

Missouri Clean Water Commission
Department of Natural Resources
Lewis and Clark State Office Building
LaCharrette/Nightingale Conference Rooms
1101 Riverside Drive
Jefferson City, Missouri 65102

July 18, 2013

**Northeast Public Sewer District of Jefferson County
Request for Level 2 Continuing Authority Designation**

Issue: Preliminary Continuing Authority Feasibility Study

Background: The preferential order of continuing authority is defined in accordance with 10 CSR 20-6.010(3)(B). A municipality, public sewer district or private sewer company which currently provides sewage collection and/or treatment on a regional or watershed basis may request approval from the Clean Water Commission to be designated as a level 2 continuing authority.

Currently Northeast Public Sewer District (NPSD) is a level 3 continuing authority. It operates Saline Creek Regional Wastewater Treatment Plant, an interim facility with Operating Permit # MO 128490. Similarly, NPSD operates ten other wastewater treatment facilities within their service area, and these facilities are also required to be eliminated when connection to other facilities becomes available. Facilities designated as interim are required to connect to higher authority within 90 days of notice of availability. Because NPSD is located within the area of a level 1 continuing authority and the 208 management plan service area, NPSD may be required under the current permits to connect to St. Louis Metropolitan Sewer District (MSD) should service becomes available.

The current East-West Gateway Council of Governments (EWG) 208 Water Quality Management Plan for the St. Louis Area specifies that all wastewater collected in the northern portion of the NPSD service area should be conveyed to MSD for treatment at its Lower Meramec Wastewater Treatment Plant.

Jacob Engineering Group on behalf of NPSD conducted a Continuing Authority Feasibility Study in an effort to be designated as a level 2 regional wastewater collection and treatment authority within the NPSD service area. NPSD suggests that seeking a level 2 continuing authority would allow them to become a regional wastewater collection and treatment utility within their service area. NPSD concludes in their feasibility study that a connection to MSD is not economically viable option and would dramatically increase customer rates.

NPSD would like to pursue level 2 designation from the Clean Water Commission while beginning discussions with East-West Gateway Council of Governments about an amendment to the 208 Plan.



authority has obtained a certificate of convenience and necessity from the PSC;

3. A municipality, public sewer district, or sewer company regulated by the PSC other than one which qualifies under paragraph (3)(B)1. or 2. of this rule or a public water supply district. Permits shall not be issued to a continuing authority regulated by the PSC until the authority has obtained a certificate of convenience and necessity from the PSC;

4. Any person with complete control of, and responsibility for, the water contaminant source, point source, or wastewater treatment facility and all property served by it. The person may constitute a continuing authority only by showing that the authorities listed under paragraphs (3)(B)1.-3. of this rule are not available, do not have jurisdiction, are forbidden by statute or ordinance from providing service to the person or, if available, have submitted written waivers as provided for in subsection (3)(B) of this rule; and

5. An association of property owners served by the wastewater treatment facility, provided the applicant shows that—

A. The authorities listed in paragraphs (3)(B)1.-3. of this rule are not available or that any available authorities have submitted written waivers as provided for in subsection (3)(B);

B. The association owns the facility and has valid easements for all sewers;

C. The document establishing the association imposes covenants on the land of each property owner which assures the proper operation, maintenance, and modernization of the facility including at a minimum:

(I) The power to regulate the use of the facility;

(II) The power to levy assessments on its members and enforce these assessments by liens on the properties of each owner;

(III) The power to convey the facility to one (1) of the authorities listed in paragraphs (3)(B)1.-3.; and

(IV) The requirement that members connect with the facility and be bound by the rules of the association; and

D. The association is a corporation in good standing registered with the Office of the Missouri Secretary of State.

(C) The department will review the planning, design, construction, and designation of watershed or regional sewage works. Where development is insufficient to warrant immediate construction of facilities for the entire watershed or region, interim facilities for a portion of the area shall be authorized as long as the design is compatible with 10 CSR 20-8, Design Guides. The department shall condition permits for these interim discharges so

they will be eliminated upon the availability of watershed or regional facilities. At such time as watershed or regional facilities become available, and to the extent their capacity is sufficient, any existing subregional treatment works and/or lift stations shall be taken out of service and the tributary waste flows diverted into the watershed or regional facilities. A Regional Sewage Service and Treatment Plan shall be developed by all affected political jurisdictions and submitted to the department. Staff will review the plan and submit recommendations to the Clean Water Commission. The Clean Water Commission may approve, require changes, deny the plan, and/or hold public hearings related to approval of the plan.

(D) Industries, including electric cooperatives and mining operations, are by definition continuing authorities for collection and treatment of industrial type wastewater and incidental domestic wastewater associated with their operation when an authority listed in paragraph (3)(B)1. or 2. is infeasible.

(E) Private corporations which are not incorporated under the laws of the state of Missouri shall be represented by a registered agent in the state of Missouri before a construction permit or an operating permit will be issued by the department.

(4) Construction Permits.

(A) No person shall cause or permit the construction, installation, or modification of any sewer system or of any water contaminant source, point source, or wastewater treatment facility without first receiving a construction permit issued by the department except for the following:

1. Construction of a separate storm sewer; and

2. Facilities as provided in other 10 CSR 20-6 regulations.

(B) A separate application for each sewer system, water contaminant source, point source, or wastewater treatment facility must be submitted to the department. Where there are multiple releases from a single operating location, however, one (1) application may cover all facilities and releases. For continuing authorities listed in paragraph (3)(B)1. or 2. only one (1) application may be required when the authority operates a sewage treatment plant and has one (1) or more other noncontinuous storm water-related discharges associated with the sewage treatment plant.

(C) An application for a construction permit must be submitted to the department at least one hundred eighty (180) days in advance of the date on which construction begins. Requests for a shorter time for a review of a wastewater treatment facility may be made but must be accompanied by a

detailed statement of the justification for the request. No such statement is required when the application is only for the construction of sewers.

(D) An application shall consist of the following items:

1. Unless not required by the department, an engineering report shall be submitted by an engineer and shall contain the information required by 10 CSR 20-8.020 and 10 CSR 20-8.110-10 CSR 20-8.220. If the report includes a wastewater treatment facility, it shall include consideration of the feasibility of constructing and operating a facility which will have no discharge to waters of the state (see section (12) of this rule). Unless the department specifies otherwise, this report will be reviewed and necessary changes made before the plans and specifications in paragraph (4)(D)2. will be reviewed;

2. Detailed plans and specifications shall be submitted by an engineer and shall contain the information required in 10 CSR 20-8.020 and 10 CSR 20-8.110-10 CSR 20-8.220 or other regulations as applicable;

3. An application form and permit fee;

4. A one inch equals two thousand feet (1" = 2000') scale map (or larger) showing the location of all outfalls (alternate scale maps are allowed upon the request of the applicant and approval of the Department of Natural Resources);

5. Other information necessary to determine compliance with the Missouri Clean Water Law and these regulations as required by the department; and

6. If a construction permit is waived by the department, or not required, the information in paragraphs (4)(D)1.-5. may be required with application for the operating permit.

(E) If an application is incomplete or otherwise deficient, the applicant shall be notified of the deficiency and processing of the application may be discontinued until the applicant has corrected all deficiencies. The department will act after receipt of all documents and information necessary for a properly completed application, including appropriate filing fees and other supporting documents as necessary, by either issuing a notice of operating permit pending, issuing the construction permit, or denying the permit. The director in writing, shall give the reasons for a denial to the applicant. Applicants who fail to satisfy all department comments after two (2) certified department comment letters in a time frame established by the department shall have the application returned as incomplete and the construction fees shall be forfeited. The applicant has the right to request that the time frames be



Jeremiah W. (Jay) Nixon, Governor

Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

APR 29 2011

Joseph Richardson
Northeast Public Sewer District
555 13th Street
Fenton, MO 63026

Dear Permittee:

State Operating Permit No. MO-0128490 issued on March 28, 2011 is hereby modified as per the enclosed. This modification is to include Special Condition #10 which requires the permittee to implement and enforce its approved pretreatment program. The attached permit is for your official record.

Please read your permit and attached Standard Conditions. They contain important information on monitoring requirements, effluent limitations, sampling frequencies and reporting requirements.

This permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits for this facility. In all future correspondence regarding this facility, please refer to your state operating permit number and facility name as shown on page one of the permit.

If you have any questions concerning this permit, please do not hesitate to contact this office at P.O. Box 176, Jefferson City, MO 65102-0176 or by phone at (573) 751-1300.

Sincerely,

WATER PROTECTION PROGRAM

A handwritten signature in black ink, appearing to read "Refaat Mefrakis".

Refaat Mefrakis, P.E., Chief
NPDES Permits and Engineering Section

RM:cga

Enclosure

c: St. Louis Regional Office

FACILITY DESCRIPTION continued

Outfall #001 - POTW - SIC #4952, Class "A" Operator Required

Two treatment plant sites:

Ron Rog site (4 MGD)/ lift station/peak flow holding basin/oxidation ditch/ultraviolet disinfection/sludge digestion & storage/sludge contract hauler/sludge land applied;

Hwy-141 site (1.25 MGD)/lift station/peak flow holding basin/activated sludge/seasonal chlorination/dechlorination/sludge digestion & storage/sludge contract hauler/sludge is land applied.

Design population equivalent is 52,500.

Design flow is 5.25 MGD.

Actual flow is 2.4 MGD.

Design sludge production is 1061 dry tons/year.

Outfalls #002 - #007 - These outfalls have been terminated.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 3 of 9

PERMIT NUMBER MO-0128490

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		45	30	twice/week	24 hr. comp.****
Total Suspended Solids	mg/L		45	30	twice/week	24 hr. comp.****
pH - Units	SU	**		**	twice/week	grab
E. Coli (Note 1)	#/100 ml		630	126	twice/week	grab
Total Residual Chlorine (Note 2)	µg/L	40 (130ML)		20 (130ML)	twice/week	grab
Ammonia as N (Apr 1 - Sept 30) (Oct 1 - Mar 31)	mg/L	30.2 *		7.9 *	twice/week	grab
Oil & Grease	mg/L	15		10	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE May 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Cadmium, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. comp.****
Chromium III, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. comp.****
Chromium VI, Total Dissolved	µg/L	91.4		45.1	once/quarter***	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. comp.****
Zinc, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. comp.****

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions	once/year	24 hr. composite****
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MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE May 28, 2012.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

*Monitoring requirement only.

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

***See table below for quarterly sampling.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1 - Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

C. INFLUENT MONITORING REQUIREMENTS

The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Influent			
Biochemical Oxygen Demand,	mg/L	once/month	24 hr. composite****
Total Suspended Solids	mg/L	once/month	24 hr. composite****

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE May 28, 2011.

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required year-round unless the permit specifically states that “Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31.” If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- (c) Do not chemically dechlorinate if it is not needed to meet the limits in your permit.
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 mg/L” TRC.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

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

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
 6. Water Quality Standards
 - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

D. SPECIAL CONDITIONS (continued)

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.
8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report annually in November to the St. Louis Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
9. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	44%	once/year	24 hr. composite****	Any

**** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampler.

Dilution Series							
44 % effluent	100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

D. SPECIAL CONDITIONS (continued)

- (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
 - (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
 - (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
 - (4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
 - (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (9) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC₅₀ concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC₅₀ concentration must be greater than 100%; **AND**,
 - (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.
- (c) Test Conditions
- (1) Test Type: Acute Static non-renewal
 - (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
 - (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
 - (4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
 - (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality

**Missouri Department of Natural Resources
 FACT SHEET
 FOR THE PURPOSE OF RENEWAL
 OF
 MO-0128490
 NPSD – INTERIM SALINE CREEK REGIONAL WWTF**

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

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

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

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ; Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: POTW
 Facility SIC Code(s): 4952

Facility Description: This permit consists of two treatment facilities discharging to a common outfall. The two separate facilities are permitted under permit number (MO-0128490) and referred to collectively as the NPSD Interim Saline Creek Regional WWTF. Effluent limitations were calculated based on the combined flow of both facilities. The locational data in the permit is for the outfall.

According to the existing 208 management plan this facility will eventually be taken off-line and the influent will be sent to the St. Louis MSD treatment system.

The two treatment plant sites are:

Ron Rog site – Located in the center of Landgrant 3013. (4 MGD)

Lift station/peak flow holding basin/oxidation ditch/ultraviolet disinfection/sludge digestion & storage/sludge contract hauler/sludge land applied.

Hwy-141 site – Located in the Southeast corner of Landgrant 3011. (1.25 MGD)

Lift station/peak flow holding basin/activated sludge/seasonal chlorination/dechlorination/sludge digestion & storage/sludge contract hauler/sludge is land applied.

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

- Yes
 - No.

Application Date: 2/8/10
 Expiration Date: 8/11/10
 Last Inspection: 3/5/08 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	8.1375	secondary	municipal	0

Outfall #001

Legal Description: Landgrant 664, Jefferson County
UTM Coordinates: X = 725447, Y = 4260518
Receiving Stream: Meramec River (P)
First Classified Stream and ID: Meramec River (P) (2183) 303d List
USGS Basin & Sub-watershed No.: (07140102-080004)

Receiving Water Body's Water Quality & Facility Performance History:

4 violations for fecal coliform, 1 violation for TSS in the last 5 years.

Comments:

Outfalls 002 – 007 have been discontinued because no activities are exposed to storm water that pose a significant risk of contamination of storm water.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:
 - Private sewer company regulated by the Public Service Commission:
 - State or Federal agencies:

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections.

This facility currently requires an operator with a "B" Certification Level. Please see **Appendix # 1- Classification Worksheet** Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Joe Richardson
Certification Number: 4842
Certification Level: A

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

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

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

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

Flow values were obtained from USGS Gauging station 07019000 located on the Meramec River near Eureka. The previous permit was based on an equal area basin method to interpolate flow values for this segment of the Meramec River. At the time of writing of the previous permit, daily flow data were unavailable from the gauging station. Since the more accurate daily flow information is now available it was used in drafting effluent limits for the current permit.

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Meramec River	P	2183	LWW, AQL, WBC(A), SCR, DWS, IND	07140102	Ozark/Meramec

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

** Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Meramec River (P)	403	421	482

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(a)]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(b)]	
(0.25)7Q10	(0.25)30Q10 (NH ₃)	(0.25)(0.1)7Q10	(0.25)(0.1)1Q10 (NH ₃)
105.25	120.5	10.53	10.08

The ZID cannot be more than 10X the Design Flow

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

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

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

ANTIDEGRADATION:

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

- Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Applicable (renewal and modifications to existing operating permits) ;

This facility has been approved to land apply as per Permit Standard Conditions III and a Department approved bio-solids management plan.

COMPLIANCE AND ENFORCEMENT:

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

Not Applicable ;

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

PRETREATMENT PROGRAM:

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

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Applicable ;

This permittee has an approved pretreatment program in accordance with the requirements of [40 CSR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program.

REASONABLE POTENTIAL ANALYSIS (RPA):

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

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

Applicable ;

A RPA was conducted on appropriate parameters. Please see APPENDIX #2 – RPA RESULTS.

REMOVAL EFFICIENCY:

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

Applicable ;

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

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

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

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

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

Applicable ;

This segment of the Meramec River is listed on the 2008 Missouri 303(d) List for lead from mill tailings.

– This facility is not considered to be a source of the above listed pollutant or considered to contribute to the impairment of the Meramec River.

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*		
BOD ₅	MG/L	1		45	30		
TSS	MG/L	1		45	30		
pH	SU	1	*		*		
AMMONIA AS N (APR 1 – SEPT 30)	MG/L	2/3/5	30.2		7.9	YES	69 / 22.2
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	2/3/5	*		*	YES	69 / 22.2
ESCHERICHIA COLI FORM (E COLI)	***			630	126		****
CHLORINE, TOTAL RESIDUAL	µG/L	1/2/3	44		22		114 / 57
OIL & GREASE (MG/L)	MG/L	1	15		10		
CHROMIUM (III), TOTAL RECOVERABLE	µg/L	2	*		*		
CHROMIUM (VI), TOTAL DISSOLVED	µg/L	2/3	34.4		17.1	YES	91.4/45.1
COPPER, TOTAL RECOVERABLE	µg/L	2	*		*	YES	131 / 65.3
ZINC, TOTAL RECOVERABLE	µg/L	2	*		*		
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only.

** For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

*** # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.

**** Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from

previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

- **pH.** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer:

Chronic WLA: $C_e = ((8.1375 + 120.5)1.5 - (120.5 * 0.01))/8.1375$
 $C_e = 23.71 \text{ mg/L}$

Acute WLA: $C_e = ((8.1375 + 10.08)12.1 - (10.08 * 0.01))/8.1375$
 $C_e = 27.08 \text{ mg/L}$

$LTA_c = 23.71 \text{ mg/L} (0.682) = 16.17 \text{ mg/L}$

[CV = 0.941, 99th Percentile, 30 day avg.]

$LTA_a = 27.08 \text{ mg/L} (0.215) = 5.82 \text{ mg/L}$

[CV = 0.941, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 5.82 \text{ mg/L} (5.19) = 30.2 \text{ mg/L}$

[CV = 0.941, 99th Percentile]

$AML = 5.82 \text{ mg/L} (1.35) = 7.9 \text{ mg/L}$

[CV = 0.941, 95th Percentile, n=30]

Winter:

A Reasonable Potential Analysis demonstrated that this facility will not exceed water quality standards during the winter months.

- ***Escherichia coliform (E. coli)***. Monthly average of 126 per 100 ml as a geometric mean and Weekly Average of 630 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).
- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_e = ((8.1375 + 105.25)10 - (105.25 * 0.0))/8.1375$
 $C_e = 139.33 \text{ µg/L}$

Acute WLA: $C_e = ((8.1375 + 10.53)19 - (10.53 * 0.0))/8.1375$
 $C_e = 43.59 \text{ µg/L}$

$LTA_c = 139.33 (0.527) = 73.43 \text{ µg/L}$

[CV = 0.6, 99th Percentile]

$LTA_a = 43.59 (0.321) = 13.99 \text{ µg/L}$

[CV = 0.6, 99th Percentile]

$MDL = 13.99 (3.11) = 43.5 \text{ µg/L}$

[CV = 0.6, 99th Percentile]

$AML = 13.99 (1.55) = 21.6 \text{ µg/L}$

[CV = 0.6, 95th Percentile, n = 4]

Total Residual Chlorine effluent limits of 44 µg/L daily maximum, 222 µg/L monthly average are recommended if chlorine is used as a disinfectant.

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and "The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

- **Cadmium, Copper, Zinc (all Total Recoverable):** A reasonable potential analysis for these metals has shown that this facility's effluent does not pose a reasonable potential to exceed water quality standards. Therefore, a monitoring only requirement is being placed in the permit.
- **Chromium III, Total Recoverable:** Monitoring is being continued from the previous permit. There was not a robust data set to use to perform an RPA. An RPA will be done at next renewal.
- **Chromium VI, Total Dissolved:** There was not enough data available to perform an RPA. At next renewal an RPA will be done for this constituent. Numeric limits will be retained in the permit.

Protection of Aquatic Life Chronic Criteria = 10 µg/L, Acute Criteria = 15 µg/L.

Chronic WLA: $C_c = ((8.1375 + 105.25)10 - (105.25 * 0.0))/8.1375$
 $C_c = 139.34 \mu\text{g/L}$

Acute WLA: $C_c = ((8.1375 + 10.53)15 - (10.53 * 0.0))/8.1375$
 $C_c = 34.41 \mu\text{g/L}$

$LTA_c = 139.34(0.527) = 73.43 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$LTA_a = 34.41(0.321) = 11.05 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

MDL = 11.05(3.11) = 34.4 µg/L [CV = 0.6, 99th Percentile]

AML = 11.05(1.55) = 17.1 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Chronic

Acute

No less than ONCE/YEAR:

Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.

Facility continuously or routinely exceeds their design flow.

Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.

Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

$AEC\% = 8.1375 \text{ cfs} / (10.53 \text{ cfs} + 8.1375 \text{ cfs}) \times 100 = 44\%$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit.

Part VI – Administrative Requirements

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

PUBLIC NOTICE:

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

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

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

- The Public Notice period for this operating permit is tentatively schedule to begin in January 2011.

DATE OF FACT SHEET: JANUARY 26, 2011

COMPLETED BY:

**ALAN MOREAU, ENVIRONMENTAL SPECIALIST III
NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
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Part VII – Appendices

APPENDIX #1 - CLASSIFICATION WORKSHEET

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	5
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	5
EFFLUENT DISCHARGE/RECEIVING WATER SENSITIVITY		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	
Chemical addition (except chlorine, enzymes)	4	
REQUIRED LABORATORY CONTROL - performed by plant personnel (highest level only)		
Lab work conducted outside of plant	0	
Push – button or visual methods for simple test such as pH, Settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations such as BOD seeding procedures, E. coli, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
ALTERNATIVE RATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	
Land Disposal – low rate	3	
High rate	5	
Overland flow	4	
Total from page ONE (1)		

APPENDIX #1 - CLASSIFICATION WORKSHEET (CONTINUED)

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
RAW WASTE RECEIVING AND TREATMENT		
Variation do not exceed those normally or typically expected	0	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	
Raw wastes subject to toxic waste discharge	6	6
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Waste Treatment Polishing Pond	2	
Chemical/physical - without secondary	15	
Chemical/physical - following secondary	10	
Biological or chemical/biological	12	
Carbon regeneration	4	
SINCE 10		
Chlorination or comparable	5	5
Dechlorination	2	2
On-site generation of disinfectant (except UV light)	5	
UV light	4	4
SINCE 10		
SOLIDS HANDLING - SODG		
Solids Handling Thickening	5	
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
SINCE 10		
SINCE 10		
Grand Total		

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX #2 – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	16.8	1.5	2.63	27	13/0	Yes
Total Ammonia as Nitrogen (Winter) mg/L	12.1	8.6	3.1	1.2	29	7.5/0.1	No
Cadmium, Total Recoverable	8.23	1.4	0.39	0.2	18	0.002/0	No
Copper, Total Recoverable	22.05	20.2	14.09	3.3	18	0.02/0.004	No
Zinc, Total Recoverable	180.69	91	179.22	15.0	18	0.121/0.029	No

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

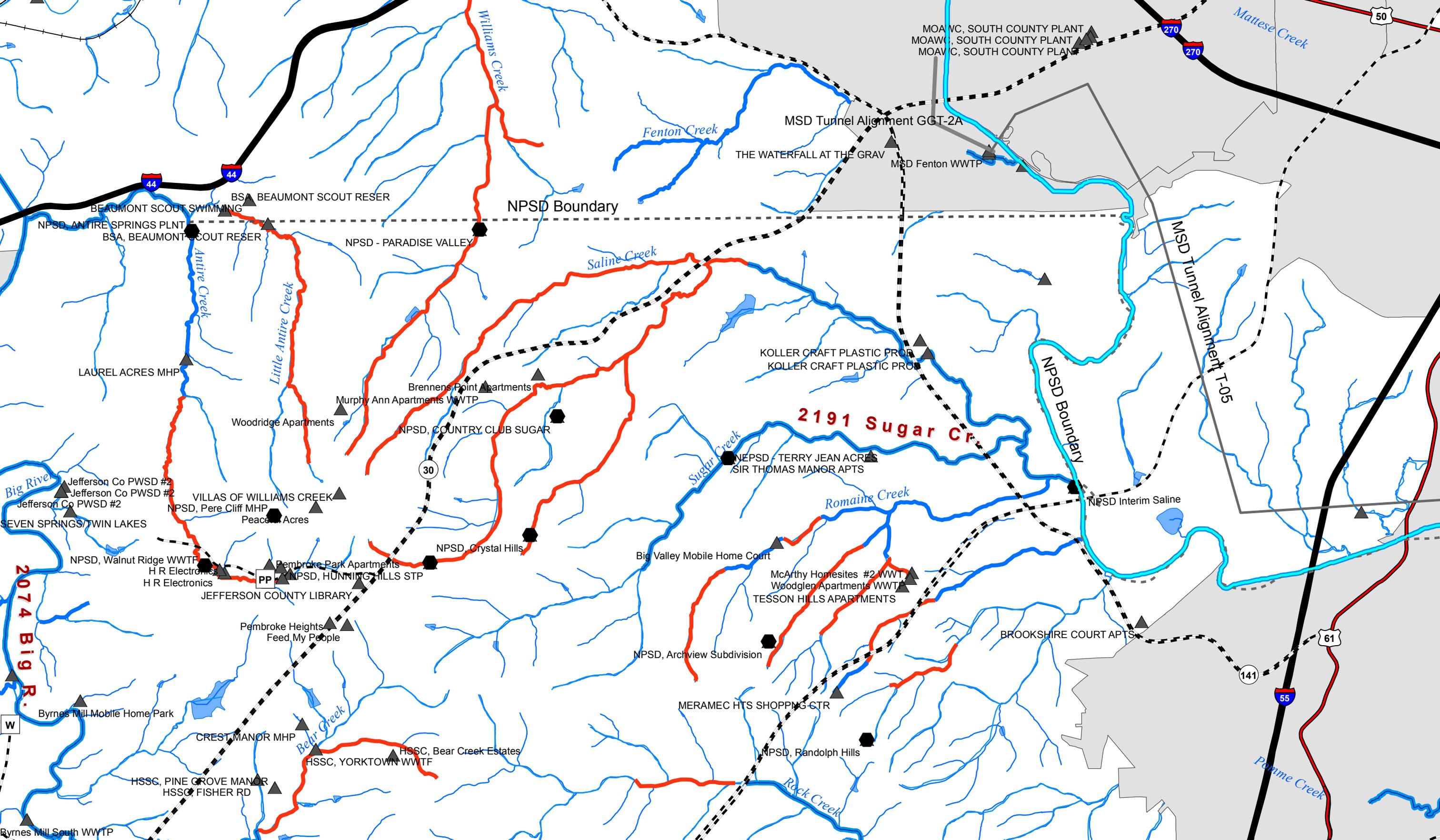
** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.



June 3, 2013

Ms. Malinda Steenbergen,
Missouri Clean Water Commission
Water Protection Program
PO Box 176
Jefferson City, MO 65102

7/13

Subject: Northeast Public Sewer District of Jefferson County
Level 2 Continuing Authority

WATER PROTECTION PROGRAM

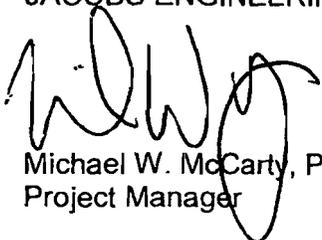
Dear Ms. Steenbergen:

Jacobs is working with Northeast Public Sewer District of Jefferson County (NPSD) to raise their Continuing Authority to Level 2. Attached with this letter is NPSD's preliminary request to the Clean Water Commission outlining their intention to become a Level 2 Continuing Authority. The Feasibility Study that was prepared for NPSD is also attached for your reference. Please confirm that this preliminary request will be placed on the July Clean Water Commission Meeting Agenda.

Should you have any questions on any of the above, please do not hesitate to contact me at (314) 335-4380.

Sincerely,

JACOBS ENGINEERING GROUP INC.



Michael W. McCarty, PE
Project Manager

Cc:

Mr. Refaat Mefrakis, PE – MDNR - Water Protection Program
Engineering Section Chief

Mr. Jim Huber – Chairman - NPSD



Northeast Public Sewer District

June 3, 2013

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2013

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Ms. Malinda Steenbergen,
Missouri Clean Water Commission
Water Protection Program
PO Box 176
Jefferson City, MO 65102

WATER PROTECTION PROGRAM

**Subject: Northeast Public Sewer District of Jefferson County
Level 2 Continuing Authority**

Dear Ms. Steenbergen:

The Northeast Public Sewer District (NPSD) has recently completed a Continuing Authority Feasibility Study; that was prepared by Jacobs Engineering Group Inc. The goal of the study was to develop a plan to become the Continuing Authority for the northern portion of Jefferson County and remove the interim label from the Operating Permit of the Saline Creek Regional Wastewater Treatment Plant (WWTP).

The current East-West Gateway Council of Governments (EWG) 208 Water Quality Management Plan for the St. Louis Area recommends that all wastewater collected in the northern portion of the NPSD service area should be conveyed to the St. Louis Metropolitan Sewer District (MSD) for treatment at its Lower Meramec WWTP. The Feasibility Study completed a high level comparison of two options:

1. Option 1 – convey all wastewater that currently flows to the Saline Creek WWTP to MSD's planned Lower Meramec Tunnel Extension.
2. Option 2 – continue to improve treatment capacity at the Saline Creek WWTP to meet evolving regulatory limits for discharge to the Meramec River.

1041 Gravois Road
Fenton, Missouri
63026

P 636 343-5090
F 636 343-7904

The study indicated that Option 2 is the most economically viable option for NPSD. As a result NPSD is requesting the Clean Water Commission consider providing NPSD Level 2 Continuing Authority for our service area. Please provide any feedback regarding this preliminary request, so that we may proceed with our final report which will document NPSD compliance with Missouri Department of Natural Resources requirements for becoming a Level 2 Continuing Authority.

NPSD representatives will plan to attend the next Clean Water Commission meeting to support this request and respond to any questions. Thank you for your consideration in this matter. Should you have any questions on any of the above please contact our engineer Mike McCarty with Jacobs Engineering Group, Inc. at 314.335.4380.

Sincerely,
Northeast Public Sewer District



Jim Huber
Chairman

Cc:
Mr. Refaat Mefrakis, PE – MDNR - Water Protection Program
Engineering Section Chief

Mr. Michael McCarty, PE – Jacobs Engineering Group, Inc.
Project Manager

Northeast Public Sewer District
CONTINUING AUTHORITY FEASIBILITY
STUDY

Revision A

March 15, 2013

PREPARED BY
JACOBS

Jacobs Engineering Group Inc.
N.A. Infrastructure
501 North Broadway
St. Louis, Missouri 63102
314.335.4000

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Appendix A – Rough Order of Magnitude Cost Estimates

1.0 Introduction

Northeast Public Sewer District (NPSD) contracted with Jacobs Engineering Group, Inc. (Jacobs) to complete a Continuing Authority Feasibility Study. The goal of this study is to develop a plan for NPSD to become the Continuing Authority for its service area and remove the interim label from the Operating Permit of the Saline Creek Regional Wastewater Treatment Plant (WWTP). The current East-West Gateway Council of Governments (EWG) 208 Water Quality Management Plan for the St. Louis Area recommends that all wastewater collected in the northern portion of the NPSD service area should be conveyed to the St. Louis Metropolitan Sewer District (MSD) for treatment at its Lower Meramec WWTP. This Continuing Authority Feasibility Study has been developed to address the following:

1. MDNR Continuing Authority requirements
2. EWG 208 Plan and economic impact of NPSD conveying wastewater to MSD
3. NPSD Facility Planning to provide regional treatment within its service area
4. Water Quality requirements for discharge to the Meramec River and the future impact on NPSD.
5. Recommendations for NPSD's path forward

2.0 Current MDNR Continuing Authority Requirements

2.1 Continuing Authority Level Definition

The Missouri Department of Natural Resources (MDNR) defines Continuing Authority as a municipality or public sewer district which has been designated as the area-wide management authority. The Continuing Authority Rule establishes levels in accordance with 10 CSR 20-6.010(3)(B) defining preferential order as follows:

1. Level 1 – A municipality or public sewer district which has been designated as the area-wide management authority under section 208(c)(1) of the Federal Clean Water Act. Currently Missouri has three Level 1 Continuing Authorities: Mid-America Regional Council (Kansas City metro area), EWG (St. Louis metro area) and Ozark Gateway (Joplin Area).
2. Level 2 – A municipality, public sewer district or private sewer company which currently provides sewage collection and /or treatment on a regional or watershed basis. These entities must be approved by the Clean Water Commission to attain Level 2 status. Currently Missouri has only one Level 2 Continuing Authority: Boone County Regional Sewer District.
3. Level 3 - A municipality, public sewer district or private sewer company.
4. Level 4 – An individual person with complete control of and responsibility for the wastewater facilities on their property.
5. Level 5 – An association of property owners served by the wastewater treatment facility.

NPSD is currently a Level 3 Continuing Authority.

2.2 Continuing Authority Preferential Order and Waiver Requirements

Level 1 is the highest level of Continuing Authority with descending preferential order to the lowest Level 5. Based on this preferential order all new construction permits for a wastewater treatment plant that utilizes a lower level continuing authority must obtain a waiver from an existing higher level Continuing Authority. This waiver must include one of the following reasons:

1. The higher authority declines to accept management of the additional wastewater.
2. The higher authority's collection system is greater than 2,000 feet from the proposed facility.
3. The proposed connection charge from the higher authority would be 120% more than the cost of the applicant to construct their own system.
4. The proposed customer service fee for connection to the higher authorities system result in average customer rates that exceed 2% of the median household income of the customers.
5. If it will take longer than two years for the higher authority to make available service to the lower authority, then the lower authority may proceed with their planned improvements.

Also as in the case of the Saline Creek Regional WWTP, if a higher level continuing authority has an approved plan in place to serve a lower level continuing authority in the future, the WWTP operating permit will have an interim designation. This designation outlines under the special conditions of the existing permit that the WWTP will cease discharge by connection to a facility with an area-wide management plan within 90 days of notice of its availability.

2.3 Proposed MDNR Rule to Establish Continuing Authority

MDNR is currently modifying the Continuing Authority Rule to clearly outline the requirements to become a Level 2 Continuing Authority. Based on information from MDNR's Construction and Operating Permits Workgroup which is developing the rule modification, the requirements will generally be as follows:

1. Submit a preliminary request to the Clean Water Commission to obtain higher authority.
2. Develop a Capital Improvements Program.
3. Develop and obtain local approval of ordinances outlining the authority to connect facilities and manage wastewater flows. The ordinance shall require the recipient to notify all potential users of service availability and that all users shall

- connect to the system within ninety (90) days of notice of service availability. A copy of the enacted ordinance must be submitted.
4. Allow opportunity for public participation to exchange ideas during project development. Public participation must be preceded by timely distribution of information and must occur sufficiently in advance of decision making to allow the recipient to assimilate public views into action. At a minimum, the entity must provide an opportunity for public participation, prior to approval of the Capital Improvements Plan and draft ordinance, at a public meeting. The entity shall prepare a transcript, recording or other complete record of the proceeding and submit it to the department and make it available at no more than cost to anyone who requests it. A copy of the record should be available for public review.
 5. Submit a final request to the Clean Water Commission for approval, containing the fulfillment of the (G)1-4, along with the Commission's recommendations.

3.0 EWG 208 Water Quality Management Plan for the St. Louis Area

3.1 Overview

In May of 1975 the EPA and MDNR designated EWG as a Level 1 Continuing Authority for the St. Louis area including the City of St. Louis and the counties of Franklin, Jefferson, St. Charles and St. Louis. EWG developed the Water Quality Management Plan in accordance with Section 208 of the Clean Water Act, in May 1978. The Clean Water Commission certified EWG as the Level 1 Continuing Authority for the planning area in February 1979.

The EWG Water Quality Management Plan outlined recommendations to control point source pollution throughout the planning area. The 208 plan recommended, for the Lower Meramec region of the planning area, a regional WWTP be constructed in St. Louis County near the confluence of the Meramec River and the Mississippi River. This regional WWTP would provide sewer service via major interceptors for the Lower Meramec Region, which consists of southern St. Louis County and northern Jefferson County. The planned regional WWTP is MSD's Lower Meramec Facility, which was constructed in 2007. The northern Jefferson County portion of the Lower Meramec region is essentially NPSD's service area.

3.2 MSD 201 Facility Plan

In conjunction with the EWG 208 Plan MSD developed the 201 Facility Plan for the Lower Meramec River Basin in September 1979. This Facility Plan has since been updated in 1985. As part of evaluating the recommendations of the facility plan MSD has completed alignment studies to extend the Lower Meramec Tunnel from the existing shaft at the former Baumgartner Lagoons to the Fenton WWTP and a second project to extend the tunnel to the Grand Glaize WWTP. These tunnel extensions allow the treatment facilities to be de-commissioned and convey wastewater to the Lower Meramec WWTP, which would also require two phases of expansion. MSD evaluated

multiple alignment options, but the current recommended alignment of the Lower Meramec Tunnel extension is on the north side of the Meramec River from the existing shaft at the Baumgartner Lagoon then northwest crossing Gravois Road and Tesson Ferry Road to the Fenton WWTP. The current recommended alignment for the Lower Meramec Tunnel extension is outlined in Figure 4-1.

The Lower Meramec Tunnel extension would be the closest available interceptor for NPSD to interconnect with MSD. The current design basis for the tunnel is 8' diameter pipeline in a 12' diameter bored rock tunnel. Design flows for the tunnel extension is currently 35 MGD average daily flow, 98 MGD peak daily flow and 140 MGD peak hourly flow. MSD has not included any allowance for wastewater flow from NPSD in the current planning level work for the Lower Meramec Tunnel extension. Also in conjunction with the tunnel extension MSD will need to expand the capacity of the Lower Meramec WWTP to treat the additional wastewater flow.

3.3 NPSD Connection to MSD – Economic Impact

If MDNR would require NPSD to adhere to the continuing authority preferential order and follow the recommendations outlined in the 208 Plan, the Lower Meramec Tunnel Extension would be the closest MSD interceptor for connection. The economic impact of connection to MSD is summarized in the following categories:

1. Capital cost to connect the two systems. NPSD would pay for 100% of this cost.
2. Capital cost of shared facilities. The shared facilities include tunnels, interceptor sewers, pump stations and WWTP expansions to accommodate the additional flow. This capital cost is shared between all users based on capacity purchased in the shared facility.
3. Operation and Maintenance (O&M) Cost of shared facilities. The O&M cost is a treatment charge based on metered NPSD flow to the shared facilities.

3.3.1 Capital Cost to Connect the Two Systems

There are several options to convey wastewater from the Saline Creek WWTP and connect to MSD's Lower Meramec Tunnel extension. A potential point of connection could be made at a planned intermediate access shaft just northwest of Tesson Ferry Road or near the Fenton WWTP. Conveyance options to connect to MSD would need to be evaluated using a decision matrix that considers capital cost, operation cost, maintenance cost, constructability, easement acquisition and other criteria. This option evaluation would be completed as part of a Facility Plan Update or update to the 208 Plan. For the purpose of this feasibility study we have outlined two conveyance options that could be used to evaluate financial viability as it relates to Level 1 Continuing

Authority and the 208 Plan. The conveyance options for NPSD to interconnect with the Lower Meramec Tunnel may include:

1. Construct a pump station at the Saline Creek Regional WWTP and utilize a forcemain to convey wastewater to the proposed intermediate shaft at the Fenton WWTP; see Figure 4-2 for a general alignment.
2. Construct a tunnel from the Saline Creek Regional WWTP outfall at the Meramec River to a proposed intermediate shaft along the Lower Meramec Tunnel. This option will require modification and continued operation of the WWTP headworks pump station to direct wastewater to the existing outfall sewer. Three general alignments are outlined in Figure 4-2 but the most direct alignment would require approximately 8,150 LF of tunnel.

A Rough Order of Magnitude (ROM) cost estimate was developed for each conveyance option. The ROM cost estimate provides a high level overview of the cost to connect to MSD. The pump station and forcemain option has a ROM cost estimate of \$24,605,000, and the tunnel option has a ROM estimate of \$32,244,000. The ROM cost estimates are included in Appendix A. NPSD would be responsible for 100% of the capital, operation and maintenance cost associated with the conveyance improvements from the point of connection back to NPSD's system. A detailed decision matrix comparison and present worth analysis would need to be completed to determine the most viable option for connection to MSD, which is beyond the scope of this study.

3.3.2 Capital Cost of Shared Facilities

The shared facilities that NPSD would utilize in the connection with MSD include the Lower Meramec Tunnel extension and the expansion of the Lower Meramec WWTP which is required to treat wastewater flow from the Lower Meramec Tunnel. Essentially NPSD would purchase capacity in these shared facilities. This would be accomplished by an intergovernmental agreement between NPSD and MSD. The shared capital costs would be determined by formula that allocates cost based on contracted capacity of conveyance and treatment improvements. Current estimated total installed cost for the Lower Meramec Tunnel Extension to eliminate the Fenton WWTP is \$215.555 million and for the Lower Meramec WWTP Phase II expansion is \$108 million. It is noted that these costs do not include any allowance for flow from NPSD, which could potentially increase the estimated cost.

Table 3.3.2-1 was developed in an effort to roughly quantify the cost for NPSD to connect with MSD. This assumes no change in capital cost of the shared facilities from the increased capacity for NPSD.

Table 3.3.2-1		
	Flow	Percent of Total
NPSD Peak Flow (MGD)	17.97	15.5%
MSD Peak Flow (MGD)	98	84.5%
Total Capacity of Shared Facility	115.97	100.0%
	Total Cost	NPSD Cost
Lower Meramec Tunnel Extension	\$215,555,000	\$33,401,081
Lower Meramec WWTP Expansion	\$108,000,000	\$16,735,018
Total NPSD Cost of Shared Facilities		\$50,136,099
NPSD Cost to connect to MSD		\$24,605,000
Total Capital Cost to connect to MSD		\$74,741,099

3.3.3 Operation and Maintenance Cost of Shared Facilities

NPSD would also share in the operation and maintenance (O&M) cost of the shared facilities. Calculation of O&M costs would be defined in the intergovernmental agreement between NPSD and MSD. NPSD treatment charges would be calculated by formula based on actual MSD O&M costs and allocated based on actual flow from NPSD as a percentage of the total flow.

4.0 NPSD Facility Plan

NPSD completed a comprehensive Facility Plan for the entire collection and treatment system in 2010. The goal of the Facility Plan was to identify NPSD's future wastewater needs and identify improvements that will support growth within the district boundaries and meet the ever shifting landscape of water quality requirements. The Facility Plan recommended the Saline Creek WWTP become a regional WWTP for NPSD. Collection system improvements would be made to intercept wastewater from a number of NPSD's smaller plants and convey them to the Saline Creek Regional WWTP.

The Saline Creek Regional WWTP was constructed in two phases with the most recent completed in 2009. The plant was designed for an average daily flow of 4 MGD and peak daily flow of 10 MGD. Provisions were made in the plant design to accommodate expanding capacity to an average daily flow of 8 MGD and peak daily flow of 20 MGD by adding additional process equipment. The Facility Plan also included recommendations to re-rate the Saline Creek Regional WWTP as follows:

1. Design Average Flow = 6.56 MGD
2. Design Maximum Flow = 17.97 MGD
3. Organic Loading BOD₅ = 11,341 lb/d
4. Total Suspended Solids Loading TSS = 12,203 lb/d

Saline Creek Regional WWTP's current operating permit includes E. Coli and ammonia as nitrogen limits as follows:

E. Coli

April 1 to October 31:

- Weekly Average = 630 colonies/100 ml
- Monthly Average = 126 colonies/100 ml

Ammonia as Nitrogen

April 1 to September 30:

- Daily Maximum = 30.2 mg/L
- Monthly Average = 7.9 mg/L

October 1 to March 31:

- Monitoring only

5.0 Meramec River Water Quality Requirements

5.1 Overview

The Meramec River is an important natural resource for Jefferson and St. Louis counties, providing recreational uses and public drinking water supply. As a result MDNR closely monitors water quality along the Meramec River. The Meramec River is currently on MDNR's 303(d) List of Impaired Waters for the pollutant E. Coli. The 303(d) list identifies the river's impaired uses as:

- Whole Body Contact – recreational
- Aquatic Life Protection
- Public Drinking Water Supply
- Industrial Users
- Livestock and Wildlife Watering

MDNR is now considering what limitations to impose on the nutrients nitrogen and phosphorus which are discharged to surface waters across the state. The reason for the limitations is to reverse the hypoxia in the Gulf of Mexico caused by nutrients emanating from the Mississippi River and other surface waters that drain into the Gulf. The Mississippi River/Gulf of Mexico Watershed Nutrient (Hypoxia) Task Force has been formed as a collaboration of several states and the U.S. Environmental Protection Agency (EPA) to develop ways to reverse the hypoxia. One method being considered is to limit nutrients that can be discharged to surface waters by WWTPs.

There are three components of nitrogen that are measured in WWTP effluent that are added together to measure Total Nitrogen (TN). TN is defined as the sum of Total

Kjeldahl Nitrogen (TKN), Ammonia and Nitrate/Nitrite. Phosphorus in WWTP effluent is generally in three forms including orthophosphate, polyphosphate and organic phosphate. These three forms are added together to measure Total Phosphorus (TP).

There is no consensus among wastewater industry professionals on future effluent limits for WWTPs that discharge to the Meramec River. The Water Environment Research Foundation (WERF) has developed levels of treatment guidelines to meet varying nutrient limits, these levels are outlined below:

1. Level 1 – generally regarded as no TN or TP removal (e.g. BOD removal with or without ammonia removal similar to the existing effluent limits for the Saline Creek Regional WWTP)
2. Level 2 – generally regarded as TN = 8-10 mg/L and TP = 1.0 mg/L.
3. Level 3 – generally regarded as TN = 4-8 mg/L and TP = 0.1–0.3 mg/L.
4. Level 4 – generally regarded as TN = 3 mg/L and TP = 0.1–0.3 mg/L.
5. Level 5 – generally regarded as TN = 1 mg/L and TP = 0.01 mg/L.

For planning purposes future effluent limits for the Meramec River are assumed to be either Level 2 or 4.

5.2 Impact to NPSD

Currently the Saline Creek Regional WWTP discharge permit only requires meeting the Ammonia component of TN. Biological wastewater treatment systems, such as the oxidation ditch at the Saline Creek WWTP, can be operated to remove nitrogen and phosphorus biologically. Typically, total nitrogen in the effluent can be reduced to 5 to 10 mg/l and phosphorus to around 1 mg/l to meet Level 2 nutrient removal. NPSD's diligent operation of the Saline Creek Regional WWTP is resulting in total nitrogen in the effluent consistently less than 5 mg/L. To meet Level 4 nutrient removal, additional treatment including anaerobic/anoxic bioreactors, chemical addition, flocculation/ sedimentation and filtration will be required.

NPSD is currently completing a facility plan update of the Saline Creek Regional WWTP to evaluate process improvements required to meet Level 2 and Level 4 nutrient removal requirements and sludge dewatering improvements. This facility plan will define the long term capital improvement plan for this regional facility to maintain compliance with anticipated regulations.

6.0 Path Forward

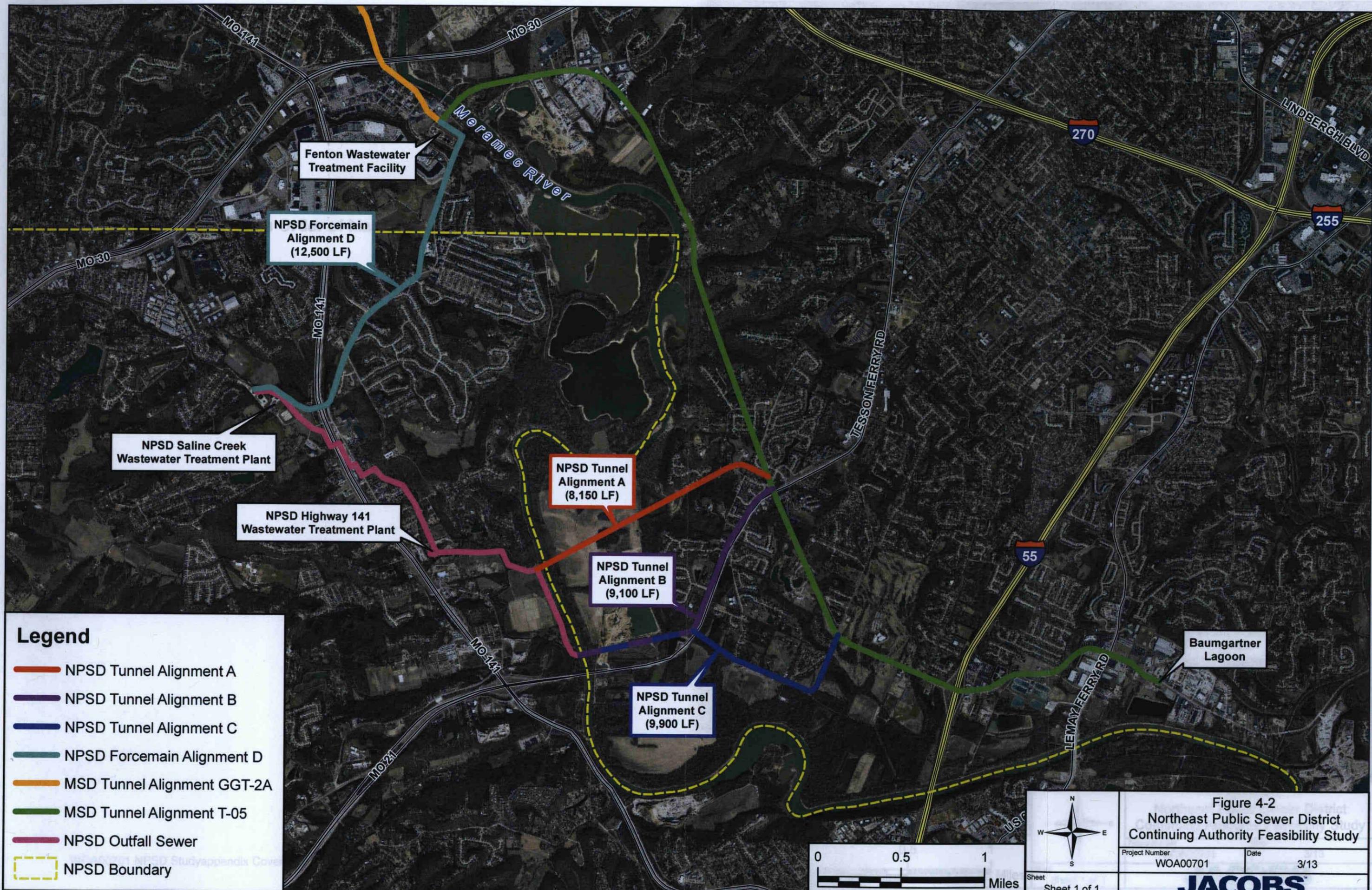
There is a strong foundation for NPSD to maintain its status as the regional wastewater collection and treatment utility within your service area. Connection to MSD is not currently an economically viable option and would dramatically increase customer rates. NPSD is currently engaged in responsible planning to stay ahead of pending regulations

related to nutrient removal that will require more advanced treatment at the Saline Creek Regional WWTP. The NPSD planning should confirm utilizing the Saline Creek WWTP as a regional facility is more economically viable and environmentally sound compared to connection to MSD. As a result, we recommend a two step approach, first work with MDNR to obtain Level 2 Continuing Authority Status and secondly begin discussions with EWG about an amendment to the 208 Plan.

6.1 Level 2 Continuing Authority

The following is a timeline based on MDNR's draft rule to obtain Level 2 Continuing Authority status:

1. Submit a preliminary request to the Clean Water Commission to obtain higher authority. This request would be made by letter upon concurrence of NPSD with the path forward. The request should be submitted by June 1 in an effort to get on the July Clean Water Commission meeting agenda.
2. Attend the Clean Water Commission meeting on July 10, 2013 to respond to any questions from the commission regarding the preliminary request.
3. Confirm NPSD rules and regulations meet MDNR requirements to manage regional wastewater flows.
4. Hold public meetings to discuss NPSD capital improvement plan. These meetings could be held in August 2013.
5. Develop an overall report that addresses any feedback from the Clean Water Commission and documents the NPSD Capital Improvements Program, rules and regulations and public meetings. This report could be completed and submitted to MDNR by September 1, 2013.
6. MDNR reviews the overall report approximately 180 days, which would be February 2014. If MDNR concurs with the request they will make the recommendation accordingly to the Clean Water Commission.
7. Make final request to the Clean Water Commission at the next scheduled meeting after MDNR completes review of the report.



Legend

- NPSD Tunnel Alignment A
- NPSD Tunnel Alignment B
- NPSD Tunnel Alignment C
- NPSD Forcemain Alignment D
- MSD Tunnel Alignment GGT-2A
- MSD Tunnel Alignment T-05
- NPSD Outfall Sewer
- NPSD Boundary

Fenton Wastewater Treatment Facility

NPSD Forcemain Alignment D (12,500 LF)

NPSD Saline Creek Wastewater Treatment Plant

NPSD Highway 141 Wastewater Treatment Plant

NPSD Tunnel Alignment A (8,150 LF)

NPSD Tunnel Alignment B (9,100 LF)

NPSD Tunnel Alignment C (9,900 LF)

Baumgartner Lagoon

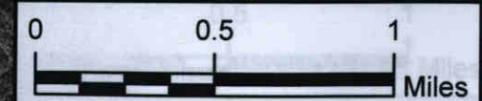
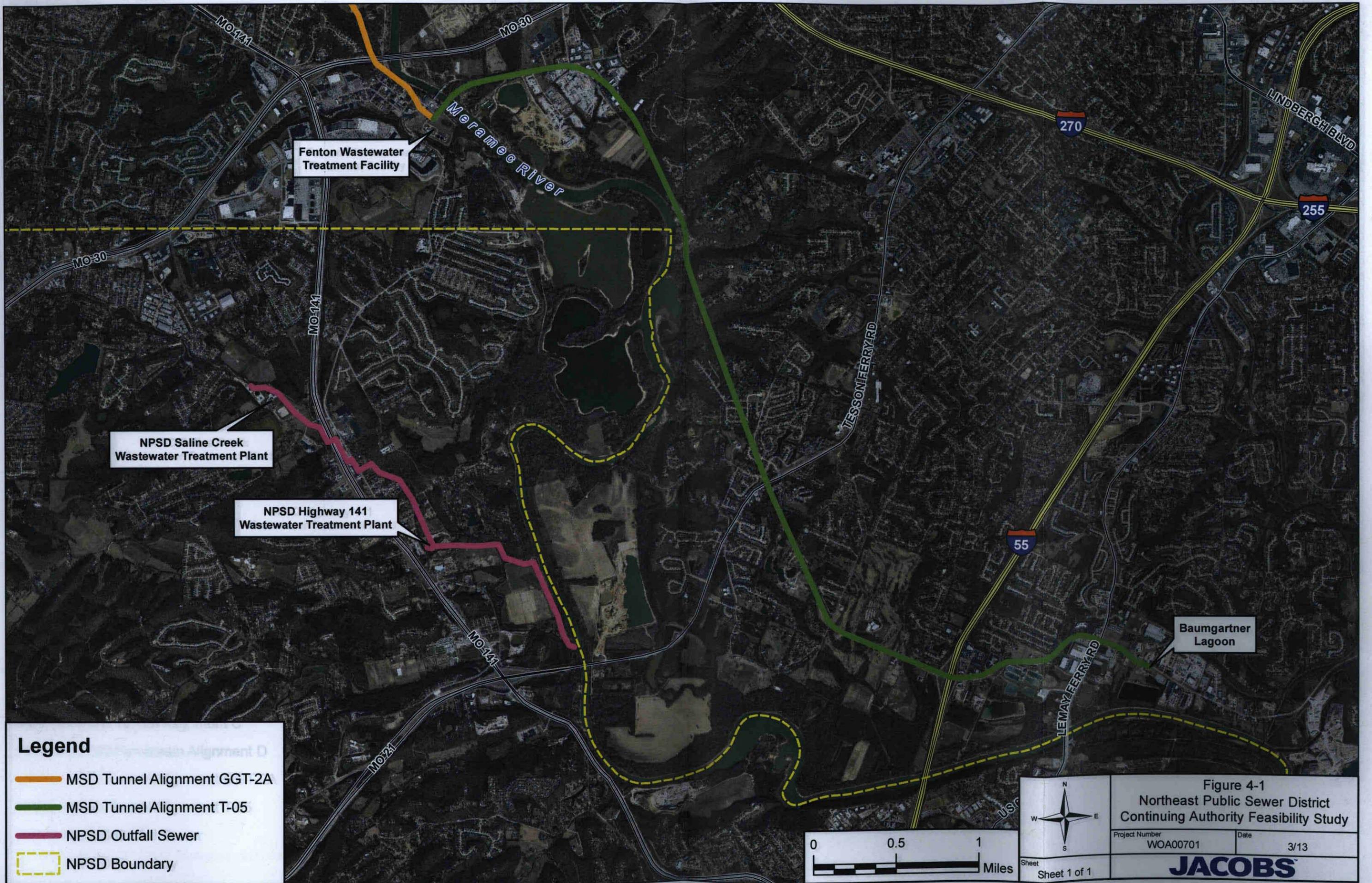


Figure 4-2
Northeast Public Sewer District
Continuing Authority Feasibility Study

Project Number WOA00701	Date 3/13
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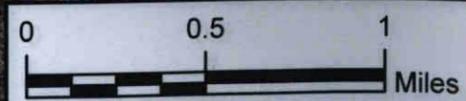


Legend

- MSD Tunnel Alignment GGT-2A
- MSD Tunnel Alignment T-05
- NPSD Outfall Sewer
- NPSD Boundary

Figure 4-1
 Northeast Public Sewer District
 Continuing Authority Feasibility Study

Project Number WOA00701	Date 3/13
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Sheet
 Sheet 1 of 1



Appendix A – Rough Order of Magnitude Cost Estimate

Saline Creek WWTW Force Main Connection to PSD					
Item #	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization, Bonds, Insurance (10% of Construction)	LS	1	\$1,398,000.00	\$ 1,398,000.00
2	Saline Creek Pump Station	LS	1	\$5,800,000.00	\$ 5,800,000.00
3	30" DIP Force Main	LF	12,500	\$300.00	\$ 3,750,000.00
4	42" Steel Encasement with 30" DIP Jack and Bore	LF	400	\$1,200.00	\$ 480,000.00
5	Rock Excavation	CY	2,000	\$150.00	\$ 300,000.00
6	Intermediate Drop Shaft	EA	1	\$2,500,000.00	\$ 2,500,000.00
7	Re-Route Collection System at Saline Creek WWTP	LS	1	\$400,000.00	\$ 400,000.00
8	Decommission Saline Creek WWTP	LS	1	\$750,000.00	\$ 750,000.00
				Construction:	\$15,378,000.00
				Inflation (%/yrs):	\$ 15,378,000.00
				Contingency (%):	\$ 4,613,400.00
				Engineering Design (%):	\$ 1,537,800.00
				Engineering Construction (%):	\$ 922,680.00
				Legal (%):	\$ 768,900.00
				Easements (%):	\$ 1,384,020.00
				Total Cost:	\$ 24,604,800.00
TOTAL COST:					\$24,605,000.00

Item		Unit	Quantity	Unit Price	Total Price
1	Mobilization, Bonds, Insurance (10% of Construction)	LS	1	\$1,832,000.00	\$ 1,832,000.00
2	36" Pipe in 6' Tunnel including entrance and exit shafts	LF	8,150	\$1,800.00	\$ 14,670,000.00
3	Intermediate Drop Shaft	EA	1	\$2,500,000.00	\$ 2,500,000.00
4	Re-Route Collection System at Saline Creek WWTP	LS	1	\$400,000.00	\$ 400,000.00
5	Decommission Saline Creek WWTP	LS	1	\$750,000.00	\$ 750,000.00
<p>Inflation (%/yrs):</p> <p>Contingency (%):</p> <p>Engineering Design (%):</p> <p>Engineering Construction (%):</p> <p>Legal (%):</p> <p>Easements (%):</p>					<p>Construction:</p> <p>\$20,152,000.00</p> <p>\$ 20,152,000.00</p> <p>\$ 6,045,600.00</p> <p>\$ 2,015,200.00</p> <p>\$ 1,209,120.00</p> <p>\$ 1,007,600.00</p> <p>\$ 1,813,680.00</p> <p>Total Cost:</p> <p>\$ 32,243,200.00</p>
TOTAL COST:					\$32,244,000.00

174