



STATE OF MAINE
DEPARTMENT OF
ENVIRONMENTAL PROTECTION



JANET L. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

June 18, 2019

Mr. Andrew Begin
Assistant General Manager & Chief Engineer
Greater Augusta Utility District
12 Williams Street
Augusta, ME. 04330

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0102890
Maine Waste Discharge License (WDL) #W009211-5S-A-N
Proposed Draft Permit

Dear Mr. Begin:

Enclosed is a **proposed draft** MEPDES permit and Maine WDL which the Department proposes to issue for your facility as a final document after opportunity for your review and comment. By transmittal of this letter, you are provided with an opportunity to comment on the proposed draft document and its special and standard conditions. If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies and from any other parties who have notified the Department of their interest in this matter.

Beginning today, Monday, June 18, 2019, the Department is making the draft permit available for a 30-day public comment period. All comments on the proposed draft permit must be received in the Department of Environmental Protection office on or before the close of business **Thursday, July 18, 2019**. Failure to submit comments in a timely fashion will result in the final permit document being issued as drafted.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
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(207) 822-6300 FAX: (207) 822-6303

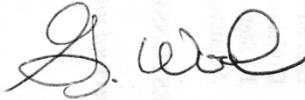
PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333-0017
gregg.wood@maine.gov

If you have any questions regarding the matter, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Wood", is positioned above the typed name.

Gregg Wood
Division of Water Quality Management
Bureau of Water Quality

Enc.

James Crowley, DEP/CMRO
Lori Mitchell, DEP/CMRO
Damien Houlihan, USEPA
Marelyn Vega, USEPA
Shelley Puleo, USEPA
Maine DMR
Maine IFW



DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018

Contact: (207) 287-2452

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status.* The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

GREATER AUGUSTA UTILITY DISTRICT)	MAINE POLLUTANT DISCHARGE
MISCELLANEOUS NON PROCESS WATER)	ELIMINATION SYSTEM PERMIT
AUGUSTA, KENNEBEC COUNTY, MAINE)	AND
ME0102890)	WASTE DISCHARGE LICENSE
W009211-5S-A-N)	NEW
		APPROVAL

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et. seq.* and Maine Law 38 M.R.S., Section 414-A *et seq.*, and applicable regulations, the Department of Environmental Protection (the Department) has considered a request by the GREATER AUGUSTA UTILITY DISTRICT (GAUD/District/permittee hereinafter), for a new combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0102890/Maine Waste Discharge License (WDL) #W009211-5S-A-N (permit hereinafter). With its supportive data, agency review comments, and other related material on file the Department FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The District is seeking authorization to discharge minor quantities of drilling fluid associated with a pipe replacement project under the Kennebec River also referred to as the “Sanitary Sewer Siphon – Kennebec River Crossing” project. The project involves the replacement of an existing parallel 20-inch and 8-inch cast iron sanitary sewer siphons located below the Kennebec River. The existing siphons were installed by open-cut methods in 1962. During a routine inspection in 2016, a leak was detected in the 8-inch siphon and this line was taken out of service. The District has concerns regarding the continued reliability of the 20-inch siphon and desires to install a new siphon to maintain flow of the sanitary sewer to the District’s waste water treatment facility on the west side of the Kennebec River.

A 16-inch diameter HDPE pipe will be installed by horizontal directional drilling (HDD) approximately 20 feet below the river bottom. The project has been permitted through the Department and U.S. Army Corps of Engineers. HDD methods require the pumping of drill mud to advance the bore tooling and remove spoils from the bore hole. The drill mud has 3 primary functions; 1) removed spoils from the bore hole, 2) lubricate for the reaming process and 3) seal fractures in the soil to minimize or eliminate seepage of groundwater. The mud helps stabilize the bore hole so it does not collapse while the new pipe is being pulled through. There is the

APPLICATION SUMMARY (cont'd)

potential for a release of drill fluid release during drilling operations. The District has developed an inadvertent fluid release plan. The plan focuses on monitoring the drilling operations to eliminate/reduce the chances of a frac-out (fluid release). The last step of the plan focuses on containing a drill fluid release to the Kennebec River.

CONCLUSIONS

BASED on the findings on page 1 of this permit, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 M.R.S. Section 464(4)(F), will be met, in that:
 - a. Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - b. Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
 - c. Where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - d. Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and
 - e. Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharges will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the request by the GREATER AUGUSTA UTILITY DISTRICT, to inadvertently discharge minor quantities of drilling fluid to the Kennebec River, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. *“Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits,”* revised July 1, 2002,
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. This permit becomes effective upon the date of signature below and expires at midnight five (5) years thereafter. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. [*Maine Administrative Procedure Act, 5 M.R.S. § 10002 and Rules Concerning the Processing of Applications and Other Administrative Matters, 06-096 CMR 2(21)(A)* (last amended June 9, 2018)].

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS ___ DAY OF _____, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
Gerald D. Reid, Commissioner

Date of initial receipt of application _____ May 23, 2019 _____.

Date of application acceptance _____ May 23, 2019 _____.

Date filed with Board of Environmental Protection _____

This Order prepared by Gregg Wood, BUREAU OF WATER QUALITY

SPECIAL CONDITIONS

A. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent must not contain a visible oil sheen, foam or floating solids at any time which would impair the uses designated by the classification of the receiving waters.
2. The effluent must not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the uses designated by the classification of the receiving waters.
3. The discharges must not cause visible discoloration or turbidity in the receiving waters which would impair the uses designated by the classification of the receiving waters.
4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

B. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on May 23, 2019; 2) the terms and conditions of this permit. Discharges of wastewater from any other point source are not authorized under this permit, and must be reported in accordance with Standard Condition D(1)(f), *Twenty-four hour reporting*, of this permit.

C. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee must notify the Department of the following.

1. Any substantial change in the volume or character of pollutants being discharged. For the purposes of this section, notice regarding substantial change must include information on:
 - (a) the quality and quantity of waste water discharged; and
 - (b) any anticipated impact caused by the change in the quantity or quality of the waste water to be discharged.

SPECIAL CONDITIONS

D. INADVERTENT DRILL FLUID RELEASE & CONTINGENCY PLAN

The permittee must adhere to protocols and procedures as outlined in the Inadvertent Drill Fluid Release & Contingency Plan submitted to the Department on May 23, 2019, as an exhibit to the application for this discharge permit. See **Attachment A** of this permit.

E. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at anytime and with notice to the permittee, modify this permit to; 1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional effluent and or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

F. SEVERABILITY

In the event that any provision(s), or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

Inadvertent Drill Fluid Release and Contingency Plan

Replacement Sewer Siphon, Kennebec River Augusta, Maine

INTRODUCTION

This is a comprehensive plan for preventing and responding to a potential inadvertent drill fluid release (or “frac-out”) during the Greater Augusta Utility District horizontal directional drill (“HDD”) project (Project).

This plan should be reviewed in conjunction with design plans and profiles for the crossing, as well as specification Section 02446 – Horizontal Directional Drilling.

PROJECT DESCRIPTION

The Greater Augusta Utility District (GAUD) is utilizing horizontal directional drilling (HDD) to install a 16-in diameter HDPE sewer siphon below the Kennebec River. HDD is being used as an alternative to open-cut siphon installation, for the purpose of reducing environmental damage to the river. The approximate crossing location is shown in Figure 1, below (red line). The river is approximately 550 feet wide at this location, and about 3 to 16 feet deep (depending on flood stage).

Test borings have been completed to investigate the subsurface conditions along the proposed HDD alignment. The results of the test borings suggest that the HDD bore will encounter soil materials consisting largely of sand and gravel, with lesser silt. Bedrock drilling is not planned.



Figure 1 – Approximate HDD alignment.

HDD Process

HDD involves advancing a small diameter pilot hole (6 to 10 inches, common) with steel rods, along a pre-designed geometry. The geometry is controlled by the geologic conditions, site access, the bending ability of the drill rods, the bending ability of the product pipe, and the steering ability of the drill tools. Once completed, the pilot hole is enlarged as necessary by subsequent reaming passes, and the product pipe is pulled into the borehole. For this project, the final, reamed hole diameter is expected to be between 24 and 30 inches.

All stages of HDD drilling (pilot hole, reaming, pullback) involve pumping a bentonite-based drill fluid down the center of the drill rods, through the drill head. The drill fluid travels back up the annulus of the borehole to the entry pit, and in some cases to the exit pit. The drill fluid removes cuttings, provides hole support, and lubricates and cools the tools, and product pipe. All drill fluid and drill fluid components are environmentally safe, NSF approved and safe for use with potable water. The drill fluid design for this Project will be developed by the Contractor's Drill Fluid Specialist, for review by the GAUD.

The weight and flow of the drill fluid exerts pressure on the walls of the borehole. "Hydraulic fracturing" is defined as a scenario whereby the drill fluid pressure in the borehole exceeds the adjacent soil stress, resulting in a tension or "tearing" fracture developing in the soil. The fracture propagates away from the borehole as long as the pressure remains. The fracture pattern is dependent on the ground stress and geology in the immediate vicinity of the borehole. The fracture is typically located in the immediate vicinity of the drill bit. An inadvertent return (IR, also referred to as a "frac-out") occurs when the crack reaches the ground surface or river bottom and drill fluid is released to the surface. A IR may also result from drill fluid following an existing pathway to the surface such as an anomaly in the soils, such as ungrouted test boring, utility, pole, pile foundation, etc.

PLAN OVERVIEW

This Inadvertent Drill Fluid Release and Contingency Plan ("Plan") expands upon the sections of the contract specifications for the Project addressing the selected drill contractor's ("Contractor") obligations with regards to detection, response, and restoration of an IR.

For purposes of this Plan, a "drill fluid loss" is defined as a situation where less drill fluid is returning to the drill pit(s) than is being pumped into the borehole, minus any expected loss as the fluid coats and fills the borehole (as intended).

This Plan describes the measures to be taken to prevent IR's from occurring during the Project as well as those measures that will be taken in the event that an IR occurs. The goals of this Plan are to:

1. Minimize the potential for an IR.
2. Provide for timely detection of an IR.
3. Provide for the protection of resource areas, including provisions to keep on-site and readily accessible all material and equipment needed to contain and clean up drilling fluid releases in the event of an IR.
4. Ensure an organized, timely, and "minimum impact" response in the event an IR occurs.
5. Ensure that notification is made to the Maine Department of Environmental Protection (MDEP) immediately if an IR occurs that results in, or may result in, a discharge to resource areas, and that such work does not re-start without prior MDEP approval.

Despite best engineering and construction practices, the occurrence of an IR is still a possibility with any HDD installation. This Plan has been designed to ensure that the Contractor has the guidance and the tools available to prevent, reduce the impact of, or contain an IR to the extent practicable. The detection, response, containment, clean up, and restoration of a given IR will vary depending on a number of factors including stage in the drilling process, location of the IR, weather, and amount of fluid released.

DESIGN CONSIDERATIONS AND CONTROLS

Special design considerations and construction controls have been incorporated into the Contract Documents and this Plan to minimize the potential for an IR and limit the associated environmental impacts. The following discussion summarizes these considerations and controls.

Geotechnical Investigations

A pre-construction geotechnical boring program has been completed in support of the proposed pipe installation. Soils present along the alignment consist primarily of alluvial and glacial sand and gravel.

The results of these geotechnical investigations are the basis for numerous project controls discussed below including the drill path design, and the design drill fluid operating pressures and properties.

Drill Path Design

The drill path geometry for the Kennebec River is shown on the attached plan and profile (Drawing No. 1). The drill entry will be on the west bank, to the west of an existing railroad. The drill exit will be located on the east bank. To accommodate the site grades, and to facilitate pipe installation, an excavation will be completed at the drill entry prior to drilling.

The design process for the GAUD HDD installation has included an assessment of the site soil pressure confining capabilities (by means of cavity expansion model), and the annular drill fluid pressure necessary for drilling and maintaining the borehole. This analysis suggests an increased risk of drill fluid loss on the east side of the river. This is shown in Figure 2, which also includes the HDD profile.

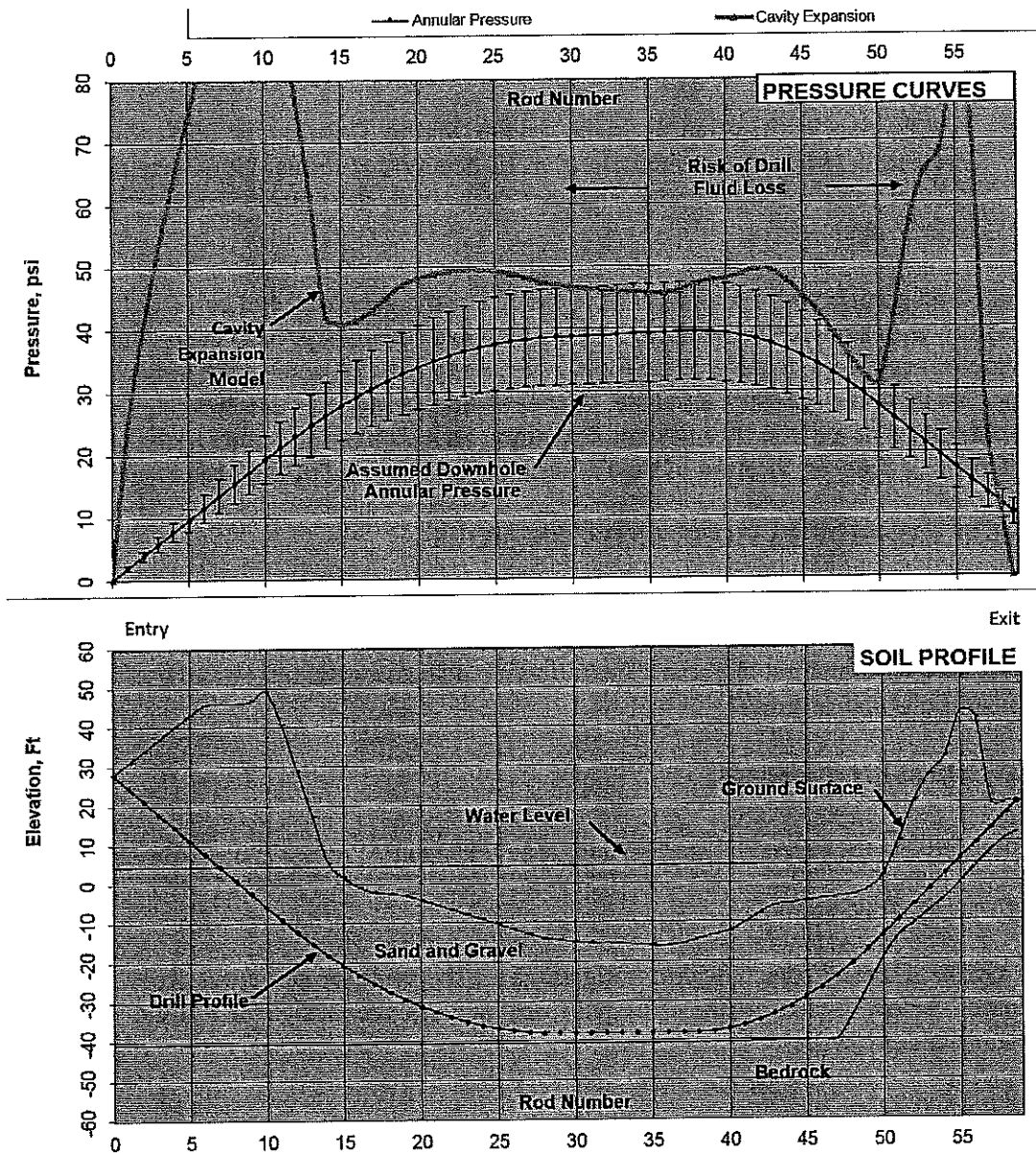


Figure 2: Top: Comparison of estimated soil confining capacity and downhole annular pressures during pilot hole drilling. Bottom: Drill and soil profile, facing north.

Drilling Fluid

HDD drilling fluid has properties designed to successfully advance the bore. For this Project, the drill fluid will provide the following functions:

- Suspend and transport the drill cuttings from the boring and then release the cuttings at the mouth of the bore hole or during the drill fluid reprocessing operations.
- Clean and remove drill cuttings from the drill bit.
- Cool the tracking electronics in the drill head.
- Provide drill fluid jet assist to supplement the soil cutting capability of the drill bit.
- Provide a structural “filter cake” for supporting the borehole wall in granular formations.
- Provide a barrier to reduce infiltration of external groundwater into the bore.
- Provide a barrier to keep the drill fluid in the borehole.
- Provide lubrication for the drilling equipment and product pipe pull.
- Provide a fill for the bore annulus between the soil and the installed product pipe.

A Drill Fluid Specialist provided by the contractor will monitor and adjust the drill fluid mix as needed to maintain optimal functional performance while working within the Project Specifications. Important drill fluid properties include density, sand content, viscosity, bentonite content, gel strength and pH.

Drill Fluid Monitoring

This Project implements a proactive drill fluid monitoring program utilizing design predictions compared to ongoing field observations to provide early indicators of potential drill fluid losses before an IR occurs. The intent of the drill fluid monitoring program is to collect data to evaluate hydraulic fracturing risk, and to adjust the drilling method in a timely manner to reduce this risk.

The Project specifications require monitoring drill fluid flow rate and pressure from the pump. In addition, a tracking system will be used to monitor the location and elevation of the drill head, as well as the downhole annular pressure generated during pilot hole drilling.

Annular Pressure Monitoring – Pilot Hole

The first stage of HDD construction involves advancing a small diameter pilot hole along the design alignment. In this case it is assumed that jetting tools will be used to advance the bore. Depending on the contractor, the approximate pilot hole diameter may range from 6 to 10 inches. Use of a mud motor to advance the pilot hole is not anticipated for this project.

In general, the risk of IR during pilot hole advance may be higher than with subsequent reaming stages, as the hole annulus is small, and there is only one route for drill fluid to exit the hole.

During the pilot hole advance for this Project, the downhole annular pressures will be monitored using a specialized pressure tool located behind the drill head. The pressure tool is connected to the drill cab (ground surface) through a wireline located within the drill rods. This will allow the drill operator to detect sudden surges in drill fluid pressures, which may signal increasing risk of drill fluid loss. Likewise, sudden drops in drill fluid pressure may suggest that drill fluid is escaping the borehole.

Drill Fluid Volumes and Return Monitoring – All Drilling Stages

The Contractor will use visual monitoring for assessing drill fluid loss in the bore during all stages of drilling. This is an ongoing comparison between the amount of drill fluid pumped into the hole, and the amount of drill fluid that returns to the drill pits (“drill fluid returns”). This will provide an indirect method for assessing drill fluid loss in the bore.

Surface Monitoring – All Drilling Stages

The Contractor will continuously monitor ground surface conditions along the bore path on land and in the river (where the bottom is visible) during all drilling operations. A boat will be used to monitor the river.

IR Containment Measures

The Project specifications require that the Contractor maintain the following equipment and materials on-site for IR containment, to be employed and used if necessary:

1. At least 200 feet of bentonite containment fencing.
2. 100 sand bags or staked straw bales.
3. Underwater containment boom capable of reaching the river bottom.
4. A boat equipped with an outboard for monitoring and boom placement.
5. Steel conductor casing.

Sand bags and containment fencing may be deployed in up to 3 feet of water. The boom would be used in deeper water. In addition, a vacuum truck will be stationed off-site for drill fluid collection and cleanup.

The Contractor will also maintain spare pumps and hoses on-site at all times to initiate cleanup and removal of a release. Additionally, the Contractor will maintain a 20,000-gallon sedimentation tank on-site for containment.

The Contractor will also provide loss control materials (LCM) within their drill fluid materials stockpile. The LCM materials are designed to be pumped downhole to seal a fracture and stop a release, should one occur.

CONSTRUCTION PROCEDURES

Based on the Design Considerations described above, the following construction procedures have been developed for the Kennebec River Crossing. These procedures (i) identify conditions that may precede a IR and the monitoring procedures that will be used to detect these; (ii) set forth and implement construction procedures to mitigate those conditions; and, (iii) set forth procedures to contain a potential IR.

Procedures have been developed for six (6) drilling Scenarios and are described in detail below. For each Scenario, the Contractor's required response to the condition, a discussion of reasons why the condition may be occurring, and remedial steps proposed to regain normal drilling conditions are provided.

If at any point during the Project an IR is identified, the Contractor will implement the IR Response Plan detailed under Scenario 5.

Scenario 1 – Normal Drilling Conditions

Scenario 1 involves normal drilling conditions in accordance with the Project specifications. In this situation, drilling is progressing under industry good practices and with routine monitoring. Drill fluid is being used to remove the cuttings from the hole, and is being pumped from the entry (and or exit) pit to the recycling system to remove the cuttings. The drill fluid is then being pumped back into the hole for reuse.

Visual observations indicate full returns of the drill fluid (minus the fluid volume needed to fill the hole and to form the "filter cake"). Pump and annular pressures are within acceptable limits. The Contractor is travelling the alignment with concentration on the area within 100 feet of the drill bit, and is not observing any changes in the ground surface or drill fluid emitting from the ground or river bottom.

Under Scenario 1 the Contractor will maintain a drilling log with the following minimum recorded information:

- Location of drill head (bit or reamer).
- While advancing the pilot hole, the downhole annular pressures recorded by the pressure tool, along with the location of the drill bit.
- The approximate drill fluid pump rate and pressure, and relative drill fluid return percentage during drilling of each drill rod.
- Start/stop times and dates for each rod.
- Approximate thrust and rotation hydraulic pressures for each drill rod.
- Drill string configuration, including measurements of the length of all components and each drill rod, including bits and reamers.

- Equipment breakdowns including a log of the time, date, duration, and cause of breakdown.

The Drill Fluid Specialist will monitor and record the drill fluid properties such as density, viscosity, and chemistry of the drill fluid.

Scenario 2 –Elevated Annular Pressures Detected during Pilot Hole Advance - No Fluid Release Observed

Scenario 2 involves detection of elevated annular pressures during pilot hole advance, while monitoring the downhole pressure tool. Potential causes for elevated annular pressures include the following:

- Increased pump rate and/or elevated penetration rate, combined with ineffective cuttings removal (increasing drill fluid density).
- Reduced carrying capacity of the drill fluid, allowing cuttings to “dump out” during flow uphole. May be the result of groundwater inflow into the borehole, or poor cuttings isolation by the drill fluid.
- Partial or complete borehole collapse.
- Annular space reduction due to borehole squeezing in soft or reactive soils.

Elevated annular pressures are considered to be those that exceed the limiting threshold pressures for a duration of more than 30 seconds. The following options will be considered if this occurs:

- Adjusting drill fluid pump rates.
- Adjusting drill bit penetration rates.
- Partial or full swabbing of the borehole, intended to open annulus.
- Modification of the drill fluid design to improve cuttings carrying capacity, hole stability, and/or reduce groundwater inflow.

The Contractor will complete one or more of the above options, then restart drilling and continue to monitor annular pressure data. If the annular pressures are below the limiting threshold pressures, return to Scenario 1. If elevated annular pressures continue, the Contractor will assess conditions with the Engineer and determine if drilling can continue.

Scenario 3 – Loss of Drill Fluid Returns - No IR Detected

Potential causes for loss of drill fluid returns may include the following:

- Encountering a void or pocket in the soil.
- Encountering underground obstacles such as a pile or utility.
- Drill fluid density increasing to an extent that it cannot be pumped from the hole.

- Borehole annulus blockage, preventing circulation.

Criteria for implementation of Scenario 3 include complete loss of drill fluid returns to the entrance/exit pit or a loss of more than 25% returns for a period of 15 minutes. These criteria are consistent with industry practices.

A 25% reduction in fluid returns is significant, demonstrating normal drilling conditions may have changed. The 15 minute window allows the Contractor enough time to evaluate if a fluid loss is actually occurring and what corrective measures should be utilized. If at any point during the 15 minute window an IR is observed, the Contractor will move to Scenario 5.

If Scenario 3 occurs, the Contractor will implement the following:

- **Stop drilling and pumping drill fluid immediately.**
- Assess monitoring data for indications of the cause of the drill fluid loss.
- Visually inspect the ground surface or river bottom along the drill path between the drill rig and a distance of 100 feet past the drill head for signs of drill fluid release.
- Implement one or more of the following procedures to restore circulation:
 - opening the hole mechanically;
 - removal of drill tools without drill fluid circulation and re-drilling with drill fluid circulation;
 - adjusting the drill fluid properties;
 - adding additional conductor casing to provide a seal; and/or
 - Use of an LCM.
- Restart drilling and attempt to restore drill fluid circulation. If drill fluid circulation is reestablished and no drill fluid release is visibly detected, return to Scenario 1. If drill fluid loss continues, then assess conditions with the Engineer and determine if drilling can continue.

Scenario 4 – Drill Fluid Properties Not Within Intended Properties - No IR Detected

During drilling, the Contractor will measure and record the drill fluid properties at least every 4 hours, and when the geologic materials encountered change (e.g. from clay to sand, etc.). Criteria for implementation of Scenario 4 involve detection of sudden or gradual unanticipated changes in design drill fluid properties, as established by the Contractor's Drill Fluid Specialist. These include the following:

- Viscosity;
- Sand Content;
- Gel Strength; and
- Density.

A fluctuation (up or down) of 10% or more for a given drill fluid parameter will require that the Contractor take corrective action. This criteria is consistent with industry

practices. While drill fluid properties will fluctuate during the Project, more than 10% fluctuation may be indicative of a problem.

If there is a fluctuation of 10% or more in any drill fluid property, the Contractor will implement the following:

- Assess the deviation history of the drill fluid properties.
 - Situation 1. The drill fluid monitoring demonstrates gradual parameter variability. The Contractor will adjust drill fluid to desired parameters and continue drilling.
 - Situation 2. Sudden change in drill fluid properties. The Contractor will **stop drilling immediately**, clean hole, and adjust drill fluid until desired drill fluid properties are restored.
- If the physical and chemical properties of the drilling fluid cannot be adjusted to meet the desired properties (i.e. elevated density or viscosity suggests drill cuttings are not being effectively removed), the Contractor will change the drill fluid. If the issue continues, the Contractor and Engineer will determine what changes to the drilling fluid parameters are acceptable to continue the Project.
- Once the drill fluid parameters are within desired limits, return to Scenario 1.

Scenario 5 – An IR is Detected (IR Response Plan)

If an IR is observed, the Contractor shall implement the following sequence of operations:

1. **Shut down the drilling operations and contain the release.**
 - a. As soon as possible after detection of a drilling fluid release to ground surface or the river the Contractor will shut down drilling operations (subject only to safety considerations).
 - b. The Contractor will locate and mark the origin of the release, and place IR containment measures.
 - c. If release is in on land, wetlands, or shallow portion of the river:
 - i. Place containment around the IR area by installing silt fence and sand bags to act as a primary containment with a secondary containment consisting of additional sandbags with a silt fence acting as a liner.
 - d. If the release occurs on the river bottom in deeper water:
 - i. The drilling contractor will install a containment boom system consisting of a silt curtain with sand bags to anchor the curtain to the bottom.

2. Implement the following **IR Response Actions**.

a. ~~Immediately notify the GAUD's Project Manager, will in turn notify the following:~~

i. (Insert necessary contact information)

- b. Employ pumps to remove drill fluid within IR containment measures. Drill fluid will be pumped to an onshore containment tank.
- c. Monitor the release area and the remaining drill path and determine the boundaries of the release area.
- d. Investigate down-current areas to assess potential impacts.
- e. Notify MDEP within 24 hours of the IR. The notification will include:

- The name and telephone number of the person reporting;
- Location of the IR;
- Date and time of the IR;
- Type and quantity, estimated size of the IR;
- The type of activity that was occurring around the area of the IR;
- Description of any sensitive areas, and their location in relation to the IR;
- Description of the methods used to clean up or secure the site.

f. The Contractor will maintain records of the quantity of drill fluid materials removed from either the river bottom or land surface, transferal of the material to other containment, and daily status of cleanup operations as applicable. The Contractor will be responsible for disposing of the released material in accordance with all local, state, and federal regulations. Records or manifests of the disposal material will be furnished to GAUD and the MDEP upon completion of the work. GAUD will maintain and provide MDEP with copies of all Material Shipping Records within 30 days of disposal of generated materials.

3. Contractor, Drill Fluid Specialist, Engineer, and other appropriate Project team members will assess the conditions and develop a procedure for additional clean up, restoration, and Project recommencement. **A plan to restart drilling will be submitted to the MDEP within 24 hours of the IR event.** The restart of the drilling activities will depend on the location of the drill, the extent of the IR, and the activity being completed (pilot bore, reaming, product installation, etc.). **Drilling operations will not recommence without prior MDEP approval and the approval of any other appropriate regulatory agencies.**

Options to restart drilling will be situation specific but may include:

- a. Introduce bore loss control materials (LCM) into the bore in accordance with the manufacturer's recommendations. Pull the drill head away from the bottom of the hole or remove from the hole. Let the bore sit until the bore seal has activated in accordance with the manufacturer's recommendations. These products are most effective when introduced soon after the drill fluid loss has occurred. If deemed appropriate by the Engineer, these products will be introduced as soon as an IR is discovered. Restart the drilling operations and assess for drill fluid returns. If full returns are observed, continue drilling under Scenario 1.
- b. Advance steel conductor casing to the end of the drill path and embed casing into the formation for a seal. Restart the drilling operations and assess for drill fluid returns. If full returns are observed, continue drilling under Scenario 1. The Contractor is required to maintain a supply of casing onsite for use as needed during the Project. Note that this is technically feasible along the entry and exit tangents of the HDD bore.
- c. Assess drill fluid parameters and adjust if necessary. Mechanically swab the drill hole with low fluid pump rate while pulling rods back until drill fluid returns restart. Continue the swabbing process until the bore is clean and fully contains reconditioned drill fluid. Re-drill the hole to the bottom while monitoring for drill fluid returns. If full returns are observed then return to Scenario 1 and continue drilling.

Scenario 6 – Continued Drill Fluid Release to an Existing Containment Location

If drill fluid returns appear within a previously established containment area, then the contractor will implement the following sequence of operations:

1. The Contractor will maintain a pump of equal or greater capacity to the pump used to return drill fluid to the recycler. This pump will be placed in the containment area for use if drill fluid release to the containment area is detected.
2. If the Contractor is able to contain and control the release within the previously installed primary containment, then drilling may continue under Scenario 1 conditions.
3. If at any time, the amount of material being released exceeds the rate of removal being achieved by the primary containment system, then the drilling operations will be suspended until the release can be brought under control by the Contractor.

CLEAN UP AND RESTORATION EVALUATION

The clean up and restoration of a given IR will vary depending on a number of factors including drilling operation active at the time of the IR, location of the IR, weather, and amount of fluid released. If an IR occurs, GAUD will evaluate the IR and determine what clean up, restoration and post restoration monitoring procedures are required.

Additional and/or alternative evaluation techniques may be employed depending upon the location of the potential IR. These may include:

- SCUBA divers deployed to inspect the river bottom.
- Sediment profile imaging (SPI) with an underwater camera/frame could also be employed to gain a better understanding of the thickness and distribution of thin sedimentary layers following the potential release of drilling fluid.
- Visual observations (shoreline, water surface, river bottom with AquaView Camera or similar method) may be used in lieu of physical sampling.

Upon completion of the evaluation, GAUD will provide MDEP with a clean-up plan specific to the conditions as they exist in the field.

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A. GENERAL PROVISIONS

1. General compliance. All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.

2. Other materials. Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

- (a) They are not
 - (i) Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law; or
 - (ii) Known to be hazardous or toxic by the licensee.
- (b) The discharge of such materials will not violate applicable water quality standards.

3. Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the 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 Clean Water Act, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (b) Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

4. 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.

5. Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. 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.

6. Reopener clause. The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

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7. Oil and hazardous substances. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

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

9. Confidentiality of records. 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

10. Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

11. Other laws. The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee of its obligation to comply with other applicable Federal, State or local laws and regulations.

12. Inspection and entry. The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), 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 this 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 Clean Water Act, any substances or parameters at any location.

B. OPERATION AND MAINTENANCE OF FACILITIES

1. General facility requirements.

- (a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

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- maximize removal of pollutants unless authorization to the contrary is obtained from the Department.
- (b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.
 - (c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.
 - (d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.
 - (e) The permittee shall install flow measuring facilities of a design approved by the Department.
 - (f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

2. 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.

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. Bypasses.

- (a) Definitions.
 - (i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
 - (ii) Severe property damage means 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.
- (b) 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 (c) and (d) of this section.
- (c) 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 ten days before the date of the bypass.

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- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).
- (d) Prohibition of bypass.
 - (i) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (B) 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
 - (C) The permittee submitted notices as required under paragraph (c) 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 conditions listed above in paragraph (d)(i) of this section.

6. Upsets.

- (a) Definition. Upset means 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.
- (b) 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 (c) 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.
- (c) 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 paragraph D(1)(f) , below. (24 hour notice).
 - (iv) The permittee complied with any remedial measures required under paragraph B(4).
- (d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

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C. MONITORING AND RECORDS

1. General Requirements. This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

2. Representative sampling. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

3. Monitoring and records.

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, 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 this permit, and records of all data used to complete the application for this permit, for a period of at least 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.
- (c) 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.
- (d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
- (e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

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D. REPORTING REQUIREMENTS

1. Reporting requirements.

- (a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only 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 Section D(4).
 - (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;
- (b) 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.
- (c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.
- (d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.
 - (ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.
 - (iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.
- (e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (f) Twenty-four hour reporting.
 - (i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 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

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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.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) 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.

2. Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State 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 by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

3. Availability of reports. Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

4. Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

(a) That any 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":

(i) One hundred micrograms per liter (100 ug/l);

(ii) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or

(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

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- (b) That 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":
- (i) Five hundred micrograms per liter (500 ug/l);
 - (ii) One milligram per liter (1 mg/l) for antimony;
 - (iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
 - (iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

5. Publicly owned treatment works.

- (a) All POTWs must provide adequate notice to the Department of the following:
- (i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
 - (ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - (iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

E. OTHER REQUIREMENTS

1. Emergency action - power failure. Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

- (a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.
- (b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

2. Spill prevention. (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminants and shall specify means of disposal and or treatment to be used.

3. Removed substances. Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

4. Connection to municipal sewer. (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

F. DEFINITIONS. For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. Except, however, bacteriological tests may be calculated as a geometric mean.

Average weekly discharge limitation means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Composite sample means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

Continuous discharge means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Daily discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by approved States as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Flow weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab sample means an individual sample collected in a period of less than 15 minutes.

Interference means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum daily discharge limitation means the highest allowable daily discharge.

New source means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

- (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

Pass through means a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Person means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

Point source means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

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.

Publicly owned treatment works ("POTW") means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

Septage means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

Time weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

Toxic pollutant includes 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. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole effluent toxicity means the aggregate toxic effect of an effluent measured directly by a toxicity test.

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE**

FACT SHEET

Date: **June 18, 2019**

PERMIT NUMBER: **ME0102890**
LICENSE NUMBER: **W009211-5S-A-N**

NAME AND ADDRESS OF APPLICANT:

**GREATER AUGUSTA UTILITY DISTRICT
12 Williams Street
Augusta, Maine 04330**

COUNTY: **Kennebec County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**Jackson Avenue
Augusta, Maine 04330**

RECEIVING WATER/CLASSIFICATION: **Kennebec River/Class B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Andrew Begin**
Asst. Gen. Mgr., Chief Engineer
(207) 622-3701
e-mail: abegin@gaud.ws

1. APPLICATION SUMMARY

- a. Application –The Greater Augusta Utility District (GAUD/District/permittee hereinafter), has submitted an application to the Maine Department of Environmental Protection (the Department) for a new combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0102890/Maine Waste Discharge License (WDL) #W009211-5S-A-N (permit hereinafter). The permittee is seeking authorization to discharge minor quantities of drill fluid to the Kennebec River, Class B, in Augusta, Maine See **Attachment A** of this Fact Sheet for a location map.

1. APPLICATION SUMMARY (cont'd)

- b. Source Description: The District is seeking authorization to discharge minor quantities of drilling fluid associated with a pipe replacement project under the Kennebec River also referred to as the “Sanitary Sewer Siphon – Kennebec River Crossing” project. The project involves the replacement of an existing parallel 20-inch and 8-inch cast iron sanitary sewer siphons located below the Kennebec River. The existing siphons were installed by open-cut methods in 1962. During a routine inspection in 2016, a leak was detected in the 8-inch siphon and this line was taken out of service. The District has concerns regarding the continued reliability of the 20-inch siphon and desires to install a new siphon to maintain flow of the sanitary sewer to the District’s waste water treatment facility on the west side of the Kennebec River.

A 16-inch diameter HDPE pipe will be installed by horizontal directional drilling (HDD) approximately 20 feet below the river bottom. The project has been permitted through the Department and U.S. Army Corps of Engineers. HDD methods require the pumping of drill mud to advance the bore tooling and remove spoils from the bore hole. The drill mud has 3 primary functions; 1) removed spoils from the bore hole, 2) lubricate for the reaming process and 3) seal fractures in the soil to minimize or eliminate seepage of groundwater. The mud helps stabilize the bore hole so it does not collapse while the new pipe is being pulled through. There is the potential for a release of drill fluid release during drilling operations. The District has developed an inadvertent fluid release plan. The plan focuses on monitoring the drilling operations to eliminate/reduce the chances of a frac-out (fluid release). The last step of the plan focuses on containing a drill fluid release to the Kennebec River.

- c. Waste Water Treatment: There will be no formal treatment of inadvertent discharges of drill fluid. The permittee will modify drilling operations to minimize discharge quantities.

2. PERMIT SUMMARY

- a. Terms and Conditions – The permit does not establish any limitations or monitoring requires due to the nature of any discharges. The permit does establish a Special Condition that requires the permittee to adhere to their protocols and procedures as outlined in the *Inadvertent Drill Fluid Release & Contingency Plan* submitted to the Department on May 23, 2019, as an exhibit to the application for this discharge permit.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S., Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S., Sections 467(4)(A)(12) indicates the main stem of the Kennebec River at the point of discharge is classified as Class B waterways. Maine law, 38 M.R.S., Section 465(3) establishes the classification standards of Class B waters as follows;

Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the one-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between April 15th and October 31st, the number of Escherichia coli bacteria in these waters may not exceed a geometric mean of 64 CFU per 100 milliliters over a 90-day interval or 236 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval.

Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

5. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class B classification.

6. PUBLIC COMMENTS

Public notice of this application was made in the Kennebec Journal newspaper on May 27, 2019. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or request a public hearing, pursuant to Chapter 522 of the Department's rules.

7. DEPARTMENT CONTACTS

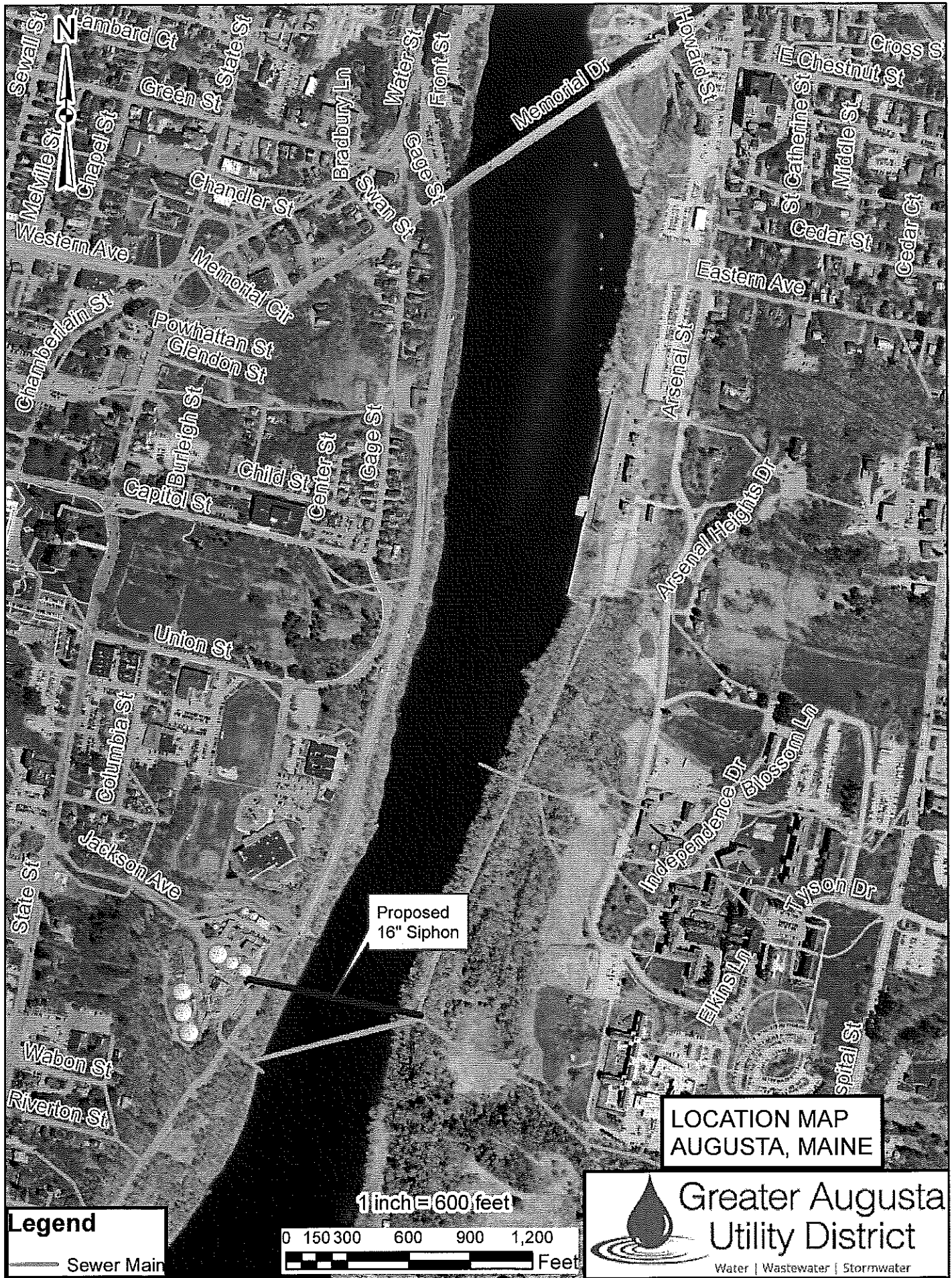
Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7693
e-mail: gregg.wood@maine.gov

8. RESPONSE TO COMMENTS

Reserved until the close of the formal 30-day public comment period.

ATTACHMENT A



Streets shown on map include: Sewall St, Lambard Ct, Green St, State St, Chapel St, Chandler St, Brabury Ln, Water St, Front St, Memorial Dr, Howard St, Cross St, Chestnut St, St Catherine St, Middle St, Cedar St, Cedar Ct, Eastern Ave, Arsenal St, Aresenal Heights Dr, Independence Dr, Blossom Ln, Tyson Dr, Spital St, Elkins Ln, Union St, Powhattan St, Glendon St, Burleigh St, Child St, Center St, Cage St, Capitol St, Chamberlain St, Memorial Cir, Western Ave, Columbia St, Jackson Ave, Wabon St, Riverton St, State St.