstream impairments near this facility.

303(D) LIST:
Section 303(d) of the federal Clean Water Act requires each state identify waters 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 impaired waters not addressed by normal water pollution control programs. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

✓ Not applicable; this facility does not discharge to an impaired segment of a 303(d) listed stream.

TOTAL MAXIMUM DAILY LOAD (TMDL):
A TMDL is a calculation of the maximum amount of a given pollutant a water body can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the §303(d) list, then a watershed management plan or TMDL for that watershed may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/

✓ Not applicable; this facility does not discharge to a waterbody or watershed with a TMDL.

RECEIVING WATERBODY MONITORING REQUIREMENTS:

✓ No receiving water monitoring requirements are recommended at this time.

WATERBODY MIXING CONSIDERATIONS:
For all outfalls, mixing zone and zone of initial dilution are not allowed per 10 CSR 20-7.031(5)(A)4.B.(I)(a) and (b), as the base stream flow does not provide dilution to the effluent.

PART III. RATIONALE AND DERIVATION OF 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.

✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], and is an existing facility.

ANTIBACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

✓ Limitations in this operating permit reissuance conform to the anti-backsliding provisions of CWA §402(o), and 40 CFR 122.44.
  - ✓ Ethylbenzene, Methyl Tertiary Butyl Ether, Toluene, Total Petroleum Hydrocarbons (TPH), and Xylene were removed as they were determined to be unnecessary to detect BMP failures. The permit writer used best professional judgement to determine that Benzene and Oil & Grease were sufficient enough and would detect failures of stormwater BMPs at outfall #001. TPH does not have water quality standards in the state of Missouri; additionally, the testing methods for these pollutants vary widely, and interpretation of the results by the permit writer may be difficult or impossible without detailed knowledge of sampling and testing procedures used by the laboratory. Benzene is a common component of fuels and oils,

and may be found in nearly all compounds. It will be utilized in this permit as an indicator pollutant for Toluene and Xylene as they are all found in petroleum products. If one pollutant is found, it is likely the other are present as well. Benzene has the lowest water quality standard for the protection of human health, and therefore will be the most protective to monitor for. Oil & Grease is a broad laboratory test which will detect most of the heavier petroleum products and waxes. It often does not correctly evaluate the lighter pollutants such as Benzene, Toluene, and Xylene, and thus Benzene is retained in addition to Oil and Grease.

✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under CWA §402(a)(1)(b).

- Monthly averages were not implemented for outfall #001 in this permit as the discharge consists of only stormwater which is not continuous pursuant to 40 CFR 122.45(d). Further, average monthly limitations are impracticable measures of non-continuous stormwater discharges because they vary widely in frequency, magnitude, and duration. This permit applies only acute short-term or daily maximum measures which represent stormwater discharges which are acute and sporadic in nature. Discharges of industrial stormwater rarely persist for long durations, making them impracticable to assess using measures with long term exposures or averaging periods. Last, the instream water quality target remains unchanged and the conditions of this permit are protective of both narrative and numeric water quality criteria.
- The previous permit special conditions contained a specific set of prohibitions related to general criteria (GC) found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality criteria in the previous permit. This permit assesses each general criteria as listed in the previous permit's special conditions. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4)(A) through (I) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality while maintaining permit conditions applicable to facility disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the following conditions:
  - (A) 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.
    - For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the facility indicates putrescent wastewater would be discharged from the facility.
    - There is RP for unsightly or harmful bottom deposits at all outfalls due to the potential to release oils/greases or high levels of other solids. The limitations on settleable solids has been maintained from the previous permit to protect this criterion. The permit writer used best professional judgment of pollutants of concern and the treatment mechanisms at the site to determine reasonable potential is present.
  - (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
    - For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses.
    - For all outfalls, the permit writer has determined there is reasonable potential for oil to be discharged from the outfalls due to the pollutants of concern and the treatment mechanisms at the site, therefore the limitation of 15 mg/L is retained from the previous permit to protect this criterion.
  - (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
    - For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates offensive odor will be present in sufficient amounts to impair beneficial uses.
    - For all outfalls, the permit writer has used best professional judgment to determine there is RP for unsightly color and turbidity due to the pollutants of concern and the treatment mechanisms at the site; therefore limitations are retained on TSS and Oil and Grease from the previous permit. These limitations are in place to protect this criterion.
  - (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
    - The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants which could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

(E) Waters shall maintain a level of water quality at their confluences to downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including waters of another state.
- This criteria was not assessed for antibacksliding as this is a new requirement, approved by the EPA on July 30, 2019.

(F) There shall be no significant human health hazard from incidental contact with the water.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(G) There shall be no acute toxicity to livestock or wildlife watering.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
- For all outfalls, there is no RP for physical changes impairing the natural biological community because nothing disclosed by the permittee indicates this is occurring.
- It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.

(I) 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 260.200 RSMo, except as the use of such materials is specifically permitted pursuant to 260.200 through 260.247 RSMo.
- There are no solid waste disposal activities or any operation which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

- The previous permit's special conditions required sampling of total petroleum hydrocarbons (TPH) under the decision model to discharge stormwater having a sheen in secondary containment. The special condition has been revised in all permits beginning in 2015 to remove TPH as 40 CFR 136 does not contain any approved methods for the TPH parameter nor are there water quality standards for TPH. This permit requires oil and grease and BTEX (benzene, toluene, ethylbenzene, and xylene) sampling of the potentially contaminated stormwater in secondary containment. The facility need only sample for these constituents prior to release when a sheen or petroleum odor is present.
- The previous permit special condition stated: "Only soils contaminated with gasoline, diesel fuel, fuel oil, kerosene, or aviation fuel, and having a TPH concentration of 10,000 ppm dry weight or less, may be placed in a treatment cell under this permit. Soils contaminated with used oil, as defined in 10 CSR 25-11.279 incorporating 40 CFR 279.1, shall not be landfarmed under this permit." The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "Soil will be managed in accordance with the October 2013 version of the Missouri Risk-Based Corrective Action for Underground Storage Tanks Technical Guidance document. Soil must be sampled and may be removed if it complies with the Tier 1 Risk Based Target Levels (RBTLs) for both subsurface and surficial soils for residential use, including the RBTLs pertaining to contaminants leaching from soil to groundwater. The permittee shall submit sample analysis along with the proposed end use to the Southeast Regional Office for approval prior to removal." The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "Soil samples shall be one composite sample per 100 cubic yards of soil and composed of soil from no more than four separate locations, and collected from a depth no less than 12 inches." The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "Surface Treatment Cell Requirements and Specifications:
  Minimum vertical depth from the bottom of a treatment cell to the seasonal high water table shall be at least five feet.
  The treatment cell floor shall be surrounded by a two foot berm to contain contaminated soils and exclude water runon.
  Contaminated soil shall be spread within the treatment cell to a depth >18 but <24 inches to allow tilling without compromising the integrity of the plastic liner.
  Treatment cells shall not contain >2500 cubic yards of contaminated soil. Contaminated soil from more than one facility may be placed in the treatment cell if soils are kept separate. The permittee shall submit written notification to the Water Protection program to document that additional soil is being placed in a treatment cell. This notification shall detain the source, amount, and contamination level of the soil to be added.
  The treatment cell shall be constructed such that stormwater runoff from the cell is collected in a retention basin that has one outfall. The retention basin shall have a liner that meets standard engineering spcifications (as per 10CSR 20-8) and shall be sized to retain the volume of water resulting from a 25-year 24 hour storm event. The basin provides for settling of suspended material, and adequate retention time to allow for testing water and treatment as needed to meet permit effluent limitations before discharging."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "Stockpiled soils shall be placed on 12 ml or greater plastic unless soil is under roof and not exposed to stormwater. The permittee shall enact whatever steps are necessary to prevent the plastic from being blown off by normal weather. In the event of severe weather, the permittee shall inspect the cover and correct any damage in two days."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.

- The previous permit special condition stated: "The 30 ml plastic liner installed below the treatment cell shall be excavated and inspected at least once every 10 years. The inspection shall include removal of a sample specimen of the liner. The liner shall be examined by an independent laboratory and tested to verify its integrity. The permittee shall notify the department at least 30 days before liner excavation."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "The facility shall be inspected biweekly by the permittee and a brief written report prepared only when stock-piled soil is stored outside the treatment cell. The inspections must include observation and evaluation of any stockpiled soil to ensure that it remains covered, and observation of the sedimentation basin & landfarm cell to ensure that accumulated water does not overflow the berms. A log of these biweekly inspection reports shall be maintained for up to three years and made available to the department upon request."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "Large volumes of solid waste are not permitted in the landfarm cell. A *de minimis* amount of plastic is permissible, but should be removed when noted during the weekly inspections. When soil is loaded from a stockpile to be brought to the landfarm, the plastic cover on top of the pile must be removed before loading."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition stated: "At least one warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. A sign shall be placed on each gate. Minimum wording shall be SOIL TREATMENT FACILITY – KEEP OUT. Signs shall be made of durable materials with characters at least two inches high and shall be securely fastened to the fence, equipment or other suitable locations."
  The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
- The previous permit special condition indicated spills from hazardous waste substances must be reported to the department. However, this condition is covered under standard conditions therefore was removed from special conditions.

ANTIDEGRADATION REVIEW:
Process water discharges with new, altered, or expanding flows, the Department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm

✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring 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" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedances. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A)5 and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BEST MANAGEMENT PRACTICES:
Minimum site-wide best management practices are established in this permit to ensure all facilities are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with 644.011 and 644.016 (17) RSMo.

COST ANALYSIS FOR COMPLIANCE (CAFCOM):
Pursuant to 644.145 RSMo, when incorporating a new requirement for discharges from publicly owned facilities, or when enforcing provisions of this chapter or the CWA, pertaining to any portion of a publicly owned facility, the Department shall make a finding of affordability on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the CWA. This process is completed through a CAFCom. Permits not including new requirements may be deemed affordable.
✓ The Department is not required to complete a cost analysis for compliance because the facility is not publicly owned.

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:
This special condition reiterates the federal rules found in 40 CFR 122.44(f) for technology treatments and 122.42(a)(1) for all other toxic substances. In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "…any pollutant listed as toxic under section 307(a)(1)" or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the clean water act then refers to those parameters listed in 40 CFR 401.15 and any other toxic parameter the Department determines is applicable for reporting under these rules in the permit. The facility should also consider any other toxic pollutant in the discharge as reportable under this condition and must report all increases to the Department as soon as discovered in the effluent. The Department may open the permit to implement any required effluent limits pursuant to CWA §402(k) where sufficient data was not supplied within the application but was supplied at a later date by either the permittee or other resource determined to be representative of the discharge, such as sampling by Department personnel.

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 facility is not currently under Water Protection Program enforcement action.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:
Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.
✓ Not applicable; this facility does not produce domestic wastewater.

Sewage sludge is solid, semi-solid, 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 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. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.
Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).
✓ Not applicable; the facility does not manage domestic wastewater on-site.

EFFLUENT LIMITATIONS:
Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A) as applicable. Any flow through the outfall is considered a discharge and must be sampled and reported as provided in the permit. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use electronic data reporting. To comply with the federal rule, the Department is requiring all facilities to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a facility must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each operating permit. An approved waiver is not transferable. The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

To assist the facility in entering data into the eDMR system, the permit describes limit sets designators in each table in Part A of the permit. Facility personnel will use these identifiers to ensure data entry is being completed appropriately. For example, M for monthly, Q for quarterly, and others as identified.

FEDERAL EFFLUENT LIMITATION GUIDELINE:
Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.
✓ The facility does not have an associated ELG.

GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, 644.076.1 RSMo, as well as Part I §D – Administrative Requirements of Standard Conditions included in this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of §§644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission. See Part IV for specific determinations.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 644.016(27) RSMo, is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6), and must be protected accordingly.
✓ This facility is monitoring the groundwater at the site to ensure groundwater is not impacted from petroleum contaminated soils at the surface.

LAND APPLICATION:
Land application, or surficial dispersion of wastewater and/or sludge, is performed by facilities to maintain a basin as no-discharge. Requirements for these types of operations are found in 10 CSR 20-6.015; authority to regulate these activities is from 644.026 RSMo.
✓ Not applicable; this permit does not authorize operation of a surficial land application system to disperse wastewater or sludge.

LAND DISTURBANCE:
Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities when only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.
✓ Applicable; this permit provides coverage for land disturbance activities. These activities have SWPPP requirements and may be combined with the standard site SWPPP.
- Land disturbance BMPs should be designed to control the expected peak discharges, the University of Missouri has design storm events for the 25 year 24 hour storm; these can be found at: http://ag3.agebb.missouri.edu/design_storm/comparison_reports/20191117_25yr_24hr_comparison_table.htm; to calculate peak discharges, the website https://www.lmnoeng.com/Hydrology/rational.php has the rational equation to calculate expected discharge volume from the peak storm events.

MAJOR WATER USER:
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2236.htm
✓ Not applicable; this facility cannot withdraw water from the state in excess of 70 gpm/0.1 MGD.

MODIFICATION REQUESTS:
Facilities have the option to request a permit modification from the Department at any time under RSMo 644.051.9. Requests must be submitted to the Water Protection Program with the appropriate forms and fees paid per 10 CSR 20-6.011. It is recommended facilities contact the permit writer early so the correct forms and fees are submitted, and the modification request can be completed in a timely fashion. Minor modifications, found in 40 CFR 122.63, are processed without the need for a public comment period. Major modifications, those requests not explicitly fitting under 40 CFR 122.63, do require a public notice period. Modifications to permits should be completed when: a new pollutant is found in the discharge; operational or functional changes occur which affect the technology, function, or outcome of treatment; the facility desires alternate numeric benchmarks; or other changes are needed to the permit.

Modifications are not required when utilizing or changing additives in accordance with the publication https://dnr.mo.gov/pubs/pub2653.htm nor are required when a temporary change or provisional discharge has been authorized by the regional office. While provisional discharges may be authorized by the regional office, they will not be granted for more than the time necessary for the facility to obtain an official modification from the Water Protection Program. Temporary provisional discharges due to weather events or other unforeseen circumstances may or may not necessitate a permit modification. The facility may ask for a Compliance Assistance Visit (CAV) from the regional office to assist in the decision-making process; CAVs are provided free to the permitted entity.

NUTRIENT MONITORING:
Nutrient monitoring is required for facilities characteristically or expected to discharge nutrients (nitrogenous compounds and/or phosphorus) when the design flow is equal to or greater than 0.1 MGD per 10 CSR 20-7.015(9)(D)8. This requirement is applicable to all Missouri waterways.
✓ This facility has not disclosed nutrients are present in the discharge, therefore no nutrient monitoring is required at this time.

Water quality standards per 10 CSR 20-7.031(5)(N) describe nutrient criteria requirements assigned to lakes (which include reservoirs) in Missouri, equal to or greater than 10 acres during normal pool conditions. The Department's Nutrient Criteria Implementation Plan (NCIP) may be reviewed at: https://dnr.mo.gov/env/wpp/rules/documents/nutrient-implementation-plan-final-072618.pdf Discharges of wastewater in to lakes or lake watersheds designated as L1 (drinking water use) are prohibited per 10 CSR 20-7.015(3)(C).
✓ Not applicable; this facility does not discharge nutrients.

OIL/WATER SEPARATORS:
Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.
✓ Not applicable; the facility has not disclosed the use of any oil water separators they wish to include under the NPDES permit at this facility and therefore oil water separator tanks are not authorized by this permit.

OPERATOR CERTIFICATION REQUIREMENTS:
Operators or supervisors of operations at regulated domestic wastewater treatment facilities shall be certified in accordance with 10 CSR 20-9 and any other applicable state law or regulation.
✓ Not applicable; this facility is not required to have a certified operator. This permit does not cover domestic wastewater or the domestic wastewater population equivalent (PE) is less than two hundred (200) individuals. Additionally, this facility is not owned or operated by a municipality, public sewer district, county, public water supply district, or private sewer company regulated by the Public Service Commission, or operated by a state or federal agency. Private entities are exempted from the population equivalent requirement unless the Department has reason to believe a certified operator is necessary.

PRETREATMENT:
This permit does not regulate pretreatment requirements for facilities discharging to an accepting permitted wastewater treatment facility. If applicable, the receiving entity (the publicly owned treatment works - POTW) is to ensure compliance with any effluent limitation guidelines for pretreatment listed in 40 CFR Subchapter N per 10 CSR 20-6.100. Pretreatment regulations per 644.016 RSMo are limitations on the introduction of pollutants or water contaminants into publicly owned treatment works or facilities.

- ✓ Not applicable, this facility does not discharge industrial wastewater to a POTW. Domestic wastewater is not subject to pretreatment requirements.

REASONABLE POTENTIAL (RP):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants which are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines 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 the pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A). Permit writers may use mathematical reasonable potential analysis (RPA) using the Technical Support Document for Water Quality Based Toxics Control (TSD) methods (EPA/505/2-90-001) as found in Section 3.3.2, or may also use reasonable potential determinations (RPD) as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD.

- ✓ Not applicable; a mathematical RPA was not conducted for this facility. This permit establishes permit limits and benchmarks for stormwater. The Department has determined stormwater is not a continuous discharge and is therefore not necessarily dependent on mathematical RPAs. However, the permit writer completed an RPD, a reasonable potential determination, using best professional judgement for all of the appropriate parameters in this permit. An RPD consists of reviewing application data and/or discharge monitoring data for the last five years and comparing those data to narrative or numeric water quality criteria.

RENEWAL REQUIREMENTS:
The renewal special condition permit requirement is designed to guide the facility to prepare and include all relevant and applicable information in accordance with 10 CSR 20-6.010(7)(A)-(C), and if applicable, federal regulations. The special condition may not include all requirements and requests for additional information may be made at the time of permit renewal under 644.051.13(5) RSMo and 40 CFR 122.21(h). Prior to submittal, the facility must review the entire submittal to confirm all required information and data is provided; it is the facility's responsibility to discern if additional information is required. Failure to fully disclosure applicable information with the application or application addendums may result in a permit revocation per 10 CSR 20-6.010(8)(A) and may result in the forfeiture of permit shield protection authorized in 644.051.16 RSMo.

SAMPLING FREQUENCY JUSTIFICATION:
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges, such as wastewater discharges, shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

SAMPLING TYPE JUSTIFICATION:
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others. For further information on sampling and testing methods see 10 CSR 20-7.015(9)(D)2.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, 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. SOCs are allowed under 40 CFR 122.47 and 10 CSR 20-7.031(11) providing certain conditions are met. An SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed in accordance with 40 CFR 125.3.
- For a newly constructed facility in most cases per 644.029 RSMo. Newly constructed facilities must meet all applicable effluent limitations (technology and water quality) when discharge begins. New facilities are required to install the appropriate control technologies as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be specifically granted for conducting these activities.

In order to provide guidance in developing SOCs, and to attain a greater level of consistency, the Department issued a policy on development of SOCs on October 25, 2012. The policy provides guidance to permit writers on standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.

✓ Not applicable; this permit does not contain a SOC. No SOC is allowed because the facility is already capable of meeting the new effluent limits.

SPILLS, OVERFLOWS, AND OTHER UNAUTHORIZED DISCHARGE REPORTING:
Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. http://dnr.mo.gov/env/esp/spillbill.htm

Any other spills, overflows, or unauthorized discharges reaching waters of the state must be reported to the regional office during normal business hours, or after normal business hours, to the Department's 24 hour Environmental Emergency Response spill line at 573-634-2436.

SLUDGE – INDUSTRIAL:
Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process or non-process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and any material derived from industrial sludge. Industrial sludge could also be derived from lagoon dredging or other similar maintenance activities.

✓ Applicable; this permittee retains the industrial sludge in the basins. This permit does not authorize land application or discharge of sludge.

STANDARD CONDITIONS:
The standard conditions Part I attached to this permit incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act. Standard Conditions Part III, if attached to this permit, incorporate requirements dealing with domestic wastewater, domestic sludge, and land application of domestic wastes.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:
Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater-only discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) §3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), a benchmark, or a monitoring requirement as dictated by site specific conditions, the BMPs in place, the BMPs proposed, past performance of the facility, and the receiving water's current quality.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.
Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute Water Quality Standards (WQSs) are based on one hour of exposure, and must be protected at all times. Therefore, industrial stormwater facilities with toxic contaminants present in the stormwater may have the potential to cause a violation of acute WQSs if toxic contaminants occur in sufficient amounts. In this instance, the permit writer may apply daily maximum limitations.

Conversely, it is unlikely for rainfall to cause a discharge for four continuous days from a facility; if this does occur however, the receiving stream will also likely sustain a significant amount of flow providing dilution. Most chronic WQSs are based on a four-day exposure with some exceptions. Under this scenario, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

A standard mass-balance equation cannot be calculated for stormwater because stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day or storm event without real-time ad-hoc monitoring. The amount of stormwater discharged from the facility will vary based on current and previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, area of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability may increase the stream flow dramatically over a short period of time (flash).

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard may also be used. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States. If a facility has not disclosed BMPs applicable to the pollutants for the site, the facility may not be eligible for benchmarks.

40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found. However, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA) under most stormwater discharge scenarios. Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the facility in knowing when additional corrective actions may be necessary to comply with the conditions of the permit.

BMP inspections typically occur more frequently than sampling. Sampling frequencies are based on the facility's ability to comply with the benchmarks and the requirements of the permit. Inspections should occur after large rain events and any other time an issue is noted; sampling after a benchmark exceedance may need to occur to show the corrective active taken was meaningful.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

- ✓ Applicable, this facility has stormwater-only outfalls where benchmarks or limitations were deemed appropriate contaminant measures.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under §304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under §402(p) of the CWA for the control of stormwater 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,* (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater 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. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the facility should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation 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(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), §II.B.

If parameter-specific numeric benchmark exceedances continue to occur and the facility feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the facility can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification, which includes an appropriate fee; the application is found at: https://dnr.mo.gov/forms/#WaterPollution

- ✓ Applicable; a SWPPP shall be developed and implemented for this facility; see specific requirements in the SPECIAL CONDITIONS section of the permit.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:
Please review Standard Conditions Part 1, §A, No. 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department and incorporated within this permit. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A facility is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive.

UNDERGROUND INJECTION CONTROL (UIC):
The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to §§1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by 577.155 RSMo; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in 577.155 RSMo; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the Department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the facility shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: http://dnr.mo.gov/forms/780-1774-f.pdf Single family residential septic systems and non-residential septic systems used solely for sanitary waste and having the capacity to serve fewer than 20 persons a day are excluded from the UIC requirements (40 CFR 144.81(9)).
✓ Not applicable; the facility has not submitted materials indicating the facility will be performing UIC at this site.

VARIANCE:
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 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. Thermal variances are regulated separately and are found under 644.
✓ Not applicable; this permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010; definitions], the WLA is the maximum amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).
✓ Not applicable, this is a stormwater only permit therefore WLAs were not calculated. See section on stormwater permitting as applying WLAs to stormwater is not normally applicable per TSD §3.1.

WASTELOAD ALLOCATION (WLA) MODELING:
Facilities may submit site specific studies to better determine the site specific wasteload allocations applied in permits.
✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARD REVISION:
In accordance with 644.058 RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.
✓ This operating permit does not contain requirements for a water quality standard changing twenty-five percent or more since the previous operating permit.

PART IV. EFFLUENT LIMIT DETERMINATIONS

OUTFALL #001 – IMPACTED STORMWATER OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*		SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. EST
CONVENTIONAL							
COD	mg/L	*		SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	15		15/10	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH †	SU	6.5-9.0		SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SETTLEABLE SOLIDS	ml/L.hr	1.5		1.5/1.0	ONCE/QUARTER	ONCE/QUARTER	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	50		50/30	ONCE/QUARTER	ONCE/QUARTER	GRAB
METALS							
LEAD, TR	µg/L	*		SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
BENZENE	µg/L	*		5.0/5.0	ONCE/QUARTER	ONCE/QUARTER	GRAB
ETHYLBENZENE	REMOVED						
METHYL TERTIARY BUTYL ETHER	REMOVED						
TOLUENE	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (DRO)	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (GRO)	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (ORO)	REMOVED						
XYLENE	REMOVED						
WET TEST - ACUTE	TUa	1	-	*	ONCE/YEAR	ONCE/YEAR	COMPOSITE

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring continued. This facility treats petroleum products. The stormwater is in contact with soils containing these products, which have the chance to increase the COD in the effluent. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD which may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may also indicate a need for maintenance or improvement of BMPs.

Oil & Grease
15 mg/L daily maximum; continued from previous permit. The previous permit contained monthly average limits. The nature of the discharge is stormwater dependent and therefore only acute limits are applicable. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or xylene, but these constituents are often lost during testing due to their boiling points. The facility reported from 5 to 6 mg/L. The permit writer completed an RPD on this parameter and found no RP. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the facility to visually observe the discharge and receiving waters for sheen or bottom deposits. The limit this permit applies does not allow the facility to violate general criteria even if data provided are below the numeric limit.
AQL Chronic: 10 mg/L per 10 CSR 20-7.031 Table A1
Set chronic standard equal to chronic WLA per TSD §5.4.2 (EPA/505/2-90-001); multiply by 1.5 to obtain acute limit.
10 mg/L * 1.5 = 15 mg/L

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall and are continued from the previous permit. pH is a fundamental water quality indicator. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. Limitations in this permit will protect against aquatic organism toxicity, downstream water quality issues, human health hazard contact, and negative physical changes in accordance with the general criteria at 10 CSR 20-7.031(4) and the Clean Water Act's (CWA) goal of 100% fishable and swimmable rivers and streams.

Settleable Solids (SS)
Daily maximum limit of 1.5 mL/L/hr continued from the previous permit. The previous permit contained monthly average limits. The nature of the discharge is stormwater dependent and therefore only acute limits are applicable. There is no numeric water quality standard for SS; however, sediment discharges can negatively impact aquatic life. Increased settleable solids are known to interfere with multiple stages of the life cycle in many benthic organisms. For example, they can smother eggs and young or clog the crevasses benthic organisms use for habitat. Settleable solids are also a valuable indicator parameter. Solids monitoring allows the facility to identify increases in sediment and solids indicating uncontrolled materials leaving the site.

Total Suspended Solids (TSS)
Daily maximum limit of 50 mg/L continued from the previous permit. The previous permit contained monthly average limits. The nature of the discharge is stormwater dependent and therefore only acute limits are applicable. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the facility to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

METALS:

Lead, Total Recoverable
Quarterly monitoring continued from previous permit. Lead is a pollutant of concern at this site as older contaminated soils may contain leaded petroleum products.

OTHER:

Benzene
Quarterly monitoring only. The previous permit contained monthly average limits. The nature of the discharge is stormwater dependent and therefore only acute limits are applicable. Previous permit limits were 5.0 µg/L daily maximum and 5.0 µg/L monthly average. DMRs showed values between 0.5 µg/L to 2 µg/L. Reasonable potential was not shown. However benzene is a pollutant of concern at this site, and benzene will be used as an indicator pollutant for other petroleum discharges at the site. It has the lowest water quality standard for the protection of human health, therefore it will be the most protective of the indicator pollutants to monitor for.

Ethylbenzene, Methyle Tertiary Butyl Ether, Toluene, Xylene
Monitoring requirement removed. The permit writer used best professional judgment to determine that Benzene and Oil & Grease were sufficient enough and would detect failures of stormwater BMPs at outfall #001. (See justification for benzene above).

Total Petroleum Hydrocarbons (DRO, GRO, ORO)
Monitoring requirement removed. The permit writer used best professional judgment to determine that Benzene and Oil & Grease were sufficient enough and would detect failures of stormwater BMPs at outfall #001. TPH does not have water quality standards; in addition, the laboratory sampling and analysis methods vary widely, and the data provided to the permit writer is not useful without detailed knowledge of the sampling and analysis procedures.

Whole Effluent Toxicity (WET) Test
A WET test is a quantifiable method to conclusively determine if discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water. Under the CWA §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits to quantify toxicity. WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures the provisions in 10 CSR 20-6 and Missouri's Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to ensure compliance with the CWA and related regulations of the Missouri Clean Water Commission. Missouri Clean Water Law (MCWL) RSMo 644.051.3 requires the Department to set permit conditions complying with the MCWL and CWA. 644.051.4 RSMo specifically references toxicity as an item the Department must consider in permits (along with water quality-based effluent limits); and RSMo 644.051.5 is the basic authority to require testing conditions. WET tests are required by all facilities meeting any of the following criteria:

- ✓ Facility handles large quantities of toxic substances, or substances toxic in large amounts
- ✓ Facility has water quality-based effluent limitations for toxic substances (other than NH_3)
- ✓ Annual testing is the minimum testing frequency; monitoring requirements promulgated in 40 CFR 122.44(i)(2) state "requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year."

Acute
The permit writer has determined this facility has reasonable potential to cause toxicity in the receiving stream. The facility reported 1 TUa 5 years in a row during the last permit term.

Acute AQL: 0.3 TUa
The AEC is (0.185667432 CFSdf / (0 CFSzid +0.185667432 CFSdf)) = 100%
Acute WLA: Ce = ((0.185667432 cfsDF + 0 cfsZID) * 0.3 – (0 cfsZID * 0 background)) / 0.185667432 cfsDF = 0.3
LTAa: WLAa * LTAa multiplier = 0.3 * 0.321 = 0.096 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 0.096 * 3.114 = 0.3 TU [CV: 0.6, 99th %ile]

The limit established in this permit is below the detection limit for this test; the compliance value is set at 1 TUa.Where no mixing is allowed the criterion must be met at the end of the pipe. However, when using an LC_{50} as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC_{50} value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration is 100% a limit of **1.0 TUa** will apply.

PERMITTED FEATURES #002-#007 & S1 – INSTREAM & GROUNDWATER MONITORING

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
DEPTH TO GROUNDWATER Φ	Feet	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	MEASURED
OTHER							
BENZENE	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
METHYL TERTIARY BUTYL ETHER	REMOVED						
TOLUENE	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (DRO)	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (GRO)	REMOVED						
TOTAL PETROLEUM HYDROCARBONS (ORO)	REMOVED						

Φ Depth to groundwater will only be recorded for permitted features #002 through #007 only.
* Monitoring and reporting requirement only

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Depth to Groundwater
Monitoring only to verify that the facility is greater than five feet above the seasonal high groundwater table. The depths for the last six years ranged from 0 feet to 41.9 feet.

OTHER:

Benzene
Quarterly monitoring only. The drinking water standard for Benzene is 5 µg/L. Since the facility is already monitoring stormwater discharges from outfall #001 for benzene, it is the permit writer's best professional judgment that the facility must also monitor for benzene at all monitoring wells.

Methyle Tertiary Butyl Ether, Toluene
Monitoring requirement removed. The permit writer used best professional judgment to determine that Benzene was sufficient enough and would detect failures of stormwater BMPs at outfall #001.

Total Petroleum Hydrocarbons (DRO, GRO, ORO)
Monitoring requirement removed. The permit writer used best professional judgment to determine that Benzene and Oil & Grease were sufficient enough and would detect failures of stormwater BMPs at outfall #001. TPH does not have water quality standards; in addition, the laboratory sampling and analysis methods vary widely, and the data provided to the permit writer is not useful without detailed knowledge of the sampling and analysis procedures.

PART V. 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:
Permits are normally issued on a five-year term, but to achieve watershed synchronization some permits will need to be issued for less than the full five years as allowed by regulation. The intent is all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf. This will allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than two years old, such data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

- ✓ If the Department issues the permit at this time, the effective period of the permit would be less than one year in length. To ensure efficient use of Department staff time, reduce the Department's permitting back log, and to provide better service to the facility by avoiding another renewal application to be submitted in such a short time period, this operating permit will be issued for the maximum timeframe of five years and synced with other permits in the watershed at a later date.

PUBLIC NOTICE:
The Department shall give public notice 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 or with 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 facility must be notified of the denial in writing. http://dnr.mo.gov/env/wpp/permits/pn/index.html The Department must issue public notice of a pending operating 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 wishing to submit comments regarding this proposed operating permit, 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. All comments must be in written form.

- ✓ The Public Notice period for this operating permit was from September 10, 2021 to October 11, 2021. No responses were received.

DATE OF FACT SHEET: AUGUST 9, 2021
COMPLETED BY:
KYLE O'ROURKE, ENVIRONMENTAL PROGRAM SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions
Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      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. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the 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.

6. **Illegal Activities.**
   a. 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 the permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
   b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Non-compliance Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

6. **Other Information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

7. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance**. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. **Permit Actions.**
   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. Violations 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 or 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.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
    a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
    b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance 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 by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

AP 35029

RECEIVED
JUN 12 2020
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED 6-12-20	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

PLEASE READ ALL THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.
SUBMITTAL OF AN INCOMPLETE APPLICATION MAY RESULT IN THE APPLICATION BEING RETURNED.

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:
Fill out the No Exposure Certification Form (Mo 780-2828): https://dnr.mo.gov/forms/780-2828-f.pdf

1. REASON FOR APPLICATION: MO 0132837

- ☐ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – 01032837, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- ☐ b. This facility is now in operation under permit MO – _____, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- ☐ c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.
- ☑ d. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0132837 and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
SMITH&CO. LANDFARM		573-785-9621	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
CR 236	ADVANCE	MO	63730

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
S.H. SMITH&CO., INC.		573-785-9621	
EMAIL ADDRESS			
MIKEW@SHSMITHCO.COM			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
901 VINE ST., PO BOX 72	POPLAR BLUFF	MO	63901

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

5. OPERATOR CERTIFICATION

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
MIKE WALKER, RG	ENV. SERVICES MANAGER	573-785-9621
E-MAIL ADDRESS		
MIKEW@SHSMITHCO.COM		

7. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary.

NAME			
JAMES D. ROBERTSON			
ADDRESS	CITY	STATE	ZIP CODE
8160 CODEN BELT RD. SUITE #5	CODEN	AL	36523

8. ADDITIONAL FACILITY INFORMATION

8.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)
For Universal Transverse Mercator (UTM), use Zone 15 North referenced to North American Datum 1983 (NAD83)

001 NW ¼ NW ¼ Sec 4 T 27N R 10E STODDARD County
UTM Coordinates Easting (X): _____ Northing (Y): _____

002 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
Primary SIC 1799 and NAICS 23599 SIC ____ and NAICS ____
SIC ____ and NAICS ____ SIC ____ and NAICS ____

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

A. Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES ☐ NO ☑
If yes, complete Form C.

B. Is the facility considered a "Primary Industry" under EPA guidelines (40 CFR Part 122, Appendix A) : YES ☐ NO ☑
If yes, complete Forms C and D.

C. Is wastewater land applied? YES ☐ NO ☑
If yes, complete Form I.

D. Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied? YES ☐ NO ☑
If yes, complete Form R.

E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES ☐ NO ☑
If yes, please include a list of all permits or approvals for this facility.

F. Do you use cooling water in your operations at this facility? YES ☐ NO ☑
If yes, please indicate the source of the water: _____

G. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

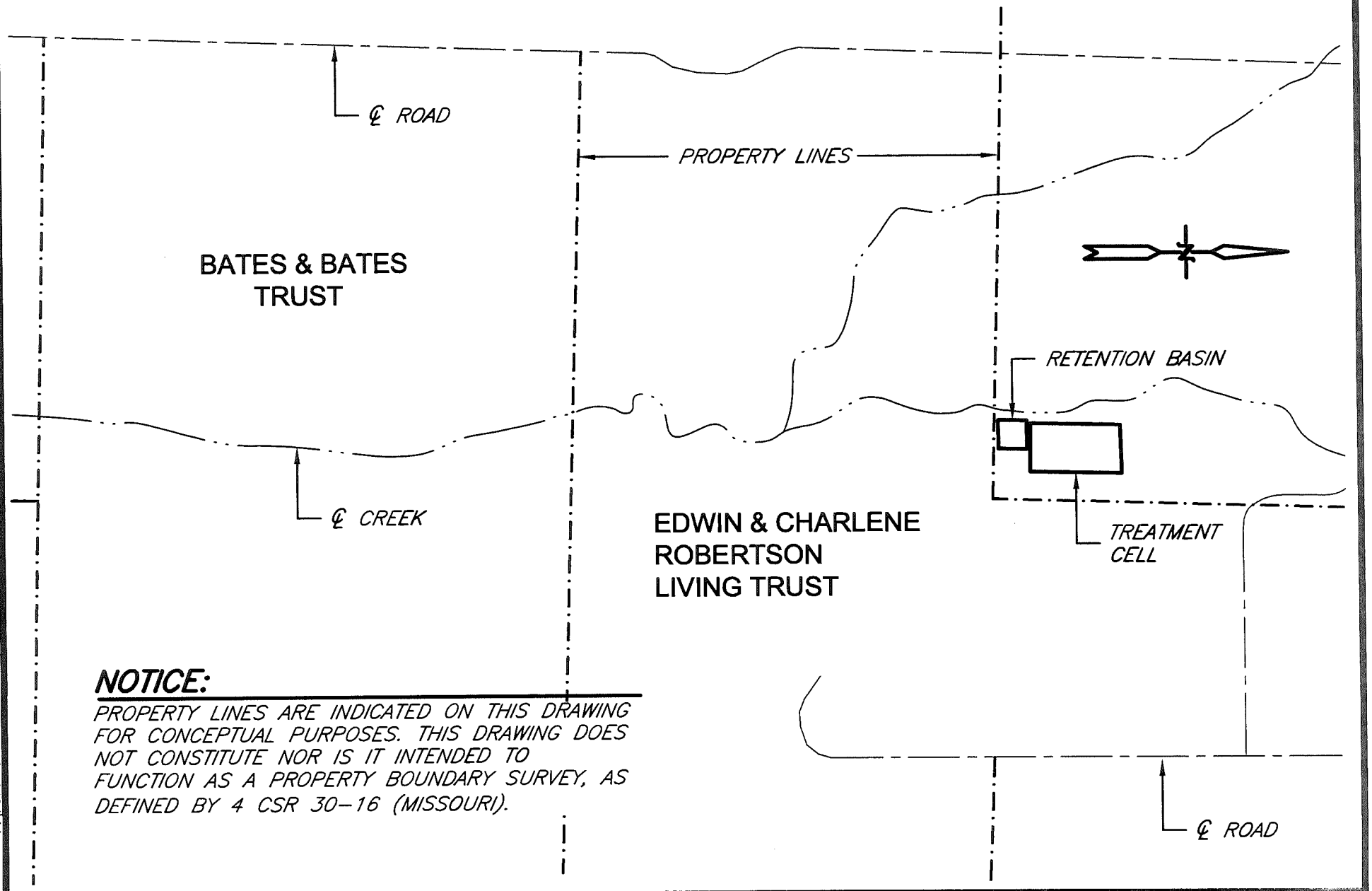
11. FEES

Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. Use the URL provided to access JetPay and make an online payment: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/

12. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
STEVE HICKS, PE - CHIEF OPERATING OFFICER	573-785-9621
SIGNATURE Steve Hicks	DATE SIGNED 4-28-2020



NOTICE:

PROPERTY LINES ARE INDICATED ON THIS DRAWING FOR CONCEPTUAL PURPOSES. THIS DRAWING DOES NOT CONSTITUTE NOR IS IT INTENDED TO FUNCTION AS A PROPERTY BOUNDARY SURVEY, AS DEFINED BY 4 CSR 30-16 (MISSOURI).

SMITH & COMPANY LAND FARM
STODDARD COUNTY, MISSOURI

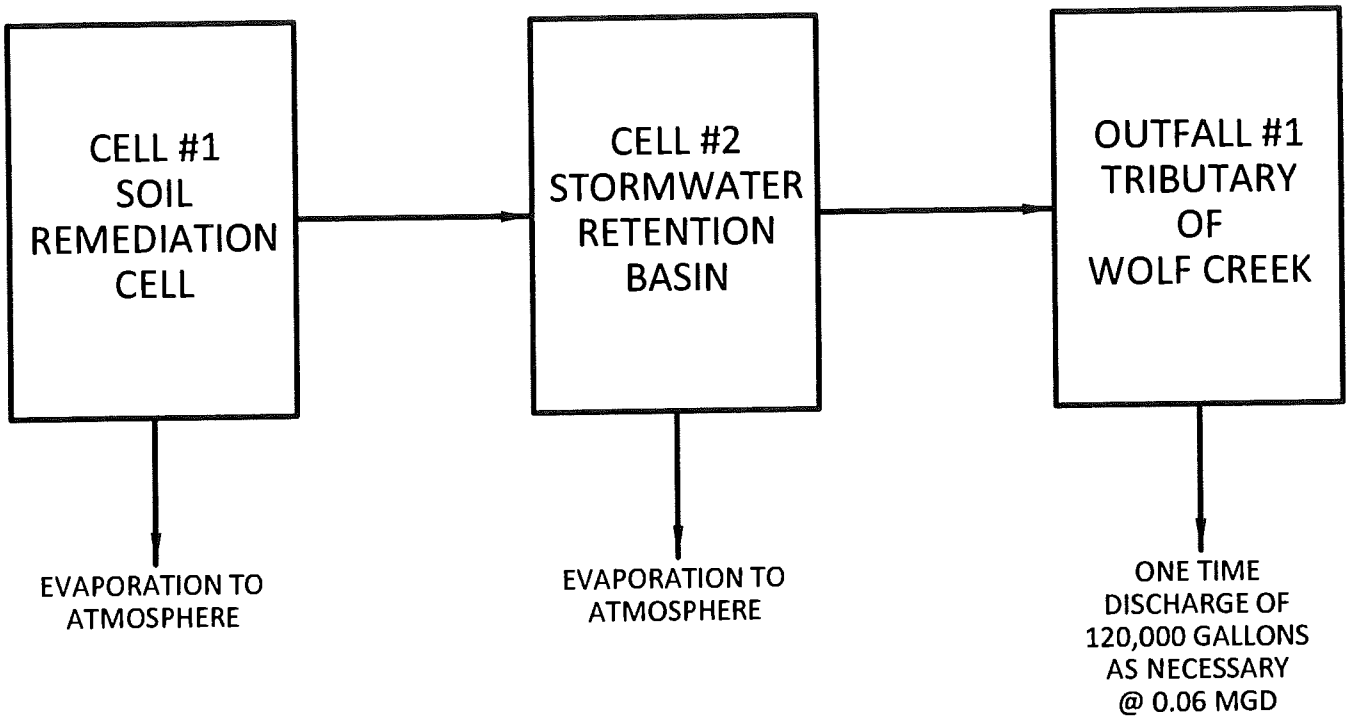
SITE LAYOUT AND DOWN STREAM LAND OWNERS

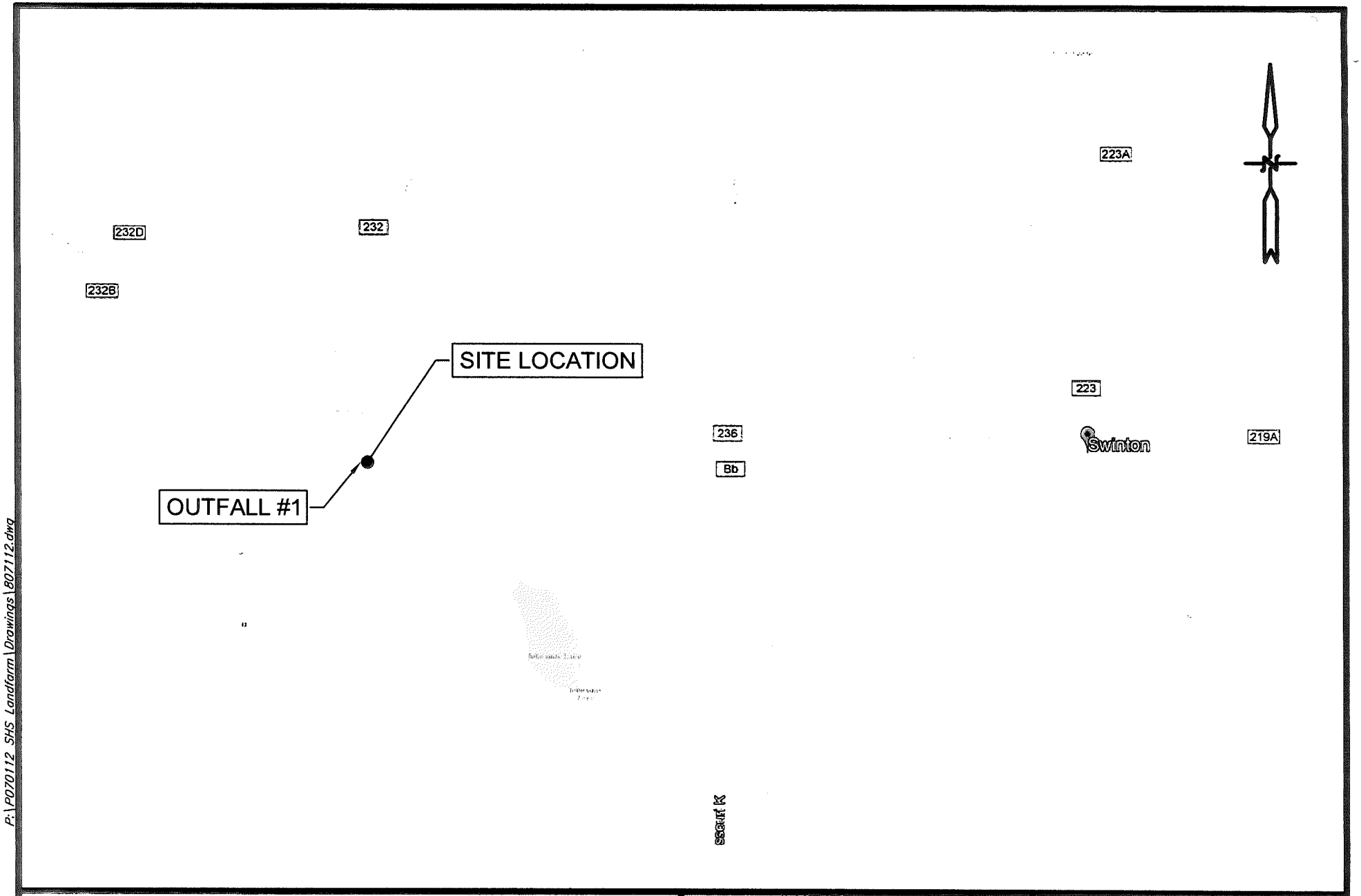
DRAWN BY: RDS DATE: 9/09
CHECKED BY: SMT DATE: 9/09
DRAWING FILE: 807112.dwg
JOB: N/A
0 500 1000
THIS BAR WILL MEASURE 1" WHEN PRINTED AT FULL SCALE.

SMITH & CO. ENGINEERS
AN EMPLOYEE OWNED COMPANY
901 VINE STREET; P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2651 WWW.SHSMITHCO.COM

P:\P070112 SHS Landfarm\Drawings\807112.dwg
4/28/2020 3:29 PM

SMITH & CO. LANDFARM
WATER FLOW DIAGRAM





SMITH & COMPANY LAND FARM
STODDARD COUNTY, MISSOURI

SITE LOCATION MAP

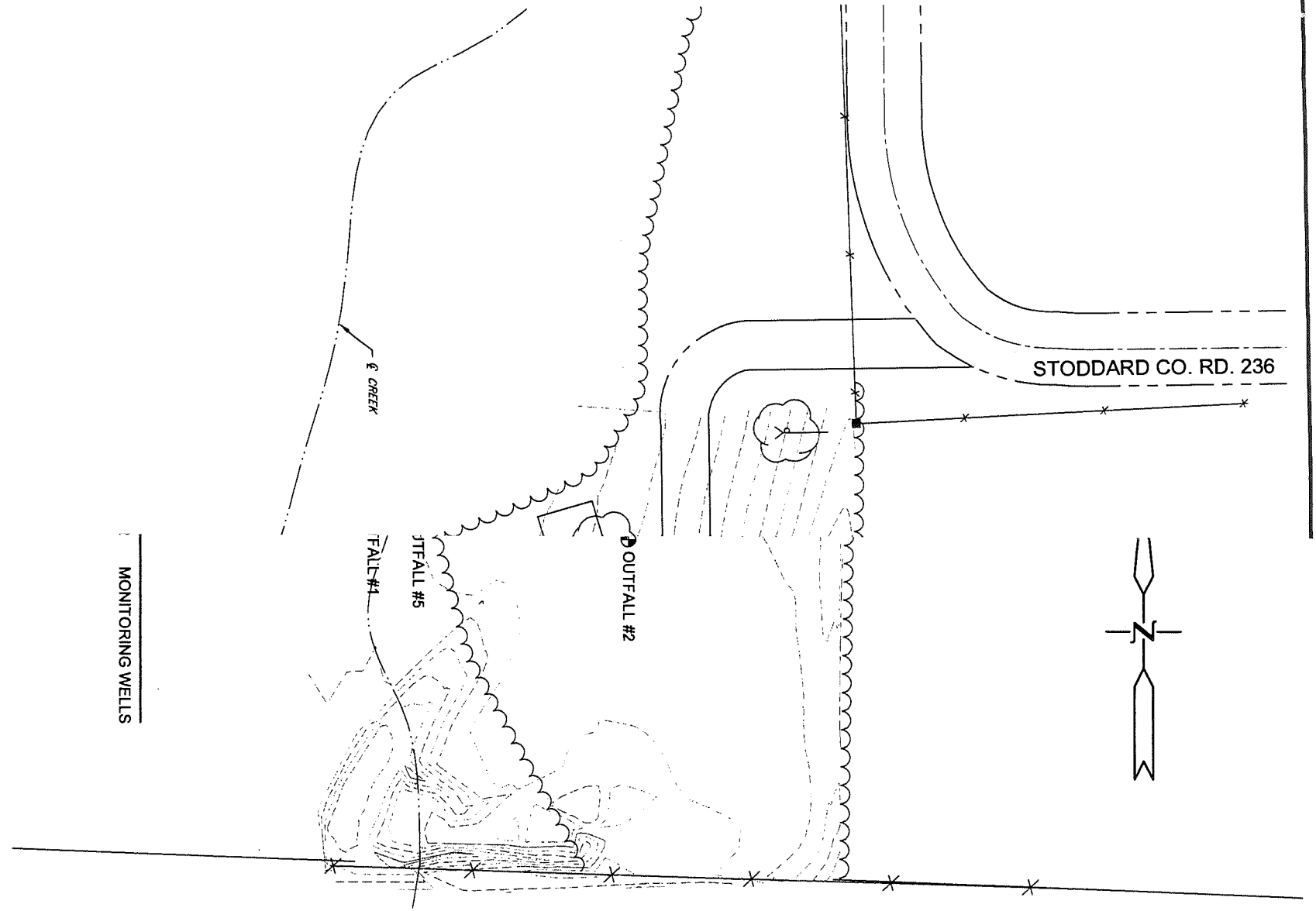
DRAWN BY: RDS DATE: 5/20
CHECKED BY: MAW DATE: 5/20
DRAWING FILE: 807112.dwg
JOB: P070112
NO SCALE

THIS BAR WILL MEASURE 1"
WHEN PRINTED AT FULL SCALE.

SMITH & CO.
ENGINEERS
901 VINE STREET; P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2651 WWW.SHSMITHCO.COM

P:\P070112 SHS Landfarm\Drawings\807112.dwg
5/29/2020 9:52 AM

4/28/2070 7:18 AM P:\P070112 SHS Landfarm\Drawings\807112.dwg



SMITH & COMPANY LAND FARM
STODDARD COUNTY, MISSOURI

SITE LAYOUT MAP

JOB #: 807112
DRAWING #: N/A
SHEET: 1

EMPLOYEE OWNED CORP.
SMITH&CO.
ENGINEERS
901 VINE STREET; P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2651 WWW.SHSMITHCO.COM

DRAWN BY: RDS, BJH DATE: 2/12
CHECKED BY: MAW DATE: 2/12
FIELD BOOK: N/A
DRAWING FILE: 807112.dwg

0 20 40
THIS BAR WILL MEASURE 1" WHEN PRINTED AT FULL SCALE.

NO.	REVISIONS	DATE	BY	APP.

SEAL:

RECEIVED
JUN 12 2020
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING, SILVICULTURE OPERATIONS, AND STORMWATER

GENERAL INFORMATION (PLEASE SEE INSTRUCTIONS)

1.0 NAME OF FACILITY

SMITH&CO. LANDFARM

1.1 THIS FACILITY IS OPERATING UNDER MISSOURI STATE OPERATING PERMIT (MSOP) NUMBER:

MO-0132837

1.2 IS THIS A NEW FACILITY? PROVIDE CONSTRUCTION PERMIT (CP) NUMBER IF APPLICABLE.

1.3 Describe the nature of the business, in detail. Identify the goods and services provided by the business. Include descriptions of all raw, intermediate, final products, byproducts, or waste products used in the production or manufacturing process, stored outdoors, loaded or transferred and any other pertinent information for potential sources of wastewater or stormwater discharges.

PETROLEUM-IMPACTED SOIL IS REMEDIATED VIA LANDFARMING TECHNIQUES. REMEDIATED SOIL CAN THEN BE USED AS CLEAN FILL.

FLOWS, TYPE, AND FREQUENCY

2.0 Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in item B. Construct a water balance on the line drawing by showing average and maximum flows between intakes, operations, treatment units, evaporation, public sewers, and outfalls. If a water balance cannot by determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

2.1 For each outfall (1) below, provide: (2) a description of all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, stormwater runoff, and any other process or non-process wastewater, (3) the average flow and maximum flow (put max in parentheses) contributed by each operation and the sum of those operations, (4) the treatment received by the wastewater, and (5) the treatment type code. Continue on additional sheets if necessary.

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW; INCLUDE ALL PROCESSES AND SUB PROCESSES AT EACH OUTFALL	3. AVERAGE FLOW AND (MAXIMUM FLOW), INCLUDE UNITS.	4. TREATMENT DESCRIPTION	5. TREATMENT CODES FROM TABLE A
001	STORMWATER RUNOFF	0.06 MGD	RETENTION	
		0.12 MGD (max)		

Attach additional pages if necessary.

2.2 INTERMITTENT DISCHARGES

Except for stormwater runoff, leaks, or spills, are any of the discharges described in items 2.0 or 2.1 intermittent or seasonal?

☑ Yes *(complete the following table)* ☐ No *(go to section 2.3)*

1. OUTFALL NUMBER	2. OPERATION(S) CONTRIBUTING FLOW	3. FREQUENCY		4. FLOW				C. DURATION *(in days)*
				A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	1. MAXIMUM DAILY	2. LONG TERM AVERAGE	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	
001	STORMWATER RETENTION		6	0.06		0.06	0.03	2

2.3 PRODUCTION

A. Does an effluent limitation guideline (ELG) promulgated by EPA under section 304 of the Clean Water Act apply to your facility? Indicate the part and subparts applicable.

☐ Yes 40 CFR_____ Subpart(s) _____ ☑ No *(go to section 2.5)*

B. Are the limitations in the effluent guideline(s) expressed in terms of production (or other measure of operation)? Describe in C below.

☐ Yes *(complete C.)* ☑ No *(go to section 2.5)*

C. If you answered "yes" to B, list the quantity representing an actual measurement of your maximum level of production, expressed in the terms and units used in the applicable effluent guideline and indicate the affected outfalls.

A. OUTFALL(S)	B. QUANTITY PER DAY	C. UNITS OF MEASURE	D. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*

2.4 IMPROVEMENTS

A. Are you required by any federal, state, or local authority to meet any implementation schedule for the construction, upgrading, or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☑ Yes *(complete the following table)* ☐ No *(go to 2.6)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
			A. REQUIRED	B. PROJECTED
Bi-weekly site visits		VISIUAL INSPECTION OF FACILITY	X	
QTRLY GW SAMPLING	002-007	QTRLY GW SAMPLING OF MONITORING WELLS	X	

B. Optional: provide below or attach additional sheets describing water pollution control programs or other environmental projects which may affect discharges. Indicate whether each program is underway or planned, and indicate actual or planned schedules for construction. This may include proposed bmp projects for stormwater.

2.5 SLUDGE MANAGEMENT

Describe the removal of any industrial or domestic biosolids or sludges generated at your facility. Include names and contact information for any haulers used. Note the frequency, volume, and methods (incineration, landfilling, composting, etc) used. See Form A for additional forms which may need to be completed.

DATA COLLECTION AND REPORTING REQUIREMENTS FOR APPLICANTS

3.0 EFFLUENT (AND INTAKE) CHARACTERISTICS (SEE INSTRUCTIONS)

A. & B. See instructions before continuing – complete one Table 1 for **each outfall** (and intake) – annotate the outfall (intake) number or designation in the space provided. The facility is not required to complete intake data unless required by the department or rule.

C. Use the space below to list any pollutants listed in the instructions section 3.0 C. Table B which you know or have reason to believe is discharged or may be discharged from any outfall not listed in parts 3.0 A or B on Table 1. For every pollutant listed, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	3. OUTFALL(S)	4. ANALYTICAL RESULTS (INCLUDE UNITS)
Total Petroleum Hydrocarbon	Petroleum Impacted Soil	001	

3.1 Whole Effluent Toxicity Testing

A. To your knowledge, have any Whole Effluent Toxicity (WET) tests been performed on the facility discharges (or on receiving waters in relation to your discharge) within the last three years?

☑ Yes (go to 3.1 B) ☐ No (go to 3.2)

3.1 B

Disclose wet testing conditions, including test duration (chronic or acute), the organisms tested, and the testing results. Provide any results of toxicity identification evaluations (TIE) or toxicity reduction evaluations (TRE) if applicable. Please indicate the conclusions of the test(s) including any pollutants identified as causing toxicity and steps the facility is taking to remedy the toxicity.

ANNUAL WET TEST IS A 24-HOUR COMPOSITE SAMPLE. TEST DURATION IS ACUTE.

3.2 CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported herein, above, or on Table 1 performed by a contract laboratory or consulting firm?

☑ Yes (list the name, address, telephone number, and pollutants analyzed by each laboratory or firm.) ☐ No *(go to 4.0)*

A. LAB NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list or group)*
ENVIRONMENTAL ANALYSIS SOUTH	4000 E. JACKSON BLVD. JACKSON, MO	573-204-8817	WET TEST
TEKLAB	5445 HORSESHOE LAKE RD. COLLINSVILL	618-344-1004	BTEX, TPH, pH, COD, O&G, LEAD, MTBE, SS, TSS

4.0 STORMWATER

4.1
Do you have industrial stormwater discharges from the site? If so, attach a site map outlining drainage areas served by each outfall. Indicate the following attributes within each drainage area: pavement or other impervious surfaces; buildings; outdoor storage areas; material loading and unloading areas; outdoor industrial activities; structural stormwater control measures; hazardous waste treatment, storage, and disposal units; and wells or springs in the area.

OUTFALL NUMBER	TOTAL AREA DRAINED (PROVIDE UNITS)	TYPES OF SURFACES (VEGETATED, STONE , PAVED, ETC)	BEST MANAGEMENT PRACTICES EMPLOYED; INCLUDE STRUCTURAL BMPS AND TREATMENT DESIGN FLOW FOR BMPS DESCRIBE HOW FLOW IS MEASURED

4.2 STORMWATER FLOWS
Provide the date of sampling with the flows, and how the flows were estimated.

SIGNATORY REQUIREMENTS

5.0 CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
STEVE HICKS, PE CHIEF OPERATING OFFICER	573-785-9621
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
Steve Hicks	4-28-2020

SEE INSTRUCTIONS; PLEASE PRINT OR TYPE.
You may report some or all of this information on separate sheet *(use similar format)* instead of completing these pages.

FORM C TABLE 1 FOR 3.0 - ITEMS A AND B

EFFLUENT (AND INTAKE) CHARACTERISTICS THIS OUTFALL IS: OUTFALL NO. 001

3.0 PART A – You must provide the results of at least one analysis for every pollutant in Part A. Complete one table for each outfall or proposed outfall. See instructions.

1. POLLUTANT	2. VALUES							3. UNITS *(specify if blank)*	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUES		C. LONG TERM AVERAGE VALUES		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)									
B. Chemical Oxygen Demand (COD)								mg/L	
C. Total Organic Carbon (TOC)									
D. Total Suspended Solids (TSS)								mg/L	
E. Ammonia as N									
F. Flow	VALUE 0.06		VALUE 0.12		VALUE 0.06			MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°F	
I. pH	MINIMUM		MAXIMUM		AVERAGE 7.5			STANDARD UNITS (SU)	

3.0 PART B – Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark Column 2A for any pollutant, you must provide the results for at least one analysis for the pollutant. Complete one table for each outfall (intake). Provide results for additional parameters not listed here in Part 3.0 C.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUES		C. LONG TERM AVERAGE VALUES		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)		X	MINIMUM		MINIMUM		MINIMUM				
B. Bromide (24959-67-9)		X									
C. Chloride (16887-00-6)		X									
D. Chlorine, Total Residual		X									
E. Color											
F. Conductivity											
F. Cyanide, Amenable to Chlorination		X									

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants (Continued)											
G. *E. coli*		X									
H. Fluoride (16984-48-8)		X									
I. Nitrate plus Nitrate *(as N)*		X									
J. Kjeldahl, Total (as N)		X									
K. Nitrogen, Total Organic *(as N)*		X									
L. Oil and Grease		X								mg/L	
M. Phenols, Total		X									
N. Phosphorus *(as P)*, Total (7723-14-0)		X									
O. Sulfate *(as SO^4)* (14808-79-8)		X									
P. Sulfide *(as S)*		X									
Q. Sulfite (as SO^3) (14265-45-3)		X									
R. Surfactants		X									
S. Trihalomethanes, Total		X									
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)		X									
2M. Antimony, Total Recoverable (7440-36-9)		X									
3M. Arsenic, Total Recoverable (7440-38-2)		X									
4M. Barium, Total Recoverable (7440-39-3)		X									
5M. Beryllium, Total Recoverable (7440-41-7)		X									
6M. Boron, Total Recoverable (7440-42-8)		X									
7M. Cadmium, Total Recoverable (7440-43-9)		X									
8M. Chromium III Total Recoverable (16065-83-1)		X									
9M. Chromium VI, Dissolved (18540-29-9)		X									
10M. Cobalt, Total Recoverable (7440-48-4)		X									

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)		X									
12M. Iron, Total Recoverable (7439-89-6)		X									
13M. Lead, Total Recoverable (7439-92-1)		X									
14M. Magnesium, Total Recoverable (7439-95-4)		X									
15M. Manganese, Total Recoverable (7439-96-5)		X									
16M. Mercury, Total Recoverable (7439-97-6)		X									
17M. Methylmercury (22967926)		X									
18M. Molybdenum, Total Recoverable (7439-98-7)		X									
19M. Nickel, Total Recoverable (7440-02-0)		X									
20M. Selenium, Total Recoverable (7782-49-2)		X									
21M. Silver, Total Recoverable (7440-22-4)		X									
22M. Thallium, Total Recoverable (7440-28-0)		X									
23M. Tin, Total Recoverable (7440-31-5)		X									
24M. Titanium, Total Recoverable (7440-32-6)		X									
25M. Zinc, Total Recoverable (7440-66-6)		X									
Subpart 3 – Radioactivity											
1R. Alpha Total		X									
2R. Beta Total		X									
3R. Radium Total		X									
4R. Radium 226 plus 228 Total		X									

March 25, 2020

Mike Walker
Smith & Company Engineers
901 Vine Street
Poplar Bluff, MO 63901
TEL: (573) 785-9621
FAX: (573) 785-2651

RE: Landfarm

WorkOrder: 20031136

Dear Mike Walker:

TEKLAB, INC received 2 samples on 3/18/2020 9:09:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Client: Smith & Company Engineers
Work Order: 20031136
Client Project: Landfarm
Report Date: 25-Mar-2020

This reporting package includes the following:

Client: Smith & Company Engineers | **Work Order:** 20031136

Client Project: Landfarm | **Report Date:** 25-Mar-2020

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit	E - Value above quantitation range
H - Holding times exceeded	I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

Cooler Receipt Temp: 1.2 °C

Locations

Collinsville

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	jhriley@teklabinc.com

Springfield

Address	3920 Pintail Dr Springfield, IL 62711-9415
Phone	(217) 698-1004
Fax	(217) 698-1005
Email	KKlostermann@teklabinc.com

Kansas City

Address	8421 Nieman Road Lenexa, KS 66214
Phone	(913) 541-1998
Fax	(913) 541-1998
Email	jhriley@teklabinc.com

Collinsville Air

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	EHurley@teklabinc.com

Chicago

Address	1319 Butterfield Rd. Downers Grove, IL 60515
Phone	(630) 324-6855
Fax	
Email	arenner@teklabinc.com

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	4/10/2020	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2020	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2020	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2020	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2020	Collinsville
Arkansas	ADEQ	88-0966		3/14/2021	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		3/3/2020	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Client: Smith & Company Engineers
Work Order: 20031136
Client Project: Landfarm
Report Date: 25-Mar-2020
Lab ID: 20031136-001
Client Sample ID: Eff031720
Matrix: GROUNDWATER
Collection Date: 03/17/2020 13:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 1664A								
Hexane Extractable Material	NELAP	5		< 5	mg/L	1	03/24/2020 15:58	R274541
EPA 600 410.4								
Chemical Oxygen Demand	NELAP	50		< 50	mg/L	1	03/19/2020 14:41	R274368
STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		7.86		1	03/18/2020 14:34	R274317
STANDARD METHODS 2540 D 1997								
Total Suspended Solids	NELAP	6		7	mg/L	1	03/20/2020 15:24	R274437
STANDARD METHODS 2540 F 1997								
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	03/19/2020 9:13	R274396
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Lead	NELAP	0.0075		< 0.0075	mg/L	1	03/19/2020 21:33	163299
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		ND	mg/L	1	03/19/2020 14:47	163296
TPH-ORO (C21 - C35)	*	2.80		ND	mg/L	1	03/23/2020 21:38	163421
Surr: 2-Fluorobiphenyl	*	10-178		68.2	%REC	1	03/19/2020 14:47	163296
Surr: Nitrobenzene-d5	*	10-231		72.8	%REC	1	03/19/2020 14:47	163296
Surr: p-Terphenyl-d14	*	10-220		114.3	%REC	1	03/19/2020 14:47	163296
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
1,2-Dichloroethane	NELAP	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
Benzene	NELAP	0.0005		ND	mg/L	1	03/18/2020 14:43	163335
Diisopropyl ether	*	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
Ethylbenzene	NELAP	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
Ethyl-tert-butyl ether	*	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
Methyl tert-butyl ether	NELAP	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
Naphthalene	NELAP	0.0030		ND	mg/L	1	03/18/2020 14:43	163335
tert-Amyl methyl ether	*	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
tert-Butyl alcohol	NELAP	0.0100		ND	mg/L	1	03/18/2020 14:43	163335
Toluene	NELAP	0.0020		ND	mg/L	1	03/18/2020 14:43	163335
TPH - GRO (C6 - C10)	*	0.500		ND	mg/L	1	03/18/2020 14:43	163335
Xylenes, Total	NELAP	0.0040		ND	mg/L	1	03/18/2020 14:43	163335
Surr: 1,2-Dichloroethane-d4	*	80.9-113		98.7	%REC	1	03/18/2020 14:43	163335
Surr: 4-Bromofluorobenzene	*	88.3-109		96.7	%REC	1	03/18/2020 14:43	163335
Surr: Toluene-d8	*	86.1-110		98.5	%REC	1	03/18/2020 14:43	163335

Client: Smith & Company Engineers
Work Order: 20031136
Client Project: Landfarm
Report Date: 25-Mar-2020
Lab ID: 20031136-002
Client Sample ID: S1
Matrix: GROUNDWATER
Collection Date: 03/17/2020 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	03/19/2020 15:25	163296
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	03/23/2020 22:16	163421
Surr: 2-Fluorobiphenyl	*	10-178		**71.1**	%REC	1	03/19/2020 15:25	163296
Surr: Nitrobenzene-d5	*	10-231		**78.7**	%REC	1	03/19/2020 15:25	163296
Surr: p-Terphenyl-d14	*	10-220		**113.8**	%REC	1	03/19/2020 15:25	163296
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
Benzene	NELAP	0.0005		**ND**	mg/L	1	03/18/2020 15:10	163335
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	03/18/2020 15:10	163335
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	03/18/2020 15:10	163335
Toluene	NELAP	0.0020		**ND**	mg/L	1	03/18/2020 15:10	163335
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	03/18/2020 15:10	163335
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	03/18/2020 15:10	163335
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**96.9**	%REC	1	03/18/2020 15:10	163335
Surr: 4-Bromofluorobenzene	*	88.3-109		**98.2**	%REC	1	03/18/2020 15:10	163335
Surr: Toluene-d8	*	86.1-110		**96.9**	%REC	1	03/18/2020 15:10	163335

Client: Smith & Company Engineers

Client Project: Landfarm

Work Order: 20031136

Report Date: 25-Mar-2020

EPA 1664A

Batch R274541 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hexane Extractable Material	5		< 5	2.560	0	0	-100	100	03/24/2020

Batch R274541 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hexane Extractable Material	5		34	40.00	0	86.2	78	114	03/24/2020

Batch R274541 **SampType:** LCSD Units **mg/L** RPD Limit **18**
SampID: LCSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Hexane Extractable Material	5		37	40.00	0	91.5	34.50	5.91	03/24/2020

EPA 600 410.4

Batch R274368 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	50		< 50	17.00	0	0	-100	100	03/19/2020

Batch R274368 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	50		137	133.0	0	103.0	90	110	03/19/2020

Batch R274368 **SampType:** MS Units **mg/L**
SampID: 20031044-007EMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		1200	1000	195.2	100.5	90	110	03/19/2020

Batch R274368 **SampType:** MSD Units **mg/L** RPD Limit **10**
SampID: 20031044-007EMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		1210	1000	195.2	101.5	1201	0.77	03/19/2020

Batch R274368 **SampType:** MS Units **mg/L**
SampID: 20031136-001FMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		1060	1000	20.53	103.6	90	110	03/19/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

EPA 600 410.4

Batch R274368 **SampType:** MSD Units mg/L RPD Limit 10

SampID: 20031136-001FMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1060**	1000	20.53	104.0	1056	0.44	03/19/2020

Batch R274368 **SampType:** MS Units mg/L

SampID: 20031195-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chemical Oxygen Demand	100		**1170**	1000	146.3	102.6	90	110	03/19/2020

Batch R274368 **SampType:** MSD Units mg/L RPD Limit 10

SampID: 20031195-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chemical Oxygen Demand	100		**1140**	1000	146.3	99.8	1173	2.41	03/19/2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** LCS Units

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH	1.00		**6.97**	7.000	0	99.6	99.1	100.8	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031136-001CDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.85**				7.860	0.13	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031044-012ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.82**				7.770	0.64	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031044-013ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.97**				7.950	0.25	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031044-014ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.45**				7.460	0.13	03/18/2020

Client: Smith & Company Engineers

Client Project: Landfarm

Work Order: 20031136

Report Date: 25-Mar-2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-015ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.80**				7.780	0.26	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-016ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.00**				7.990	0.13	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-017ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.47**				8.450	0.24	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-018ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.77**				7.750	0.26	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-019ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.79**				7.770	0.26	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-020ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.47**				8.410	0.71	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-021ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**9.01**				8.970	0.44	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031044-022ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.24**				8.210	0.36	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031087-002BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**3.20**				3.190	0.31	03/18/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031094-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.83**				7.770	0.77	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031094-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.51**				7.510	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031141-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.12**				8.100	0.25	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031141-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.01**				7.990	0.25	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031141-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.08**				8.080	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031142-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.54**				7.540	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031142-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.45**				7.520	0.94	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031142-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.47**				7.470	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031145-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**11.5**				11.49	0.26	03/18/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031145-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**6.95**				6.970	0.29	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031145-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.19**				7.180	0.14	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031145-004ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.10**				7.050	0.71	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-001BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.08**				8.060	0.25	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-002BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.14**				8.140	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-003BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.14**				8.140	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-004BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.88**				7.870	0.13	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-005BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.77**				7.790	0.26	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**

SampID: 20031147-006BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.92**				7.900	0.25	03/18/2020

Client: Smith & Company Engineers

Client Project: Landfarm

Work Order: 20031136

Report Date: 25-Mar-2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031153-002BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**6.84**				6.780	0.88	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031175-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.18**				7.160	0.28	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031187-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**2.83**				2.860	1.05	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031187-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**6.55**				6.550	0.00	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031188-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**5.86**				5.880	0.34	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031188-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.02**				7.000	0.29	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031188-005ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.00**				6.970	0.43	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031194-001BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**8.03**				8.020	0.12	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit **10**
SampID: 20031195-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		**7.74**				7.750	0.13	03/18/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031214-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		6.60				6.590	0.15	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031214-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		6.46				6.490	0.46	03/18/2020

Batch R274317 **SampType:** DUP Units RPD Limit 10

SampID: 20031216-002BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		8.05				8.030	0.25	03/18/2020

STANDARD METHODS 2540 D 1997

Batch R274437 **SampType:** MBLK Units mg/L

SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		< 6	4.000	0	0	-100	100	03/20/2020
Total Suspended Solids	6		< 6	4.000	0	0	-100	100	03/20/2020
Total Suspended Solids	6		< 6	4.000	0	0	-100	100	03/20/2020
Total Suspended Solids	6		< 6	4.000	0	0	-100	100	03/20/2020

Batch R274437 **SampType:** LCS Units mg/L

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		90	100.0	0	90.0	85	115	03/20/2020

Batch R274437 **SampType:** LCSQC Units mg/L

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		85	100.0	0	85.0	85	115	03/20/2020
Total Suspended Solids	6		89	100.0	0	89.0	85	115	03/20/2020
Total Suspended Solids	6		87	100.0	0	87.0	85	115	03/20/2020

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20030999-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		< 6				8.000	0.00	03/20/2020

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20031003-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		20				21.00	4.88	03/20/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

STANDARD METHODS 2540 D 1997

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20031025-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6	R	**37**				33.00	11.43	03/20/2020

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20031047-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		**< 6**				0	0.00	03/20/2020

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20031068-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		**18**				18.00	0.00	03/20/2020

Batch R274437 **SampType:** DUP Units mg/L RPD Limit 5

SampID: 20031128-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		**< 6**				0	0.00	03/20/2020

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 163299 **SampType:** MBLK Units mg/L

SampID: MBLK-163299

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**< 0.0150**	0.001400	0	0	-100	100	03/19/2020

Batch 163299 **SampType:** LCS Units mg/L

SampID: LCS-163299

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**0.536**	0.5000	0	107.3	85	115	03/19/2020

Batch 163299 **SampType:** LCSD Units mg/L RPD Limit 20

SampID: LCSD-163299

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	0.0150		**0.536**	0.5000	0	107.2	0.5364	0.06	03/19/2020

Batch 163299 **SampType:** MS Units mg/L

SampID: 20031130-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.0150		**0.530**	0.5000	0	106.0	75	125	03/19/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 163299 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 20031130-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	0.0150		**0.526**	0.5000	0	105.2	0.5301	0.76	03/19/2020

SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163296 **SampType:** MBLK Units **mg/L**

SampID: MBLK-163296

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**ND**						03/18/2020
TPH-ORO (C21 - C35)	0.700		**ND**						03/18/2020
Surr: 2-Fluorobiphenyl			**0.0165**	0.01250		132.2	10	175	03/18/2020
Surr: Nitrobenzene-d5			**0.0150**	0.01250		119.7	10	202	03/18/2020
Surr: p-Terphenyl-d14			**0.0217**	0.01250		173.5	10	201	03/18/2020

Batch 163296 **SampType:** LCS Units **%REC**

SampID: LCS-163296

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0148**	0.01250		118.6	10	175	03/18/2020
Surr: Nitrobenzene-d5			**0.0130**	0.01250		104.2	10	202	03/18/2020
Surr: p-Terphenyl-d14			**0.0196**	0.01250		156.9	10	201	03/18/2020

Batch 163296 **SampType:** LCSD Units **%REC** RPD Limit **0**

SampID: LCSD-163296

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0166**	0.01250		133.1			03/18/2020
Surr: Nitrobenzene-d5			**0.0148**	0.01250		118.6			03/18/2020
Surr: p-Terphenyl-d14			**0.0205**	0.01250		164.0			03/18/2020

Batch 163296 **SampType:** LCSG Units **mg/L**

SampID: LCSG-163296-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.49**	2.000	0	124.4	50	175	03/18/2020
Surr: 2-Fluorobiphenyl			**0.0140**	0.01250		111.7	10	175	03/18/2020
Surr: Nitrobenzene-d5			**0.0122**	0.01250		97.8	10	202	03/18/2020
Surr: p-Terphenyl-d14			**0.0192**	0.01250		153.8	10	201	03/18/2020

Batch 163296 **SampType:** LCSGD Units **mg/L** RPD Limit **40**

SampID: LCSGD-163296-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.27**	2.000	0	113.5	2.488	9.12	03/19/2020
Surr: 2-Fluorobiphenyl			**0.0119**	0.01250		95.2			03/19/2020
Surr: Nitrobenzene-d5			**0.0106**	0.01250		85.2			03/19/2020
Surr: p-Terphenyl-d14			**0.0175**	0.01250		139.8			03/19/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163296 **SampType:** MS Units **mg/L**

SampID: 20030844-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	2.00		**8.94**	8.000	0	111.7	50	175	03/19/2020
Surr: 2-Fluorobiphenyl			**0.0405**	0.05000		81.0	10	178	03/19/2020
Surr: Nitrobenzene-d5			**0.0429**	0.05000		85.9	10	231	03/19/2020
Surr: p-Terphenyl-d14			**0.0664**	0.05000		132.8	10	220	03/19/2020

Batch 163296 **SampType:** MSD Units **mg/L** RPD Limit **40**

SampID: 20030844-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH-DRO (C10 - C21)	2.00		**9.11**	8.000	0	113.9	8.936	1.97	03/18/2020
Surr: 2-Fluorobiphenyl			**0.0390**	0.05000		77.9			03/18/2020
Surr: Nitrobenzene-d5			**0.0359**	0.05000		71.9			03/18/2020
Surr: p-Terphenyl-d14			**0.0588**	0.05000		117.6			03/18/2020

Batch 163421 **SampType:** MBLK Units **mg/L**

SampID: MBLK-163421

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**ND**						03/23/2020
TPH-ORO (C21 - C35)	0.700		**ND**						03/23/2020
Surr: 2-Fluorobiphenyl			**0.0139**	0.01250		111.5	10	175	03/23/2020
Surr: Nitrobenzene-d5			**0.0134**	0.01250		106.9	10	202	03/23/2020
Surr: p-Terphenyl-d14			**0.0214**	0.01250		171.0	10	201	03/23/2020

Batch 163421 **SampType:** LCS Units **%REC**

SampID: LCS-163421

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0138**	0.01250		110.7	10	175	03/23/2020
Surr: Nitrobenzene-d5			**0.0117**	0.01250		93.8	10	202	03/23/2020
Surr: p-Terphenyl-d14			**0.0200**	0.01250		159.9	10	201	03/23/2020

Batch 163421 **SampType:** LCSD Units **%REC** RPD Limit **0**

SampID: LCSD-163421

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0139**	0.01250		111.1			03/23/2020
Surr: Nitrobenzene-d5			**0.0125**	0.01250		99.9			03/23/2020
Surr: p-Terphenyl-d14			**0.0201**	0.01250		160.8			03/23/2020

Batch 163421 **SampType:** LCSG Units **mg/L**

SampID: LCSG-163421-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.53**	2.000	0	126.5	50	175	03/23/2020
Surr: 2-Fluorobiphenyl			**0.0129**	0.01250		103.5	10	175	03/23/2020
Surr: Nitrobenzene-d5			**0.0106**	0.01250		85.2	10	202	03/23/2020
Surr: p-Terphenyl-d14			**0.0203**	0.01250		162.7	10	201	03/23/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163421 **SampType:** LCSGD Units mg/L RPD Limit 40

SampID: LCSGD-163421

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.36**	2.000	0	117.8	2.530	7.12	03/23/2020
Surr: 2-Fluorobiphenyl			**0.0127**	0.01250		101.3			03/23/2020
Surr: Nitrobenzene-d5			**0.0115**	0.01250		92.2			03/23/2020
Surr: p-Terphenyl-d14			**0.0199**	0.01250		159.5			03/23/2020

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163335 **SampType:** MBLK Units mg/L

SampID: MBLK-N200318A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2-Dibromoethane	0.0020		**ND**						03/18/2020
1,2-Dichloroethane	0.0020		**ND**						03/18/2020
Benzene	0.0005		**ND**						03/18/2020
Diisopropyl ether	0.0020		**ND**						03/18/2020
Ethylbenzene	0.0020		**ND**						03/18/2020
Ethyl-tert-butyl ether	0.0020		**ND**						03/18/2020
Methyl tert-butyl ether	0.0020		**ND**						03/18/2020
Naphthalene	0.0050		**ND**						03/18/2020
tert-Amyl methyl ether	0.0020		**ND**						03/18/2020
tert-Butyl alcohol	0.0100		**ND**						03/18/2020
Toluene	0.0020		**ND**						03/18/2020
Xylenes, Total	0.0040		**ND**						03/18/2020
TPH - GRO (C6 - C10)	0.500		**ND**						03/18/2020
Surr: 1,2-Dichloroethane-d4			**47.7**	50.00		95.3	80.9	113	03/18/2020
Surr: 4-Bromofluorobenzene			**47.6**	50.00		95.3	88.3	109	03/18/2020
Surr: Toluene-d8			**48.7**	50.00		97.4	86.1	110	03/18/2020

Batch 163335 **SampType:** LCSD Units mg/L RPD Limit 14

SampID: LCSD-N200318A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2-Dibromoethane	0.0020		**0.0490**	0.0500	0	98.0	0.0496	1.08	03/18/2020
1,2-Dichloroethane	0.0020		**0.0486**	0.0500	0	97.2	0.0485	0.21	03/18/2020
Benzene	0.0005		**0.0497**	0.0500	0	99.4	0.0504	1.40	03/18/2020
Diisopropyl ether	0.0020		**0.0507**	0.0500	0	101.3	0.0509	0.43	03/18/2020
Ethylbenzene	0.0020		**0.0483**	0.0500	0	96.7	0.0499	3.10	03/18/2020
Ethyl-tert-butyl ether	0.0020		**0.0496**	0.0500	0	99.1	0.0491	0.83	03/18/2020
Methyl tert-butyl ether	0.0020		**0.0499**	0.0500	0	99.7	0.0496	0.44	03/18/2020
Naphthalene	0.0050		**0.0493**	0.0500	0	98.5	0.0495	0.55	03/18/2020
tert-Amyl methyl ether	0.0020		**0.0505**	0.0500	0	101.1	0.0504	0.20	03/18/2020
tert-Butyl alcohol	0.0100		**0.240**	0.250	0	96.0	0.232	3.23	03/18/2020
Toluene	0.0020		**0.0482**	0.0500	0	96.3	0.0494	2.52	03/18/2020
Xylenes, Total	0.0040		**0.143**	0.150	0	95.3	0.148	3.65	03/18/2020
Surr: 1,2-Dichloroethane-d4			**47.6**	50.00		95.1			03/18/2020
Surr: 4-Bromofluorobenzene			**47.8**	50.00		95.6			03/18/2020
Surr: Toluene-d8			**49.4**	50.00		98.9			03/18/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163335 **SampType:** LCS Units **mg/L**

SampID: LCS-N200318A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2-Dibromoethane	0.0020		**0.0496**	0.0500	0	99.1	83.6	110	03/18/2020
1,2-Dichloroethane	0.0020		**0.0485**	0.0500	0	97.0	72.3	117	03/18/2020
Benzene	0.0005		**0.0504**	0.0500	0	100.8	78.5	119	03/18/2020
Diisopropyl ether	0.0020		**0.0509**	0.0500	0	101.8	72	128	03/18/2020
Ethylbenzene	0.0020		**0.0499**	0.0500	0	99.7	78.2	114	03/18/2020
Ethyl-tert-butyl ether	0.0020		**0.0491**	0.0500	0	98.3	74.6	124	03/18/2020
Methyl tert-butyl ether	0.0020		**0.0496**	0.0500	0	99.3	80.3	122	03/18/2020
Naphthalene	0.0050		**0.0495**	0.0500	0	99.1	75.6	121	03/18/2020
tert-Amyl methyl ether	0.0020		**0.0504**	0.0500	0	100.9	80.8	125	03/18/2020
tert-Butyl alcohol	0.0100		**0.232**	0.250	0	92.9	64.9	118	03/18/2020
Toluene	0.0020		**0.0494**	0.0500	0	98.8	78.6	112	03/18/2020
Xylenes, Total	0.0040		**0.148**	0.150	0	98.9	78.3	114	03/18/2020
Surr: 1,2-Dichloroethane-d4			**47.6**	50.00		95.2	80.9	113	03/18/2020
Surr: 4-Bromofluorobenzene			**47.9**	50.00		95.9	88.3	109	03/18/2020
Surr: Toluene-d8			**50.1**	50.00		100.2	86.1	110	03/18/2020

Batch 163335 **SampType:** LCSGD Units **mg/L** RPD Limit **20**

SampID: LCSGD-N200318A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH - GRO (C6 - C10)	0.500		**1.76**	2.00	0	88.1	1.83	3.84	03/18/2020
Surr: 1,2-Dichloroethane-d4			**47.9**	50.00		95.8			03/18/2020
Surr: 4-Bromofluorobenzene			**47.7**	50.00		95.4			03/18/2020
Surr: Toluene-d8			**49.0**	50.00		98.1			03/18/2020

Batch 163335 **SampType:** LCSG Units **mg/L**

SampID: LCSG-N200318A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH - GRO (C6 - C10)	0.500		**1.83**	2.00	0	91.6	70	130	03/18/2020
Surr: 1,2-Dichloroethane-d4			**47.5**	50.00		95.1	80.9	113	03/18/2020
Surr: 4-Bromofluorobenzene			**47.6**	50.00		95.2	88.3	109	03/18/2020
Surr: Toluene-d8			**49.9**	50.00		99.8	86.1	110	03/18/2020

Batch 163335 **SampType:** MS Units **mg/L**

SampID: 20031096-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.0100		**1.48**	1.00	0.474	100.4	72	120	03/18/2020
Ethylbenzene	0.0400		**1.01**	1.00	0.0350	97.4	74.8	115	03/18/2020
Toluene	0.0400		**0.913**	1.00	0.0098	90.3	70.6	109	03/18/2020
Xylenes, Total	0.0800		**1.89**	2.00	0.0330	92.7	72.1	113	03/18/2020
Surr: 1,2-Dichloroethane-d4			**952**	1000		95.2	80.9	113	03/18/2020
Surr: 4-Bromofluorobenzene			**973**	1000		97.3	88.3	109	03/18/2020
Surr: Toluene-d8			**968**	1000		96.8	86.1	110	03/18/2020

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 163335 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 20031096-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene	0.0100		**1.41**	1.00	0.474	93.6	1.48	4.72	03/18/2020
Ethylbenzene	0.0400		**1.01**	1.00	0.0350	97.9	1.01	0.49	03/18/2020
Toluene	0.0400		**0.914**	1.00	0.0098	90.5	0.913	0.13	03/18/2020
Xylenes, Total	0.0800		**1.92**	2.00	0.0330	94.5	1.89	1.87	03/18/2020
Surr: 1,2-Dichloroethane-d4			**930**	1000		93.0			03/18/2020
Surr: 4-Bromofluorobenzene			**978**	1000		97.8			03/18/2020
Surr: Toluene-d8			**970**	1000		97.0			03/18/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Smith & Company Engineers

Work Order: 20031136

Client Project: Landfarm

Report Date: 25-Mar-2020

Carrier: FedEx

Received By: AMD

Completed by: Amanda R. Ham
On: 18-Mar-2020

Reviewed by: Elizabeth A. Hurley
On: 18-Mar-2020

Pages to follow: Chain of custody [1] Extra pages included [0]

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C **1.2**
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

Custody seal intact on shipping container/cooler. - aham - 3/18/2020 9:41:21 AM

CHAIN OF CUSTODY

pg. 1 of 1 Work order #L0031136

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Smith & Company Engineers
Address:	901 Vine Street
City / State / Zip	Poplar Bluff, MO 63901
Contact:	Mike Walker
Phone:	(573) 785-9621
E-Mail:	mikew@shsmitheo.com
Fax:	

Samples on: ~~ICE~~ BLUE ICE NO ICE 1.2 °C 2TG3

Preserved in: LAB ~~FIELD~~ MH 3/18/20

FOR LAB USE ONLY

Lab Notes: Custody seal intact. MH 3/18/20 — pH MH 3/18/20

Client Comments: MO2BCA 8260/8270 6010-lead S.S. <24hrs

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

Project Name/Number	Sample Collector's Name
Landfarm	Heather Slayton

Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: 8260	8270	6010-lead	pH	S.S.	T.S.S.	C.O.D.	O&G
2003113601	Eff031720	3/17 1:00pm	3	1		2				2						x	x	x	x	x	x	x	x	x
-002	S1	3/17 1:30pm	1							2						x	x	x							

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3/17/2020 3:00pm	[signature] FedEx	3/18/20 909

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 54021

MH 3/18/20

Teklab, Inc.
Environmental Laboratory

RECEIVED
JUN 12 2020
Water Protection Program

http://www.teklabinc.com/

January 13, 2020

Mike Walker
Smith & Company Engineers
901 Vine Street
Poplar Bluff, MO 63901
TEL: (573) 785-9621
FAX: (573) 785-2651

RE: Landfarm P070112

WorkOrder: 20010330

Dear Mike Walker:

TEKLAB, INC received 6 samples on 1/8/2020 8:24:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Client: Smith & Company Engineers

Client Project: Landfarm P070112

Work Order: 20010330

Report Date: 13-Jan-2020

This reporting package includes the following:

Client: Smith & Company Engineers

Work Order: 20010330

Client Project: Landfarm P070112

Report Date: 13-Jan-2020

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit	E - Value above quantitation range
H - Holding times exceeded	I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Client: Smith & Company Engineers

Client Project: Landfarm P070112

Work Order: 20010330

Report Date: 13-Jan-2020

Cooler Receipt Temp: 2.6 °C

Locations

Collinsville

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	jhriley@teklabinc.com

Collinsville Air

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	EHurley@teklabinc.com

Springfield

Address	3920 Pintail Dr Springfield, IL 62711-9415
Phone	(217) 698-1004
Fax	(217) 698-1005
Email	KKlostermann@teklabinc.com

Chicago

Address	1319 Butterfield Rd. Downers Grove, IL 60515
Phone	(630) 324-6855
Fax	
Email	arenner@teklabinc.com

Kansas City

Address	8421 Nieman Road Lenexa, KS 66214
Phone	(913) 541-1998
Fax	(913) 541-1998
Email	jhriley@teklabinc.com

Client: Smith & Company Engineers

Work Order: 20010330

Client Project: Landfarm P070112

Report Date: 13-Jan-2020

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2020	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2020	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2020	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2020	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2020	Collinsville
Arkansas	ADEQ	88-0966		3/14/2020	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Indiana	ISDH	C-IL-06		1/31/2020	Collinsville
Kentucky	UST	0073		1/31/2020	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville
Tennessee	TDEC	04905		1/31/2020	Collinsville

Client: Smith & Company Engineers
Work Order: 20010330
Client Project: Landfarm P070112
Report Date: 13-Jan-2020
Lab ID: 20010330-001
Client Sample ID: OF002
Matrix: GROUNDWATER
Collection Date: 01/07/2020 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 18:33	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 18:33	161035
Surr: 2-Fluorobiphenyl	*	10-178		**62.8**	%REC	1	01/10/2020 18:33	161035
Surr: Nitrobenzene-d5	*	10-231		**87.7**	%REC	1	01/10/2020 18:33	161035
Surr: p-Terphenyl-d14	*	10-220		**75.0**	%REC	1	01/10/2020 18:33	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 15:44	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 15:44	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 15:44	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 15:44	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 15:44	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 15:44	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**110.0**	%REC	1	01/08/2020 15:44	160980
Surr: 4-Bromofluorobenzene	*	88.3-109		**103.3**	%REC	1	01/08/2020 15:44	160980
Surr: Toluene-d8	*	86.1-110		**98.2**	%REC	1	01/08/2020 15:44	160980

Client: Smith & Company Engineers
Work Order: 20010330
Client Project: Landfarm P070112
Report Date: 13-Jan-2020
Lab ID: 20010330-002
Client Sample ID: OF003
Matrix: GROUNDWATER
Collection Date: 01/07/2020 10:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 19:11	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 19:11	161035
Surr: 2-Fluorobiphenyl	*	10-178		**75.3**	%REC	1	01/10/2020 19:11	161035
Surr: Nitrobenzene-d5	*	10-231		**80.8**	%REC	1	01/10/2020 19:11	161035
Surr: p-Terphenyl-d14	*	10-220		**124.9**	%REC	1	01/10/2020 19:11	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 16:12	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 16:12	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 16:12	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:12	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 16:12	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 16:12	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**108.7**	%REC	1	01/08/2020 16:12	160980
Surr: 4-Bromofluorobenzene	*	88.3-109		**104.0**	%REC	1	01/08/2020 16:12	160980
Surr: Toluene-d8	*	86.1-110		**100.5**	%REC	1	01/08/2020 16:12	160980

Client: Smith & Company Engineers
Work Order: 20010330
Client Project: Landfarm P070112
Report Date: 13-Jan-2020
Lab ID: 20010330-003
Client Sample ID: OF004
Matrix: GROUNDWATER
Collection Date: 01/07/2020 11:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 19:50	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 19:50	161035
Surr: 2-Fluorobiphenyl	*	10-178		**65.0**	%REC	1	01/10/2020 19:50	161035
Surr: Nitrobenzene-d5	*	10-231		**84.3**	%REC	1	01/10/2020 19:50	161035
Surr: p-Terphenyl-d14	*	10-220		**78.6**	%REC	1	01/10/2020 19:50	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 16:39	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 16:39	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 16:39	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 16:39	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 16:39	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 16:39	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**104.6**	%REC	1	01/08/2020 16:39	160980
Surr: 4-Bromofluorobenzene	*	88.3-109		**104.8**	%REC	1	01/08/2020 16:39	160980
Surr: Toluene-d8	*	86.1-110		**100.1**	%REC	1	01/08/2020 16:39	160980

Client: Smith & Company Engineers | **Work Order:** 20010330

Client Project: Landfarm P070112 | **Report Date:** 13-Jan-2020

Lab ID: 20010330-004 | **Client Sample ID:** OF005

Matrix: GROUNDWATER | **Collection Date:** 01/07/2020 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 20:28	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 20:28	161035
Surr: 2-Fluorobiphenyl	*	10-178		**73.4**	%REC	1	01/10/2020 20:28	161035
Surr: Nitrobenzene-d5	*	10-231		**83.7**	%REC	1	01/10/2020 20:28	161035
Surr: p-Terphenyl-d14	*	10-220		**55.5**	%REC	1	01/10/2020 20:28	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 17:07	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 17:07	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 17:07	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:07	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 17:07	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 17:07	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**107.5**	%REC	1	01/08/2020 17:07	160980
Surr: 4-Bromofluorobenzene	*	88.3-109	S	**109.4**	%REC	1	01/08/2020 17:07	160980
Surr: Toluene-d8	*	86.1-110		**101.9**	%REC	1	01/08/2020 17:07	160980
Surrogate recovery is outside control limits due to matrix interference.								

Client: Smith & Company Engineers
Work Order: 20010330
Client Project: Landfarm P070112
Report Date: 13-Jan-2020
Lab ID: 20010330-005
Client Sample ID: OF006
Matrix: GROUNDWATER
Collection Date: 01/07/2020 9:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 21:07	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 21:07	161035
Surr: 2-Fluorobiphenyl	*	10-178		**71.6**	%REC	1	01/10/2020 21:07	161035
Surr: Nitrobenzene-d5	*	10-231		**91.2**	%REC	1	01/10/2020 21:07	161035
Surr: p-Terphenyl-d14	*	10-220		**90.5**	%REC	1	01/10/2020 21:07	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 17:34	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 17:34	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 17:34	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 17:34	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 17:34	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 17:34	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**107.6**	%REC	1	01/08/2020 17:34	160980
Surr: 4-Bromofluorobenzene	*	88.3-109		**105.2**	%REC	1	01/08/2020 17:34	160980
Surr: Toluene-d8	*	86.1-110		**99.9**	%REC	1	01/08/2020 17:34	160980

Client: Smith & Company Engineers
Work Order: 20010330
Client Project: Landfarm P070112
Report Date: 13-Jan-2020
Lab ID: 20010330-006
Client Sample ID: OF007
Matrix: GROUNDWATER
Collection Date: 01/07/2020 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)	*	2.00		**ND**	mg/L	1	01/10/2020 21:45	161035
TPH-ORO (C21 - C35)	*	2.80		**ND**	mg/L	1	01/10/2020 21:45	161035
Surr: 2-Fluorobiphenyl	*	10-178		**74.8**	%REC	1	01/10/2020 21:45	161035
Surr: Nitrobenzene-d5	*	10-231		**86.1**	%REC	1	01/10/2020 21:45	161035
Surr: p-Terphenyl-d14	*	10-220		**100.5**	%REC	1	01/10/2020 21:45	161035
Elevated reporting limit due to sample composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2-Dibromoethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
1,2-Dichloroethane	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
Benzene	NELAP	0.0005		**ND**	mg/L	1	01/08/2020 18:01	160980
Diisopropyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
Ethylbenzene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
Ethyl-tert-butyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
Methyl tert-butyl ether	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
Naphthalene	NELAP	0.0030		**ND**	mg/L	1	01/08/2020 18:01	160980
tert-Amyl methyl ether	*	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
tert-Butyl alcohol	NELAP	0.0100		**ND**	mg/L	1	01/08/2020 18:01	160980
Toluene	NELAP	0.0020		**ND**	mg/L	1	01/08/2020 18:01	160980
TPH - GRO (C6 - C10)	*	0.500		**ND**	mg/L	1	01/08/2020 18:01	160980
Xylenes, Total	NELAP	0.0040		**ND**	mg/L	1	01/08/2020 18:01	160980
Surr: 1,2-Dichloroethane-d4	*	80.9-113		**112.7**	%REC	1	01/08/2020 18:01	160980
Surr: 4-Bromofluorobenzene	*	88.3-109		**103.5**	%REC	1	01/08/2020 18:01	160980
Surr: Toluene-d8	*	86.1-110		**99.1**	%REC	1	01/08/2020 18:01	160980

Client: Smith & Company Engineers

Work Order: 20010330

Client Project: Landfarm P070112

Report Date: 13-Jan-2020

SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 161035 **SampType: MBLK** Units **mg/L**

SampID: MBLK-161035

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**ND**						01/10/2020
TPH-ORO (C21 - C35)	0.700		**ND**						01/10/2020
Surr: 2-Fluorobiphenyl			**0.00983**	0.01250		78.6	10	175	01/10/2020
Surr: Nitrobenzene-d5			**0.0126**	0.01250		100.7	10	202	01/10/2020
Surr: p-Terphenyl-d14			**0.0165**	0.01250		131.8	10	201	01/10/2020

Batch 161035 **SampType: LCS** Units **%REC**

SampID: LCS-161035

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0108**	0.01250		86.5	10	175	01/10/2020
Surr: Nitrobenzene-d5			**0.0126**	0.01250		100.7	10	202	01/10/2020
Surr: p-Terphenyl-d14			**0.0154**	0.01250		122.8	10	201	01/10/2020

Batch 161035 **SampType: LCSD** Units **%REC** RPD Limit **0**

SampID: LCSD-161035

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.0107**	0.01250		86.0			01/10/2020
Surr: Nitrobenzene-d5			**0.0123**	0.01250		98.6			01/10/2020
Surr: p-Terphenyl-d14			**0.0144**	0.01250		115.1			01/10/2020

Batch 161035 **SampType: LCSG** Units **mg/L**

SampID: LCSG-161035

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.32**	2.000	0	116.2	50	175	01/10/2020
Surr: 2-Fluorobiphenyl			**0.0117**	0.01250		93.3	10	175	01/10/2020
Surr: Nitrobenzene-d5			**0.0131**	0.01250		104.9	10	202	01/10/2020
Surr: p-Terphenyl-d14			**0.0168**	0.01250		134.4	10	201	01/10/2020

Batch 161035 **SampType: LCSGD** Units **mg/L** RPD Limit **40**

SampID: LCSGD-161035

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH-DRO (C10 - C21)	0.500		**2.21**	2.000	0	110.7	2.324	4.85	01/10/2020
Surr: 2-Fluorobiphenyl			**0.0109**	0.01250		86.9			01/10/2020
Surr: Nitrobenzene-d5			**0.0120**	0.01250		96.4			01/10/2020
Surr: p-Terphenyl-d14			**0.0150**	0.01250		120.1			01/10/2020

Client: Smith & Company Engineers

Work Order: 20010330

Client Project: Landfarm P070112

Report Date: 13-Jan-2020

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 160980 **SampType:** MBLK Units mg/L

SampID: MBLK-N200108A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2-Dibromoethane	0.0020		ND						01/08/2020
1,2-Dichloroethane	0.0020		ND						01/08/2020
Benzene	0.0005		ND						01/08/2020
Diisopropyl ether	0.0020		ND						01/08/2020
Ethylbenzene	0.0020		ND						01/08/2020
Ethyl-tert-butyl ether	0.0020		ND						01/08/2020
Methyl tert-butyl ether	0.0020		ND						01/08/2020
Naphthalene	0.0050		ND						01/08/2020
tert-Amyl methyl ether	0.0020		ND						01/08/2020
tert-Butyl alcohol	0.0100		ND						01/08/2020
Toluene	0.0020		ND						01/08/2020
Xylenes, Total	0.0040		ND						01/08/2020
TPH - GRO (C6 - C10)	0.500		ND						01/08/2020
Surr: 1,2-Dichloroethane-d4			52.0	50.00		104.0	80.9	113	01/08/2020
Surr: 4-Bromofluorobenzene			51.5	50.00		103.1	88.3	109	01/08/2020
Surr: Toluene-d8			51.0	50.00		101.9	86.1	110	01/08/2020

Batch 160980 **SampType:** LCSD Units mg/L RPD Limit 14

SampID: LCSD-N200108A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2-Dibromoethane	0.0020		0.0470	0.0500	0	93.9	0.0440	6.64	01/08/2020
1,2-Dichloroethane	0.0020		0.0449	0.0500	0	89.8	0.0428	4.72	01/08/2020
Benzene	0.0005		0.0424	0.0500	0	84.8	0.0414	2.27	01/08/2020
Diisopropyl ether	0.0020		0.0451	0.0500	0	90.1	0.0445	1.21	01/08/2020
Ethylbenzene	0.0020		0.0460	0.0500	0	92.1	0.0432	6.25	01/08/2020
Ethyl-tert-butyl ether	0.0020		0.0436	0.0500	0	87.2	0.0430	1.27	01/08/2020
Methyl tert-butyl ether	0.0020		0.0429	0.0500	0	85.8	0.0431	0.37	01/08/2020
Naphthalene	0.0050		0.0499	0.0500	0	99.7	0.0464	7.30	01/08/2020
tert-Amyl methyl ether	0.0020		0.0454	0.0500	0	90.8	0.0437	3.86	01/08/2020
tert-Butyl alcohol	0.0100		0.222	0.250	0	88.8	0.234	5.39	01/08/2020
Toluene	0.0020		0.0439	0.0500	0	87.9	0.0409	7.22	01/08/2020
Xylenes, Total	0.0040		0.136	0.150	0	90.5	0.128	5.85	01/08/2020
Surr: 1,2-Dichloroethane-d4			49.3	50.00		98.5			01/08/2020
Surr: 4-Bromofluorobenzene			49.3	50.00		98.5			01/08/2020
Surr: Toluene-d8			50.2	50.00		100.4			01/08/2020

Client: Smith & Company Engineers

Work Order: 20010330

Client Project: Landfarm P070112

Report Date: 13-Jan-2020

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 160980 **SampType:** LCS Units **mg/L**

SampID: LCS-N200108A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2-Dibromoethane	0.0020		**0.0440**	0.0500	0	87.9	83.6	110	01/08/2020
1,2-Dichloroethane	0.0020		**0.0428**	0.0500	0	85.6	72.3	117	01/08/2020
Benzene	0.0005		**0.0414**	0.0500	0	82.9	78.5	119	01/08/2020
Diisopropyl ether	0.0020		**0.0445**	0.0500	0	89.0	72	128	01/08/2020
Ethylbenzene	0.0020		**0.0432**	0.0500	0	86.5	78.2	114	01/08/2020
Ethyl-tert-butyl ether	0.0020		**0.0430**	0.0500	0	86.1	74.6	124	01/08/2020
Methyl tert-butyl ether	0.0020		**0.0431**	0.0500	0	86.2	80.3	122	01/08/2020
Naphthalene	0.0050		**0.0464**	0.0500	0	92.7	75.6	121	01/08/2020
tert-Amyl methyl ether	0.0020		**0.0437**	0.0500	0	87.4	80.8	125	01/08/2020
tert-Butyl alcohol	0.0100		**0.234**	0.250	0	93.7	64.9	118	01/08/2020
Toluene	0.0020		**0.0409**	0.0500	0	81.7	78.6	112	01/08/2020
Xylenes, Total	0.0040		**0.128**	0.150	0	85.4	78.3	114	01/08/2020
Surr: 1,2-Dichloroethane-d4			**50.9**	50.00		101.7	80.9	113	01/08/2020
Surr: 4-Bromofluorobenzene			**49.8**	50.00		99.7	88.3	109	01/08/2020
Surr: Toluene-d8			**50.3**	50.00		100.5	86.1	110	01/08/2020

Batch 160980 **SampType:** LCSGD Units **mg/L** RPD Limit **20**

SampID: LCSGD-N200108A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH - GRO (C6 - C10)	0.500		**2.30**	2.00	0	114.8	2.39	3.96	01/08/2020
Surr: 1,2-Dichloroethane-d4			**51.3**	50.00		102.6			01/08/2020
Surr: 4-Bromofluorobenzene			**50.5**	50.00		101.1			01/08/2020
Surr: Toluene-d8			**51.1**	50.00		102.2			01/08/2020

Batch 160980 **SampType:** LCSG Units **mg/L**

SampID: LCSG-N200108A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH - GRO (C6 - C10)	0.500		**2.39**	2.00	0	119.4	70	130	01/08/2020
Surr: 1,2-Dichloroethane-d4			**51.5**	50.00		102.9	80.9	113	01/08/2020
Surr: 4-Bromofluorobenzene			**53.0**	50.00		106.0	88.3	109	01/08/2020
Surr: Toluene-d8			**49.4**	50.00		98.9	86.1	110	01/08/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Smith & Company Engineers
Client Project: Landfarm P070112

Work Order: 20010330
Report Date: 13-Jan-2020

Carrier: FedEx

Received By: KMT

Completed by: Amber M. Dilallo
On: 08-Jan-2020

Reviewed by: Elizabeth A. Hurley
On: 08-Jan-2020

Pages to follow: Chain of custody [1] Extra pages included [0]

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C **2.6**
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. - ktaylor - 1/8/2020 9:09:33 AM

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 20010330

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Smith & Company Engineers
Address:	901 Vine Street
City / State / Zip	Poplar Bluff, MO 63901
Contact:	Mike Walke Shsm theosm **Phone:** (573) 785-9621
E-Mail:	Mikewalke **Fax:** (573) 785 5201

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Samples on: ☒ ICE ☒ BLUE ICE ☐ NO ICE 2.6 °C LTC3

Preserved in: ☒ LAB ☒ FIELD

FOR LAB USE ONLY

Lab Notes ⓟ MS VM 1/8/20

custody seal intact on cooler VM 1/8/20

Client Comments:

MO RCBA Limits

Project Name/Number	Sample Collector's Name
Landfarm P070112	Felipe DeLeon

Results Requested

☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Container: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: 8260	8270
20010330 001	OF002	1/7/2020 10:30	1							2						X	X	X
002	OF003	10:55	1							2						X	X	X
003	OF004	11:20	1							2						X	X	X
004	OF005	10:40	1							2						X	X	X
005	OF006	9:55	1							2						X	X	X
006	OF007	9:35	1							2						X	X	X

Relinquished By	Date/Time	Received By	Date/Time
	1/7/2020 3:05	FedEx	1/8/20 0824

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 54021

VM 1/8

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

RECEIVED
JUN 12 2020
Water Protection Program

REPORT OF ACUTE TOXICITY TESTING
Smith & Company Landfarm
Outfall 001 (24 hr composite) AEC = 100%
MO-0132837
EAS LOG# 2314019
April 10, 2019 through April 12, 2019

Tests performed by:
John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

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REPORT OF ACUTE TOXICITY TESTING
Smith & Company Landfarm
Outfall 001 (24 hr composite) AEC = 100%
MO-0132837
EAS LOG# 2314019
April 10, 2019 through April 12, 2019

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
TUa	<1.0	<1.0
Result of Toxicity Test	Monitor Only	Monitor Only

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 >100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa<1.0

Ceriodaphnia dubia 48 hour WET results: LC 50 >100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa<1.0

Approved by _____
Sara C. Shields, Chemist

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Smith & Company Landfarm
Outfall 001 (24 hr composite) AEC = 100%
MO-0132837
EAS LOG# 2314019
April 10, 2019 through April 12, 2019

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	Ceriodaphnia dubia:	*Pimephales promelas:*
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from Environmental Enterprises USA Inc. located in Slidell, Louisiana and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.
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REPORT OF ACUTE TOXICITY TESTING
Smith & Company Landfarm
Outfall 001 (24 hr composite) AEC = 100%
MO-0132837
EAS LOG# 2314019
April 10, 2019 through April 12, 2019

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on April 3, 2019 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.140 g/l 95%CI (0.813-1.467 g/l)
EAS %CV = 14.4%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – LC_{50} = 0.385 g/l 95%CI (0.195-0.574 g/l)
EAS %CV = 24.7%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2).* June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME:	Smith & Company Landfarm, Outfall 001, 24 hr composite
NPDES NUMBER:	MO-0132837
TYPE OF METHOD:	multiple dilution, 48 hrs, PP & CD, AEC=100%, Tua report
DATE & TIME OF COLLECTION:	04/09/19 0930 hrs - 04/10/19 0930 hrs by Heather Slayton
DATE & TIME OF SUBMISSION:	04/10/19 1040 hrs by Heather Slayton

Upstream: S1 Creek
Collected: 04/10/19 0800 hrs by Tom Williamson

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
LOG NUMBER / ID NUMBER						2314019	2314019A	RC4226
pH - SU	04/10/19	1050 hrs	SCS	SB114 (8.8-9.2)	8.86	8.53	8.43	8.41
TEMPERATURE °C RECEIVED	04/10/19	1050 hrs	SCS	EAS 106		6	6	20
SPECIFIC CONDUCTANCE umhos	04/10/19	1050 hrs	SCS	ERA P255-506 (437-490)	479	241	136	246
HARDNESS - ppm	04/11/19	1400 hrs	SCS	P257-507 (194-228)	195	122	72.8	60
CHLORINE - ppm	04/10/19	1050 hrs	SCS	A6298 (0.82 - 1.02)	0.91	<0.04	<0.04	<0.04
DISSOLVED OXYGEN - ppm	04/10/19	1050 hrs	SCS	cal@840		11.1	8.6	8.9
TOTAL ALKALINITY - ppm	04/11/19	1500 hrs	SCS	P272-506 (40.3-48.1)	46.8	91.6	65.6	62.8
INITIAL AMMONIA - ppm	04/11/19	1100 hrs	JPC	DMRQA38 (4.16-6.59)	5.34	<0.02	<0.02	<0.02
TOTAL DISSOLVED SOLIDS -ppm								

0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	04/10/19	1100 hrs	SCS	SB114 (8.8-9.2)	8.86	7.63	7.76	8.13	7.64	7.64	7.59	7.62	
TEMPERATURE °C	04/10/19	1100 hrs	SCS	EAS 106		23.6	23.9	23.9	23.6	23.5	23.5	23.8	
SPECIFIC CONDUCTANCE umhos	04/10/19	1100 hrs	SCS	ERA P255-506 (437-490)	479	269	152	274	218	175	153	148	
DISSOLVED OXYGEN - ppm	04/10/19	1100 hrs	SCS	cal@840		9.0	9.1	11.2	10.0	9.8	9.8	9.4	

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	04/11/19	1100 hrs	SCS	SB114 (8.8-9.2)	8.86	7.86	8.15	8.04	8.03	8.00	8.05	8.09	
TEMPERATURE °C	04/11/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	04/11/19	1100 hrs	SCS	ERA P255-506 (437-490)	476	260	152	284	226	182	163	157	
DISSOLVED OXYGEN - ppm	04/11/19	1100 hrs	SCS	cal@840		8	7.8	7.6	7.7	7..7	7.7	7.8	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	04/12/19	1100 hrs	SCS	SB114 (8.8-9.2)	8.87	8.12	8.31	8.17	8.11	8.11	8.17	8.24	
TEMPERATURE °C	04/12/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	04/12/19	1100 hrs	SCS	ERA P255-506 (437-490)	477	261	171	285	232	184	166	161	
DISSOLVED OXYGEN - ppm	04/12/19	1100 hrs	SCS	cal@840		8.4	7.9	7.9	7.9	8.0	8.0	8.0	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	04/11/19	1100 hrs	SCS	SB114 (8.8-9.2)	8.86	8.23	8.02	8.12	7.99	7.96	7.97	8.01	
TEMPERATURE °C	04/11/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	04/11/19	1100 hrs	SCS	ERA P255-506 (437-490)	476	251	137	276	222	179	160	151	
DISSOLVED OXYGEN - ppm	04/11/19	1100 hrs	SCS	cal@840		9.1	8.4	8.4	8.6	8.8	8.6	8.3	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	04/12/19	1100 hrs	SCS	SB114 (8.8-9.2)	8.87	8.15	8.25	8.07	7.99	8.01	8.05	8.12	
TEMPERATURE °C	04/12/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	04/12/19	1100 hrs	SCS	ERA P255-506 (437-490)	477	260	157	282	224	182	162	156	
DISSOLVED OXYGEN - ppm	04/12/19	1100 hrs	SCS	cal@840		7.9	8.6	8.5	8.5	8.5	8.5	8.6	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

Approved by: [signature]

Date: 04/15/19

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Smith & Company Landfarm, Outfall 001, 24 hr composite **EAS LOG# 2314019**

Date Test Began:	April 10, 2019	**Time Test Began:**	1100 hrs	**Analyst 1:**	DFW
Date Test Finished:	April 12, 2019	**Time Test Finished:**	1100 hrs	**Analyst 2:**	KJR
				Analyst 3:	SCS

P. promelas (PP) **AGE:** 3 days **HATCH NUMBER:** 04092019EEU

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	

Ceriodaphnia dubia (CD) **AGE:** <24 hours **HATCH NUMBER:** 04092019EEU

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	

Approved by: [signature] Date: 04/15/19

Smith & Company Landfarm, Outfall 001, 24 hr composite EAS#: 2314019

Notes & Comments

Prepared by: 

Date: 04/15/19

Multiple 1003 Transport

150566

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY

CLIENT: Smith & Co. Landfarm

NPDES PERMIT NUMBER: MO- 0132837

EFFLUENT NAME: Eff041019 GRAB ☐ 24 HR COMPOSITE ☐
(LEGAL NAME)

COLLECTION DATA: START DATE: 4/9/19 START TIME: 9:30 am

FINISH DATE: 4/10/19 FINISH TIME: 9:30 am

UPSTREAM NAME: S1 (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: 4/10/19 TIME: 9:45 am

SAMPLER NAME: Heather Slayton CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $100 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

NO HEADSPACE IN BOTTLES ☐
SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON ___/___/___ ☐
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP ☐
SUFFICIENT **ICE** TO COOL SAMPLES TO A RANGE OF 0 - 6° C WHEN SHIPPING OVERNIGHT ☐

RELINQUISHED BY: Heather Slayton DATE: 4/10/19 TIME: 10:40 am

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 231401 9

RECEIVED TEMPERATURE: 6 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: 231401 9 A

RECEIVED TEMPERATURE: 6 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: [signature] DATE: 4/10/19 TIME: 1040

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WHOLE EFFLUENT TOXICITY TESTS

RETURN FORM TO: **Southeast Regional Office**
2155 N. Westwood Blvd. Poplar Bluff, MO 63901

Facility Name	Smith & Company Landfarm	**Receiving Water**	S1 Creek
Permit Number	MO-0132837	**Laboratory Name**	Environmental Analysis South, Inc.
Outfall	001	**Laboratory Report #**	MO_2314019

SAMPLE INFORMATION

Sample Number	Sample Collection				Sample Temperature (°C)		pH (SU)	Hand delivered? (If yes, ≤ 4 hrs?	Hold Time ≤ 36 hours?	Sample Acceptable
	Effluent or Upstream	Sample Type	Beginning Date	End Date	At Collection	At Lab	At Lab			
1	2314019	Effl/comp	04/09/19	04/10/19		6	8.53	■ Y ☐ N	■ Y ☐ N	■ Y ☐ N
2	2314019A	Up/grab	04/10/19	04/10/19		6	8.43	■ Y ☐ N	■ Y ☐ N	■ Y ☐ N
3								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
4								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N

Describe any unusual conditions during sampling that might influence test results

TEST INFORMATION - ACUTE

Test Method:	*C. dubia* 2002.0		*P. promelas* 2000.0	
Date Test Initiated:	04/10/2019			
AEC/IWC Info:	AEC = 100%			
Dilution Series	100%	50%	25%	12.5%
	6.25%			
Dilution Water:	*C. dubia*	RW ■	LW ☐	
	P. promelas	RW ■	LW ☐	
	RW = Receiving Stream Control		LW = Lab Water Control	

Comments:

QA/QC CONDITIONS - ACUTE

	YES	NO
Did test conditions meet all test acceptability criterion required by the specified method?	✓	
Temperatures maintained during test (20 ± 1°C)		✓
Temperatures maintained during test (25 ± 1°C)	✓	
Dissolved oxygen ≥ 4.0 mg/L throughout test?	✓	
Effluent pH maintained within 6.0 - 9.0 SU throughout test?	✓	
Concurrent or monthly reference tests within acceptable limits?	✓	
Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment)		✓

Comments:

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

Sample Type	Sample Number	Conductivity (µmhos)	Unionized Ammonia	Hardness	Alkalinity	pH (SU) After Warming	Total Residual Chlorine	Other	Other	Other
Upstream	2314019A	136	<0.010	72.8	65.6	7.76	<0.04	DO=8.6		
Effluent	2314019	241	<0.010	122	91.6	8.13	<0.04	DO=11.1		
Lab Water	RC4226	246	<0.010	60	62.8	7.63	<0.04	DO=8.9		

Comments:

TU_a limit = Monitoring only.

Pimephales promelas Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a=	<1.0
Ceriodaphnia dubia Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a=	<1.0

Receiving Water Controls				Lab Water Controls			
Fathead Minnow		*Ceriodophnia dubia*		Fathead Minnow		*Ceriodaphnia dubia*	
Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N

Comments:

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010	DATE	PHONE NUMBER
		573-204-8817

Version 1.0

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM C – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS

All blanks must be filled in when the application is submitted to the appropriate Regional Office (see map). The form **must be signed** as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility it is possible to discharge from even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility - By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

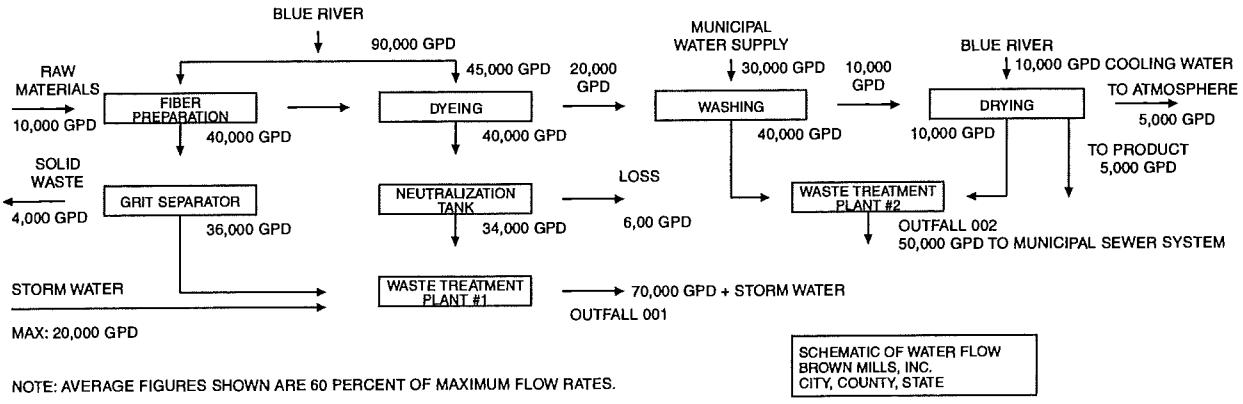
SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional Office in your area (see map).

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located by the Missouri Clean Water Commission staff.

2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

2.30 Self-explanatory.

2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or a "distillation tower"). You may estimate the flow contributed by each source if no data is available, and for storm water, you may use any reasonable measure of duration, volume or frequency. For each treatment unit, indicate its size, flow rate and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table A to fill in column 3B for each treatment unit. Insert "XX" into column 3B if no code corresponds to a treatment unit you list.

TABLE A – CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A ..... Ammonia Stripping	1-M ..... Grit Removal
1-B ..... Dialysis	1-N ..... Microstraining
1-C ..... Diatomaceous Earth Filtration	1-O ..... Mixing
1-D ..... Distillation	1-P ..... Moving Bed Filters
1-E ..... Electrodialysis	1-Q ..... Multimedia Filtration
1-F ..... Evaporation	1-R ..... Rapid Sand Filtration
1-G ..... Flocculation	1-S ..... Reverse Osmosis (Hyperfiltration)
1-H ..... Flotation	1-T ..... Screening
1-I ..... Foam Fractionation	1-U ..... Sedimentation (Settling)
1-J ..... Freezing	1-V ..... Slow Sand Filtration
1-K ..... Gas-Phase Separation	1-W ..... Solvent Extraction
1-L ..... Grinding (Comminutors)	1-X ..... Sorption

CHEMICAL TREATMENT PROCESSES

2-A ..... Carbon Absorption	2-G ..... Disinfection (Ozone)
2-B ..... Chemical Oxidation	2-H ..... Disinfection (Other)
2-C ..... Chemical Precipitation	2-I ..... Electrochemical Treatment
2-D ..... Coagulation	2-J ..... Ion Exchange
2-E ..... Dechlorination	2-K ..... Neutralization
2-F ..... Disinfection (Chlorine)	2-L ..... Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A ..... Activated Sludge	3-E ..... Pre-Aeration
3-B ..... Aerated Lagoons	3-F ..... Spray Irrigation/Land Application
3-C ..... Anaerobic Treatment	3-G ..... Stabilization Ponds
3-D ..... Nitrification-Denitrification	3-H ..... Trickling Filtration

OTHER PROCESSES

4-A ..... Discharge to Surface Water	4-C ..... Reuse/Recycle of Treated Effluent
4-B ..... Ocean Discharge Through Outfall	4-D ..... Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A ..... Aerobic Digestion	5-M ..... Heat Drying
5-B ..... Anaerobic Digestion	5-N ..... Heat Treatment
5-C ..... Belt Filtration	5-O ..... Incineration
5-D ..... Centrifugation	5-P ..... Land Application
5-E ..... Chemical Conditioning	5-Q ..... Landfill
5-F ..... Chlorine Treatment	5-R ..... Pressure Filtration
5-G ..... Composting	5-S ..... Pyrolysis
5-H ..... Drying Beds	5-T ..... Sludge Lagoons
5-I ..... Elutriation	5-U ..... Vacuum Filtration
5-J ..... Flotation Thickening	5-V ..... Vibration
5-K ..... Freezing	5-W ..... Wet Oxidation
5-L ..... Gravity Thickening	

CONCENTRATION

ppm ..... parts per million
mg/1 ..... milligrams per liter
ppb. ..... parts per billion
µg/1 ..... micrograms per liter

MASS

lbs ..... pounds
ton ..... tons (English tons)
mg ..... milligrams
g ..... grams
kg ..... kilograms
T ..... tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "number of analyses" columns (columns 2A and 2B, Part A, and columns 3A and 3D, Part B). The Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2C, Part A, and column 3C, Part B), and the total number of daily values under the "Number of Analyses" columns (column 2D, Part A, and column 3D, Part B). Also, determine the average of all daily values taken during each calendar month, and report the highest average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Values" columns (column 2B, Part A, and column 3B, Part B).

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLE. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

TABLE B – (continued)

HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Carbaryl	Isoprene	2,4,5-T (2,4,5-Trichloro-phenoxyacetic acid)
Carbofuran	Isopropanolamine	TDE (Tetrachlorodiphenyl ethane)
Carbon disulfide	Kelthane	2,4,5-TP (2-(2,4,5-Trichloro-phenoxy) propanoic acid)
Chlorpyrifos	Kepone	Trichlorofon
Coumaphos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	Triethylamine
Crotonaldehyde	Methoxychlor	Trimethylamine
Cyclohexane	Methyl mercaptan	Uranium
2,4-D (2,4-Dichloro-phenoxyacetic acid)	Methl methacrylate	Vanadium
Diazinon	Methyl parathion	Vinyl acetate
Dicamba	Mevinphos	Xylene
Dichlobenil	Mexacarbate	Xylenol
2,2-Dichloropropionic acid	Monethyl amine	Zirconium
	Monomethyl amine	

3.10 Self-explanatory. Additional information may be requested by the Missouri Department of Natural Resources.

3.20 Self-explanatory.

3.30 The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application . . . shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

All applications must be signed as follows and the signature must be original:

A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.

B. For a partnership or sole proprietorship, by a general partner or the proprietor.

C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

Stormwater Pollution Prevention Plans (SWPPP)-Best Management Practices (BMPs)

RECEIVED
JUN 12 2020
Water Protection Program

Smith and Company Landfarm

Missouri State Operating Permit No. MO-0132837

A. BACKGROUND

1 Location

The site is located on County Road 236 in Advance, Stoddard County, Missouri, approximately 13 miles northwest of the City of Bloomfield, Missouri. Smith and Co.'s office is located at 901 Vine St., Poplar Bluff, Missouri, 63901. The company's phone number is 573-785-9621.

2 Site Description

The site is an approximately 10-acre facility surrounded by agricultural grounds. The site is gently sloping to the west. There is an intermittent, unnamed creek that flows southward to Wolf Creek along the western side of the site. The site has two manmade basins. The largest is the holding and treatment cell for petroleum impacted soils. The treatment cell is bermed and lined with a 30-mil PVC liner. The second basin is the 8,500 square foot retention cell that accumulates any surface stormwater runoff from the treatment cell. The berm is lined with a 20-mil PVC liner. The outfall pipe from the detention cell is valved. The valve remains closed until the water accumulated in the retention cell has been tested and determined safe for release in accordance with within the Final Effluent Limitations and Monitoring Requirements of the Operating Permit. The site is accessed by a graveled drive from County Road 236 to the treatment cell. There are no permanent areas for equipment fueling or maintenance on the site.

3 Site Contact Information

The following individuals are responsible for environmental and maintenance issues for the site:

	Position	Name	Primary Contact Number	Emergency Contact Number
Primary	Environmental Department Manger	Mike Walker	573-785-9621	573-718-0038
Alternate	Asst. Environmental Department Manger	Heather Slayton	573-785-9621	573-718-4753

4 Potential Pollution Sources and BMPs

Soil Remediation Activities: The sites treatment activities have the potential to have sediment and debris impacting stormwater coming from the exposed soil surfaces. Initial settlement occurs in the treatment cell before stormwater flows into the retention basin. Stormwater accumulations in the retention cell are not released until laboratory testing shows that the water is within the Final Effluent Limitations and Monitoring Requirements of the Operating Permit.

The table below lists other potential contaminants to stormwater runoff from the site:

Pollutant Source	BMPs
Application of fertilizers, pesticides, and herbicides	Observe all applicable Federal, State, and local regulations when using these products.
	Strictly follow recommended application rates and methods (i.e., do not apply in excess of vegetative requirements).
	Have materials such as absorbent pads easily accessible to clean up spills
	Inspect and maintain all containers used to prevent leaking.
	Train employees for proper application and spill prevention.
	Remove storage containers from the site after the completion of application operations.
Soil tracking on wheels and exterior of trucks or other equipment	Inspect wheels and exterior of trucks or other equipment as necessary to minimize soil tracking. Scape or brush off soils prior to leaving the site.
	Grade the drive to remove potholes and ruts.
	Replenish aggregate as needed to maintain the surface.
Erosion from stockpiled soils awaiting treatment	Place stockpiles soil on 12-mil or greater plastic.
	Cover soil stockpiles with 12-mil or greater plastic. Anchor or secure the plastic cover.
	Inspect cover within two days of severe weather. Repair any damages to the cover.
Erosion from soils removed from the treatment cell	Place and grade soils in even lifts, grading to limit surface erosion or rutting.
	Construct temporary stormwater erosion measures. (See Temporary Measures below)
	Seed the soil surface with lawn or orchard grass at the rate recommended by the supplier
	Mulch the soil surface with vegetative mulch at the rate of 750 pounds per acre.
	Repair seeded and mulched surfaces until vegetative cover is established.
Equipment fueling and maintenance	Utilized approved fuel containers and fuel transfer equipment.
	Use drip pans under fueling hoses during fueling operations.
	Do not top off the fuel tanks in the receiving equipment.
	Maintain absorbent materials and/or pads to wipe up minor spills or drips.

5 Inspections

The site shall be visually on a bi-weekly basis (i.e. every two weeks). Note the effectiveness and the condition of BMPs especially and temporary BMPs. If any damages are discovered, the must be documented in the Notes section of the Landfarm Biweekly Inspection Record along with photographs. Repair any damages within seven (7) days. Include comments of repairs made and photographs with the Landfarm Biweekly Inspection Record documenting the damage.

Maintain the inspection reports with the Standard Operating Procedures manual located at the Smith & Co. office. These reports shall be maintained for a minimum of 5 years and be made available to regulatory agencies upon request.

6 Training

All new employees of Smith & Co.'s Environmental Department shall review this document within 30 days of starting employment and document that they understand it's provisions. Training certification documents shall be maintained with the Standard Operating Procedures manual located at the Smith & Co. office.

B. TEMPORARY MEASURES

The Owner shall refer to the MDNR Operating Permit, the construction plans and specifications, as well as the information listed below for all Stormwater Best Management Practices. The temporary practices explained below are to be utilized for all exposed soils (unvegetated) soils on the site.

BMP's

1. Silt fence
2. Inlet Protection
3. Retention Basin
4. Entrance
5. Check Dam

1. SILT FENCE

PHYSICAL DESCRIPTION - Silt fences are used as temporary perimeter controls, appropriate to the BMP, at sites where operating activities will disturb the soil. They can also be used on the interior of the site. A silt fence consists of a length of filter fabric stretched between anchoring posts spaced at regular intervals along the site at low and down slope areas. The filter fabric should be entrenched in the ground. When installed correctly and inspected frequently, silt fence can be an effective barrier to silt leaving the site in storm water runoff.

WHERE BMP IS TO BE INSTALLED - Silt fences apply to sites with relatively small drainage areas. They are to be installed on the downstream slopes of soils that are stockpiled for treatment. Theses soils are to be placed upon and covered waterproof plastic sheets or tarps. They are appropriate in areas where runoff will occur as low-level flow, not exceeding 0.5 cfs. The drainage area for silt fences should not exceed 0.25 acre per 100-foot fence length (100 square feet per foot of fence). The slope length above the fence should not exceed 100 feet (NAHB, 1995). The fence should be designed to withstand the runoff from a 10-year peak storm event.

CONDITIONS FOR EFFECTIVE USE OF BMP - Spacing of parallel lengths of silt fence along slopes is relative to slope steepness as follows:

Type of Flow: Sheet flow only.
Contributing Slope Length: 30 foot maximum for 3:1 slopes.
50 foot maximum for slopes between 3:1 and 10:1.
100 foot maximum for slopes under 10%.

WHEN BMP IS TO BE INSTALLED - Prior to disturbance of natural vegetation and at intervals during construction of fill slopes. Install on the perimeter of the site (where storm water exits the site) prior to disturbance of natural vegetation, around material stock piles and interior to the site along slopes, at the base of slopes, at intervals during construction of slopes, and along any fill ares until a vegative cover is established.

INSTALLATION / CONSTRUCTION PROCEDURES

Drive post for fence line.
Dig trench to required dimensions in front of posts for fabric burial.
Attach wire mesh to posts.
Attach fabric to posts, allowing required length below ground level to run fabric along bottom of Trench.
Backfill and compact soil in trench to protect and anchor fabric.

If a standard-strength fabric is used, it can be reinforced with wire mesh behind the filter fabric. This increases the effective life of the fence. The maximum life expectancy for synthetic fabric silt fences is about 6 months, depending on the amount of rainfall and runoff.

The stakes used to anchor the filter fabric should be wood or metal. Wooden stakes should have minimum dimensions of 2 by 2 inches if a hardwood like oak is used. Stakes from soft woods like No. 2 Southern Pine, should have minimum dimensions of 4 by 4 inches. When using steel (standard U, T, L or C shape sections) posts in place of wooden stakes, they should weigh no less than 1.33 lb/linear foot. If metal posts are used, attachment points are needed for fastening the filter fabric with wire ties. Posts should be least 5 feet long and driven or placed at a slight upstream angle into the ground to a minimum depth of 18 inches. Depth shall be increased to a minimum of 22 inches if fence is placed on a slope of 3:1 or greater. When the post embedment depth is impossible to obtain, the posts shall be adequately secured to prevent overturning of the fence due to sediment loading.

Erect silt fence in a continuous fashion from a single roll of fabric to eliminate gaps in the fence. If a continuous roll of fabric is not available, overlap the fabric from both directions only at stakes or posts. Overlap at least 6 inches.

The Geosynthetic filter fabric and wire mesh (when applicable) shall be no less than 30 inches above ground and are stapled or wired to the upslope side of the post. Staples should be a 17-gauge wire and ½ inch long. Excavate a trench to bury the bottom of the fabric fence in a "J" configuration at least 6 inches below the ground surface. The trench shall be backfilled with native soil and the soil compacted over the geotextile. This helps to prevent gaps from forming near the ground surface. Gaps would make the fencing useless as a sediment barrier.

The height of the fence posts should be 38 (22-inch embedment) to 42 (18-inch embedment) inches above the original ground surface. If standard-strength fabric is used with 14-gauge steel wire with a mesh spacing of 6 inches by 6 inches (or a prefabricated polymeric mesh of equivalent strength), space the posts no more than 4 feet apart. If extra-strength fabric is used without wire mesh reinforcement, space the posts no more than 4 feet apart with woven or 6 feet apart with non-woven geosynthetic.

MAINTENANCE CONSIDERATIONS - Inspect silt fences regularly and frequently, as well as after each rainfall event, to make sure that they are intact and that there are no gaps where the fence meets the ground or tears along the length of the fence. If you find gaps or tears, repair or replace the fabric immediately. Remove accumulated sediments from the fence base when the sediment reaches one third to one-half the fence height. Remove sediment more frequently if accumulated sediment is creating noticeable strain on the fabric and the fence might fail from a sudden storm event. When you remove the silt fence, remove the accumulated sediment, dress the area disturbed to give it a pleasing appearance and vegetate all bare areas as well.

O&M PROCEDURES
Inspect after every storm and whenever activity is occurring on site.
Remove sediment buildup deeper than ½ the fence height or 12", whichever is less.
Replace torn of clogged fabric; repair loose fabric.
Repair unstable or broken posts.
Stabilize any areas susceptible to undermining.
Fill any undermined areas.
Extend fence or add additional row(s) of fence if necessary, to provide adequate protection.

2. INLET PROTECTION -

BLOCK & GRAVEL, GRAVEL BAGS, AND FIBER ROLLS

PHYSICAL DESCRIPTION - A temporary sediment control barrier consisting of a short concrete block wall supporting gravel filter media or gravel bags or fiber rolls around a storm water inlet designed to prevent sediment from entering the storm sewer. Shallow temporary ponding during and after rainfall should be expected. Use an alternate method if flooding of driving lanes, adjacent property, etc. is possible.

WHERE BMP IS TO BE INSTALLED - At inlets where heavy flows are expected, and an overflow capacity is necessary to prevent excessive ponding around the structure.

CONDITIONS FOR EFFECTIVE USE OF BMP
Type of Flow: Sheet flow and concentrated flow
Contributing Area: Maximum of 1 acre
WHEN BMP IS TO BE INSTALLED - Immediately after placement of inlet and before construction starts on existing inlets.

INSTALLATION / CONSTRUCTION PROCEDURES
Backfill, compact and uniformly grade area around inlet.
Install first row of concrete blocks adjacent to the inlet sill, placing one block on its side on each side of inlet. The blocks are placed against the sill for lateral support and to avoid washouts when overflows occur.
If needed for lateral support, install 2 x 4 lumber through vertical block openings.
Fill vertical block openings with gravel for stability.
Place second row of block offsetting one-half block from the first row, in a brick-like pattern.
Fill vertical block openings with gravel.
Anchor wire screen over horizontal block openings to support gravel.
Place gravel around the blocks.

O&M PROCEDURES
Inspect after every storm and whenever activity is occurring on site.
Remove sediment accumulation to keep it at least 8 inches from the top of the blocks.
Remove trash accumulation at inlet.
Repair elements to original configuration as needed.

SITE CONDITIONS FOR REMOVAL - Remove after contributing drainage areas have been adequately stabilized. Restore area to grade and vegetate.

3. DETENTIONS BASIN AND TEMPORARY SETTLEMENT BASINS

PHYSICAL DESCRIPTION – The site utilizes a retention designed to capture runoff from the treatment cell, retaining it to allow most of the sediment to settle out before analytical testing of the waters for release. Sedimentation basins cannot trap all sediment that enters. Temporary settlement basin(s) should be used in conjunction with additional BMP's, such as temporary seeding, to reduce the total amount of sediment washing into them. Sediment basins may also be designed to be converted to permanent storm water detention basins after site construction has been completed.

WHERE BMP IS TO BE INSTALLED - Should be located as close to the sediment source as possible. A sediment basin should not be used in areas of continuously running water (live streams) or areas where failure of the embankment will result in loss of life, damage to homes or structures, or prevent the use of roadways or utilities.

CONDITIONS FOR EFFECTIVE USE OF BMP
Type of Flow: Sheet flow and concentrated flow.
Contributing Area: Maximum 10 acres, as secondary or tertiary BMP.
Basin Volume: Volume of 2-year, 24-hour storm plus silt load of 1800 cf per acre below top of riser.
Outlet Pipe: Sized for 2 year, 24 hour storm.

WHEN BMP IS TO BE INSTALLED - Prior to disturbance of natural vegetation.

INSTALLATION / CONSTRUCTION PROCEDURES
Excavate to length, width, depth and slopes fore excavation or fill areas.
Place and compact fill to construct dam to elevation at least 1 foot about crown of outlet pipe.
Install outlet pipe and compact clayey soil around pipe using hand tampers.
Install the perforated riser pipe, wrap with fabric, and surround with uniformly graded gravel or install surface skimmer.
Install BMP at downstream end of outlet pipe.
Complete installation of dam to an elevation 10% above design height to allow for settling.
Grade and stabilize spillway.
Install lathe or post near outlet of temporary basin. Mark maximum allowable sediment depth as designed.

O&M PROCEDURES
Inspect every week and after every storm.
Remove trash accumulation at outlet.
Remove sediment accumulations once sediment reaches design depth, as indicated on monitoring posts.
Repair and revegetate any erosion damage on spillway.
Repair settlement, cracking, piping holes, and seepage at embankment.
Replace gravel around riser if basin does not drain properly.

SITE CONDITIONS FOR REMOVAL - Remove temporary settlement basins after upstream areas are stabilized with vegetation. Regrade as appropriate and vegetate immediately.

4. SITE ENTRANCE

PHYSICAL DESCRIPTION - A stabilized entrance to the site is designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Stabilization generally consists of aggregate that is graded and compacted. Mud and sediment fall off of tires as they travel along the stabilized entrance; however, additional measures in the form of a washdown area may be be included on site if wet site conditions are present during soil delivery or removal operations. The stabilized entrance also distributes the axle load of vehicles over a larger area; thereby mitigating the rutting impact vehicles normally have on unpaved areas.

WHERE BMP IS TO BE INSTALLED - At locations where it is safe for construction vehicles and equipment to access existing roads. See the Site Plan for location.

CONDITIONS FOR EFFECTIVE USE OF BMP
Drainage: Ditches or pipes, if needed, sized for 15 year, 20 minute storm; HGL 6" below surface of entrance.

WHEN BMP IS TO BE INSTALLED - First order of work, prior to vehicles or equipment accessing unpaved or stabilized areas.

INSTALLATION / CONSTRUCTION PROCEDURES
Grade and compact area of construction entrance.
Install culvert under entrance if needed to maintain positive drainage.
Place geosynthetic material next to compacted soil, lay geogrid on top of this, and cover with aggregate, forming diversion across entrance if needed to direct runoff away from roadway.

O&M PROCEDURES:
Immediately remove any mud or debris tracked onto paved surfaces.
Remove sediment and clods of dirt from construction entrance continuously.
Replace rock, if necessary, to maintain clean surface.
Repair settled areas.

SITE CONDITIONS FOR REMOVAL - Remove when vehicles and equipment will no longer access unpaved or stabilized areas.

5. CHECK DAM

PHYSICAL DESCRIPTION - A small dam built within a drainage swale or temporary diversion channel designed to pond water and cause sediment to settle out. Dams can be constructed of rock, sandbags, filter rolls / wattles, triangular dikes, or gravel bags. Silt fence shall not be used to construct check dams.

WHERE BMP IS TO BE INSTALLED – If temporary ditches or swales are needed for stormwater managements, check dams shall be installed at intervals along drainage swales or channels. The top of the downstream check dam should be level with the base of the upstream check dam.

CONDITIONS FOR EFFECTIVE USE OF BMP
Type of Flow: Moderate concentrated flow

Contributing Area: Maximum of 2 acres
Channel Slope: Maximum of 2%

WHEN BMP IS TO BE INSTALLED - Prior to disturbance of natural vegetation in contributing drainage area; immediately after construction of drainage way.
For additional information see Missouri Department of Transpiration Specification for Highway Construction.

INSTALLATION / CONSTRUCTION PROCEDURES
Grade drainage way and compact area of check dam.
Place rock, sand bags, filter rolls / wattles or gravel bags to required configuration perpendicular to flow.

O&M PROCEDURES
Inspect after every storm and whenever activity is occurring on site.
Remove trash and leaf accumulation.
Remove sediment buildup once it reaches ½ depth of check dam or 12" depth, whichever is less.
Restore dam structure to original configuration to protect banks.
Replace rock on upstream face of dam if ponding does not drain in reasonable timeframe.

SITE CONDITIONS FOR REMOVAL - Remove after contributing drainage areas have been adequately stabilized and vegetation is adequately established in drainage way. Regrade and vegetate area of check dam.

C. CERTIFICATION

1. Facility Name: Smith & Company Landfarm

2. Facility Type: Remediation facility for petroleum impacted soils

3. Date of Initial Operation: 2001

4. Facility Address: County Road 236, Advance, MO 63730

5. SWPPP Coordinator: Mike Walker, R.E., Environmental Department Manager – 901 Vine St. Poplar Bluff MO, 63901

6. Management Approval: Full approval is extended by management at a level with authority to commit the necessary resources to implement and maintain this Stormwater Pollution Prevention Plan (SWPPP).

   Name: MIKE WALKER

   Title: ENVIRONMENTAL DEPT. MANAGER

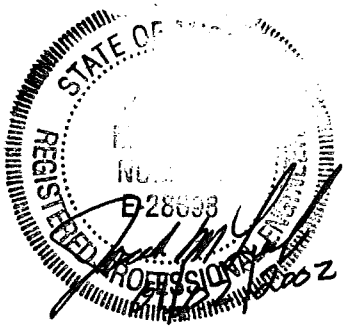
   Signature: [signature]

   Date: 01 - 03 - 2020

Professional Engineer's Certification: The undersigned Registered Professional Engineer is familiar with the requirements of 10 CSR 20-6.200 and has visited and examined the facility or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this SWPPP has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 10 CSR 20-6.200 and the site's State Operating Permit; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility.

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR part 112. This Plan is valid only to the extent that the facility owner or operator maintains, and inspects equipment, containment, and other devices as prescribed in this Plan.

Joseph M. Leahy, PE
Senior Engineer, Smith & Company
901 Vine Street, Poplar Bluff, Missouri 63901
Registration No.: 028698 State: Missouri



D. ENCLOSURES

1. Employee Training Certification

2. Landfarm Biweekly Inspection Record

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Brian Hecker, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.

2. Potential site pollution sources and Best Management Practices (BMPs)

3. Temporary measures to prevent stormwater pollution.

Employee: Brian Hecker Date: 1/27/2020

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Felix J Peters, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.
2. Potential site pollution sources and Best Management Practices (BMPs)
3. Temporary measures to prevent stormwater pollution.

Employee: _____ Date: 1/27/2020

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Caleb Smith, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.
2. Potential site pollution sources and Best Management Practices (BMPs)
3. Temporary measures to prevent stormwater pollution.

Employee: _____ Date: 1-27-2020

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Ryan Maddox, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.

2. Potential site pollution sources and Best Management Practices (BMPs)

3. Temporary measures to prevent stormwater pollution.

Employee: Ryan Maddox Date: 1-27-2020

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, KEVIN KNIGHT, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.
2. Potential site pollution sources and Best Management Practices (BMPs)
3. Temporary measures to prevent stormwater pollution.

Employee: K Knight Date: 1/27/20

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Mike Walker, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.
2. Potential site pollution sources and Best Management Practices (BMPs)
3. Temporary measures to prevent stormwater pollution.

Employee: Mike Walker Date: 01/27/2020

Enclosure 1

EMPLOYEE TRAINING CERTIFICATION

I, Heather Slayton, hereby attest that I have received and understood the training of the subjects identified below:

1. Soil Remediation Activities to prevent stormwater pollution.

2. Potential site pollution sources and Best Management Practices (BMPs)

3. Temporary measures to prevent stormwater pollution.

Employee: _____ Date: 1-27-2020

SMITH&CO. ENGINEERS

LANDFARM BIWEEKLY INSPECTION RECORD

SHS Personnel: _____
Date: _____

Retention Basin Visually Inspected: _____ Yes _____ No
> 3 ft. Freeboard Remaining?: _____ Yes _____ No

Was effluent sample collected? _____ Yes _____ No
Sample name: _____

S-1 sample collected? _____ Yes _____ No

Stock Piled Soil Inspected: _____ Yes _____ No
Stock Pile Plastic Repaired/Replaced: _____ Yes _____ No

	(Measure Once A Month)		(Sample Once A Quarter)	
MW2 Water Level:	_____ feet	**Sampled:**	_____	Yes/No
MW3 Water Level:	_____ feet	**Sampled:**	_____	Yes/No
MW4 Water Level:	_____ feet	**Sampled:**	_____	Yes/No
MW5 Water Level:	_____ feet	**Sampled:**	_____	Yes/No
MW6 Water Level:	_____ feet	**Sampled:**	_____	Yes/No
MW7 Water Level:	_____ feet	**Sampled:**	_____	Yes/No

Water in Creek: _____ Yes/No **Sampled:** _____ Yes/No

Treatment Cell Tilled: _____ hours _____
Treatment Cell Plowed: _____ hours _____

Verification Samples Collected: _____ Yes/No **# of Samples:** _____
Verification Sample ID's: _____

Treated Soil Removed from Cell: _____ Yes _____ No _____ yds^3 _____

NOTES: _____
_____
_____

901 Vine Street
P.O. Box 72
Poplar Bluff, MO 63902
Phone 573.785.9621
Fax 573.785.2651

SMITH CO.
ENGINEERS

RECEIVED
JUN 12 2020
Water Protection Program

May 27, 2020

Mr. Chris Weiberg
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, Missouri 65102-0176

Re: **Application for Permit Renewal**
S.H. Smith&Co. Landfarm
Permit MO-0132837
Advance, Missouri

Dear Mr. Weiberg:

Enclosed are the following items for the renewal of the site-specific permit for the above-referenced facility:

- Forms A and C
- Effluent Analytical Reports
- WET Test Results
- SWPPP

We respectfully request that the following requirements be removed/altered from the permit:

Section C - #15 – item "d"

Contaminated soil from more than one facility may be placed in the treatment cell if the soils are kept separate.....permittee shall submit written notification to the Water Protection Program to document additional soil is being placed within the treatment cell...

It is not possible to keep soils from different sources separate once land-farming activities (plowing, tilling) begin. In addition, there are times that we accept small amounts of the soil (drill cuttings < 1 cy). It would not be feasible to keep these soils separate from others. We propose this be removed from the permit requirements.

Instead of notifying the department each time new soil is accepted, Smith&Co. proposes submitting a list quarterly to the WPP. The list would document generator, date accepted, total cubic yards/tons accepted.

Section C - #18

The facility shall be inspected bi-weekly by the permittee and a brief written report prepared.

This requirement was implemented due to the stock-piling of soils outside the treatment cell. In the last five years, we have not had a need to stock-pile soil outside the cell. We propose that bi-weekly site visits would be conducted only when stock-piled soil stored outside the treatment cell.

Please feel free to contact me at (573) 785-9621 if you have any questions or need any further information.

Sincerely,

SMITH&CO.
ENGINEERS

Mike Walker, RG
Environmental Services Manager

Enclosures

CC: Mr. John Chronister – MDNR SEMO Regional Office