20STATE 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-0140414
Owner:	Reliant Processing Holding LTD
Address:	10817 W County Road 60; Midland, TX 79707
Continuing Authority:	Reliant Processing Limited Partnership
Address:	26530 US-24; Carrollton, MO 64633
Facility Name:	Reliant Processing LLC
Facility Address:	26530 US-24; Carrollton, MO 64633
Legal Description:	Sec.35, T53N, R23W, Carroll County
UTM Coordinates:	#001 X = 461110, Y = 4357204
Receiving Stream:	Tributary to Tributary to Little Wakenda Creek
First Classified Stream and ID:	Presumed Use Stream (Tributary to Little Wakenda Creek) (C) WBID# 5065
USGS Basin & Sub-watershed No.:	103001011008: Little Wakenda Creek

authorizes activities pursuant to the terms and conditions of this permit in accordance with the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

FACILITY DESCRIPTION

SIC # 2813; NAICS # 325120, carbon capture and dry ice manufacturing. This permit requires that stormwater be maintained as no industrially exposed stormwater.

Design Flow:	Box Washing: 1000 gpd; Cooling Tower Blowdown: 17,280 gpd = 18,280 gpd
Average Flow:	Unknown, New Permit

February 1, 2024
Effective Date

January 31, 2029
Expiration Date

John Hoke, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001 *noncontact cooling tower blowdown and box wash water*	**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 **February 1, 2024** 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	MONTHLY AVERAGE	MINIMUM MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
CONVENTIONAL					
Chlorine, Total Residual ‡	µg/L	16.5	8.2	once/month	grab
Oil & Grease	mg/L	*	*	once/month	grab
pH †	SU	6.5 to 9.0	-	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
OTHER					
Chloride	mg/L	*	*	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride plus Sulfate	mg/L	1000	*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2024.					

* Monitoring and reporting requirement only

‡ Chlorine, Total Residual. This permit contains a Total Residual Chlorine (TRC) limit (or monitoring). The effluent limit is below the minimum quantification level of the most sensitive EPA approved CLTRC methods. The Department has determined the current acceptable minimum level (ML) for total residual chlorine is 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The facility will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured and detection values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and non-detect values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. The facility shall report less than "<" the value obtained on the meter for non-detections. The less than symbol shall not be used for detections. The facility shall not log the ML as the quantified value unless the quantified value is the ML. Do not chemically dechlorinate unless it is necessary to meet permit limits.

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

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I & III standard conditions dated August 1, 2014 and August 1, 2019, respectively, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized are unauthorized discharges.
   (b) If 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.

2. Any discharge not meeting permitted limits may be pumped and hauled to an accepting wastewater treatment facility, or otherwise properly disposed.

3. Electronic Discharge Monitoring Report (eDMR) Submission System. The NPDES Electronic Reporting Rule, 40 CFR Part 127, 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 for the NPDES program. The eDMR system is currently the only Department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the Department. The facility must register in the Department's eDMR system

through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as “WET Test Chronic Outfall 002 Jan 2023”, or “Outfall004-DailyData-Mar2025”.

4. Site-wide minimum Best Management Practices (BMPs)
   At a minimum, the facility shall adhere to the following:
   (a) Provide good housekeeping practices on the site to keep trash from entry into waters of the state. Dumpsters must remain closed when not in use.
   (b) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, to prevent the contamination of stormwater from these substances.
   (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, petroleum waste products, 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 shall be retained on-site or readily accessible electronically.
   (e) The facility shall not discharge substances resulting from an on-site spill.
   (f) Provide sediment and erosion control sufficient to prevent or minimize sediment loss off of the property, and to protect embankments from erosion.

5. Reporting 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. The reporting limits established by the laboratory must be below the lowest effluent limits established for the specified parameter (including any parameter’s future limit after an SOC) in the permit unless the permit provides for an ML.
   (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).

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

7. All outfalls 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. This permit does not cover land disturbance activities.

10. This permit does not apply to fertilizer products receiving a current exemption under the Missouri Clean Water Law and regulations in 10 CSR 20-6.015(3)(B)8, and are land applied in accordance with the exemption.

11. This permit does not allow stream channel or wetland alterations unless approved by Clean Water Act §404 permitting authorities.

12. This permit does not authorize in-stream treatment, 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.

13. All records required by this permit may be maintained electronically. These records can be maintained in a searchable format.

14. Changes in Discharges of Toxic Pollutant. In addition to the reporting requirements under 40 CFR 122.41, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director per 40 CFR 122.42(a)(1) and (2) as soon as recognizing:
    (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 the 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).
    (c) Authorization of new or expanded pollutant discharges may be required under a permit modification or renewal, and may require an antidegradation review.

15. This permit does not authorize the facility to accept, treat, or discharge wastewater from other sources unless explicitly authorized herein. If the facility would like to accept, treat, or discharge wastewater from another activity or facility, the permit must be modified to include external wastewater pollutant sources in the permit.

16. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with Sections 301, 302, 306, 307, and 403 of the federal Clean Water Act, except for standards imposed under Section 307 for toxic pollutants injurious to human health, and with equivalent provisions of the Missouri Clean Water Law, in accordance with Section 644.051.16 RSMo and CWA §402(k). 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.

17. Any discharges (or qualified activities such as land application) not expressly authorized in this permit, and not clearly disclosed in the permit application, cannot become authorized or shielded from liability under CWA section 402(k) or Section 644.051.16, RSMo, by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including any other permit applications, funding applications, the SWPPP, discharge monitoring reporting, or during an inspection. Submit a permit modification application, and an antidegradation determination if appropriate, to request authorization of new or expanded discharges.

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, the facility must ensure they are submitting the correct forms as required by regulation.
    (c) Sufficiently sensitive analytical methods must be used. A sufficiently sensitive method is one that can effectively describe the presence or absence of a pollutant at or below that pollutant's permit limit or water quality standard.
    (d) The facility may use the electronic submission system to submit the application to the Program, if available.

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 shall 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 A NEW PERMIT FOR
MO-0140414
RELIANT PROCESSING

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.

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: non-categorical
SIC Code(s):	2813 – Industrial Gases
NAICS Code(s):	325120 – Industrial Gas Manufacturing
Application Date:	10/31/2023
Permit Rating:	11/29/2023 – minor

FACILITY DESCRIPTION

Reliant will capture the carbon dioxide byproduct from ethanol fermentation from the neighboring ethanol plant, Show-Me Ethanol (SME), to produce food grade carbon dioxide products, including dry ice. The carbon dioxide will be compressed and cooled to create liquid carbon dioxide stored in pressurized vessels. Dry ice will be produced upon demand and sold in insulated boxes. The dry ice will be a food grade product. As such, the boxes must be washed and sanitized prior to use. Reliant proposes to use potable water, a food grade wash and sanitizer to physically wash the dry ice boxes prior to use. Chemical Safety Data Sheets (SDSs) were provided. The boxes will be washed indoors and the resulting water collected in a floor drain/sump system will be discharged by the facility. Reliant is currently evaluating the addition of an oil-water separator vessel in line between the floor drain sump and wastewater holding vessel to prevent any unintentional oil discharges. The box wash water will not come in contact with stormwater prior to discharge. Water from the floor drain and sump system will be stored in a holding tank prior to discharge. The holding tank will be tested to ensure the water meets discharge parameters. Because Reliant is proposing to use potable water treated with chlorine, Reliant anticipates using sodium bisulfite to scavenge the free chlorine prior to discharge. Reliant anticipates a discharge volume of 900 to 1,000 gallons per day while washing boxes, which may not occur every day, and will likely be limited to regular business hours Monday through Friday. The discharge wastewater quality is expected to be similar to the water test data from the Eurofins test report.

Reliant will also utilize a cooling tower in its operations. SME will provide Reliant non-potable well water from SME's wells for the cooling tower. The non-potable well water will be further treated with chemicals, designed to reduce scaling and microbial growth in the cooling tower prior to use. Reliant anticipates a wastewater discharge of approximately up to 12 gallons per minute (17,280 gallons per day) of cooling tower blowdown. Reliant will use non-contact heat exchange in the carbon dioxide process, as such cooling water will not come in contact with the process. Reliant anticipates the cooling tower blowdown wastewater quality to be similar to SME's current cooling tower blowdown quality. Data from SME's current cooling tower blowdown is provided in the ChemTreat report.

Reliant is proposing to discharge the above wastewater sources at Outfall 001, which will be located west of the existing southern stormwater pond. Water discharged from Outfall 001 will flow to an unnamed tributary of Little Wakenda Creek. The location of the proposed discharge is depicted in the site layout figure and approximate latitude / longitude coordinates are provided. Prior to discharge at Outfall 001, box wash water and cooling tower blowdown water will be combined. Both wastewater sources will be able to be sampled independently, but wastewater samples for ongoing compliance will be collected from the comingled stream. The wastewater line drawing depicts the water source, treatment or use, and discharge.

The facility submitted an application for an antidegradation review on August, 28, 2023; the Water Quality and Antidegradation Review (WQAR) report was completed on October 31, 2023; therefore the application for a new permit was considered complete at that time. The new source requirements per 40 CFR 122.21(l) are not applicable as this facility is not subject to any national standard

of performance pursuant to CWA 306 and 40 CFR Subchapter N. For new discharges pursuant to 40 CFR 122.29(a)(2), the Department has completed an antidegradation review which included an environmental impact statement (EIS). The Missouri Department of Conservation Heritage Review had a finding of no known records. The completed EIS did not prohibit issuance of this permit.

Items listed in the facility (or outfall) description, applicable to the operation, maintenance, control, and resultant effluent quality are required to be enumerated in the facility description. The facility description ensures the facility continues to operate the wastewater (or stormwater) controls listed in the permit to preserve and maintain the effluent quality pursuant to 40 CFR 122.21(e). Any planned changes to the facility (which changes the facility or outfall description) are required to be reported to the Department pursuant to 40 CFR 122.41(l)(1)(ii). If the facility does not or cannot use all of their disclosed treatment devices, this is considered bypassing pursuant to 40 CFR 122.41(m) in the case of wastewater, and BMP disruption in the case of stormwater.

PERMITTED FEATURES TABLE

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	unknown	0.0183	none	non-contact cooling water and box wash water

FACILITY MAP

FACILITY PERFORMANCE HISTORY & COMMENTS

This is a new permit, the WQAR was reviewed, and is incorporated in the permit. The WQAR and the permit are public noticed at the same time. For new permits, the Department evaluated requirements in 40 CFR 122.21(k) and (l); the application was deemed complete.

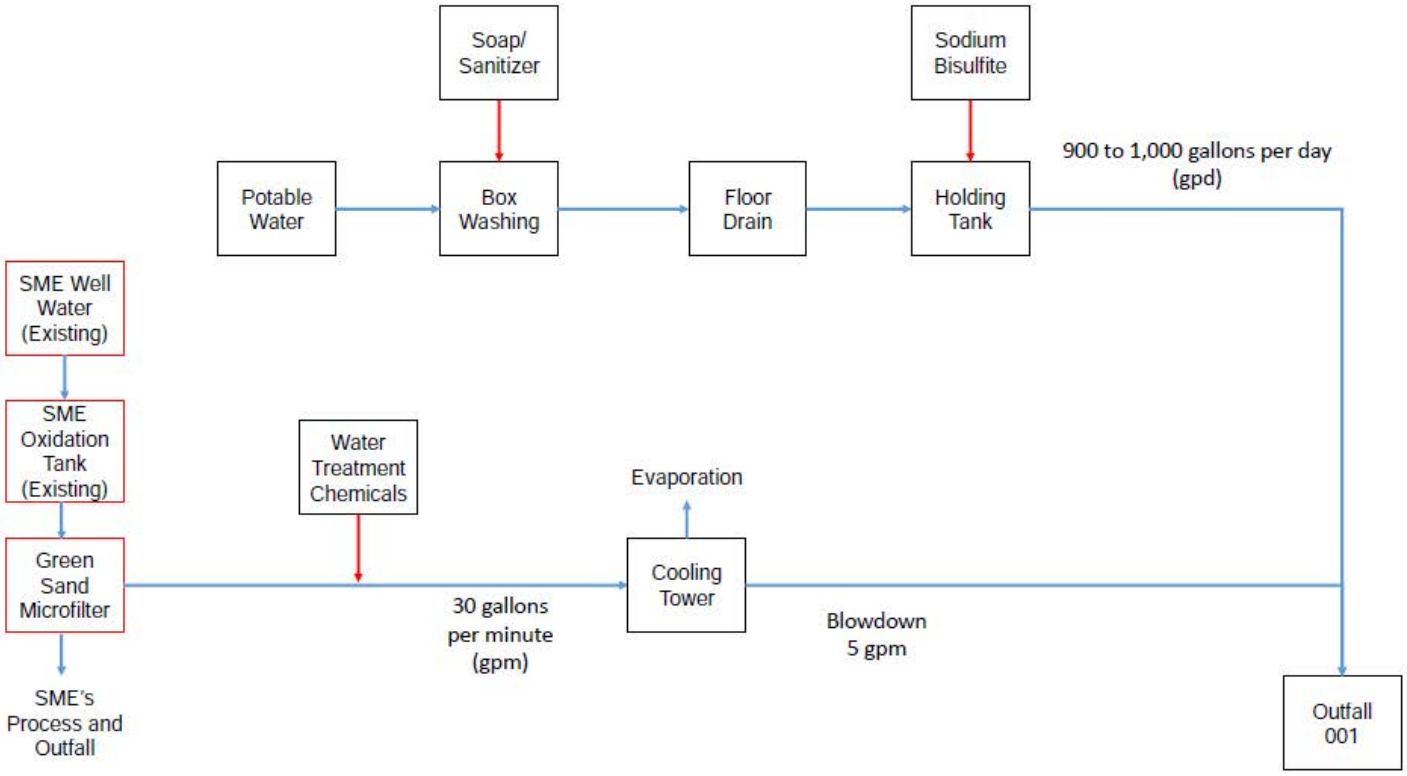
CONTINUING AUTHORITY

Under the WQAR, regionalization was reviewed, the facility is greater than 2,000 feet from the property line per 10 CSR 20-6.010(2)(C)3 and was cost prohibitive, therefore regionalization was not required. See antidegradation review for more information.

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 has no other permits.

WATER BALANCE DIAGRAM



PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#001	Tributary to tributary to Little Wakenda Creek	n/a	n/a	n/a	0.0 mi	103001011008: Little Wakenda Creek
	Presumed Use Stream	C	5065	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	0.2 mi	

Classes are representations of hydrologic flow volume or lake basin size per 10 CSR 20-7.031(1)(E).
Designated uses are described in 10 CSR 20-7.031(1)(F).
WBID: Waterbody Identification Number per 10 CSR 20-7.031(1)(Q) and (S)
HUC: Hydrologic Unit Code https://water.usgs.gov/GIS/huc.html
Water Quality Standards Search https://apps5.mo.gov/mocwis_public/waterQualityStandardsSearch.do

EXISTING WATER QUALITY & IMPAIRMENTS

The receiving waterbody(s) segment(s), upstream, and downstream confluence water quality was reviewed. The USGS https://waterdata.usgs.gov/nwis/sw or the Department's quality data database was reviewed. https://apps5.mo.gov/mocwis_public/wqa/waterbodySearch.do and https://apps5.mo.gov/wqa/ Impaired waterbodies which may be impacted by discharges from this facility were determined. Impairments include waterbodies on the 305(b) or 303(d) list and those waterbodies or watersheds under a TMDL. https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/tmdls 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. https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters Water quality standards protect beneficial uses of water provided in 10 CSR 20-7.031. The 303(d) list helps state and federal agencies keep track of impaired waters not addressed by normal water pollution control programs. 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.

✓ There are no upstream or downstream impairments near this facility.

WATERBODY MIXING CONSIDERATIONS

For all wastewater 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

ANTIBACKSLIDING

Federal antibacksliding requirements per CWA §402(o) and 40 CFR § 122.44(l) https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-122#p-122.44(l) generally prohibit a reissued permit from containing effluent limitations that are less stringent than the previous permit, with some exceptions. All renewed permits are analyzed for evidence of backsliding. There are several express statutory exceptions to the antibacksliding requirements, located in CWA § 402(o)(2) and 40 CFR 122.44(l). Parameters are discussed individually in Part IV of the fact sheet.

✓ This is a new permit therefore there is no backsliding.

ANTIDEGRADATION REVIEW

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. See https://dnr.mo.gov/document-search/antidegradation-implementation-procedure The prescribed minimum BMPs required in the permit for stormwater are developed by the Department pursuant to 10 CSR 20-7.031(3), and BMP use for stormwater discharges is authorized under 40 CFR 122.44(k)(2). The facility must pay for the Department to complete the review. 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. Per 10 CSR 20-7.015(4)(A), new discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream, or connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

✓ Applicable; new, wastewater discharge, please see APPENDIX A – WATER QUALITY AND ANTIDEGRADATION REVIEW (WQAR)

BEST MANAGEMENT PRACTICES (BMPS)

Minimum site-wide best management practices (BMPs) 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) or 10 CSR 20-6.200(2), these best management practices are not specifically included only 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 per 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.

CLOSURE

To properly decontaminate and close a wastewater storage structure, treatment structure, lagoon, basin, or device, the facility must draft a complete closure plan, and include the Closure Request Form #2512 https://dnr.mo.gov/document-search/facility-closure-request-form-mo-780-2512 The publication, Wastewater Treatment Plant Closure - PUB2568 found at https://dnr.mo.gov/print/document-search/pub2568 may be helpful to develop the closure plan. The regional office will then approve the closure plan, and provide authorization to begin the work. The regional office contact information can be found here: https://dnr.mo.gov/about-us/division-environmental-quality/regional-office

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 must 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 facility 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.

DISCHARGE MONITORING REPORTING – ELECTRONIC (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 requiring electronic data reporting. To comply with the federal rule, the Department is requiring all facilities to submit discharge monitoring data and reports online. To review historical data, the Department's database has a publically facing search engine, available at https://apps5.mo.gov/mocwis_public/dmrDisclaimer.do

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. 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. 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, A for annual, and others as identified.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS

Domestic wastewater is defined as wastewater originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, wash water, animal waste, process, or ancillary wastewater.

✓ Not applicable; this facility does not operate domestic wastewater facilities.

EFFLUENT LIMITATIONS

Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. Permits are required to establish the most stringent or most protective limit per 10 CSR 20-7.015(9)(A) and 40 CFR 122.44(b)(1). Effluent limitations derived and established for this permit are based on current operations of the facility. Any flow through the outfall is considered a discharge and must be sampled and reported per permit requirements. Daily maximums and monthly averages are required for continuous discharges per 40 CFR 122.45(d)(1). Weekly limits are not available for non-POTWs.

EMERGENCY DISCHARGE

For non-discharging permits, some permits may allow a small amount of wastewater discharge under very specific circumstances.

✓ Not applicable; this permit does not contain conditions allowing emergency discharges.

FEDERAL EFFLUENT LIMITATION GUIDELINES

Effluent Limitation Guidelines (ELGs) are found at 40 CFR 400-499. https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N These are limitations established by the EPA based on the type of activities a facility is conducting. Most ELGs are for process wastewater and some address stormwater. Effluent guidelines are not always established for every pollutant present in a point source discharge. In many instances, EPA promulgates effluent guidelines for an indicator pollutant. Industrial facilities complying with the effluent guidelines for the indicator pollutant will also control other pollutants (e.g. pollutants with a similar chemical structure). For example, EPA may choose to regulate only one of several metals present in the effluent from an industrial category, and compliance with the effluent guidelines will ensure similar metals present in the discharge are adequately controlled. All are technology based limitations which must be met by the applicable facility at all times. If Reasonable Potential is established for any particular parameter, and water-quality based effluent limits are more protective of the receiving water's quality, the WQBEL will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A).

✓ 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, permit decisions were made by completing 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). See Part III REASONABLE POTENTIAL for more information. In instances where reasonable potential exists, the permit includes limitations 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, and 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.

GOOD HOUSEKEEPING PRACTICES

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or

equipment and employee training. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices is an effective means of ensuring the continued implementation of these measures.

Specific good housekeeping may include:

- ◆ Spill and overflow protection under chemical or fuel connectors to contain spillage at liquid storage tanks
- ◆ Load covers on residue hauling vehicles and ensure gates on trucks are sealed and the truck body is in good condition
- ◆ Containment curbs around loading/unloading areas or tanks
- ◆ Techniques to reduce solids residue which may be tracked on to access roads traveled by residue trucks or residue handling vehicles.
- ◆ Techniques to reduce solid residue on exit roads leading into and out of residue handling areas

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure. For erosion and sediment control, BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors, are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

The SWPPP (if required for this facility) must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures. A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. BMPs schedules must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

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 not required to monitor groundwater for the Water Protection Program as there are no sub-surface discharges.

ICE-MELT PRODUCT REMOVAL

The Department is authorized to require BMPs for facilities per 40 CFR 122.44(k)(2). The facility should, to the extent practicable, remove large pieces of salt as soon as possible. After winter weather has ceased for the year, the facility needs to inspect all low-lying areas for extra salt and sand, and remove these as soon as possible. Salt applied to large areas has the potential to cause freshwater salinization which could result in a fish kill of sensitive species. To reduce potential for solids entering a stream, sand or other traction control materials will need to be evaluated against the probability that these materials could cause general criteria violations of solids and bottom deposits per 10 CSR 20-7.031(4).

LAND APPLICATION

Land application, which is surficial dispersion of wastewater or surficial spreading of sludge can be performed by facilities as an alternative to discharging. Authority to regulate these activities is pursuant to 644.026 RSMo. The Department implements requirements for these types of operations pursuant to 10 CSR 20-6.015(4)(A)1 which instructs the Department to develop permit conditions containing limitations, monitoring, reporting, and other requirements to protect soils, crops, surface waters, groundwater, public health, and the environment. Sub-surface dispersion or application of wastewater is typically considered a Class V UIC system; See UNDERGROUND INJECTION CONTROL section below.

✓ 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.

- ✓ Not applicable; this permit does not provide coverage for land disturbance activities. The facility may obtain a separate land disturbance permit (MORA) online at https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance MORA permits may not cover disturbance of contaminated soils, however, site specific permits such as this one can be modified to include appropriate controls for land disturbance of contaminated soils by adding site-specific BMP requirements and additional outfalls.

METALS

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). "Aquatic Life Protection" in 10 CSR 20-7.031 Tables A1 and A2, and general criteria protections in 10 CSR 20-7.031(4) apply to this discharge. The hardness value used for hardness-dependent metals calculations is typically based on the ecoregion's 50th percentile (also known as the median) per 10 CSR 20-7.015(1)(CC), and is reported in the calculations below, unless site specific data was provided. Per a memorandum dated August 6, 2019, the Director has determined limit derivation must use the median of the Level III Ecoregion to calculate permit limits, or site specific data if applicable. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used, as applicable, to determine the most protective effluent limit for the receiving waterbody's class and uses. HHP, DWS, GRW, IRR, or LWW do not take hardness into account.

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 program 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 must 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/document-search/additive-usage-wastewater-treatment-facilities-pub2653/pub2653 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.

PERMIT SHIELD

The permit shield provision of the Clean Water Act (Section 402(k)) and Missouri Clean Water Law (644.051.16 RSMo) provides that when a permit holder is in compliance with its NPDES permit or MSOP, it is effectively in compliance with certain sections of the Clean Water Act, and equivalent sections of the Missouri Clean Water Law. In general, the permit shield is a legal defense against certain enforcement actions, but is only available when the facility is in compliance with its permit and satisfies other specific conditions, including having completely disclosed all discharges and all facility processes and activities to the Department at time of application. It is the facility's responsibility to ensure that all potential pollutants, waste streams, discharges, and activities, including wastewater land application, storage, and treatment areas, are all fully disclosed to the Department at the time of application or during the draft permit review process. Previous permit applications are not necessarily evaluated or considered during permit renewal actions. All relevant disclosures must be provided with each permit application, including renewal applications, even when the same information was previously disclosed in a past permit application. Subsequent requests for authorization to discharge additional pollutants, expanded or newly disclosed flows, or for authorization for previously unpermitted and undisclosed activities or discharges, will likely require an official permit modification, including another public participation process.

REASONABLE POTENTIAL (RP)

Regulations per 10 CSR 20-7.015(9)(A)2 and 40 CFR 122.44(d)(1)(i) require 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 allowance in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit allowance in mixing zones. A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS). If any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS or derived WQBEL, the permit must contain a WQBEL 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). The RPA is performed using the *Technical Support Document for Water Quality Based Toxics Control (TSD)* methods (EPA/505/2-90-001) for continuous discharges. See additional considerations under Part II WATERBODY MIXING CONSIDERATIONS and Part III WASTELOAD

ALLOCATIONS. Wasteload allocations are determined utilizing the same equations and statistical methodology. Absent sufficient effluent data, WQBELs are derived without consideration of effluent variability and is assumed to be present unless found to be absent to meet the requirements of antidegradation review found in 10 CSR 20-7.031(3) and reporting of toxic substances pursuant to 40 CFR 122.44(f). The Department's permit writer's manual (https://dnr.mo.gov/water/business-industry-other-entities/technical-assistance-guidance/wastewater-permit-writers-manual), the EPA's permit writer's manual (https://www.epa.gov/npdes/npdes-permit-writers-manual), program policies, and best professional judgment guide each decision. Each parameter in each outfall is carefully considered; and all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, inspection reports, stream water quality information, stream flows, uses assigned to each waterbody, and all applicable site specific information and data gathered by the facility through discharge monitoring reports and renewal (or new) application sampling.

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 1 data point supplied in the application). Narrative criteria with RP typically translate to a numeric WQBEL, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. For example, a facility with orange discharge can have RP for narrative criteria like color, but a numeric iron limit is established to account for the violation of narrative criteria based on effluent data submitted by the facility. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the type of effluent discharged, the current operational controls in place, and historical overall management of the site. In the case of iron causing excursions of narrative criteria for color, if a facility has not had iron monitoring in a previous permit, adding iron monitoring would be an RPD, since numeric data isn't being used in the determination, but observable, site-specific conditions are.

When the facility is performing surficial or subsurface land application, the volume of water, frequency of application, type of vegetation, soil type, land slopes, and general overall operating conditions are considered. 10 CSR 20-8 are regulations for the minimum operating conditions for land application; these regulations cannot be excused even if there is no RP. RP is reserved for discharging outfalls given that these outfalls are the only ones which water quality standards apply to, but the process is similar as the site conditions are compared to regulations, soil sampling, pollutant profile, and other site specific conditions. In the case of non-discharging outfalls, an RPD is instead used to determine monitoring requirements.

The TSD RPA method cannot be performed on stormwater as the flow is intermittent and highly variable. A stormwater RPD consists of reviewing application data and discharge monitoring data and comparing those data to narrative or numeric water quality criteria. For stormwater outfalls, considerations are required per 10 CSR 20-6.200(6)(B)2: A. application and other information supplied by the facility; B. effluent guidelines; C. best professional judgment; D. water quality; and E. BMPs.

RPDs are also performed for WET testing in wastewater. While no WET regulations specific to industrial wastewater exist, 40 CFR 122.21(j)(5) implies the following can be considered: 1) the variability of the pollutants; 2) the ratio of wastewater flow to receiving stream flow; and 3) current technology employed to remove toxic pollutants. Generally, sufficient data does not exist to mathematically determine RPA for WET, but instead compares the data for other toxic parameters in the wastewater with the necessity to implement WET testing with either monitoring or limits. When toxic parameters exhibit RP, WET testing is generally included in the permit as an RPD. However, if all toxic parameters are controlled via limitations or have exhibited no toxicity in the past, then WET testing may be waived. Only in instances where the wastewater is well characterized can WET testing be waived.

WET testing is typically not implemented for stormwater. Stormwater discharges do not adhere to the same principles of wastewater RPAs because stormwater discharges are not continuous, and at the time of precipitation discharge the receiving stream is also no longer at base (0) flow, meaning that using RP to develop WET testing requirements for stormwater is unrepresentative. The Department works with the Missouri Department of Conservation and has understanding of streams already exhibiting toxicity, even without the influence of industrial wastewater or stormwater. Facilities discharging to streams with historical toxicity are required to use laboratory water for dilution, instead of water from the receiving stream when performing WET tests.

TSD methods encountered may be § 3.3.2, § 5.7.3 for metals, and § 5.4.1 for chloride. Part IV EFFLUENT LIMIT DETERMINATIONS provides specific decisions related to this permit. In general, removal of a WQBEL if there is no RP is not considered backsliding, see ANTIBACKSLIDING for additional information.

✓ No statistical RPAs were performed for this permit.

REGIONAL OFFICES (ROS)

Regional Offices will provide a compliance assistance visit at a facility's request; a regional map with links to phone numbers can be found here: https://dnr.mo.gov/about-us/division-environmental-quality/regional-office. Or use https://dnr.mo.gov/compliance-assistance-enforcement to request assistance from the Region online.

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 disclose 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. Forms are located at: https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater

- ✓ 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.
- ✓ The facility may email cleanwaterpermits@dnr.mo.gov to submit the application to the Program. A paper copy is not necessary if submitted via email. For larger applications, a drop-box type service may also be used.
- ✓ Application materials shall include complete Form A, and Form C. If the form name has changed, then the facility should ensure they are submitting the correct forms as required by regulation.

SAMPLING FREQUENCY JUSTIFICATION
This facility is a new facility monthly sampling is required to determine if the facility will be in compliance with the operating permit in accordance with Appendix U of Missouri's Water Pollution Control Permit Manual.

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 will consider implementing 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.

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 possible 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.
https://revisor.mo.gov/main/OneSection.aspx?section=260.500&bid=13989&hl

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.

Certain industrial facilities are subject to the self-implementing regulations for Oil Pollution Prevention in 40 CFR 112, and are required to initiate and follow Spill Prevention, Control, and Countermeasure (SPCC) Plans. This permit, as issued, is not intended to be a replacement for any SPCC plan, nor can this permit's conditions be automatically relaxed based on the SPCC plan if the permit is more stringent than the plan.

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 holding structure dredging or other similar maintenance activities. Certain oil sludge, like those from oil water separators, are subject to self-implementing federal regulations under 40 CFR 279 for used oils.

- ✓ Not applicable; industrial sludge is not generated at this facility.

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 must be reviewed by the facility to ascertain compliance with this permit, state regulations, state statutes, federal regulations, and the Clean Water Act.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
A SWPPP must be prepared by the facility if the SIC code or facility description type is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better

management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff.

✓ Not applicable; on 30 October 2023 this facility has demonstrated there is no exposure for stormwater pursuant to 10 CSR 20-6.200(1)(C).

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 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 any 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. The reporting limits established by the chosen laboratory must be below the lowest effluent limits established for the specified parameter (including any parameter's future limit after an SOC) in the permit unless the permit provides for an ML or if the facility provides a written rationale to the Department. It is the facility's responsibility to ensure the laboratory has adequate equipment and controls in place to quantify the pollutant. Inflated reporting limits will not be accepted by the Department if the reporting limit is above the parameter value stipulated in the permit. 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)

Class V wells are sub-surface dispersal or injection of any industrial wastewater; and in certain circumstances, may also be considered a Class V well if it is domestic wastewater. They can also be shallow injection wells like heat pumps and groundwater remediation wells. UIC systems may be described as having "septic tanks" or "lateral lines" in addition to the traditional well type of injection. 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. 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 any 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: https://dnr.mo.gov/document-search/class-v-well-inventory-form-mo-780-1774 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)). The Department implements additional requirements for these types of operations pursuant to 10 CSR 20-6.015(4)(A)1 which instructs the Department to develop permit conditions containing limitations, monitoring, reporting, and other requirements to protect soils, crops, surface waters, groundwater, public health, and the environment.

✓ Not applicable; the facility has not submitted materials indicating the facility is or will be performing UIC at this site.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS

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. Only streams with available load allocations can be granted discharge allowances. Outfalls afforded mixing allocations provide higher limits because the receiving stream is able to accept more pollutant loading without causing adverse impacts to the environment or aquatic life.

✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below. These equations are statistical equations (See Part III – REASONABLE POTENTIAL ANALYSIS) used to calculate the hypothetical or actual variability of the wastewater and the spreadsheet output obtains an effluent limit. Most toxic parameter's WLAs are calculated using the *Technical Support Document For Water Quality-Based Toxics Control* or "TSD" EPA/505/2-90-001; 3/1991, §4.5.5.

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow

Ce = effluent concentration
Qe = effluent flow

- ✓ For chloride, the Department uses TSD §5.4.1 for two-value steady state acute and chronic protection of aquatic life. It allows comparison of two independent WLAs (acute and chronic) to determine which is more limiting for a discharge. The WLA output provides two numbers for protection against two types of toxic effects, acute and chronic permit limitations resulting in a daily maximum and monthly average limit.
- ✓ Criteria maximum concentration (CMC) are the acute in-stream standards for a specific pollutant.
- ✓ Criteria continuous concentration (CCC) are the chronic in-stream standards for a specific pollutant.
- ✓ Acute wasteload allocations (WLAa) are designated as daily maximum limits (maximum daily limit: MDL), and were determined using applicable water quality criteria
- ✓ Chronic wasteload allocations (WLAc) are designated as monthly average limits (average monthly limit: AML) and are typically the most stringent limits applied. Facilities subject to average monthly limits are welcome to take additional samples in the month to meet any lower limit by averaging the results. When only one sample is taken in the month, the sample result is applied to both the daily maximum and monthly average.
- ✓ Mixing: when a stream's flow 7Q10 is above 0.1 cfs, (or lake width is sufficient) the discharge may be afforded mixing allowances. The mixing criteria for toxics are found at 10 CSR 20-7.031(5)(A)4 and a full explanation of mixing is found in Part II – WATERBODY MIXING CONSIDERATIONS.
- ✓ Number of Samples "n": effluent quality is determined by the underlying distribution of daily values, determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying assumption which is, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed uses an assumed number of samples "n = 4". See additional information under Part III – REASONABLE POTENTIAL ANALYSIS

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, typically when mixed with receiving stream water. Under the CWA §101(a)(3), requiring WET testing is reasonably appropriate for Missouri State Operating Permits to quantify toxicity. WET testing is also required by 40 CFR 122.44(d)(1) when RP is found. WET testing ensures the provisions in 10 CSR 20-6 and Missouri's Water Quality Standards in 10 CSR 20-7 are being met; the acute WQS for WET is 0.3 TUa. 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. Requirements found in the federal application requirements for POTWs (40 CFR 122.21(j)(5)) do not apply to industrial facilities, therefore WET testing can be implemented on a case by case basis following the factors outlined below. Annual testing is the minimum testing frequency if reasonable potential is found; 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." To determine reasonable potential, factors considered are: 1) history of toxicity; 2) quantity and quality of substances (either limited or not) in the permit with aquatic life protections assigned; and 3) operational controls on toxic pollutants. See Part III under REASONABLE POTENTIAL for additional information. A facility does not have to be designated as a major facility to receive WET testing; and being a major facility does not automatically require WET testing. Additionally per 40 CFR 122.44(d)(1)(v), limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet, using the procedures in 40 CFR 122.44(d)(1)(ii) of this section, that chemical-specific limits or specified operational controls are sufficient to attain and maintain applicable numeric and narrative water quality standards.

If WET limits are applied to this facility, follow up testing applies. When a facility exceeds the TU established in the permit, three additional follow-up tests are triggered. The follow up test results do not negate the initial testing result. If the facility is within the prescribed TU limit for all three follow up tests, then no further testing is required until the next regularly scheduled tests. If one or more additional tests exceed the TU limit, the facility may consider beginning the Toxicity Identification Evaluation (TIE) and Toxicity Identification Reduction (TRE) processes instead of waiting for three consecutive TU exceedances. The TIE and TRE process can take up to two years, especially when toxicity is variable or transient. We urge facilities to work closely with their WET testing laboratory to follow nationwide guidance for determining causes of toxicity and curative activities to remove toxicity. Additional wastewater controls may be necessary; and while, generally, no Construction Permit (CP) is required for adding treatment at industrial facilities, the facility may check with the Engineering Section to determine a plan of action.

If WET testing failures are from a known toxic parameter, and the facility is working with the Department to alleviate that pollutant's toxicity in the discharge, please contact the Department prior to conducting follow-up WET testing. Under certain conditions, follow-

up testing may be waived when the facility is already working to reduce and eliminate toxicity in the effluent. For the purposes of reporting, the laboratory may supply either the TU value, the LC_{50}, or the NOEC. If the laboratory only supplied the LC_{50} or the NOEC value, the toxic unit is calculated by $100/LC_{50}$ for acute tests, or 100/NOEC for chronic tests. The TU value is entered in the eDMR system. Reports showing no toxicity are usually entered as <1.

- ✓ Not applicable; WET testing was not implemented in this permit because the flow is very low; while there are toxic parameters in this permit, the wastewater is effectively managed through effluent limits.

PART IV. EFFLUENT LIMIT DETERMINATIONS

OUTFALL #001 – COOLING TOWER DISCHARGE

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	NEW	ONE/MONTH	MONTHLY	24 HR. TOT
CONVENTIONAL							
CHLORINE, TOTAL RESIDUAL (TRC)	µg/L	16.5	8.2	NEW	ONE/MONTH	MONTHLY	GRAB
OIL & GREASE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
PH †	SU	6.5 TO 9.0	-	NEW	ONE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	30	NEW	ONE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	-	NEW	ONE/MONTH	MONTHLY	GRAB

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
‡ An ML is established for TRC; see permit.
new parameter not established in previous state operating permit

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow
Per 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 maximum daily flow and average in millions of gallons per day (MGD), monthly monitoring continued from previous permit.

CONVENTIONAL:

Chlorine, Total Residual (TRC)
16.5 µg/L daily maximum and 8.2 µg/L monthly average per the 2023 antidegradation review based on Missouri Water Quality 10 CSR 20-7.031 Table A. The effluent limits are calculated as follows, however, the Department has established an ML for this parameter; the ML is 130 µg/L, see note ‡ in the permit. This parameter must be measured within the 15 minute holding time.

Oil & Grease
Monitoring requirement only to determine future RP. 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. 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 requirement this permit applies does not allow the facility to violate general criteria pursuant to 10 CSR 20-7.015(4).

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits per 10 CSR 20-7.031(5)(E) are appropriate as WQBEL is more protective than the TBEL, and there is RP. This parameter must be measured within the 15 minute holding time. 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.

Total Suspended Solids (TSS)
100 mg/L daily maximum and 30 mg/L monthly average. The limit is appropriate based on the activities at the site and is established pursuant to 10 CSR 20-7.015(9)(I)1 utilizing best professional judgment and in accordance with the antidegradation review.

OTHER:

Chloride
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of chloride. The facility reported 148 mg/L in the application.

Sulfate
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate. The facility reported 989 mg/Lin the application.

Chloride Plus Sulfate
Effluent limit of 1000 mg/L per 10 CSR 20-7.031(5)(L) and the 2023 antidegradation review. The sum of chloride and sulfate will be provided. The facility will sum the samples from the same sampling event, and report the maximum sum.

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. This will allow the Department to explore a watershed based permitting effort at some point in the future.
✓ Industrial permits are not being synchronized.

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. https://dnr.mo.gov/water/what-were-doing/public-notices The Department must issue public notice of a draft 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 December 15, 2023 to January 15, 2024. No comments were received.

DATE OF FACT SHEET: JANUARY 16, 2024

COMPLETED BY:
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MISSOURI DEPARTMENT OF NATURAL RESOURCES

Water Protection Program
Water Pollution Control Branch
Engineering Section

Water Quality and Antidegradation Review

For the Protection of Water Quality
and Determination of Tier 2 Performance Based Discharge Levels to

A Tributary Little Wakenda Creek

Requested by
Matt Henry, P.E.
Pinnacle Engineering

For
RELIANT PROCESSING LIMITED PARTNERSHIP
Joshua Jones

October 2023

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1. Purpose of Antidegradation Review Report

An Antidegradation Review Request was submitted by Pinnacle Engineering on behalf of RELIANT PROCESSING LIMITED PARTNERSHIP to evaluate a new discharge of 18,280 gallons per day and ensure that stream uses are protected. The discharge will be blowdown water from a cooling tower and wash water from a food-grade container cleaning operation coming from the manufacturing and distribution of dry ice.

In accordance with Missouri's Water Quality Standards [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the department developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review that documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use Missouri's Antidegradation Implementation Procedure (AIP) for new and expanded wastewater discharges.

The AIP specifies that when the proposed activity results in a reduction by ten percent or more of the:

- facility assimilative capacity for any pollutant as a result of any single discharge;
- segment assimilative capacity for any pollutant as a result of all discharges combined after existing water quality (EWQ); or
- any new or expanded discharge that the department determines will likely result in the increased accumulation of pollutants or their degradation products in sediment or fish tissue,

then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required.

The applicant elected to determine that all pollutants of concern (POC) require a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance in the absence of existing water quality data for the receiving lake/stream. An alternatives analysis was conducted to fulfill the requirements of the Antidegradation Implementation Policy (AIP).

The preferred treatment technology is to utilize best management practices (BMPs) to ensure that the concentration of pollutants in the blowdown water does not exceed water quality standards. The receiving waterbody is an unnamed tributary of Little Wakenda Creek. The proposed design flow is 18,280 gpd.

The following is a review of the Wastewater Treatment Facility Antidegradation Review Report for Reliant Processing prepared by Matt Henry, P.E. of Pinnacle Engineering dated August 14, 2023 and revised October 02, 2023.

2. Permit Limits and Monitoring Information

Table 2-1: Performance Based Levels

0	Unit	Basis	Monthly Average
Flow	MGD	*	*
TSS	mg/L	FSR	30
Oil & Grease	mg/L	WQBEL	10
Chlorine, Total Residual	µg/L	WQBEL	<130
Chlorides + Sulfates	mg/L	WQBEL	1000
PARAMETER	Unit	Basis for Limits	Minimum/ Maximum
pH	SU	FSR	6.5/9.0

* - Monitoring requirement only
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

MDEL – Minimally Degrading Effluent Limit
NDEL – Non-Degrading Effluent Limit
PEL – Preferred Effluent Limit
TBEL – Technology-Based Effluent Limit
WQBEL – Water Quality-Based Effluent Limit
FSR – Federal or State Regulation

3. Facility Information

This is a new discharger, with conservative operation and Best Management Practices (BMP) of the cooling tower as the proposed treatment method. This facility is located 2.7 miles northeast of the Carrollton WWTF at 26530 US-24. RELIANT PROCESSING LIMITED PARTNERSHIP will become the continuing authority once construction is complete. The discharge is from a new dry ice manufacturing plant that utilizes carbon dioxide (CO_2) off-gassed by an ethanol manufacturer in Carrollton, MO. Daily production for the facility will be up to 60 tons of solid CO_2 per day. Flows from the cooling tower will be continuous and the tower will operate 24 hours per day, whereas the water from food-grade box washing will be batch discharged during normal weekday working hours. The domestic wastewater generated onsite is separate and will go to a drain field permitted by the Ray County Department of Health.

Facility Name:	Reliant Processing
Address:	26530 US-24
Permit #:	TBD
SIC/NAICS	2813/325120
County:	Carroll
Facility Type:	Industrial
Owner:	RELIANT PROCESSING LIMITED PARTNERSHIP
Continuing Authority:	RELIANT PROCESSING LIMITED PARTNERSHIP
Sec. of State Charter No:	LF001410199
UTM Coordinates:	X = 460631 ; Y = 4357213
Legal Description:	T53N R23W Sec 35
12 digit watershed:	103001011008
Ecological Drainage Unit:	Central Plains

A. Facility Performance History:

There is no performance history for this facility since it is a new and proposed discharging facility.

B. Natural Heritage Review

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant. Two species of bats, Indiana and Northern Long-Eared, may be present in the project area. The following recommendations were made for construction activities:

- Manage construction to minimize sedimentation and run-off to nearby streams.
- At stream and drainage crossings, avoid erosion, silt introduction, petroleum or chemical pollution, and disruption or realignment of stream banks and beds.
- If any trees need to be removed for the project, contact the U.S. Fish and Wildlife Service for coordination under the Endangered Species Act.

C. Geohydrologic Evaluation

A Geohydrologic Evaluation dated October 10, 2023 was submitted with the antidegradation review request (see Appendix B). This facility will discharge into a unnamed tributary of Little Wakenda Creek, which was found to be gaining for the purpose of this review. The site received an overall slight geological limitation rating due to the low permeability of soils and bedrock material. In the event of treatment failure the surface waters of Little Wakenda Creek and the shallow groundwater may be adversely affected.

4. Receiving Waterbody Information

A. Receiving Waterbody

Table 4-1: Outfalls Table

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
001	0.0283	Primary	Industrial

Table 4-2: Receiving Stream(s)

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Little Wakenda	NA	NA	General Criteria	103001000731-1008 (Little Wakenda Creek)	0.12
Presumed Use Streams	C	5065	AHP-WWH, IRR, LWP, SCR, WBC-C, HHP	103001011008	0

* **AHP** = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP is 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; **DWS** = Drinking water supply; **GRW** = Groundwater; **HHP** = Human Health Protection as it relates to the consumption of fish; **IND** = Industrial water supply; **IRR** = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption; **LWP =** Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife; **WBC** = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as: **WBC-A** = Whole body contact recreation that supports swimming uses and has public access; **WBC-B** = Whole body contact recreation that supports swimming; **SCR** = Secondary Contact Recreation (like fishing, wading, and boating).

Table 4-3: Receiving Stream Segments

Receiving Water Body Segment Outfall #1:		
Upper end segment* UTM coordinates:	X = 461157.49; Y = 4357147.51	outfall
Lower end segment* UTM coordinates:	X = 460629.25; Y = 4357212.28	downstream confluence

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

B. Mixing Considerations and Low Flow Values

The proposed receiving waterbody is a tributary of Little Wakenda Creek, which is a class C stream. The applicant elected to use USGS StreamStats to establish low flow values. See Appendix D for StreamStats summary. Since the USGS StreamStats are below the 0.1 cfs established in 10 CSR 20-7.031(5)(A)4.B, mixing is not allowed.

Table 4-4: Receiving Stream(s) Low-Flow Values

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Little Wakenda	0.0048	0.00638	0.0235

i. MIXING CONSIDERATIONS

Mixing Zone: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

C. Existing Water Quality

No existing water quality data was submitted. The proposed facility will discharge to a Tributary to Little Wakenda Creek.

D. Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

5. Antidegradation Review Information

A. Tier Determination

Waterbodies are assigned Tier 1, 2, or 3 protection levels.

Tier 1 protection is applied to a waterbody on a pollutant by pollutant basis for pollutants which may cause or contribute to the impairment of a beneficial use or violation of Water Quality Criteria (WQC); and prohibit further degradation of Existing Water Quality (EWQ) where additional pollutants of concern (POCs) would result in the water being included on the 303(d) List. According to the AIP, the waters may receive the POCs that are causing impairments if 1) the discharge would not

cause or contribute to a violation of the WQS, 2) all other conditions of the state permitting requirements are met (i.e., no discharge options are explored and technology based requirements (including ELGs) are met); and 3) the permit is issued with the highest statutory and regulatory requirements.

- Existing water quality was not determined for this review, and the receiving waterbody is not on the 303(d) list and does not have a TMDL so a Tier 1 review is not applicable.

Tier 2 level protection is assigned to the waterbody on a pollutant by pollutant basis that prohibits the degradation of water quality of a surface water unless a review of reasonable alternatives and social and economic considerations justifies the degradation in accordance with the methods presented in the AIP.

- Tier 2 Pollutants for this review include: biochemical oxygen demand (BOD), total suspended solids (TSS), oil and grease, chlorides + sulfates, TRC, and pH.

Tier 3 protection prohibits any degradation of water quality of Outstanding National Resource Waters and Outstanding State Resource Waters as identified in Tables D and E of the Water Quality Standards (WQS). Temporary degradation of water receiving Tier 3 protection may be allowed by the Department on a case-by-case basis as explained in Section VI of the AIP.

- As this proposed discharge is located at a Tributary to Little Wakenda Creek, the receiving waterbody is not an Outstanding National Resource Water or an Outstanding State Resource Water, and as such Tier 3 is not applicable.

Below is a list of POCs reasonably expected and identified by the permittee in their application to be in the discharge. Pollutants of concern are defined as those pollutants "proposed for discharge that affect beneficial use(s) in waters of the state." They include pollutants that "create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge" (AIP, Page 6).

Table 5-1: Pollutants of Concern and Tier Determinations

Pollutants of Concern	Tier	Review Type	Comment
Total Suspended Solids (TSS)	2	Significant	10 CSR 20-7.015(9)(I)1
pH	***	Significant	10 CSR 20-7.031 (5)(E)
Chlorine, Total Residual	2	Significant	10 CSR 20-7.031 Table A
Chlorides + Sulfates	2	Significant	10 CSR 20-7.031(5)(L) applied
Grease and Oil	2	Significant	monitoring required

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

B. Necessity of Degradation

The AIP specifies that if the proposed activity results in a reduction by ten percent or more of the assimilative capacity then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Part of that analysis as shown below is the evaluation of non-degrading alternatives, such as regionalization or no discharge systems.

The applicant has the option of assuming discharge will result in a reduction by ten percent or more of the assimilative capacity and proceeding directly to the alternatives analysis, thereby avoiding the determination of the assimilative capacity of the receiving water. Due to the limited methods of removal for the POCs in the cooling tower blowdown, only two discharging alternatives were evaluated. The rest of the possible treatment methods are non-discharging methods utilizing evaporation.

ii. Regionalization

The City of Carrollton, Carrollton WWTF is the closest treatment system and is 2.7 miles southwest of the Reliant Processing facility. Regionalization was evaluated and found to be cost-prohibitive at $1.67 million which is four hundred percent (400%) of their preferred treatment option. Discharging at the existing Show Me Ethanol facility was also evaluated and determined it was better to keep the facility waste streams separate due to separate company ownership and operation.

iii. No Discharge Evaluation

Land application was evaluated, but due to the amount of land required, the cost, and the amount of assumptions needed to be made, this option was found not practicable. The cost of this option is anticipated to be $6,217,588 (%1500 of the preferred treatment case) as they would require 6.89 acres of land to apply at 24 inches/year/acre.

iv. ALTERNATIVES TO NO DISCHARGE

i. ALTERNATIVE #1: BMPS (BASE CASE)

The proposed base case is to operate the cooling tower in a way that limits the number of cycles the cooling water will go through to ensure that the blowdown does not exceed pollutant limits. Typical cooling tower guidance states that water can be recycled 4 to 6 times before it must be discharged, but the Reliant cooling tower will only recycle 2 to 4 times to ensure conductivity and dissolved solids stay low. The water will then be conveyed from the cooling tower to the receiving waterbody. Water from the food-grade box washing will be retained in the facility and monitored for chlorine contents before being batch discharged. They will also be using only food grade cleaning products in an effort to reduce harmful byproducts and protect the quality of food preserved with the dry ice from the facility. Residual chlorine is not expected and would be a sign of overdosing in the box washing stage. This option is economically feasible due to low input and maintenance costs, and has the potential to meet water quality standards due to the nature of effluent produced at this site. This option will also include a monitoring location prior to outfall.

ii. ALTERNATIVE #2: BMPS W/ CHLORINE SCAVENGER

A modification to the base case would be to add a chlorine scavenger, employing sodium bisulfite, to bind residual chlorine in the box washing water stream to meet WQS if total residual chlorine from box washing is found in the effluent stream. This option will also include a monitoring location prior to outfall. This option is economically feasible due to low input and maintenance costs.

iii. ALTERNATIVE #3: EVAPORATIVE POND + REVERSE OSMOSIS

An evaporation pond with a reverse osmosis (RO) treatment system to remove contaminants. This option would provide two effluent streams: permeate and reject. The RO reject is the pollutant stream which has been concentrated and would go to the evaporative pond, whereas the permeate stream would be re-used in the cooling tower after it has been cleaned by RO. This option was designated as not practicable due to associated costs and land required for a lagoon of adequate sizing.

Table 5-2: Alternatives Analysis Comparison

Pollutant	Alternative 1 (Base Case) BMP and piping	Alternative 2 BMP w/ chlorine scavenger	Alternative 3 RO membrane and evaporation basin
TSS	≤ 30 mg/l	≤ 30 mg/l	≤ 30 mg/l
pH	6.5 - 9	6.5 - 9	6.5 - 9
Oil and Grease	≤ 10 mg/l	≤ 10 mg/l	≤ 10 mg/l
Chlorides and Sulfates	< 1000 mg/l	< 1000 mg/l	< 1000 mg/l
TRC	< 130 ug/l	< 130 ug/l	< 130 ug/l
Life Cycle Cost**	$405,584.51	$410,584.51	$2,311,365.85
Ratio	100%	101%	563%

* monitoring requirement
**Life cycle cost at 20-year design life and 3.375% discount rate

C. Social and Economic Importance

The immediate benefit of the Reliant Processing plant will be 15 new jobs in Carrollton, MO, as well as another source of sales and property tax revenue for the state. Long term, they will be utilizing what is currently a waste product of the ethanol manufacturing process and turning it into a desirable product in the food packaging industry. This will not prevent the carbon from entering the atmosphere forever, but facilities like Reliant do allow for cost-effective production of typically expensive lab and food grade coolants that reduce the energy needed for the preservation of perishable items over long travels. Proper and cost-effective operation of the facility serves the environmental and economic interests of both the State of Missouri and the local communities.

6. Derivation and Discussion of Parameters, Limits, and performance based effluent levels

Wasteload allocations and limits were calculated using two methods:

A. **Water quality-based** – Using water quality criteria or water quality model results and the dilution equation below:

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

$$C_e = \frac{(Q_e + Q_s)C - (C_s \times Q_s)}{Q_e}$$

Where C = downstream concentration (mg/L)
C_s = upstream concentration (mg/L)
Q_s = upstream flow (cfs)
C_e = effluent concentration (mg/L)
Q_e = effluent flow (cfs)

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

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

B. **Alternative Analysis-based** – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD_5 and TSS that are provided by the consultant as the WLA, the performance based effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL).

Note: Performance based effluent limits have been based on the authority included in Section I.A. of the AIP.

Outfall #001 **– Main Facility Outfall**

- **Flow.** Though not limited itself, the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations [40 CFR Part 122.44(i)(1)(ii)]. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Total Suspended Solids (TSS).** The Antidegradation review proposes a performance based average monthly effluent concentration of 30 mg/L and an average daily effluent concentration of 100 mg/L. These limits are as protective as the minimum effluent limits determined by best professional judgement based on 40 CFR 423.12(b)(3) due to the similarity of waste sources.

- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031(4)(B)]. Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.

- **pH.** The preferred alternative selected for ammonia treatment serves as the base case for pH with effluent limit range of 6.5-9.0 SU. 6.5/9.0 SU [10 CSR 20-7.015] are protective of the water quality standard [10 CSR 20-7.031(5)(E)]. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.
  $C_e = (((Q_e+Q_s)*C) - (Q_s*C_s))/Q_e$
  Chronic WLA: $C_e = ((0.028 + 0.0)10 – (0.0 * 0.0))/0.028$
  $C_e = 10$ µg/L
  Acute WLA: $C_e = ((0.028 + 0.0)19 – (0.0 * 0.0))/0.028$
  $C_e = 19$ µg/L
  LTA_c = 10 µg/L (0.527) = **5.3 µg/L** [CV = 0.6, 99th Percentile]
  LTA_a = 19 µg/L (0.321) = 6.1 µg/L [CV = 0.6, 99th Percentile]
  MDL = **5.3** µg/**L** (3.11) = 16.5 µg/L [CV = 0.6, 99th Percentile]
  AML = **5.3** µg/**L** (1.55) = 8.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

Total Residual Chlorine effluent limits of 0.017 mg/L daily maximum, 0.008 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

- **Chloride Plus Sulfate.** Based on the testing data submitted from the applicant there appears to be potential for water quality exceedance of the chloride + sulfate standard of 1,000 mg/L per 10 CSR 20-7.031(5)(L). The sum of chloride and sulfate will be provided. The facility will sum the samples from the same sampling event, and report the maximum sum.

7. General Assumptions of the Water Quality and Antidegradation Review

A. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(2) Continuing Authorities and 10 CSR 20-6.010(4)(A)5.B., consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
B. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
C. Changes to Federal and State Regulations (FSR) made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
D. Effluent limitations derived from FSR may be WQBEL or Effluent Limit Guidelines (ELG).
E. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
F. A WQAR does not allow discharges to waters of the State, and shall not be construed as a National Pollution Discharge Elimination System (NPDES) or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
G. Limitations and other requirements in a WQAR may change as Water Quality Standards (WQS), Methodology, and Implementation procedures change.
H. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
I. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

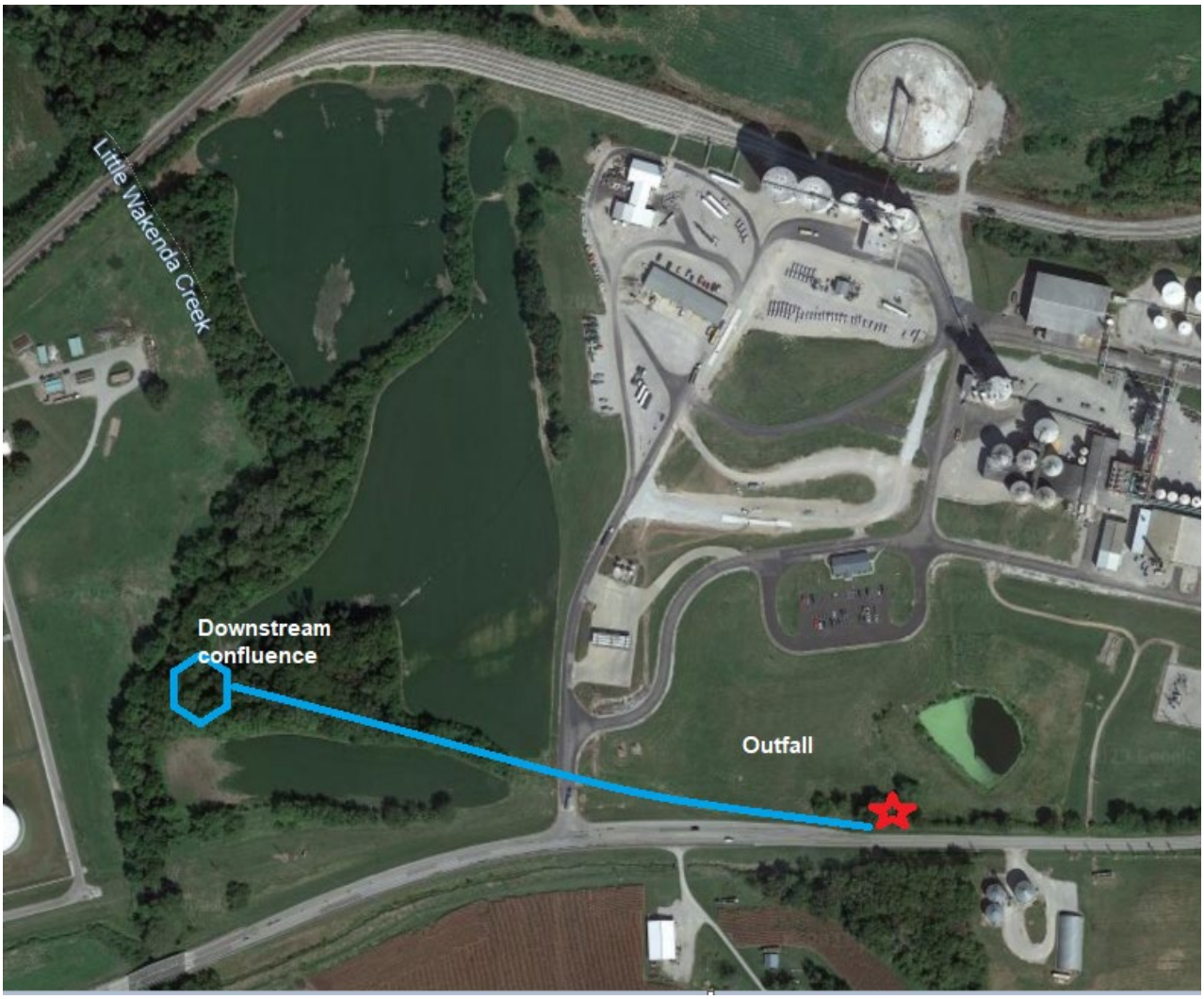
8. Antidegradation Review Preliminary Determination

The proposed facility discharge location will result in an assumed reduction by ten percent or more of the pollutant assimilative capacity of the Tributary of Little Wakenda Creek. The use of BMPs and ample effluent testing was chosen as the preferred alternative for both cost and overall practicability. The effluent limits will be protective of current and future water quality criteria. The other evaluated technologies including a reverse osmosis system, and chlorine scavenger were found unnecessary for the control of POCs in this project. Land application and regionalization were also found to be not practicable due to associated costs and land or easements required.

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

Reviewer: Alex Bielefeldt
Date: October, 2023
Reviewer: Cailie Carlile, P.E.

Appendix A: Map of Discharge Location



Appendix B: Geohydrologic Evaluation

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

LWE24024
Carroll County

October 10, 2023

Christopher Sumter
12107 Anne Street
Omaha, NE 68144

RE: Reliant Processing Limited Partnership

Dear Christopher Sumter:

On September 20, 2023, the Missouri Geological Survey received a request to perform a geohydrologic evaluation for the above referenced project located in Carroll County. Included with this letter is a report that details the geologic and hydrologic conditions at the site and the potential for groundwater contamination in the event of wastewater treatment failure.

Thank you for the evaluation request. If you are in need of further assistance or have questions regarding the report, please contact our office at P.O Box 250, Rolla, Mo 65402-0250, by telephone at 573-368-2100 or gspeg@dnr.mo.gov.

Sincerely,

MISSOURI GEOLOGICAL SURVEY

Molly A Starkey

Molly Starkey
Geologist
Environmental Geology Section

c: Joshua Jones
WPP
Northeast Regional Office

10/10/2023

Missouri Department Of Natural Resources
Missouri Geological Survey
Geological Survey Program
Environmental Geology Section

Project ID Number
LWE24024
County
Carroll County

Request Details

Project: Reliant Processing Limited Partnership

Legal Description: 35 T53N R23W
Quadrangle: CARROLLTON EAST
Latitude: 39 21 51.4
Longitude: -93 27 0.24

Organization Official
Name: Joshua Jones
Address: 10817 W County Road 60
City: Midland
State: MO Zip: 79707
Phone: 432-617-4200
Email: joshuaj@reliantholdingsltd.com

Preparer
Name: Christopher Sumter
Address: 12107 Anne Street
City: Omaha
State: NE Zip: 68144
Phone: 402-278-4432
Email: csumter@pineng.com

Project Details

Report Date: 10/10/2023
Date of Field Visit: 09/25/2023
Previous Reports: LWE08023

Facility Type
- [ ] Mechanical treatment plant
- [ ] Recirculating filter bed
- [ ] Land application
- [ ] Lagoon or storage basin
- [ ] Subsurface soil absorption system
- [ ] Lagoon or storage basin W/Land App
- [ ] Lagoon or storage basin W/SSAS
- [x] Other type of facility

Type of Waste
- [ ] Animal
- [ ] Human
- [x] Process or industrial
- [ ] Leachate
- [ ] Other waste type

Funding Source
- [x] IWT
- [ ] WWL-SRF

Additional Information
- [ ] Plans were submitted
- [ ] Site was investigated by NRCS
- [ ] Soil or geotechnical data were submitted

Geologic Stream Classification: [x] Gaining [ ] Losing [ ] No discharge

Overall Geologic Limitations
- [x] Slight
- [ ] Moderate
- [ ] Severe

Collapse Potential
- [x] Not applicable
- [ ] Slight
- [ ] Moderate
- [ ] Severe

Topography
- [x] <4%
- [x] 4% to 8%
- [ ] 8% to 15%
- [ ] >15%

Landscape Position
- [x] Broad uplands
- [ ] Floodplain
- [ ] Ridgetop
- [ ] Alluvial plain
- [x] Hillslope
- [ ] Terrace
- [ ] Narrow ravine
- [ ] Sinkhole

Bedrock: Pennsylvanian-age Marmaton Group

Surficial Materials: Dark brown silt loam to clayey silt loam

Missouri Department Of Natural Resources
Missouri Geological Survey
Geological Survey Program
Environmental Geology Section

Project ID Number
LWE24024
County
Carroll County

Recommended Construction Procedures for Earthen Facility	Determine Overburden Properties	Determine Hydrologic Conditions
☐ Installation of clay pad and Compaction	☐ Particle size analysis	☐ Groundwater elevation
☐ Diversion of subsurface flow	☐ Atterberg limits	☐ Direction of groundwater flow
☐ Artificial sealing	☐ 95% Max. dry density test method	☐ 25-Year flood level
☐ Rock excavation	☐ Overburden thickness	☐ 100-Year flood level
☐ Limit excavation depth	☐ Permeability coefficient-undisturbed	
	☐ Permeability coefficient-remolded	

Remarks:

On September 25, 2023, a geologist with the Missouri Geological Survey conducted a geohydrologic evaluation for a proposed discharge from an industrial process for Reliant Processing in Carroll County. The purpose of the site visit was to observe the geologic and hydrologic characteristics of the site and to determine the potential impacts in the event of wastewater treatment failure. The site is located on a broad upland hillslope just north of US Highway 24, approximately two miles east of Carrollton.

Surficial materials were sampled on site using a handheld auger and observed in situ in stream banks. The surficial materials at the site are dark brown silt loam to clayey silt loam with low to moderate permeability. Local well logs indicate that surficial materials are between 15 and 30 feet thick in this area.

No bedrock was observed on site or in the surrounding area. According to geologic mapping and area well logs, the uppermost bedrock at this site is the Pennsylvanian-age Marmaton Group. A measured section near the site indicates that the predominant lithology in this area is low permeability shale, with interbedded limestones and coals. The bedrock has low overall permeability and groundwater velocity is low.

The receiving stream for the proposed discharge is an unnamed tributary to Little Wakenda Creek and Little Wakenda Creek. The unnamed tributary was evaluated during the site visit and has been geologically classified as a gaining stream. Little Wakenda Creek has previously been classified as a gaining stream and observations made in the course of the evaluation support this conclusion.

Overall the site receives a slight geologic limitations rating. In the event of wastewater treatment failure, the local, shallow groundwater and the surface waters of the unnamed tributary and Little Wakenda Creek may be adversely impacted.

Appendix C: Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level One Report: No Known Records

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Reliant CO2 Antidegradation Application #13158
Project Description: Section 35 Township 53 North, Range 23 West 39.3645369,-93.45053,20 Unnamed tributary to Little Wakenda Creek Carroll County
Project Type: Energy Storage, Production and Transfer, Energy Transfer, Other
Contact Person: Christopher Sumter
Contact Information: csumter@pineng.com or 4022784432

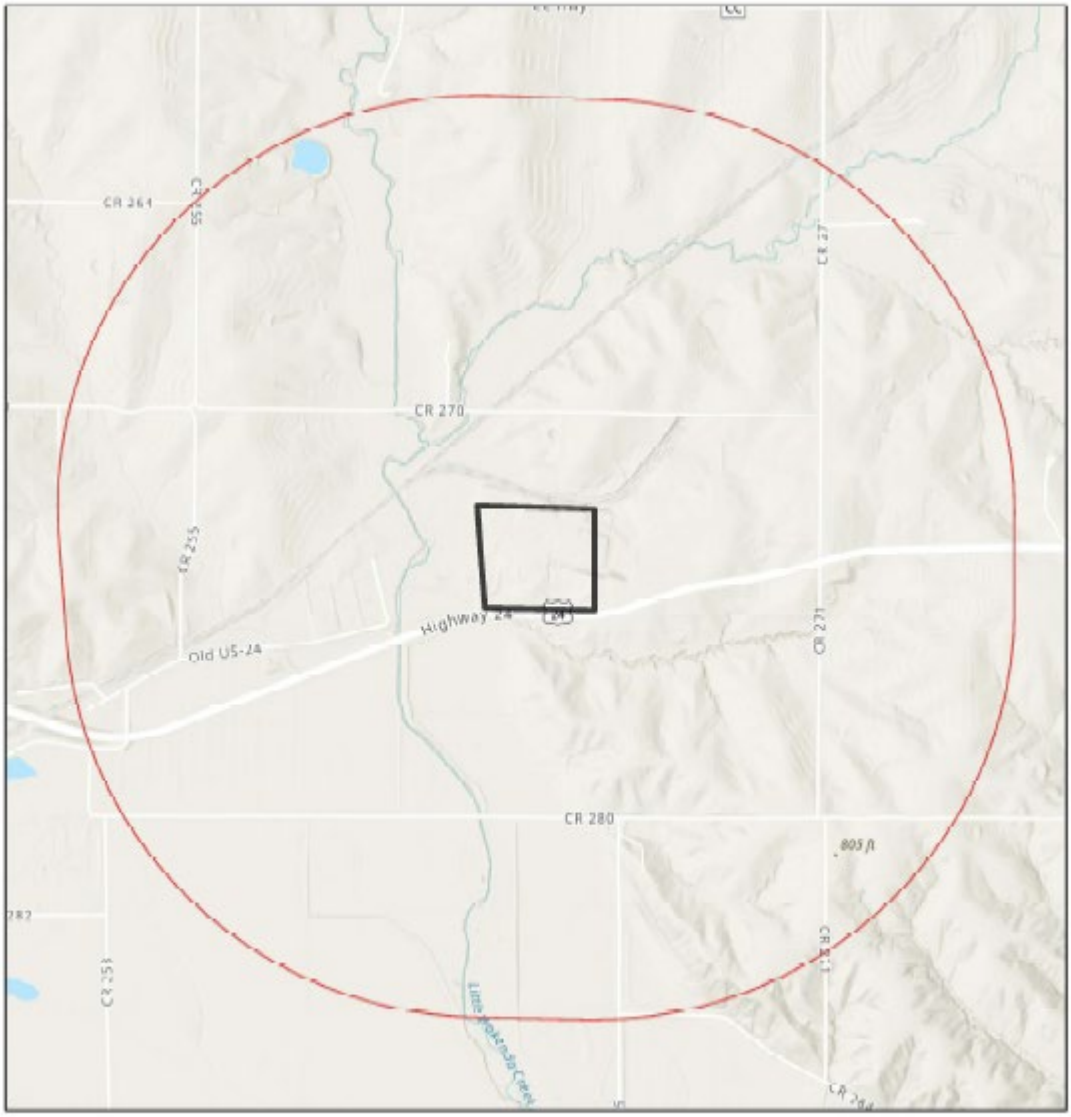
Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

Reliant CO2 Antidegradation Application



August 7, 2023

1:21,362

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Buffered Project Boundary

Project Boundary

Species or Communities of Conservation Concern within the Area:

There are no known records of Species or Natural Communities of Conservation Concern within the defined Project Area.

Other Special Search Results:

No results have been identified for this project location.

Project Type Recommendations:
Other forms of energy storage or transfer. The project should be managed to minimize erosion and sedimentation/runoff to nearby wetlands, streams and lakes, including adherence to any Clean Water Act permit conditions. Project design should include stormwater management elements that assure storm discharge rates to streams for heavy rain events will not increase from present levels. Revegetate areas in which the natural cover is disturbed to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Pollutants, including sediment, can have significant impacts far downstream. Use silt fences and/or vegetative filter strips to buffer streams and drainages, and monitor the site after rain events and until a well-rooted ground cover is reestablished.

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

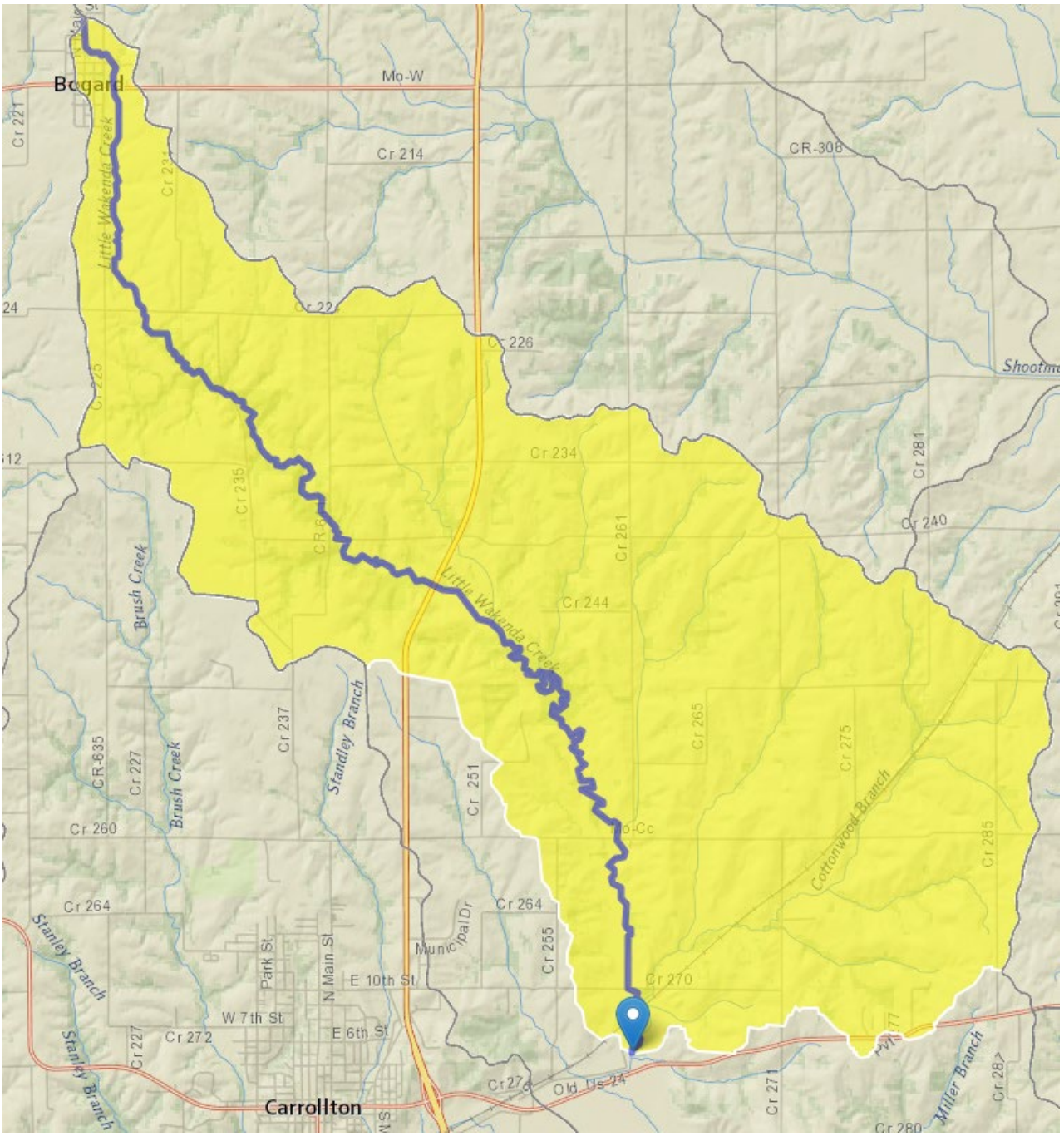
Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information
FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.
STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

Appendix D: Stream stats



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	18.6	square miles
LFPLENGTH	Length of longest flow path	11.26	miles
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.81	dimensionless

Low-Flow Statistics

Low-Flow Statistics Parameters [LowFlow Region 1 SIR 2013 5090]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	18.6	square miles	0.34	4320
LFPLENGTH	LFP length	11.26	miles	1.28	268
STREAM_VARG	Streamflow Variability Index from Grid	0.81	dimensionless	0.376	1.03

Low-Flow Statistics Flow Report [LowFlow Region 1 SIR 2013 5090]

Statistic	Value	Unit
1 Day 10 Year Low Flow	0.00477	ft^3/s
2 Day 10 Year Low Flow	0.00503	ft^3/s
3 Day 10 Year Low Flow	0.00572	ft^3/s
7 Day 10 Year Low Flow	0.00635	ft^3/s
10 Day 10 Year Low Flow	0.00817	ft^3/s
30 Day 10 Year Low Flow	0.0234	ft^3/s
60 Day 10 Year Low Flow	0.0399	ft^3/s

Appendix E: Revised Forms

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY / REQUEST

FOR DEPARTMENT USE ONLY	
APP NO.	
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

1. FACILITY

NAME		COUNTY	
Reliant Processing Limited Partnership		Carroll	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
26530 US-24	Carrollton	MO	64633
PERMIT NUMBER	PROPOSED DESIGN FLOW	SIC / NAICS CODE	
New Permit	15,400 GPD maximum	2813 / 325120	

2. OWNER

NAME			
Reliant Processing Limited Partnership			
ADDRESS	CITY	STATE	ZIP CODE
26530 US-24	Carrollton	MO	64633
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
Joshua Jones <joshuaj@reliantholdingsltd.com>		432-617-4200	

3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(2).

NAME	SECRETARY OF STATE CHARTER NUMBER		
Reliant Processing Limited Partnership			
ADDRESS	CITY	STATE	ZIP CODE
26530 US-24	Carrollton	MO	64633
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
Joshua Jones <joshuaj@reliantholdingsltd.com>		432-617-4200	

4. CONSULTANT

PREPARER NAME	COMPANY NAME		
Matthew Henry	Pinnacle Engineering, Inc.		
ADDRESS	CITY	STATE	ZIP CODE
12107 Anne Street	Omaha	NE	68137
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
mhenry@pineng.com		402-932-2045	

5. RECEIVING WATER BODY SEGMENT #1

NAME: Cottonwood Branch of Little Wakenda Creek

5.1 Upper end of segment – Location of discharge
UTM: X= _____, Y= _____ OR Lat 39.3634753724176, Long 93.45701499852072

5.2 Lower end of segment – Merges with Wakenda Creek
UTM: X= _____, Y= _____ OR Lat 39.3274822883801, Long -93.40775012199022

Per the Missouri Antidegradation Implementation Procedure (AIP), the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

6. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

NAME:

6.1 Upper end of segment – End of Segment #1
UTM: X= _____, Y= _____ OR Lat _____, Long _____

6.2 Lower end of segment –
UTM: X= _____, Y= _____ OR Lat _____, Long _____

7. DECHLORINATION

If chlorination and dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A1 of 10 CSR 20-7.031?

☑ Yes ☐ No – What is the proposed method of disinfection?

Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.

8. SUMMARIZE THE FEASIBILITY OF CONSTRUCTING A NO-DISCHARGE TREATMENT WASTEWATER FACILITY

According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.

Waste water from the facility will consist of two streams A) box wash water and B) evaporative cooling tower blowdown. The box washing source water will be potable water (from the city of Carrollton). A food grade soap and a food grade sanitizer will be used to wash the boxes, residues of which will be discharged with the water. Since the water is chlorinated (potable water from the city), if needed, sodium bisulfite will be used to remove residual chlorine prior to discharge. The cooling tower water is sourced from a neighboring facility (Show Me Ethanol). The process water is from on-site wells which is treated through a green sand filter to remove the iron. Reliant will further treat the water with anti-scaling and anti-microbial additives as needed in the cooling tower, to improve the tower efficiency and life of the materials. The evaporative cooling tower blowdown prevents excessive build-up of dissolved solids and salts from forming in the cooling tower. Currently there is no identified use for the wastewater streams. With the salt content and addition of wash/sanitizer, the wastewater would need significant treatment prior to any re-use in Reliant's process or in any neighboring entity's process. It would not be economical to reuse, recycle, or transfer this water to a regional treatment facility.

9. ADDITIONAL REQUIREMENTS

Complete and submit the following with this submittal:

- ☑ Copy of the Geohydrologic Evaluation – Submit request through the Missouri Geological Survey website
- ☑ Copy of the Missouri Natural Heritage from the Missouri Department of Conservation website
- ☑ Attach your Antidegradation Review Report and all supporting documentation as these forms are only a summary.
- ☑ If applicable, submit a copy of any Existing Water Quality data used in this process. Include the date range of the data, source(s) of the data, and location of data collection relative to the outfall. If using your own collected water quality data, submit a copy of the Quality Assurance Project Plan (QAPP) approved by the department's Watershed Protection Section. For more detailed information, see the Missouri Antidegradation Implementation Procedure (AIP), Section II.A.1.

10. PATH / TIER REVIEW ATTACHMENTS ENCLOSED

Path A: Tier 2 – Non-Degradation Mass Balance	☐ **Yes**	☐ **No**
Path B: Tier 2 – Minimal Degradation	☐ **Yes**	☐ **No**
Path C: Tier 2 – Significant Degradation	☑ **Yes**	☐ **No**
Path D: Tier 1 – Preliminary Review Request	☐ **Yes**	☐ **No**
Path E: Temporary Degradation	☐ **Yes**	☐ **No**

11. APPLICANT PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

Preliminary effluent limits for the proposed project are dependent upon the path selected:

Applicable Pollutants of Concern	Concentration* mg/L	Concentration* µg/L	Path / Tier Review Attachment Used for POC Evaluation	Average Monthly Limit	Daily Maximum Limit or Average Weekly Limit
BOD_5	X		see attached		
TSS	X				
Ammonia (Summer)	X				
Ammonia (Winter)	X				
Total Phosphorus	X				
TDS (Sulfates and Chlorides)	X				
Total Residual Chlorine	X				

* Place an X in appropriate box for the concentration units for each Pollutant of Concern.

12. PROPOSED PROJECT SUMMARY

Reliant will capture the carbon dioxide byproduct from ethanol fermentation from the neighboring ethanol plant, Show Me Ethanol (SME), to produce food grade carbon dioxide products, including dry ice. The carbon dioxide will be compressed and cooled to create liquid carbon dioxide stored in pressurized vessels. Dry ice will be produced upon demand and sold in insulated boxes. The dry ice will be a food grade product. As such, the dry ice boxes must be washed and sanitized prior to use. Reliant proposes to use potable water, a food grade wash and sanitizer to physically wash the dry ice boxes prior to use. The boxes will be washed indoors and the resulting water collected in a floor drain/sump system will be discharged by the facility. This water will not come into contact with stormwater prior to discharge. The discharge is estimated at approximately 1,000 gallons per day, over eight hours per day and five days per week.
Reliant will also utilize a cooling tower in its operations. Non-potable well water will be provided by SME from their wells for the cooling tower. This water will be treated with anti-scaling and anti-microbial chemicals. Reliant anticipates a wastewater discharge of approximately 5-10 gallons per minute (7,200-14,400 gpd) of cooling tower blowdown. Reliant will use a non-contact heat exchanger, as such the cooling water will not contact the process. Data from SME's current cooling tower blowdown is provided in the ChemTreat report attached.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri must comply with the requirements set forth in the *New Technology Definitions and Requirements fact sheet*.

13. CONTINUING AUTHORITY WAIVER (For New Discharges)

In accordance with 10 CSR 20-6.010(2)(C), applicants proposing use of a lower preference continuing authority, when the higher level authority is available, must submit a waiver from the existing higher authority one or other documentation for the department's review, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or by the Missouri Clean Water Commission. Is the waiver necessary? ☐ Yes ☑ No
If yes, provide a copy.

14. APPLICATION FEE

☐ CHECK NUMBER ☑ JETPAY CONFIRMATION NUMBER 20046774

15. SIGNATURE

I am authorized and hereby certify that I am familiar with the information contained in this document and to the best of my knowledge and belief such information is true, complete and accurate.

SIGNATURE	DATE
	09/28/2023
PRINT NAME	TITLE
Joshua Jones	General Manager

PLEASE IDENTIFY YOUR STATUS FOR THIS PROJECT: ☑ OWNER ☐ CONTINUING AUTHORITY ☐ CONSULTANT

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

ANTIDEGRADATION REVIEW SUMMARY
PATH C: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME	COUNTY
Reliant Processing Limited Partnership	Carroll

2. SUMMARY OF THE POLLUTANTS OF CONCERN

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

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutants of Concern*	Concentration*		Base Case Limit	Basis (WQS, WLA, ELG, Other)**
	mg/L	µg/L		
BOD_5	X			
TSS	X			
Ammonia (Summer)	X			
Ammonia (Winter)	X			
Total Nitrogen	X			
Total Phosphorus	X			
TDS (Sulfates and Chlorides)	X		see attached	
Total Residual Chlorine	X			

* Place an X in appropriate box for the concentration units for each Pollutant of Concern

** Provide the Basis for the Base Case Limit: WQS – Water Quality Standard, WLA – Wasteload Allocation, ELG – Effluent Limit Guideline, or describe other.

3. IDENTIFYING ALTERNATIVES

Supply a summary of the non-discharging alternatives considered. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. These alternatives include no-discharge. Attach all supportive documentation in the Antidegradation Review report.

Feasibility of non-discharging alternatives (regionalization, land application, subsurface irrigation, and recycling or reuse):

See attached report

Minimum of three (preferably five or more) discharging alternatives* ranging from less-degrading to degrading including Preferred Alternative (All treatment levels for POCs must at a minimum meet water quality standards):

Discharging Alternative #	Treatment Type	Description
1	See attached report	
2		
3		
4		
5		
6		

* Same technology may be multiple alternatives as you have the base unit and add to it with more capacity to provide additional treatment.

4. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. **Please do not write "See Report" for any box below.**

Practicability Summary:

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

See attached report

Economic Efficiency Basis:

What is the design life cycle for the comparison? See attached report

What interest rate was used in the present worth calculations? See attached report

Economic Efficiency Summary:

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

See attached report

TABLE OF THE ALTERNATIVES EVALUATION (Attach additional page if necessary)						
PARAMETERS	**Alternatives #**					
	1	**2**	**3**	**4**	**5**	**6**
BOD_5 – mg/L	See attached					
TSS – mg/L						
Ammonia (Summer) – mg/L						
Ammonia (Winter) – mg/L						
E. Coli – #/100 mL						
Total Nitrogen – mg/L						
Total Phosphorus – mg/L						
Construction Cost – $						
Operating Cost – $						
Present Worth – $						
Ratio present worth to base case						

Affordability Summary:

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

See attached report

Justification for Preferred Alternative:

See attached report

Reasons for Rejecting the other Evaluated Alternatives:

See attached report

Comments/Discussion:

See attached report

5. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

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

Identify the affected community:

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

See attached report

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

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

See attached report

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

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

See attached report

PROPOSED PROJECT SUMMARY:

See attached report

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

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

ANTIDEGRADATION: REGIONALIZATION AND NO-DISCHARGE EVALUATION

REGIONALIZATION AND NO-DISCHARGE EVALUATION

According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.

Please refer to the *No-Discharge Alternative Evaluation* fact sheet for examples of information to provide to justify common reasons for not pursuing regionalization or no-discharge land application. If sufficient information is not provided on this form to demonstrate that these alternatives are not feasible, a more detailed evaluation of no-discharge options may have to be submitted.

Additional pages may be attached if more room is needed.

1. FACILITY:

NAME	COUNTY
Reliant Processing Limited Partnership	Carroll

2. EVALUATION OF REGIONALIZATION (Complete all applicable reasons why regionalization was not pursued)

2.1 Regionalization Feasibility:

A. What is the distance to connect to the closest municipality's line or other facility's line? Approximately 2.7 miles (See Attached)

B. List facilities contacted about possible regionalization. Carrollton Wastewater Treatment Plant

C. Is there any planning or zoning in the area regarding development and services? See attached report

D. Who would have the responsibility to maintain the sewer connection line?

E. What is the estimated cost for piping and pumps to regionalize?

F. Explain any engineering challenges with the regionalization connection – topography, rivers, highways, or other issues.
The topography likely makes a traditional gravity sewer line impossible. Would need to cross rivers and highways.

G. Does a regional facility have the capacity to treat the additional effluent from this project? Maybe

H. Were land owners contacted for rights to an easement? ☐ Yes ☑ No

I. Describe the easement issues:
See attached report

2.2 Summarize why regionalization was not a practicable or economically efficient alternative

See attached report.
The local POTW appears to have sufficient capacity for Reliant Processing Limited Partnership's wastewater stream outside of precipitation events which have caused discharges in excess of twice the works limit.

3. EVALUATION OF NO-DISCHARGE LAND APPLICATION

Check all applicable reasons why no-discharge land application was not pursued:

☐ **3.1 Land Availability and Cost:**

A. Is land available for land application? ☐ Yes ☐ No

If not, explain: See attached report

If yes, answer the following:

B. How many acres are required for land application of the effluent?

C. Provide a breakdown of the capital cost for any necessary additional land, piping, pumps, and irrigation equipment?

D. Were long-term costs evaluated and compared for upgrading to a mechanical plant with future Water Quality Standards changes (i.e. mussel ammonia, bacteria, TP, TN) versus cost for a land application system? ☐ Yes ☐ No

E. Were land owners contacted for rights to an easement? ☐ Yes ☐ No

F. Describe the easement issues:

See attached report

☐ **3.2 Zoning or Suitability of Site in Proximity to Neighboring Sites or Waterbodies:**

A. Was drip or subsurface irrigation evaluated as opposed to surface application? ☐ Yes ☐ No

B. Does the county ordinance specifically restrict land application, surface and subsurface? ☐ Yes ☐ No

C. Can a vegetated buffer be installed to reduce necessary buffer distances? ☐ Yes ☐ No

D. Are there other steps or considerations that can be made?

See attached report

☐ **3.3 Unsuitability of Geology or Soils**

A. Is a geohydrologic evaluation, county soils survey map, or other resource showing suitability and application rates included with this application? ☐ Yes ☐ No

B. Is it cost-effective to bring in additional soils? ☐ Yes ☐ No

C. Can the application rate be decreased to a suitable rate? ☐ Yes ☐ No

D. Were subsurface application alternatives (e.g. low pressure pipe, drip) considered? ☐ Yes ☐ No

E. If collapse potential is a concern, was using a liner or alternative site evaluated? ☐ Yes ☐ No

3.4 Summarize why no-discharge land application was not a practicable or economically efficient alternative

See attached report

4. DOCUMENTATION

4.1 Is any other written correspondence or documentation included with this application to provide further justification for not pursuing a no-discharge option or regionalization?

- [x] No
- [ ] Yes:
  - [ ] A letter from an existing higher preference continuing authority waiving preferential status where service is not available in accordance with 10 CSR 20-6.0 10 (2) or if capacity is not available.
  - [ ] A letter from the existing higher preference continuing authority stating that the regional facility has no interest in taking flow from the new or expanded facility.
  - [ ] A letter from the regional municipality stating that the project area is outside city limits and annexation would be required.
  - [ ] Council meeting minutes.
  - [ ] Correspondence with land owners regarding easement rights.
  - [ ] Correspondence with land owners regarding land for sale or lease.
  - [ ] Letters from the community or a consulting engineer regarding availability, proximity, and location of suitable land and the reasonable cost of such land.
  - [ ] Documentation of recent land sales or appraisals.
  - [ ] Calculations for sizing a land application system.
  - [ ] Detailed cost estimates for a land application system or regionalization including lift stations, piping, easements, liners, and/or connection costs.
  - [ ] Geohydrologic evaluation or other soils report.
  - [ ] Copy of a county or city ordinance.
  - [ ] Verification of funding from State Revolving Fund, which does not fund projects outside city limits.
  - [ ] Other:

See attached report

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.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
August 1, 2019

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
    a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limted to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
14. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – BIOSOLIDS OR SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR BY CONTRACT HAULER

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or, if the ash is determined to be hazardous, with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or sludge must be removed to maintain adequate storage capacity in the facility.
    a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
    b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes "Class A" or "Class B" biosolids derived from domestic wastewater to be land applied onto grass land, crop land, timber, or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
    a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
    b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
    c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
    d. Animal grazing shall not be allowed for 30 days after application of biosolids.
    e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
    f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
    g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
    h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.

5. Pollutant limits
    a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
    b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to achieve pollutant concentration below those identified in Table 1, below.
    c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

Biosolids ceiling concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track polluntant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

Biosolids Low Metal Concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

e. Annual pollutant loading rate.

Table 3

Biosolids Annual Loading Rate	
Pollutant	Kg/ha (lbs./ac) per year
Arsenic	2.0 (1.79)
Cadmium	1.9 (1.70)
Copper	75 (66.94)
Lead	15 (13.39)
Mercury	0.85 (0.76)
Nickel	21 (18.74)
Selenium	5.0 (4.46)
Zinc	140 (124.96)

f. Cumulative pollutant loading rates.

Table 4

Biosolids Cumulative Pollutant Loading Rate	
Pollutant	Kg/ha (lbs./ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (268)
Mercury	17 (15)
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
   a. Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
   b. Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
   c. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

i. PAN can be determined as follows:

(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).

[1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis.

ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.

iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;

ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstandingstate resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet of dwellings or public use areas;

iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);

v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.

vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, no rate limitation;

ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;

iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.

f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:

i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of mthods or technology refletive of combination surface/shallow soil incorporation;

ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not included the use of methods or technology refletive of combination surface/shallow soil incorporation;

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
        i. PAN can be determined as follows:
        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are "similar treatment works" under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required.
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

surface water drainage without creating erosion.

b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.

c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.

8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Monitoring Frequency (See Notes 1, and 2)		
	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN[1]	Priority Pollutants[2]
319 or less	1/year	1 per month	1/year
320 to 1650	4/year	1 per month	1/year
1651 to 16,500	6/year	1 per month	1/year
16,501+	12/year	1 per month	1/year

[1] Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

[2] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.
Note 2: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
   a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:
   Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

   DNR regional or other applicable office listed in the
   permit (see cover letter of permit)
   ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: https://cdx.epa.gov/ Additional information is available at: https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws

5. Annual report contents. The annual report shall include the following:
    a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
    b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

NPDES PERMIT APPLICATION-

Reliant Processing, LLC
Carrollton, MO

Prepared For:

Reliant Processing, LLC
26530 US-24
Carrollton, Missouri 64633

Pinnacle Project No.:

IO20235891

Date:

May 3, 2023

Pinnacle Engineering
Owning Challenges. Winning Trust.

Pinnacle Engineering, Inc.
12107 Anne Street
Omaha, NE 68137

NPDES PERMIT APPLICATION

PREPARED FOR:

Reliant Processing, LLC
26530 US-24
Carrollton, Missouri 64633

PREPARED BY:

Pinnacle Engineering, Inc.
12107 Anne Street
Omaha, Nebraska 68137

DATE:

May 3, 2023

TABLE OF CONTENTS

LIST OF APPENDICES

Introduction

Reliant Processing, LLC (Reliant) is proposing to construct a carbon dioxide capture and compression facility co-located with the Show Me Ethanol (SME) plant located in Carrollton, Missouri. As a dry ice manufacturing facility, Reliant's proposed activities fall under Standard Industrial Classification (SIC) code 2813 and North American Industry Classification System (NAICS) code 325120. The dry ice production process will include two wastewater sources for which Reliant is proposing to discharge. This application is for an individual National Pollutant Discharge Elimination Systems (NPDES) permit to authorize the proposed discharges. The following sections provide a process description, a water use and wastewater generation description and the required permitting documentation.

Process Description

Reliant will capture the carbon dioxide byproduct from ethanol fermentation from the neighboring ethanol plant, SME, to produce food grade carbon dioxide products, including dry ice. The carbon dioxide will be compressed and cooled to create liquid carbon dioxide stored in pressurized vessels. Dry ice will be produced upon demand and sold in insulated boxes.

The dry ice will be a food grade product. As such, the boxes must be washed and sanitized prior to use. Reliant proposes to use potable water, a food grade wash and sanitizer to physically wash the dry ice boxes prior to use. Chemical Safety Data Sheets (SDSs) are included in Appendix E. The boxes will be washed indoors and the resulting water collected in a floor drain/sump system will be discharged by the facility. Reliant is currently evaluating the addition of an oil-water separator vessel in line between the floor drain sump and wastewater holding vessel to prevent any unintentional oil discharges. The box wash water will not come in contact with stormwater prior to discharge. Water from the floor drain and sump system will be stored in a holding tank prior to discharge. The holding tank will be tested to ensure the water meets discharge parameters. Because Reliant is proposing to use potable water treated with chlorine, Reliant anticipates using sodium bisulfite to scavenge the free chlorine prior to discharge. Reliant anticipates a discharge volume of 900 to 1,000 gallons per day while washing boxes, which may not occur every day, and will likely be limited to regular business hours Monday through Friday. The discharge wastewater quality is expected to be similar to the water test data from the Eurofins test report attached in Appendix F.

Reliant will also utilize a cooling tower in its operations. SME will provide Reliant non-potable well water from SME's wells for the cooling tower. The non-potable well water will be further treated with chemicals, designed to reduce scaling and microbial growth in the cooling tower prior to use. Reliant anticipates a wastewater discharge of approximately 5 gallons per minute (7,200 gallons per day) of cooling tower blowdown. Reliant will use non-contact heat exchange in the carbon dioxide process, as such cooling water will not come in contact with the process. Reliant anticipates the cooling tower blowdown wastewater quality to be similar to SME's current cooling tower

blowdown quality. Data from SME's current cooling tower blowdown is provided in the ChemTreat report in Appendix F.

Reliant is proposing to discharge the above wastewater sources at Outfall 001, which will be located west of the existing southern stormwater pond. Water discharged from Outfall 001 will flow to an unnamed tributary of Little Wakenda Creek. The location of the proposed discharge is depicted in the site layout figure in Appendix B and approximate latitude / longitude coordinates are provided. Prior to discharge at Outfall 001 box wash water and cooling tower blowdown water will be combined. Both wastewater sources will be able to be sampled independently, but wastewater samples for ongoing compliance will be collected from the comingled stream. The wastewater line drawing in Appendix D depicts the water source, treatment or use, and discharge.

Appendix A

MO DNR Forms

(A & C)

MO0140414 AP 43298

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	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:

☐ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – _____, 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 – _____ 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	
Reliant Processing LLC		432-617-4200	
ADDRESS (PHYSICAL)	**CITY**	**STATE**	**ZIP CODE**
26530 US-24	Carrollton	MO	64633

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Reliant Processing Holding LTD		432-617-4200	
EMAIL ADDRESS			
ADDRESS (MAILING)	**CITY**	**STATE**	**ZIP CODE**
10817 W County Road 60	Midland	TX	79707

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Reliant Processing LLC		432-617-4200	
EMAIL ADDRESS			
ADDRESS (MAILING)	**CITY**	**STATE**	**ZIP CODE**
26530 US-24	Carrollton	MO	64633

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
Joshua Jones	General Manager	432-559-6155
E-MAIL ADDRESS		
joshuaj@reliantholdingsltd.com		

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

NAME			
Show Me Ethanol			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
26530	Carrollton	MO	64633

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 _____¼ _____¼ Sec _____ T _____ R _____ _____ County
UTM Coordinates Easting (X): 461110 Northing (Y): 4357204

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): _____

Include all subsurface discharges and underground injection systems for permit consideration.

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

Primary SIC 2813 and NAICS 325120 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:
Environmental Permits 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: Well water. SME onsite well

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 https://dnr.mo.gov/env/wpp/edmr.htmfor information on the Department's eDMR system and how to register.

☑ - I will register an account online to participate in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before any reporting is due, in compliance with the Electronic Reporting Rule.

☐ - I have already registered an account online to participate in the Department's eDMR system through MoGEM.

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

☐ - The permit I am applying for does not require the submission of discharge monitoring reports.

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:
For new permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591

For modifications: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596

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
Joshua Jones, Manager	(432)617-4216
SIGNATURE	DATE SIGNED
	5/02/2023

MO 780-1479 (04-21)

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

Reliant Processing LLC

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

Facility not currently operating

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

Construction permit not 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.

See attached description

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	Cooling Tower Blowdown	7,200(8,280) GPD	Dechlorination	2-E

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	Box wash water	5	12	1	0.9-1			

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

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.

No biosolids or sludges are expected

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)
See attached sample results for box washing water and for cooling tower blowdown.			
Potable water with chlorine is proposed for the box washing water intake. Currently, there is no analytical results for chlorine. Facility proposes sodium bisulfite addition for de-chlorination.			

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.

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)*

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.

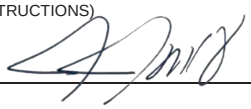
OUTFALL NUMBER	TOTAL AREA DRAINED (PROVIDE UNITS)	TYPES OF SURFACES (VEGETATED, STONE , PAVED, ETC)	BEST MANAGEMENT PRACTICES EMPLOYED; INCLUDE STRUCTURAL BMPS AND TREATMENT DESIGN FLOW FOR BMPS DESCRIBE HOW FLOW IS MEASURED
No Stormwater exposure is expected.			

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
Joshua Jones, Manager	(432)617-4216
SIGNATURE (SEE INSTRUCTIONS) 	DATE SIGNED 5/02/2023

See attached sample results for box washing water and for cooling tower blowdown.

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.

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.

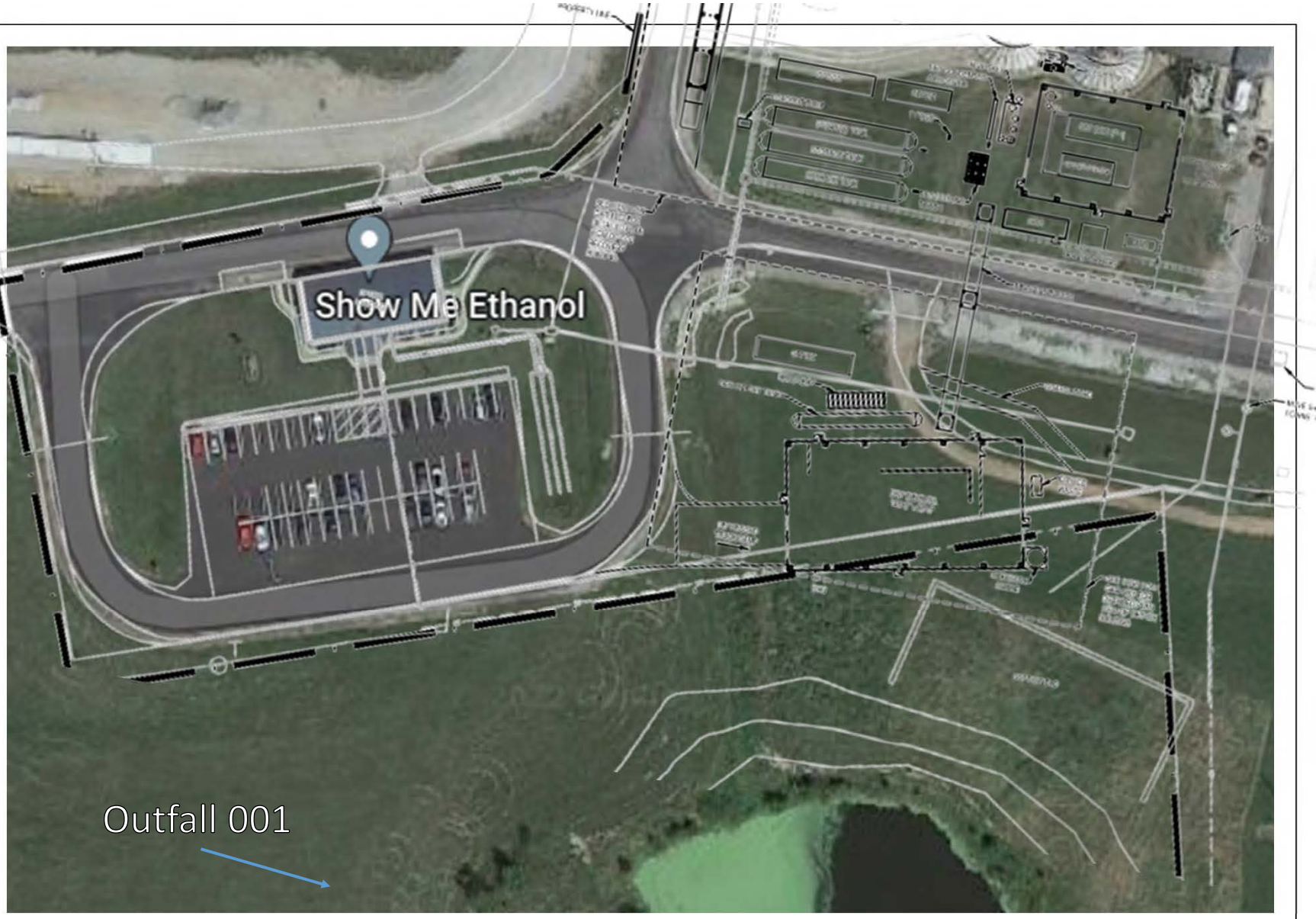
1. POLLUTANT	2. VALUES							3. UNITS *(specify if blank)*	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUES		C. LONG TERM AVERAGE VALUES		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)									
B. Chemical Oxygen Demand (COD)									
C. Total Organic Carbon (TOC)									
D. Total Suspended Solids (TSS)									
E. Ammonia as N									
F. Flow	VALUE		VALUE		VALUE			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			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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)			MINIMUM		MINIMUM		MINIMUM				
B. Bromide (24959-67-9)											
C. Chloride (16887-00-6)											
D. Chlorine, Total Residual											
E. Color											
F. Conductivity											
F. Cyanide, Amenable to Chlorination											

Appendix B

Site Layout Diagram



Pinnacle Engineering
11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

Reliant Processing

Carrollton, Missouri

PROJECT NUMBER: IO20235891 | DRAWN BY: CRS | DATE: 4/18/2023

LEGEND:

Pinnacle Engineering
11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

Reliant Processing

Carrollton, Missouri

PROJECT NUMBER: IO20235891 | DRAWN BY: CRS | DATE: 4/18/2023

LEGEND:

Pinnacle Engineering
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www.pineng.com

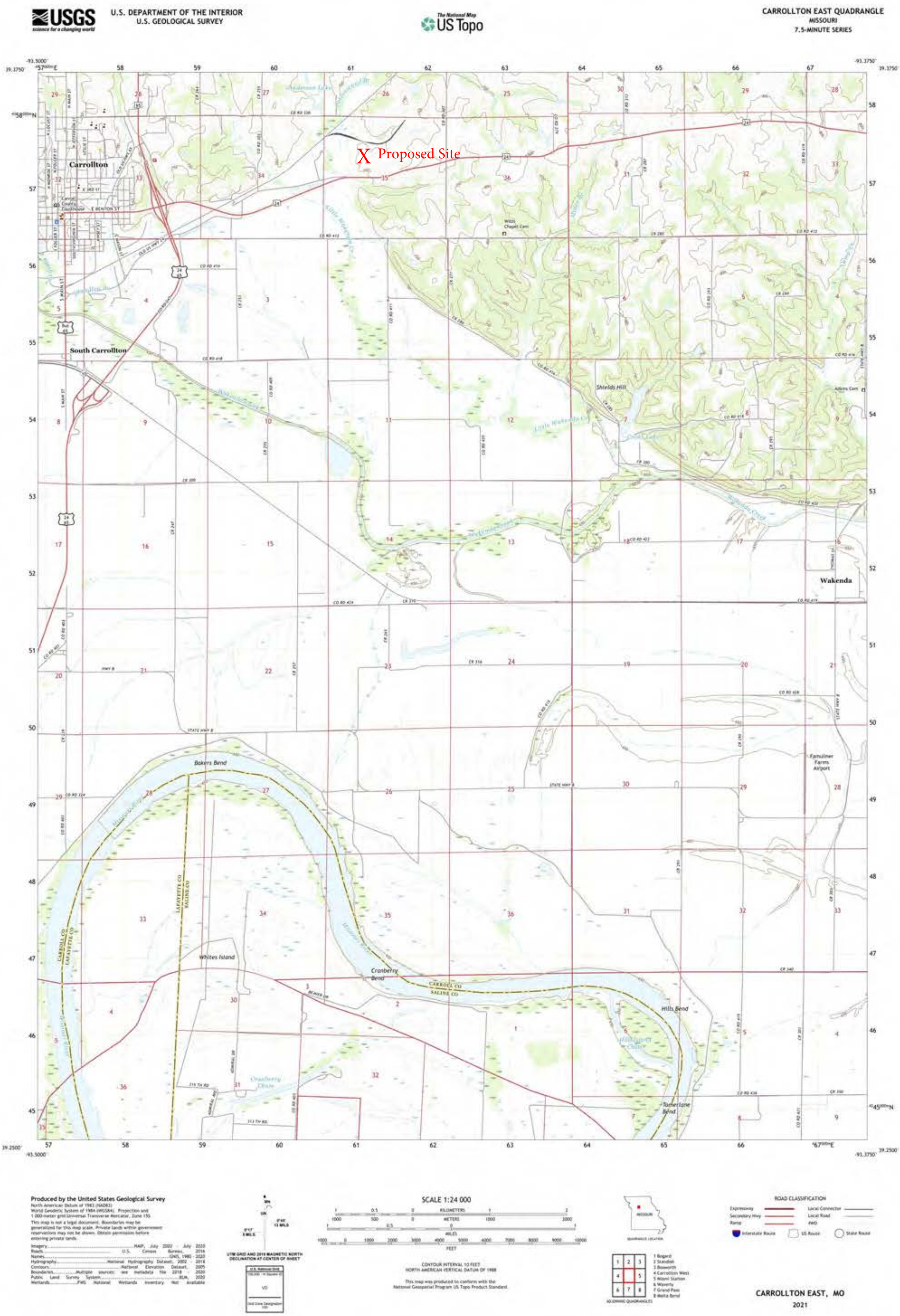
Reliant Processing

Carrollton, Missouri

PROJECT NUMBER: IO20235891 | DRAWN BY: CRS | DATE: 4/17/2023

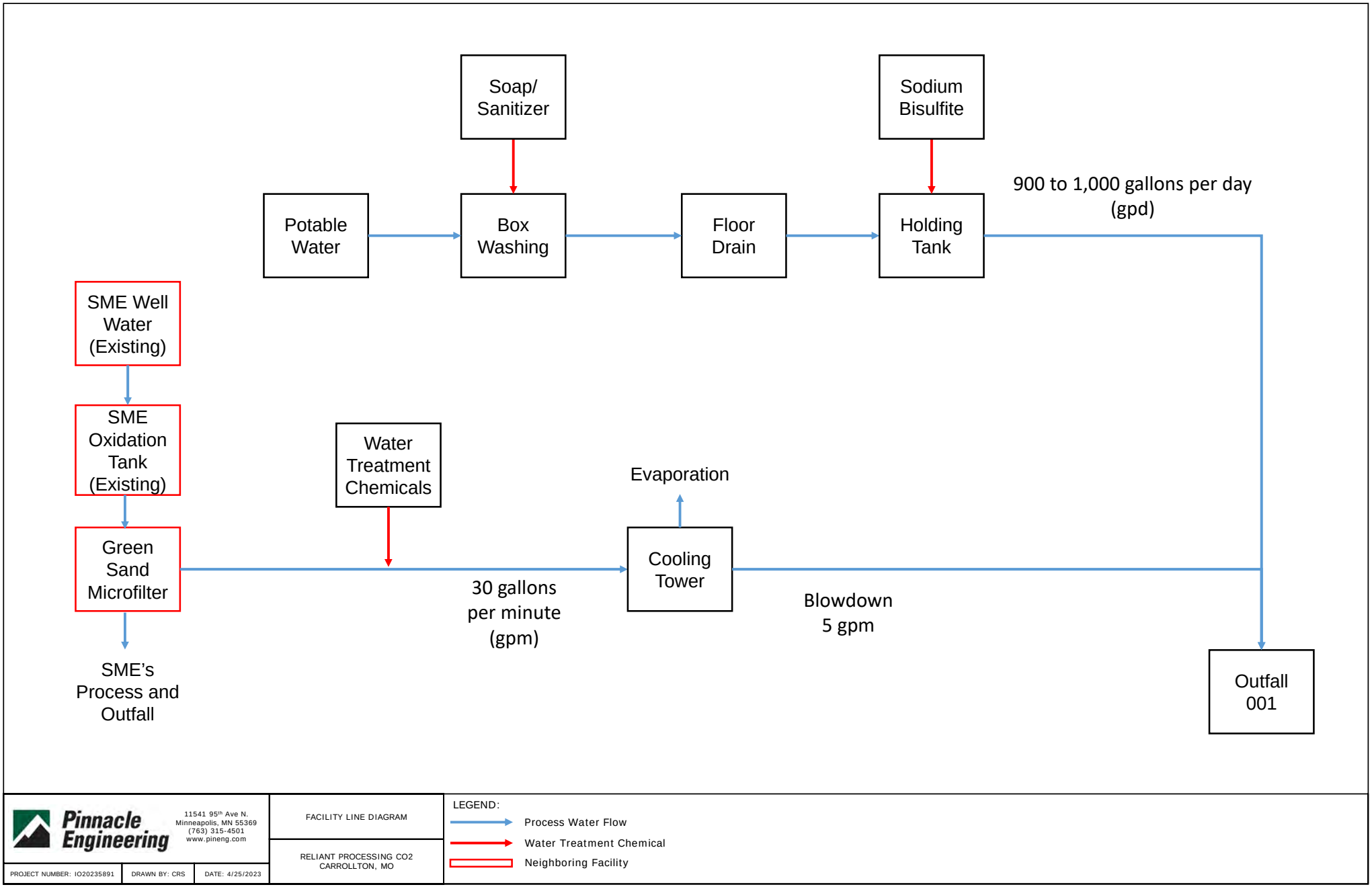
LEGEND:

Appendix C
USGS Topographic Map


USGS
science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
The National Map
US Topo
CARROLLTON EAST QUADRANGLE
MISSOURI
7.5-MINUTE SERIES
X Proposed Site
Carrollton
South Carrollton
Shields Hill
Wakenda
Bakers Bend
Whites Island
Cranberry Bend
Hills Bend
Cranberry Chute
Tamerlane Bend
Farmliner Farms Airport
Adams Cem
Wills Chapel Cem
Carroll County Courthouse
CARROLL CO
LAFAYETTE CO
SALINE CO
Produced by the United States Geological Survey
SCALE 1:24 000
KILOMETERS
METERS
MILES
FEET
CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the National Geospatial Program US Topo Product Standard.
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route
1 Bogard
2 Standish
3 Bosworth
4 Carrollton West
5 Miami Station
6 Waverly
7 Grand Pass
8 Malta Bend
ADJOINING QUADRANGLES
CARROLLTON EAST, MO
2021

Appendix D

Waterwater Line Drawing



Pinnacle Engineering
11541 95th Ave N.
Minneapolis, MN 55369
(763) 315-4501
www.pineng.com

FACILITY LINE DIAGRAM

RELIANT PROCESSING CO2
CARROLLTON, MO

PROJECT NUMBER: IO20235891 | DRAWN BY: CRS | DATE: 4/25/2023

LEGEND:
- Process Water Flow
- Water Treatment Chemical
- Neighboring Facility

Appendix E
Safety Data Sheets

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 11-Sep-2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **SANI-T-10**
Product Number: 1210 , 4800
Recommended Use: Disinfectant
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier:
Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 1

GHS Label Elements
Signal Word: **Danger**
Symbols:

Hazard Statements:
Harmful if inhaled.
Causes skin irritation.
Causes serious eye damage

Precautionary Statements:
Prevention:
Use only outdoors or in a well-ventilated area
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash hands and any exposed skin thoroughly after handling.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.

Response:
-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
-Skin IF ON SKIN: Wash with plenty of soap and water If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse
-Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Not Applicable
Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

Other Information:
• May be harmful if swallowed.
• Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	60-100
Benzalkonium Chloride	68391-01-5	3-7
Alkyl C12-14 Dimethyl Ethylbenzyl Ammonium Chloride	85409-23-0	3-7

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Skin Contact: Wash with plenty of soap and water Take off contaminated clothing and wash before reuse If skin irritation occurs: Get medical attention.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.

-Ingestion: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.

Note to Physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

Advice on Safe Handling: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe mist, vapors or spray. Do not eat, drink or smoke when using this product.

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Suggested Shelf Life: 1 year from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: None established.

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.
Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles.

Skin and Body Protection: Wear rubber or other chemical-resistant gloves.

Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Colorless
Odor:	Mild
pH:	7.0-8.0
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F ASTM D56
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	0.998
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.

Conditions to Avoid: Extremes of temperature and direct sunlight.

Incompatible Materials: Strong oxidizing agents. Strong acids.

Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.

Symptoms of Exposure:

-Eye Contact: Pain, redness, swelling of the conjunctiva and tissue damage. Eye contact may cause permanent damage.

-Skin Contact: Pain, redness and cracking of the skin.
-Inhalation: Nasal discomfort and coughing.
-Ingestion: Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.

Numerical Measures of Toxicity
The following acute toxicity estimates (ATE) are calculated based on the GHS document.
.
ATEmix (oral): 4995 mg/kg
ATEmix (dermal): 2997 mg/kg
ATEmix (inhalation-dust/mist): 2.817 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
Benzalkonium Chloride 68391-01-5	= 850 mg/kg (Rat)	= 2300 mg/kg (Rabbit)	Not Available

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT: Not Regulated
Proper Shipping Name: Non-Hazardous Product
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG: Not Regulated
Proper Shipping Name: Non-Hazardous Product

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product does not contain listed substances above the "de minimus" level

SARA 311/312 Hazard Categories
Acute Health Hazard: Yes
Chronic Health Hazard: No
Fire Hazard: No
Sudden release of pressure hazard: No
Reactive Hazard: No

California Proposition 65
This product is not subject to warning requirements under California Proposition 65.

EPA Pesticide Registration Number: 5741-13
EPA Statement:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
EPA Pesticide Label:
Danger. Corrosive. Causes irreversible eye damage and skin burns. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes, on skin or clothing. Wear protective eyewear (goggles, face shield, or safety glasses), rubber gloves and protective clothing. Wash thoroughly with soap and water after handling and before eating, drinking, smoking tobacco, chewing gum, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

16. OTHER INFORMATION

NFPA	**Health Hazards:** 3	**Flammability:** 0	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 3	**Flammability:** 0	**Physical Hazards:** 0	

Revision Date: 11-Sep-2019
Reasons for Revision: Section, 2, 4, and, 11

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 02-Jul-2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **INSPECTOR'S CHOICE**
Product Number: 3045
Recommended Use: Cleaning agent
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier:
Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification
Skin Corrosion/Irritation: Category 1 Sub-category B
Serious Eye Damage/Eye Irritation: Category 1
Corrosive to Metals: Category 1

GHS Label Elements
Signal Word: **Danger**

Symbols:

Hazard Statements:
Causes severe skin burns and serious eye damage.
May be corrosive to metals.

Precautionary Statements:
Prevention:
Do not breathe mist, vapors or spray.
Wash hands and any exposed skin thoroughly after handling.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.
Keep in original or other corrosion resistant container.

Response: **IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.**
-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
-Skin IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
-Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
-Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Store locked up. Store in corrosion resistant container.
Disposal: Dispose of contents and container in accordance with local, state and federal regulations.

Hazards Not Otherwise Classified: Not Applicable

Other Information:

- Corrosive.
- Harmful contact may not cause immediate pain.
- Harmful if swallowed
- Inhalation of vapors or mist may cause respiratory irritation or damage.
- Take off and destroy contaminated shoes.
- Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	60-100
Tetrasodium EDTA	64-02-8	1-5
sodium metasilicate	6834-92-0	1-5
phosphate ester	68130-47-2	1-5
sodium dodecylbenzene sulfonate	25155-30-0	1-5
Sodium Hydroxide	1310-73-2	1-5
sodium (C14-16) olefin sulfonate	68439-57-6	1-5

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Skin Contact: Take off immediately all contaminated clothing and shoes. Rinse with water or shower for at least 15 minutes. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse. Discard or destroy contaminated shoes.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Ingestion: Rinse mouth. Do NOT induce vomiting. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Never give anything by mouth to an unconscious person.

Note to Physicians: NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.

Suggested Shelf Life: Minimum of 2 years from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m³	TWA: 2 mg/m³ (vacated) Ceiling: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.
Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles. For severe use-conditions, wear a face shield over the goggles.

Skin and Body Protection: Wear rubber or other chemical-resistant gloves. Use of impervious apron, boots and other protective equipment should be considered in order to prevent or minimize contact with this product.

Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Clear Light yellow
Odor:	No information available.
pH:	13.0-13.5
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	> 100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F ASTM D56
Evaporation Rate:	< 1 (BuAc = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.06
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.

Conditions to Avoid: Extremes of temperature and direct sunlight.
Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Tetrasodium EDTA 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	41: 96 h Lepomis macrochirus mg/L LC50 static 59.8: 96 h Pimephales promelas mg/L LC50 static	Not Available	Not Available
sodium metasilicate 6834-92-0	Not Available	210: 96 h Brachydanio rerio mg/L LC50 semi-static 210: 96 h Brachydanio rerio mg/L LC50	Not Available	Not Available
sodium dodecylbenzene sulfonate 25155-30-0	Not Available	10.8: 96 h Oncorhynchus mykiss mg/L LC50 static	Not Available	Not Available
Sodium Hydroxide 1310-73-2	Not Available	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	Not Available	Not Available
sodium (C14-16) olefin sulfonate 68439-57-6	Not Available	1.0 - 10.0: 96 h Brachydanio rerio mg/L LC50 static 12.2: 96 h Brachydanio rerio mg/L LC50 semi-static	Not Available	Not Available

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.
US EPA Waste Number: D002

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s.,(contains sodium hydroxide)
Hazard Class: 8
Packing Group: III
Special Provisions: For totes add: I.B.C.
Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG:
UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s.,(contains sodium hydroxide)
Hazard Class: 8
Packing Group: III
Additional information: For totes add: I.B.C.

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)

All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product does not contain listed substances above the "de minimus" level

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

California Proposition 65
This product is not subject to warning requirements under California Proposition 65.

16. OTHER INFORMATION

NFPA	**Health Hazards:** 3	**Flammability:** 0	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 3	**Flammability:** 0	**Physical Hazards:** 0	

Revision Date: 02-Jul-2018
Reasons for Revision: Section 7

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Appendix F

Wastewater Discharge Quality

Sample Results

10041 Lickinghole Road - Ashland, Virginia 23005 · t/ 804.935.2418 · www.chemtreat.com

Analytical Lab

Certificate of Analysis

Apr 19, 2022

Laboratory No.	W-220413-057
Company	SHOW ME ETHANOL LLC (C002738)
Address	26530 UU HWY # 24, 64633-8474,
Account Manager	Harold Lacy
Request Date	Apr 13, 2022
Sample Class	Water

Analysis	RO REJECT	MF BACKWASH	COOLING TOWER
	Apr 11, 2022	Apr 11, 2022	Apr 11, 2022
Lab pH	7.98	7.62	7.21
Total Dissolved Solids	-	-	1577 mg/L
Conductivity	2206 umho	598 umho	2353 umho
P-Alkalinity, as CaCO3	<1 mg/L	<1 mg/L	<1 mg/L
M-Alkalinity, as CaCO3	1119 mg/L	234 mg/L	57 mg/L
Calcium Hardness, as CaCO3	949 mg/L	189 mg/L	792 mg/L
Magnesium Hardness, as CaCO3	319 mg/L	62 mg/L	268 mg/L
Iron, as Fe	<0.01 mg/L	2.4 mg/L	0.08 mg/L
Copper, as Cu	<0.01 mg/L	<0.01 mg/L	0.02 mg/L
Filtered Copper, as Cu	<0.01 mg/L	<0.01 mg/L	0.02 mg/L
Zinc, as Zn	<0.01 mg/L	<0.01 mg/L	0.09 mg/L
Sodium, as Na	91 mg/L	22 mg/L	146 mg/L
Potassium, as K	10 mg/L	3.1 mg/L	10 mg/L
Chloride, as Cl	80 mg/L	17 mg/L	148 mg/L
Sulfate, as SO4	119 mg/L	24 mg/L	989 mg/L
Nitrate, as NO3	<0.1 mg/L	0.13 mg/L	0.84 mg/L
Ortho-Phosphate, as PO4	<0.1 mg/L	0.72 mg/L	2.7 mg/L
Filtered Phosphate, as OPO4	-	-	2.7 mg/L
Silica, as SiO2	156 mg/L	12 mg/L	140 mg/L
Benzotriazole	-	-	<0.1 mg/L

Comments

Respectfully Submitted,

Joel Phillips

Manager Applied Technology Analytical Lab

ChemTreat International, Inc.

Certificate of Analysis

Apr 19, 2022

Laboratory No. W-220413-057
Company SHOW ME ETHANOL LLC (C002738)
Address 26530 UU HWY # 24, 64633-8474,
Account Manager Harold Lacy
Request Date Apr 13, 2022
Sample Class Water

Analysis	RO REJECT	MF BACKWASH	COOLING TOWER
	Apr 11, 2022	Apr 11, 2022	Apr 11, 2022
Tolyltriazole	-	-	<0.1 mg/L
Phosphonate, as PO4	-	-	0.60 mg/L
Total Phosphate, as PO4	<0.5 mg/L	<0.5 mg/L	3.9 mg/L
Fluoride, as F	0.15 mg/L	<0.1 mg/L	-
Nitrite, as NO2	2.4 mg/L	2.4 mg/L	-
Bromide, as Br	-	-	<0.5 mg/L
Aluminum, as Al	0.07 mg/L	<0.01 mg/L	0.05 mg/L
Boron, as B	0.07 mg/L	0.03 mg/L	-
Barium, as Ba	2.9 mg/L	0.66 mg/L	-
Manganese, as Mn	1.2 mg/L	0.29 mg/L	0.02 mg/L
Molybdenum, as Mo	-	-	<0.05 mg/L
Strontium, as Sr	1.3 mg/L	0.28 mg/L	-
Total Suspended Solids	13 mg/L	456 mg/L	-

Comments

Respectfully Submitted,

JO Phillips

Joel Phillips
Manager Applied Technology Analytical Lab
ChemTreat International, Inc.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

Laboratory Job ID: 400-223235-1
Laboratory Sample Delivery Group: Atlantic Dry Ice
Client Project/Site: Water Analysis

For:
Wood PLC
986 Madison Ave.
Suite 2C
Madison, Mississippi 39110

Attn: Mr. Rick Crawford

Cheyenne R Whitmire

Authorized for release by:
8/2/2022 5:41:46 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
Cheyenne.Whitmire@et.eurofinsus.com

Table of Contents

Case Narrative

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Job ID: 400-223235-1

Laboratory: Eurofins Pensacola

Narrative

Job Narrative
400-223235-1

Receipt
The sample was received on 7/21/2022 9:04 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

General Chemistry
Method 1664B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 400-585782.

Method 350.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 400-586492 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 351.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 400-585977 and analytical batch 400-586090 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 365.1_Ortho: The following sample was diluted to bring the concentration of target analytes within the calibration range: CONDENSER TOWER (400-223235-1). Elevated reporting limits (RLs) are provided.

Method 365.1_Ortho: The following sample was received outside of holding time: CONDENSER TOWER (400-223235-1).

Method 405.1: The following sample was received outside of holding time: CONDENSER TOWER (400-223235-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Client Sample ID: CONDENSER TOWER — Lab Sample ID: 400-223235-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	8.1	HF			S.U.	1		150.1	Total/NA
Temperature	21.7	HF			Degrees C	1		150.1	Total/NA
Oil & Grease (HEM)	3.1	J	3.9	1.4	mg/L	1		1664B	Total/NA
Phosphorus, Total	1.0		0.10	0.049	mg/L	1		365.4	Total/NA
ortho-Phosphate	0.83	H H3	0.25	0.20	mg/L	5		EPA 365.1	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Method	Method Description	Protocol	Laboratory
150.1	pH (Electrometric)	MCAWW	TAL PEN
160.2	Solids, Total Suspended (TSS)	MCAWW	TAL PEN
1664B	Oil and Grease (HEM)	EPA	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
365.4	Phosphorus, Total	EPA	TAL PEN
405.1	BOD, 5-Day	MCAWW	TAL PEN
EPA 365.1	Phosphorus, Ortho	EPA	TAL PEN
1664B	HEM and SGT-HEM (Aqueous)	1664B	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
365.2/365.3/365	Phosphorus, Total	MCAWW	TAL PEN

Protocol References:

1664B = EPA-821-98-002

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

TAL PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-223235-1	CONDENSER TOWER	Water	07/19/22 08:50	07/21/22 09:04

Client Sample Results

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Client Sample ID: CONDENSER TOWER

Date Collected: 07/19/22 08:50
Date Received: 07/21/22 09:04

Lab Sample ID: 400-223235-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.1**	**HF**			S.U.			07/28/22 15:05	1
Temperature	**21.7**	**HF**			Degrees C			07/28/22 15:05	1
Total Suspended Solids	<5.0		5.0	5.0	mg/L			07/22/22 15:22	1
Oil & Grease (HEM)	**3.1**	**J**	3.9	1.4	mg/L		07/22/22 10:37	07/22/22 12:15	1
Ammonia	<0.024		0.050	0.024	mg/L			07/27/22 16:01	1
Total Kjeldahl Nitrogen	<0.26		0.50	0.26	mg/L		07/24/22 17:06	07/25/22 13:22	1
Phosphorus, Total	**1.0**		0.10	0.049	mg/L		07/24/22 17:06	07/25/22 16:19	1
Biochemical Oxygen Demand	<2.0	H H3	2.0	2.0	mg/L			07/21/22 15:30	1
ortho-Phosphate	**0.83**	**H H3**	0.25	0.20	mg/L			07/26/22 13:12	5

Definitions/Glossary

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Lab Chronicle

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Client Sample ID: CONDENSER TOWER

Date Collected: 07/19/22 08:50
Date Received: 07/21/22 09:04

Lab Sample ID: 400-223235-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	150.1		1			586662	07/28/22 15:05	DEK	TAL PEN
	Instrument ID: NOEQUIP									
Total/NA	Analysis	160.2		1	100 mL	100 mL	585843	07/22/22 15:22	VB	TAL PEN
	Instrument ID: Balance 1									
Total/NA	Prep	1664B			1035 mL	1000 mL	585782	07/22/22 10:37	ARE	TAL PEN
Total/NA	Analysis	1664B		1			585796	07/22/22 12:15	ARE	TAL PEN
	Instrument ID: J.T. Baker 1&2									
Total/NA	Analysis	350.1		1	10 mL	10 mL	586492	07/27/22 16:01	CAC	TAL PEN
	Instrument ID: Venom									
Total/NA	Prep	351.2			25 mL	25 mL	585977	07/24/22 17:06	ANE	TAL PEN
Total/NA	Analysis	351.2		1			586090	07/25/22 13:22	ANE	TAL PEN
	Instrument ID: Lachat 2									
Total/NA	Prep	365.2/365.3/365			25 mL	25 mL	585976	07/24/22 17:06	ANE	TAL PEN
Total/NA	Analysis	365.4		1	10 mL	10 mL	586138	07/25/22 16:19	ANE	TAL PEN
	Instrument ID: Lachat 2									
Total/NA	Analysis	405.1		1	300 mL	300 mL	585856		DVN	TAL PEN
	Instrument ID: Sebastian						(Start)	07/21/22 15:30		
							(End)	07/26/22 14:31		
Total/NA	Analysis	EPA 365.1		5	10 mL	10 mL	586236	07/26/22 13:12	DEK	TAL PEN
	Instrument ID: DrOct									

Laboratory References:

TAL PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

General Chemistry

Prep Batch: 585782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	1664B	
MB 400-585782/1-A	Method Blank	Total/NA	Water	1664B	
LCS 400-585782/2-A	Lab Control Sample	Total/NA	Water	1664B	
LCSD 400-585782/3-A	Lab Control Sample Dup	Total/NA	Water	1664B	

Analysis Batch: 585796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	1664B	585782
MB 400-585782/1-A	Method Blank	Total/NA	Water	1664B	585782
LCS 400-585782/2-A	Lab Control Sample	Total/NA	Water	1664B	585782
LCSD 400-585782/3-A	Lab Control Sample Dup	Total/NA	Water	1664B	585782

Analysis Batch: 585843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	160.2	
MB 400-585843/1	Method Blank	Total/NA	Water	160.2	
LCS 400-585843/2	Lab Control Sample	Total/NA	Water	160.2	
400-223291-A-2 DU	Duplicate	Total/NA	Water	160.2	

Analysis Batch: 585856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	405.1	
USB 400-585856/1	Method Blank	Total/NA	Water	405.1	
LCS 400-585856/2	Lab Control Sample	Total/NA	Water	405.1	
400-223192-A-1 DU	Duplicate	Total/NA	Water	405.1	

Prep Batch: 585976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	365.2/365.3/365	
MB 400-585976/1-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 400-585976/2-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
400-223268-F-1-B MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
400-223268-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

Prep Batch: 585977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	351.2	
MB 400-585977/1-A	Method Blank	Total/NA	Water	351.2	
LCS 400-585977/2-A	Lab Control Sample	Total/NA	Water	351.2	
400-223268-F-1-E MS	Matrix Spike	Total/NA	Water	351.2	
400-223268-F-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	

Analysis Batch: 586090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	351.2	585977
MB 400-585977/1-A	Method Blank	Total/NA	Water	351.2	585977
LCS 400-585977/2-A	Lab Control Sample	Total/NA	Water	351.2	585977
MRL 400-586090/10	Lab Control Sample	Total/NA	Water	351.2	
400-223268-F-1-E MS	Matrix Spike	Total/NA	Water	351.2	585977
400-223268-F-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	585977

General Chemistry

Analysis Batch: 586138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	365.4	585976
MB 400-585976/1-A	Method Blank	Total/NA	Water	365.4	585976
LCS 400-585976/2-A	Lab Control Sample	Total/NA	Water	365.4	585976
MRL 400-586138/14	Lab Control Sample	Total/NA	Water	365.4	
400-223268-F-1-B MS	Matrix Spike	Total/NA	Water	365.4	585976
400-223268-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.4	585976

Analysis Batch: 586236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	EPA 365.1	
MB 400-586236/13	Method Blank	Total/NA	Water	EPA 365.1	
MB 400-586236/44	Method Blank	Total/NA	Water	EPA 365.1	
MB 400-586236/54	Method Blank	Total/NA	Water	EPA 365.1	
LCS 400-586236/14	Lab Control Sample	Total/NA	Water	EPA 365.1	
LCS 400-586236/45	Lab Control Sample	Total/NA	Water	EPA 365.1	
LCS 400-586236/55	Lab Control Sample	Total/NA	Water	EPA 365.1	
MRL 400-586236/15	Lab Control Sample	Total/NA	Water	EPA 365.1	
400-223260-A-11 MS	Matrix Spike	Dissolved	Water	EPA 365.1	
400-223260-A-11 MSD	Matrix Spike Duplicate	Dissolved	Water	EPA 365.1	
400-223354-H-1 MS	Matrix Spike	Total/NA	Water	EPA 365.1	
400-223354-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 365.1	

Analysis Batch: 586492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	350.1	
MB 400-586492/42	Method Blank	Total/NA	Water	350.1	
MB 400-586492/76	Method Blank	Total/NA	Water	350.1	
LCS 400-586492/43	Lab Control Sample	Total/NA	Water	350.1	
LCS 400-586492/77	Lab Control Sample	Total/NA	Water	350.1	
MRL 400-586492/16	Lab Control Sample	Total/NA	Water	350.1	
400-223279-E-2 MS	Matrix Spike	Total/NA	Water	350.1	
400-223279-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Analysis Batch: 586662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-223235-1	CONDENSER TOWER	Total/NA	Water	150.1	
LCS 400-586662/1	Lab Control Sample	Total/NA	Water	150.1	
400-223235-1 DU	CONDENSER TOWER	Total/NA	Water	150.1	

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 400-586662/1
Matrix: Water
Analysis Batch: 586662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.1		S.U.		101	98.6 - 101.4		

Lab Sample ID: 400-223235-1 DU
Matrix: Water
Analysis Batch: 586662

Client Sample ID: CONDENSER TOWER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.1	HF		8.3		S.U.				2	5
Temperature	21.7	HF		22.4		Degrees C				3	30

Method: 160.2 - Solids, Total Suspended (TSS)

Lab Sample ID: MB 400-585843/1
Matrix: Water
Analysis Batch: 585843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<0.50		0.50	0.50	mg/L			07/22/22 15:22	1

Lab Sample ID: LCS 400-585843/2
Matrix: Water
Analysis Batch: 585843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			288	264		mg/L		92	82 - 118		

Lab Sample ID: 400-223291-A-2 DU
Matrix: Water
Analysis Batch: 585843

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	13			13.0		mg/L				0	5

Method: 1664B - Oil and Grease (HEM)

Lab Sample ID: MB 400-585782/1-A
Matrix: Water
Analysis Batch: 585796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 585782

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	<1.4		4.0	1.4	mg/L		07/22/22 10:37	07/22/22 12:15	1

Lab Sample ID: LCS 400-585782/2-A
Matrix: Water
Analysis Batch: 585796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 585782

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Oil & Grease (HEM)			40.1	34.40		mg/L		86	78 - 114		

Method: 1664B - Oil and Grease (HEM) (Continued)

Lab Sample ID: LCSD 400-585782/3-A
Matrix: Water
Analysis Batch: 585796

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 585782

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Oil & Grease (HEM)	40.1	33.80		mg/L		84	78 - 114	2	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-586492/42
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.024		0.050	0.024	mg/L			07/27/22 16:01	1

Lab Sample ID: MB 400-586492/76
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.024		0.050	0.024	mg/L			07/27/22 16:01	1

Lab Sample ID: LCS 400-586492/43
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	2.00	1.97		mg/L		99	90 - 110

Lab Sample ID: LCS 400-586492/77
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	2.00	1.99		mg/L		99	90 - 110

Lab Sample ID: MRL 400-586492/16
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.0500	0.0420	J	mg/L		84	50 - 150

Lab Sample ID: 400-223279-E-2 MS
Matrix: Water
Analysis Batch: 586492

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.17	F1	1.00	0.560	F1	mg/L		39	90 - 110

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 400-223279-E-2 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586492

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.17	F1	1.00	0.622	F1	mg/L		45	90 - 110	10	11

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-585977/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586090 — **Prep Batch: 585977**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	<0.26		0.50	0.26	mg/L		07/24/22 17:06	07/25/22 13:05	1

Lab Sample ID: LCS 400-585977/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586090 — **Prep Batch: 585977**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	10.0	9.77		mg/L		98	90 - 110

Lab Sample ID: 400-223268-F-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586090 — **Prep Batch: 585977**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	0.64	F1	4.00	4.68		mg/L		101	90 - 110

Lab Sample ID: 400-223268-F-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586090 — **Prep Batch: 585977**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	0.64	F1	4.00	5.25	F1	mg/L		115	90 - 110	12	22

Lab Sample ID: MRL 400-586090/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586090

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	0.500	0.417	J	mg/L		83	50 - 150

Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 400-585976/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586138 — **Prep Batch: 585976**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	<0.049		0.10	0.049	mg/L		07/24/22 17:06	07/25/22 16:02	1

Method: 365.4 - Phosphorus, Total (Continued)

Lab Sample ID: LCS 400-585976/2-A
Matrix: Water
Analysis Batch: 586138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 585976

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phosphorus, Total	2.00	2.16		mg/L		108	75 - 113

Lab Sample ID: 400-223268-F-1-B MS
Matrix: Water
Analysis Batch: 586138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 585976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phosphorus, Total	1.1		0.400	1.54		mg/L		102	72 - 120

Lab Sample ID: 400-223268-F-1-C MSD
Matrix: Water
Analysis Batch: 586138

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 585976

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phosphorus, Total	1.1		0.400	1.57		mg/L		109	72 - 120	2	27

Lab Sample ID: MRL 400-586138/14
Matrix: Water
Analysis Batch: 586138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Phosphorus, Total	0.100	0.116		mg/L		116	50 - 150

Method: 405.1 - BOD, 5-Day

Lab Sample ID: USB 400-585856/1
Matrix: Water
Analysis Batch: 585856

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			07/21/22 16:55	1

Lab Sample ID: LCS 400-585856/2
Matrix: Water
Analysis Batch: 585856

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	197		mg/L		100	85 - 115

Lab Sample ID: 400-223192-A-1 DU
Matrix: Water
Analysis Batch: 585856

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Biochemical Oxygen Demand	<2.0		<2.0		mg/L		NC	27

Method: EPA 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-586236/13
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.039		0.050	0.039	mg/L			07/23/22 18:16	1

Lab Sample ID: MB 400-586236/44
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.039		0.050	0.039	mg/L			07/23/22 18:16	1

Lab Sample ID: MB 400-586236/54
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.039		0.050	0.039	mg/L			07/26/22 13:12	1

Lab Sample ID: LCS 400-586236/14
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
ortho-Phosphate	0.100	0.0920		mg/L		92	90 - 110

Lab Sample ID: LCS 400-586236/45
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
ortho-Phosphate	0.100	0.0902		mg/L		90	90 - 110

Lab Sample ID: MRL 400-586236/15
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
ortho-Phosphate	0.00500	<0.013		mg/L		72	50 - 150

Lab Sample ID: 400-223354-H-1 MS
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
ortho-Phosphate	<0.039		0.100	0.0983		mg/L		98	90 - 110

Lab Sample ID: 400-223354-H-1 MSD
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
ortho-Phosphate	<0.039		0.100	0.103		mg/L		103	90 - 110	5	7

Method: EPA 365.1 - Phosphorus, Ortho

Lab Sample ID: 400-223260-A-11 MS
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
ortho-Phosphate	<0.039		0.100	0.0901		mg/L		90	90 - 110		

Lab Sample ID: 400-223260-A-11 MSD
Matrix: Water
Analysis Batch: 586236

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
ortho-Phosphate	<0.039		0.100	0.0957		mg/L		96	90 - 110	6	7

Eurofins Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone: 850-474-1001 Fax: 850-478-2671

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: David Robinson (DR)	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-112739-39492.1
Client Contact: Mr. Rick Crawford	Phone: 601-382-6960	E-Mail: Cheyenne.Whitmire@et.eurofinsus.com	State of Origin: MS	Page: Page 1 of 1
Company: Wood PLC	PWSID:			Job #:
Address: 986 Madison Ave. Suite 2C	Due Date Requested:			
City: Madison	TAT Requested (days): 5			
State, Zip: MS, 39110	Compliance Project: Δ Yes Δ No			
Phone: 601-709-2837(Tel)	PO #: Purchase Order Requested			
Email: rick.crawford@woodplc.com	WO #:			
Project Name: Water Analysis	Project #: 40014808			
Site: Atlantic Dry Ice	SSOW#:			

Analysis Requested

400-223235 COC

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	350.1 - Nitrogen, Ammonia	1664B - Oil & Grease (HEM)	405.1 - BOD, 5-Day	160.2 - TSS	150.1 - pH & Temperature	365.1_Ortho - Orthophosphate	351.2 - TKN	365.4 - Phosphorus, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:				S	S	N	N	N	N	S	S		
Condenser Tower	7-19-22	0850	G	Water			X	X	X	X	X	X	X	X	6	
Empty Bottles (NOT USED)	—	—	—	~~Water~~											0	
Temp Blank	—	—	—	—											1	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	David Robinson	7-19-22 1015	WOOD			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 7.21.22 09:04	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 1743434 | Cooler Temperature(s) °C and Other Remarks: 5.4°C JR10

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Wood PLC

Job Number: 400-223235-1
SDG Number: Atlantic Dry Ice

Login Number: 223235
List Number: 1
Creator: Roberts, Alexis J

List Source: Eurofins Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	1743434
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4°C IR10
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Recieved out of hold for ortho and bod.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Wood PLC
Project/Site: Water Analysis

Job ID: 400-223235-1
SDG: Atlantic Dry Ice

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-23
ANAB	ISO/IEC 17025	L2471	02-23-23
Arkansas DEQ	State	88-0689	09-01-22
California	State	2510	06-30-23
Florida	NELAP	E81010	06-30-23
Georgia	State	E81010(FL)	06-30-23
Illinois	NELAP	200041	10-09-22
Kansas	NELAP	E-10253	10-31-22
Kentucky (UST)	State	53	06-30-23
Kentucky (WW)	State	KY98030	12-31-22
Louisiana (All)	NELAP	30976	06-30-23
Louisiana (DW)	State	LA017	12-31-22
Maryland	State	233	09-30-22
Michigan	State	9912	06-30-23
North Carolina (WW/SW)	State	314	12-31-22
Oklahoma	NELAP	9810	08-31-22
Pennsylvania	NELAP	68-00467	01-31-23
South Carolina	State	96026	06-30-23
Tennessee	State	TN02907	06-30-23
Texas	NELAP	T104704286	09-30-22
US Fish & Wildlife	US Federal Programs	A22340	06-30-23
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-23
West Virginia DEP	State	136	03-31-23