

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. **UT0020371**

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended (the "Act")*,

The City of Wellsville Water Reclamation Facility

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **Little Bear River**,

and to distribute effluent for reuse,

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on June 1, 2019

This permit expires at midnight on May 31, 2024

Signed this 20th day of May, 2019.



Erica Brown Gaddis, PhD
Director

DWQ-2019-004991

Table of Contents

Outline	Page Number
I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS.....	1
A. Description of Discharge Points	1
B. Narrative Standard	1
C. Specific Limitations and Self-Monitoring Requirements	1
D. Reporting of Monitoring Results	5
II. INDUSTRIAL PRETREATMENT PROGRAM	6
A. Definitions	6
B. Pretreatment Reporting Requirements	6
C. Industrial Wastes	6
D. General and Specific Prohibitions	7
E. Significant Industrial Users Discharging to the POTW	8
F. Change of Conditions	8
G. Legal Action	8
H. Local Limits	9
III. BIOSOLIDS REQUIREMENTS	10
IV. STORM WATER REQUIREMENTS	11
V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS.....	12
A. Representative Sampling	12
B. Monitoring Procedures.....	12
C. Penalties for Tampering	12
D. Compliance Schedules	12
E. Additional Monitoring by the Permittee	12
F. Records Contents.....	12
G. Retention of Records	12
H. Twenty-four Hour Notice of Noncompliance Reporting	12
I. Other Noncompliance Reporting.....	13
J. Inspection and Entry	13
VI. COMPLIANCE RESPONSIBILITIES	15
A. Duty to Comply	15
B. Penalties for Violations of Permit Conditions.....	15
C. Need to Halt or Reduce Activity not a Defense	15
D. Duty to Mitigate.....	15
E. Proper Operation and Maintenance.....	15
F. Removed Substances	15
G. Bypass of Treatment Facilities	15
H. Upset Conditions	17
VII. GENERAL REQUIREMENTS	18
A. Planned Changes.....	18
B. Anticipated Noncompliance.....	18
C. Permit Actions	18
D. Duty to Reapply.....	18
E. Duty to Provide Information	18
F. Other Information.....	18
G. Signatory Requirements.....	18
H. Penalties for Falsification of Reports.....	19
I. Availability of Reports	19
J. Oil and Hazardous Substance Liability	19
K. Property Rights	19
L. Severability	19
M. Transfers	19
N. State or Federal Laws	20
O. Water Quality - Reopener Provision.....	20
P. Biosolids – Reopener Provision	20
R. Storm Water-Reopener Provision	20
VIII. DEFINITIONS	22
A. Wastewater	22

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

- A. Description of Discharge Points. The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number

001

Location of Discharge Outfall

Discharge from the disinfection building on the North side of the 4th cell to the Little Bear River. Latitude 41°39'38" and Longitude 111° 54'82".

001R

Description of Area for Use

Type II Effluent Reuse is land applied during the growing season, pumped into gravity flow pipes where it can be flood irrigated onto the fields to the West of the Lagoons onsite. Latitude 41°39'34" and Longitude 111° 55' 24".

- B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.
- C. Specific Limitations and Self-Monitoring Requirements.
1. Effective Immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001 as defined in *Part VIII*.
 2.
 - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001 and Outfall 001R. Such discharges shall be limited and monitored by the Permittee as specified below:

PART I
DISCHARGE PERMIT NO. UT0020371
WASTEWATER

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.683	--	--	--	--
BOD ₅ , mg/L	25	35	--	--	--
BOD ₅ Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	10.28	--	--	--	28.7
Fall (Oct-Dec)	14.5	--	--	--	22.0
Winter (Jan-Mar)	22.7	--	--	--	37.0
Spring (Apr-Jun)	12.5	--	--	--	22.0
<i>E. coli</i> , No./100mL	126	158	--	--	--
pH, Standard Units	--	--	--	6.5	9

Parameter	Effluent Limitations ¹
Total Phosphorus, lbs/season Warmer Months, June-September ² Annual, January-December ³	72 kilograms (159 lbs). 432 kilograms (953 lbs).

1 See Definitions, Part VIII, for definition of terms.

2 Shall be reported in pounds per month on the discharge monitoring report. The following formula will convert milligrams per liter, to pounds per day. Total phosphorus (mg/l) x Flow (MGD) x 8.3396 = total phosphorus lbs per day.

3 The annual loading equals 360 kilograms (794 lbs) plus the portion of the 72 kilograms (159 lbs) that is not discharged from June through September.

PART I
DISCHARGE PERMIT NO. UT0020371
WASTEWATER

Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁴	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent ⁴	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, % Removal	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Total Ammonia (as N)	Monthly	Grab	mg/L
DO	Monthly	Grab	mg/L
Phosphorus, Total Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent	Monthly	Composite	lbs/month
Effluent	Monthly	Composite	lbs/month
Metals, Influent	1 X 1 st year of permit cycle	Grab/Composite	mg/L
Effluent	1 X 1 st year of permit cycle	Grab/Composite	mg/L

Metals to be Monitored for RP		
Parameter	Sample Type	Units
Total Arsenic	Composite	mg/L
Total Cadmium	Composite	mg/L
Total Chromium	Composite	mg/L
Total Copper	Composite	mg/L
Total Cyanide	Grab	mg/L
Total Lead	Composite	mg/L
Total Mercury	Grab/Composite	mg/L
Total Nickel	Composite	mg/L
Total Selenium	Composite	mg/L
Total Silver	Composite	mg/L
Total Zinc	Composite	mg/L

-
- 1 See Definitions, Part VIII, for definition of terms.
 - 2 Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
 - 3 If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
 - 4 In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge

PART I
DISCHARGE PERMIT NO. UT0020371
WASTEWATER

- b. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001R. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Type II Reuse Outfall 001R Effluent Limitations ¹			
	Max Monthly Average	Max Weekly Median	Minimum	Maximum
BOD ₅ , mg/L	25	--	--	--
TSS, mg/L	25	35	--	--
<i>E. coli</i> , No/100mL	--	126	--	500
pH, Standard Units	--	--	6.0	9.0

-- -- Not Applicable

Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements ^{1,4}			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Continuous	Recorder	MGD
BOD ₅	Monthly	Grab	mg/L
TSS	Weekly	Grab	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU

c. Management Practices for Land Application of Treated Effluent:

- (1) The application of treated effluent to frozen, ice-covered, or snow covered land is prohibited.
- (2) No person shall apply treated effluent where the slope of the site exceeds 6 percent.
- (3) The use should not result in a surface water runoff.
- (4) The use must not result in the creation of an unhealthy or nuisance condition, as determined by the local health department.
- (5) Any irrigation with treated effluent must be at least 300 feet from a potable well.
- (6) Any irrigation must be at least 300 feet from any potable water well.
- (7) Spray irrigation must be at least 100 feet from areas intended for public access. This distance may be reduced or increased by the Director.
- (8) Impoundments of treated effluent, if not sealed, must be at least 500 feet from any potable well.
- (9) Public access to effluent storage and irrigation or disposal sites shall be restricted by a stock-tight fence or other comparable means which shall be posted and controlled to exclude the public (Compliance Schedule for a Particular Parameter if necessary)

1 See Definitions, Part VIII, for definition of terms.

2 Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

3 If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

4 Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on a Monthly Operational Report, post-marked no later than the 28th day of the month following the completed reporting period.

3. Compliance Schedule

- a. There is no Compliance Schedule included in this renewal permit, or Compliance Schedule Language, or

4. Acute/Chronic Whole Effluent Toxicity (WET) Testing.

As part of the nationwide effort to control toxics, biomonitoring requirements are being included in all major permits and in minor permits for facilities where effluent toxicity is an existing or potential concern. Authorization for requiring effluent biomonitoring is provided for in UAC R317-8-4.2 and R317-8-5.3. The Whole Effluent Toxicity (WET) Control Guidance Document, February 15, 1991, outlines guidance to be used by Utah Division of Water Quality staff and by permittee's for implementation of WET control through the UPDES discharge permit program.

Wellsville Water Reclamation Facility (WWRF) is a minor facility with no reasonable potential for toxicity in the effluent. As a result, biomonitoring of the effluent will not be required. However, the permit will contain a WET reopener provision.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

* Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Definitions. For this section the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the Act.
2. *Local Limit* is defined as a limit designed to prevent pass through and/or interference. And is developed in accordance with 40 CFR 403.5(c).
3. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
4. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:
 - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
 - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
 - c. Is subject to Categorical Pretreatment Standards, or
 - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.
5. *User or Industrial User (IU)* means a source of Indirect Discharge

B. Pretreatment Reporting Requirements. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop a State-approved industrial pretreatment program at this time. However, in order to determine if development of an industrial pretreatment program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.C.1*, and submit it to the Division of Water Quality within **sixty (60) calendar days** of the effective date of this permit.

C. Industrial Wastes.

1. The "Industrial Waste Survey" as required by *Part II.B.* consists of;
 - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
 - b. Determination of the qualitative and quantitative characteristics of each discharge, and

PART II
DISCHARGE PERMIT NO. UT0020371
PRETREATMENT

- c. Appropriate production data.
 2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
 3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
 4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
 5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.
- D. General and Specific Prohibitions. The general prohibitions and the specific prohibitions apply to each User introducing pollutants into a POTW whether or not the User is subject to other Pretreatment Standards or any national, State or local Pretreatment Requirements.
1. General prohibition Standards. A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference.
 2. Specific Prohibited Standards. Developed pursuant to *Section 307 of The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any User (*40 CFR 403.5*):
 - a. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste-streams with a closed cup flashpoint of less than 140°F (60°C);
 - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;
 - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
 - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,

PART II
DISCHARGE PERMIT NO. UT0020371
PRETREATMENT

occurred because of the failure of an industrial user to discharge at an acceptable level. If the permittee has failed to properly delineate maximum acceptable industrial contributor levels, the Director will look primarily to the permittee as the responsible party.

- H. Local Limits. If local limits are developed per R317-8-8.5(4)(b) to protect the POTW from pass-through or interference, then the POTW must submit limits to DWQ for review and public notice, as required by R317-8-8.5(4)(c).

III. BIOSOLIDS REQUIREMENTS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met.

IV. STORM WATER REQUIREMENTS.

The *Utah Administrative Code (UAC) R-317-8-3.9* requires storm water permit provisions to include the development of a storm water pollution prevention plan for waste water treatment facilities if the facility meets one or both of the following criteria.

1. waste water treatment facilities with a design flow of 1.0 MGD or greater, and/or,
2. waste water treatment facilities with an approved pretreatment program as described in *40CFR Part 403*,

WWRF does not meet one of the above criteria; therefore this permit does not include storm water provisions. The permit does however include a storm water re-opener provision.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.
- F. Records Contents. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) and time(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and,
 6. The results of such analyses.
- G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location
- H. Twenty-four Hour Notice of Noncompliance Reporting.
1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

PART V
DISCHARGE PERMIT NO. UT0020371

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any noncompliance which may endanger health or the environment;
 - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.*);
 - c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions.*);
 - d. Violation of a daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected;
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*
- I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*
- J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

PART V
DISCHARGE PERMIT NO. UT0020371

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. COMPLIANCE RESPONSIBILITIES

- A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under UCA 19-5-115(2) a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at Part VI.G, *Bypass of Treatment Facilities* and Part VI.H, *Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.
- C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.
- E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.
- G. Bypass of Treatment Facilities.
1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.
 2. Prohibition of Bypass.
 - a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

PART VI
DISCHARGE PERMIT NO. UT0020371

- (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
 - (3) The permittee submitted notices as required under *section VI.G.3*.
- b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.
3. Notice.
- a. *Anticipated bypass.* Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
 - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
 - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
 - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
 - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
 - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,
 - (6) Any additional information requested by the Director.
 - b. *Emergency Bypass.* Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.
 - c. *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural

PART VI
DISCHARGE PERMIT NO. UT0020371

Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required under *Part V.H, Twenty-four Hour Notice of Noncompliance Reporting*; and,
 - d. The permittee complied with any remedial measures required under *Part VI.D, Duty to Mitigate*.
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

VII. GENERAL REQUIREMENTS

- A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.
- B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.
- E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.
 - 1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
 - 2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position

PART VII
DISCHARGE PERMIT NO. UT0020371

having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.
- I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.
- J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers. This permit may be automatically transferred to a new permittee if:
 1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

PART VII
DISCHARGE PERMIT NO. UT0020371

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
 3. Revisions to the current CWA § 208 area wide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.
- Q. This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.
- R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or

PART VII
DISCHARGE PERMIT NO. UT0020371

reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC₅₀").
5. "Annual Loading Cap" is the highest allowable phosphorus loading discharged over a calendar year, calculated as the sum of all the monthly loading discharges measured during a calendar year divided by the number of monthly discharges measured during that year.
6. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
7. "Chronic toxicity" occurs when the IC₂₅ < 34.6% effluent. The 34.6% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
8. "IC₂₅" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
9. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

PART VIII
DISCHARGE PERMIT NO. UT0020371

- a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
 - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
 - c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
 - d. Continuous sample volume, with sample collection rate proportional to flow rate.
10. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
 11. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
 12. "EPA," means the United States Environmental Protection Agency.
 13. "Director," means Director of the Division of Water Quality.
 14. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
 15. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
 16. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 17. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

DWQ-2019-004991

**FACT SHEET AND STATEMENT OF BASIS
THE CITY OF WELLSVILLE WATER RECLAMATION FACILITY
REWAL PERMIT: DISCHARGE & REUSE
UPDES PERMIT NUMBER: UT0020371
MINOR MUNICIPAL**

FACILITY CONTACTS

Person Name: Scott Wells
Position: City Manager
Phone Number: (435) 245-7958

Person Name: Tom Maughan
Position: Sewer Manager
Phone Number: (435) 245-3686

Facility Name: City of Wellsville WWRF
Mailing and Facility Address: 75 East Main, PO Box 6
Wellsville, UT 84339
Telephone: (435) 245-3686

Actual Address: The lagoons are located 1.61 miles northeast of downtown

DESCRIPTION OF FACILITY

This facility was placed into operation in 1974 with a design flow of 0.68 MGD and a design population equivalent of 3670. The City of Wellsville Water Reclamation Facility (WWRF) is a four cell facultative lagoon system of 56.6 acres in size. The first cell is 15.6 acres, the second cell is 20.1 acres, the third cell is 11.2 acres and the fourth cell is 9.6 acres. WWRF installed 75 Bio-Domes in the 3rd cell of the lagoons to enhance the removal of nutrients from the effluent. The installation of this system does not increase the capacity of the facility; they improve the treatment results for nutrients such as nitrogen and phosphorus. Ultraviolet disinfection is used after the final cell before discharging to the Little Bear River. This UV unit is capable of treating up to 800,000 gallons per day with space for additional lights if necessary. The lagoon cells have an average depth of six feet. Influent flow is measured by a 9 inch Parshall flume and a Greyline OCF III open channel flow meter. Effluent flow is measured by a 24 inch extended weir and a Greyline OCF III open channel flow monitor.

The headwork's building is equipped with room for a blower system for aeration. The last cell of the lagoon has an active spring discharging into it. The exact flow is uncertain. However, it does not appear to be large enough to cause flow measurement problems and historically has not been a problem for the City. WWRF has acquired and modified land for use in Land Application. The addition of the land application is to reduce the nutrient loading on the receiving water. WWRF has installed an irrigation system to grow crops on 16 acres of city property.

WWRF has a phosphorus (P) limitations in their UPDES permit, due to the TMDL impairment of P into the Little Bear River. The permit allows the city to discharge 159 lbs of P during the critical warmer months of June, July, August and September, and 794 lbs of P during the other months of the year, for a total of 953 lbs a year.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Facility Updates

WWRF began construction in October 2018 on a screen building to reduce the solid loading in the primary pond. The future belt screen will be before the Parshall flume and the 1st cell of the lagoons and construction is anticipated to be complete in July 2019.

Reuse

The facility recently had an additional land disposal project approved, where they will use treated effluent from the WWRF on 52.19 acres of their own property to grow crops (alfalfa, barley, corn) that will not be used for human consumption. It is considered Type II reuse (human exposure unlikely). WWRF was approved for a variance to the required 300 foot setback to potable water wells listed in R317-11.5.D by the DWQ on October 29, 2018. The land application, at a minimum, must be at least 100 feet away from any potable water well. The variance was based on the results of a 2012 soils investigation. The land application project will allow WWRF to substantially reduce the amount of phosphorus discharged to the Little Bear River.

WWRF's renewal permit includes effluent disposal requirements per R317-3-11, as well as, effluent monitoring requirements for Type II reuse as per R317-3-11.5.C. The monitoring requirements in the permit represent the minimum required by rule. The decision to reduce the monitoring requirements for the reuse to the minimum was based in part on the frequency of the land application and the crops irrigated by the land application will not be used for human consumption. A summary of the monitoring for the reuse outfall 001R is represented below.

Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Continuous	Recorder	MGD
BOD ₅	Monthly	Grab	mg/L
TSS	Weekly	Grab	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU

TBPEL Rule

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. No TBPEL will be instituted for discharging treatment lagoons. Instead, each discharging lagoon will be evaluated to determine the current annual average total phosphorus load measured in pounds per year based on monthly average flow rates and concentrations. Absent field data to determine these loads, and in case of intermittent discharging lagoons, the phosphorus load cap will be estimated by the Director.

The City of Wellsville requested a variance to the TBEL Rule on the basis of an existing TMDL on the Little Bear River. The variance was granted and the existing cap of 953 lbs/year (159 lbs in the summer) will remain in the UPDES permit. In addition to reporting Total Phosphorus monitoring in lbs/month, WWRF will be required to report Total Phosphorous in mg/L monthly.

The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2015:

R317-1-3.3, E, 1, a. Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, E, 1, b. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

In R317-1-3.3, E, 3 the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

The City of Wellsville requested a variance to the monitoring required by R317-1-3.3, E, 1, a & b. WWRF was granted the variance by DWQ on September 4, 2015 and will continue to monitor Ammonia (as N) and Total Phosphorous (as P) in their effluent.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was not conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance) because there is inadequate data for use in a RP. As a result, monitoring for metals will be included in this permit. The additional monitoring will help establish a record of presence or absence of each pollutant. Monitoring for metals will be required once during the first year of the permit cycle.

DISCHARGE

DESCRIPTION OF DISCHARGE

WWRF has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. WWRF has one discharge point into Little Bear River and they additionally perform land application onsite.

Outfall Number

001

Location of Discharge Outfall

Discharge from the disinfection building on the North side of the 4th cell to the Little Bear River. Latitude 41°39'38" and Longitude 111° 54'82".

001R

Description of Area for Use

Type II Effluent Reuse is land applied during the growing season, pumped into gravity flow pipes where it can be irrigated onto the fields to the West of the Lagoons onsite. 41°39 '34" and Longitude 111° 55' 24".

RECEIVING WATERS AND STREAM CLASSIFICATION

If a discharge were to occur, it would discharge into Little Bear River, which is classified as 2B, 3A, 3D and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

- Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
- Class 3A -- Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.
- Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.
Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), *E. coli*, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The dissolved oxygen (D.O.) and ammonia (NH₃) limitations were derived from the Wasteload Analysis (WLA). Phosphorus limitations were derived from the Little Bear River TMDL. The WLA for this discharge into the Little Bear River is attached. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations. The permit limitations are:

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.683	--	--	--	--
BOD ₅ , mg/L	25	35	--	--	--
BOD ₅ Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	10.28	--	--	--	28.7
Fall (Oct-Dec)	14.5	--	--	--	22.0
Winter (Jan-Mar)	22.7	--	--	--	37.0
Spring (Apr-Jun)	12.5	--	--	--	22.0
<i>E. coli</i> , No./100mL	126	158	--	--	--
pH, Standard Units	--	--	--	6.5	9

Parameter	Effluent Limitations ¹
Total Phosphorus, lbs/season Warmer Months, June-September ⁶ Annual, January-December ⁷	72 kilograms (159 lbs). 432 kilograms (953 lbs).

The permit limitations for Outfall (001R) (Reuse) are:

Parameter	Type II Reuse Outfall 001R Effluent Limitations ¹			
	Max Monthly Average	Max Weekly Median	Minimum	Maximum
BOD ₅ , mg/L	25	--	--	--
TSS, mg/L	25	35	--	--
<i>E. coli</i> , No/100mL	--	126	--	500
pH, Standard Units	--	--	6.0	9.0

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements have changed in regards to *E. coli*, metals, and reuse. *E. coli* was previously not required to be monitored based on the previous permit, but records indicate WWRP was monitoring and reporting *E. coli* results. A requirement to monitor *E. coli* at the same frequency as the other parameters (monthly) has been added. A requirement to conduct a 1 time sampling event for presence/absence of metals has been added to the permit for the 3rd year of the permit cycle. Lastly, monitoring has been added for the reuse. Monitoring for type II reuse is required as per R317-3-11.5C.

The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁴	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent ⁴	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, % Removal	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Total Ammonia (as N)	Monthly	Grab	mg/L
DO	Monthly	Grab	mg/L
Phosphorus, Total			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Metals			
Influent	1 X 1 st year of permit cycle	Grab/Composite	mg/L
Effluent	1 X 1 st year of permit cycle	Grab/Composite	mg/L

Metals to be Monitored for RP		
Parameter	Sample Type	Units
Total Arsenic	Composite	mg/L
Total Cadmium	Composite	mg/L
Total Chromium	Composite	mg/L
Total Copper	Composite	mg/L
Total Cyanide	Grab	mg/L
Total Lead	Composite	mg/L
Total Mercury	Grab/Composite	mg/L
Total Nickel	Composite	mg/L
Total Selenium	Composite	mg/L
Total Silver	Composite	mg/L
Total Zinc	Composite	mg/L

The following is a summary of the Type II reuse self-monitoring and reporting requirements.

Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Continuous	Recorder	MGD
BOD ₅	Monthly	Grab	mg/L
TSS	Weekly	Grab	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU

- 1 See Definitions, *Part VIII*, for definition of terms.
- 2 Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- 3 If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- 4 In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- 5 Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on a Monthly Operational Report, post-marked no later than the 28th day of the month following the completed reporting period.

Management Practices for Land Application of Treated Effluent:

- (1) The application of treated effluent to frozen, ice-covered, or snow covered land is prohibited.
- (2) No person shall apply treated effluent where the slope of the site exceeds 6 percent.
- (3) The use should not result in a surface water runoff.
- (4) The use must not result in the creation of an unhealthy or nuisance condition, as determined by the local health department.
- (5) Any irrigation with treated effluent must be at least 300 feet from a potable well.
- (6) For Type II reuse, any irrigation must be at least 300 feet from any potable water well.
- (7) For Type II reuse, spray irrigation must be at least 100 feet from areas intended for public access. This distance may be reduced or increased by the Director.
- (8) Impoundments of treated effluent, if not sealed, must be at least 500 feet from any potable well.
- (9) Public access to effluent storage and irrigation or disposal sites shall be restricted by a stock-tight fence or other comparable means which shall be posted and controlled to exclude the public (Compliance Schedule for a Particular Parameter if necessary)

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include:

1. The development of a pollution prevention team,
2. Development of drainage maps and materials stockpiles,
3. An inventory of exposed materials,
4. Spill reporting and response procedures,
5. A preventative maintenance program,
6. Employee training,
7. Certification that storm water discharges are not mixed with non-storm water discharges,
8. Compliance site evaluations and potential pollutant source identification, and
9. Visual examinations of storm water discharges.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

Although the permittee does not have to develop an approved pretreatment program, any wastewater discharges to the sanitary sewer from industrial users are subject to Federal, State and local regulations. Pursuant to Section 307 of the Clean Water Act, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in 40 CFR 403 and the State Pretreatment Requirements found in UAC R317-8-8.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an industrial user begins to discharge or an existing industrial user changes their discharge the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

Due to the facility's design capacity being less than one MGD sampling for pretreatment requirements will not be required at this time. If the facility determines local limits are needed sampling will be needed at a frequency necessary to determine headworks loadings for the parameter(s) of concern. It is required that the permittee submit for review any local limits that are developed to the Division of Water Quality for review. If local limits are developed it is required that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring) dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

The permittee is a minor municipal facility that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. Based on these considerations and the absence of receiving stream water quality monitoring data, there is no reasonable potential for toxicity in the permittee's discharge (per State of Utah Permitting and Enforcement Guidance Document for WET Control). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Leanna Littler, Discharge
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Michael George, Storm Water
Dave Wham, Wasteload Analysis
Mike Allred, TMDL
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: April 6, 2019
Ended: May 6, 2019

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Notice of the draft permit was published in the Herald Journal and on the Utah Division of Water Quality website.

No comments were received during the public comment period. Therefore, the permit and FSSOB are the same as the draft document that were public noticed.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

May 8, 2019
DWQ-2019-004990

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ATTACHMENT 1

Industrial Waste Survey

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Industrial Pretreatment Wastewater Survey



Do you periodically experience any of the following treatment works problems:

- foam, floaties or unusual colors
- plugged collection lines caused by grease, sand, flour, etc.
- discharging excessive suspended solids, even in the winter
- smells unusually bad
- waste treatment facility doesn't seem to be treating the waste right

Perhaps the solution to a problem like one of these may lie in investigating the types and amounts of wastewater entering the sewer system from industrial users.

An industrial user (IU) is defined as a non-domestic user discharging to the waste treatment facility which meets any of the following criteria:

1. **has a lot of process wastewater (5% of the flow at the waste treatment facility or more than 25,000 gallons per work day.)**

Examples: Food processor, dairy, slaughterhouse, industrial laundry.

2. **is subject to Federal Categorical Pretreatment Standards;**

Examples: metal plating, cleaning or coating of metals, bluing of metals, aluminum extruding, circuit board manufacturing, tanning animal skins, pesticide formulating or packaging, and pharmaceutical manufacturing or packaging,

3. **is a concern to the POTW.**

Examples: septage hauler, restaurant and food service, car wash, hospital, photo lab, carpet cleaner, commercial laundry.

All users of the water treatment facility are **prohibited** from making the following types of discharges:

1. A discharge which creates a fire or explosion hazard in the collection system.
2. A discharge which creates toxic gases, vapor or fumes in the collection system.
3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.
4. An acidic discharge (low pH) which causes corrosive damage to the collection system.
5. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment facility.
6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

When the solution to a sewer system problem may be found by investigating the types and amounts of wastewater entering the sewer system discharged from IUs, it's appropriate to conduct an Industrial Waste Survey.

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

Make a list of all the commercial and industrial sewer connections.

Sources for the list:

business license, building permits, water and wastewater billing, Chamber of Commerce, newspaper, telephone book, yellow pages.

Split the list into two groups:

domestic wastewater only--no further information needed
everyone else (IUs)

Step 2: Preliminary Inspection

Go visit each IU identified on the "everybody else" list.

Fill out the **Preliminary Inspection Form** during the site visit.

Step 3: Informing the State

Please fax or send a copy of the Preliminary inspection form (both sides) to:

Jennifer Robinson

Division of Water Quality
288 North 1460 West
PO Box 144870
Salt Lake City, UT 84114-4870

Phone: (801) 536-4383
Fax: (801) 536-4301
E-mail: jenrobinson@utah.gov

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ___ / _____

Name of Business _____ Person Contacted _____
Address _____ Phone Number _____

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

Production process is: Batch Continuous Both

Is production subject to seasonal variation? yes no

If yes, briefly describe seasonal production cycle.

This facility generates the following types of wastes (check all that apply):

- | | |
|--|--|
| 1. <input type="checkbox"/> Domestic wastes | (Restrooms, employee showers, etc.) |
| 2. <input type="checkbox"/> Cooling water, non-contact | 3. <input type="checkbox"/> Boiler/Tower blowdown |
| 4. <input type="checkbox"/> Cooling water, contact | 5. <input type="checkbox"/> Process |
| 6. <input type="checkbox"/> Equipment/Facility wash-down | 7. <input type="checkbox"/> Air Pollution Control Unit |
| 8. <input type="checkbox"/> Storm water runoff to sewer | 9. <input type="checkbox"/> Other describe |

Wastes are discharged to (check all that apply):

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Sanitary sewer | <input type="checkbox"/> Storm sewer |
| <input type="checkbox"/> Surface water | <input type="checkbox"/> Ground water |
| <input type="checkbox"/> Waste haulers | <input type="checkbox"/> Evaporation |
| <input type="checkbox"/> Other (describe) | |

Name of waste hauler(s), if used

Is a grease trap installed? Yes No

Is it operational? Yes No

Does the business discharge a lot of process wastewater?

- | | | |
|---|-----|----|
| • More than 5% of the flow to the waste treatment facility? | Yes | No |
| • More than 25,000 gallons per work day? | Yes | No |

Does the business do any of the following:

- | | |
|---|--|
| <input type="checkbox"/> Adhesives | <input type="checkbox"/> Car Wash |
| <input type="checkbox"/> Aluminum Forming | <input type="checkbox"/> Carpet Cleaner |
| <input type="checkbox"/> Battery Manufacturing | <input type="checkbox"/> Dairy |
| <input type="checkbox"/> Copper Forming | <input type="checkbox"/> Food Processor |
| <input type="checkbox"/> Electric & Electronic Components | <input type="checkbox"/> Hospital |
| <input type="checkbox"/> Explosives Manufacturing | <input type="checkbox"/> Laundries |
| <input type="checkbox"/> Foundries | <input type="checkbox"/> Photo Lab |
| <input type="checkbox"/> Inorganic Chemicals Mfg. or Packaging | <input type="checkbox"/> Restaurant & Food Service |
| <input type="checkbox"/> Industrial Porcelain Ceramic Manufacturing | <input type="checkbox"/> Septage Hauler |
| <input type="checkbox"/> Iron & Steel | <input type="checkbox"/> Slaughter House |
| <input type="checkbox"/> Metal Finishing, Coating or Cleaning | |
| <input type="checkbox"/> Mining | |
| <input type="checkbox"/> Nonferrous Metals Manufacturing | |
| <input type="checkbox"/> Organic Chemicals Manufacturing or Packaging | |
| <input type="checkbox"/> Paint & Ink Manufacturing | |
| <input type="checkbox"/> Pesticides Formulating or Packaging | |
| <input type="checkbox"/> Petroleum Refining | |
| <input type="checkbox"/> Pharmaceuticals Manufacturing or Packaging | |
| <input type="checkbox"/> Plastics Manufacturing | |
| <input type="checkbox"/> Rubber Manufacturing | |
| <input type="checkbox"/> Soaps & Detergents Manufacturing | |
| <input type="checkbox"/> Steam Electric Generation | |
| <input type="checkbox"/> Tanning Animal Skins | |
| <input type="checkbox"/> Textile Mills | |

Are any process changes or expansions planned during the next three years? Yes No
If yes, attach a separate sheet to this form describing the nature of planned changes or expansions.

Inspector

Waste Treatment Facility

Please send a copy of the preliminary inspection form (both sides) to:

Jennifer Robinson
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

Phone: (801) 536-4383
Fax: (801) 536-4301
E-Mail: jenrobinson@utah.gov

	Industrial User	Jurisdiction	SIC Codes	Categorical Standard Number	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	Facility Description
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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ATTACHMENT 2

Effluent Monitoring Data

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ATTACHMENT 3

Wasteload Analysis

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**Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review**

Date: January 23, 2019

Prepared by: Dave Wham 
Standards and Technical Services

Facility: Wellsville Wastewater Lagoons
UPDES No. UT-0020371

Receiving water: Little Bear River (2B, 3A, 3D, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

Outfall 001: Wastewater Treatment Lagoons to the Little Bear River

The mean monthly design discharge is 0.68 MGD (1.06 cfs) for the facility.

Receiving Water

The receiving water for Outfall 001 is Little Bear River.

Per UAC R317-2-13.3, the designated beneficial uses Little Bear River and tributaries, from Cutler Reservoir to headwaters, (with exceptions) is: 2B, 3A, 3D and 4.

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.*

Utah Division of Water Quality
Wasteload Analysis
Wellsville Wastewater Lagoons
UPDES No. UT-0020371

- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records, the 20th percentile of available flow measurements from DWQ monitoring station # 4905580, *Little Bear River above Wellsville Lagoons* for the period 2001-2015 was calculated to approximate the 7Q10 low flow condition. The calculated 7Q10 low flow values are listed in Table 1. Ambient water quality for the receiving water was characterized using data from the same station and time period.

Table 1: Seasonal critical low flow (cfs)

Season	Little Bear R. ab Wellsville Lagoons
Summer (July-Sept)	2.0
Fall (Oct -Dec)	3.8
Winter (Jan-Mar)	10.0
Spring (Apr -June)	9.2

TMDL

Little Bear River from Cutler Reservoir to Hyrum Reservoir (Little Bear River-1 UT16010203-009_00) is listed as impaired on the 2016 303(d) list for biological dissolved oxygen and temperature for the Class 3A cold water aquatic life use.

A Total Maximum Daily Load (TMDL) for total phosphorous (relating to the dissolved oxygen impairment) was completed for the Little Bear River on May 23, 2000. As part of that TMDL, the Wellsville Wastewater Facility was given a discharge load allocation of 0.27 kg/day. As a result of TP reductions from other sources in the watershed, specifically the elimination of the load attributed to feedlots (1.06 kg/d), Wellsville's allocation was increased to 1.2 kg/day (annual average). As part of that reallocation, and in order to minimize TP discharges to the Little Bear River during the critical summer months, TMDL staff recommended that the 1.2 kg/day load allocation be distributed on a seasonal basis to yield the following effluent limits:

Summer (4 months) June-September , 0.60 kg/day total phosphorous as a seasonal average or 72 total kg for the 4 month season.

Non-summer (8 months) October-May, 1.50 kg/day total phosphorous as a seasonal average or 360 total kg for the 8 month season.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions, per UAC R317-2-5. Water

Utah Division of Water Quality
Wasteload Analysis
Wellsville Wastewater Lagoons
UPDES No. UT-0020371

quality standards must be met at the end of the mixing zone.

Since the receiving water low flow (2.0 cfs) is equal to or less than twice the flow of a point source discharge (1.06 cfs), the combined flows are considered to be totally mixed (r317-2-2.5). Acute and chronic limits were calculated using 100% of the seasonal critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total ammonia, total phosphorous, dissolved oxygen and temperature based on review of the past permit and the impairment status of the receiving water. Additional parameters of concern may become apparent as a result of reasonable potential analysis, technology based standards, or other factors as determined by the UPDES Permit Writer.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

Table 3: WET Limits for IC₂₅

Outfall	Percent Effluent
Outfall 001	34.6

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ 2012). The mass balance analysis is summarized in the Wasteload Addendum.

Effluent limits for total phosphorous are based on the approved Little Bea River TMDL (UDWQ 2000).

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al. 2002). The analysis is summarized in the Wasteload Addendum.

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is

Utah Division of Water Quality
Wasteload Analysis
Wellsville Wastewater Lagoons
UPDES No. UT-0020371

known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is required for this facility because it discharges to a 1C drinking water source as outlined in R317-2-3.5d.

Documents:

WLA Document: *Wellsville_WLADoc_1-23-19.docx*

Wasteload Analysis and Addendum: *Wellsville_WLA_1-10-19.xlsm*

References:

Lewis, B., J. Saunders, and M. Murphy. 2002. *Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits*. University of Colorado, Center for Limnology.

Utah Division of Water Quality. 2000. Little Bear River TMDL.

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0*.

22-Jan-19

WASTELOAD ANALYSIS [WLA] Addendum: Statement of Basis

Facilities: Wellsville City
Discharging to: Little Bear River
Effluent Design Flow: 0.683 MGD

UPDES No: UT-0020371

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Little Bear River:	2B, 3A, 3D, 4
Antidegradation Review:	Level I review completed. Level II review not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	6.50 mg/l (30 Day Average) 5.00 mg/l (7Day Average) 4.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

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Salt Lake City, Utah**

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration	ug/l	Load*
Aluminum	87.00 ug/l**	0.496 lbs/day	750.00	ug/l	4.280 lbs/day
Arsenic	190.00 ug/l	1.084 lbs/day	340.00	ug/l	1.940 lbs/day
Cadmium	1.88 ug/l	0.011 lbs/day	4.95	ug/l	0.028 lbs/day
Chromium III	200.33 ug/l	1.143 lbs/day	4191.34	ug/l	23.916 lbs/day
ChromiumVI	11.00 ug/l	0.063 lbs/day	16.00	ug/l	0.091 lbs/day
Copper	22.49 ug/l	0.128 lbs/day	36.94	ug/l	0.211 lbs/day
Iron			1000.00	ug/l	5.706 lbs/day
Lead	11.81 ug/l	0.067 lbs/day	302.94	ug/l	1.729 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.014 lbs/day
Nickel	124.68 ug/l	0.711 lbs/day	1121.39	ug/l	6.399 lbs/day
Selenium	4.60 ug/l	0.026 lbs/day	20.00	ug/l	0.114 lbs/day
Silver	N/A ug/l	N/A lbs/day	22.25	ug/l	0.127 lbs/day
Zinc	286.76 ug/l	1.636 lbs/day	286.76	ug/l	1.636 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 280.1 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration	ug/l	Load*
Aldrin			1.500	ug/l	0.009 lbs/day
Chlordane	0.004 ug/l	0.071 lbs/day	1.200	ug/l	0.007 lbs/day
DDT, DDE	0.001 ug/l	0.016 lbs/day	0.550	ug/l	0.003 lbs/day
Dieldrin	0.002 ug/l	0.031 lbs/day	1.250	ug/l	0.007 lbs/day
Endosulfan	0.056 ug/l	0.923 lbs/day	0.110	ug/l	0.001 lbs/day
Endrin	0.002 ug/l	0.038 lbs/day	0.090	ug/l	0.001 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.063 lbs/day	0.260	ug/l	0.001 lbs/day
Lindane	0.080 ug/l	1.318 lbs/day	1.000	ug/l	0.006 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.231 lbs/day	2.000	ug/l	0.011 lbs/day
Pentachlorophenol	13.00 ug/l	214.176 lbs/day	20.000	ug/l	0.114 lbs/day
Toxephene	0.0002 ug/l	0.003 lbs/day	0.7300	ug/l	0.004 lbs/day

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Salt Lake City, Utah**

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.03 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	3.42 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Metals				
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3) to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	44.48 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	12.85 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.01 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	1.17 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.07 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	345.98 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	1.63 lbs/day

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Salt Lake City, Utah**

1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.15 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	0.69 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l	0.18 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.02 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	70.84 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	0.11 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	7.74 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	6.59 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	280.08 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	42.84 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	42.84 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1 ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2 ug/l	0.05 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	13.02 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.64 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	28.01 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	37.89 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.15 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5 ug/l	0.01 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l	477.78 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	6.10 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	ug/l	lbs/day	170000.0 ug/l	2800.76 lbs/day
Bis(2-chloroethoxy) methane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	26.36 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0 ug/l	5.93 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.36 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.56 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	0.82 lbs/day
Hexachlorocyclopentadiene	ug/l	lbs/day	17000.0 ug/l	280.08 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	9.89 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	31.30 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l	230.65 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	12.60 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.13 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.26 lbs/day
N-Nitrosodi-n-propylamine	ug/l	lbs/day	1.4 ug/l	0.02 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	0.14 lbs/day

**Utah Division of Water Quality
Salt Lake City, Utah**

Phenol	ug/l	lbs/day	4.6E+06 ug/l	7.58E+04 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	0.10 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	85.67 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	197.70 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	1977.01 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	4.78E+04 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0 ug/l	181.23 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.15 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	3295.02 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	1.33 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	8.65 lbs/day
				lbs/day
				lbs/day
Pesticides				
Aldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.03 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.03 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.03 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	0.01 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	0.01 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 122	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 123	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 126	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		

**Utah Division of Water Quality
Salt Lake City, Utah**

Metals

Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	70.84 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	3624.52 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	75.79 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.10 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

- (1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).
- (2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.
- (3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8
- (4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

- (1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

**Utah Division of Water Quality
Salt Lake City, Utah**

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al.
Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream								
	Critical Low								
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS	
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l	
Summer (Irrig. Season)	2.00	16.3	7.9	0.10	1.00	7.48	0.00	398.7	
Fall	3.80	7.8	7.9	0.10	1.00	---	0.00	358.9	
Winter	10.00	4.4	8.1	0.10	1.00	---	0.00	353.6	
Spring	9.20	11.3	8.3	0.10	1.00	---	0.00	280.8	
Dissolved	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb	
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
All Seasons	9.10	3.70	0.20	1.80	3.975*	2.40	11.6	0.50	
Dissolved	Hg	Ni	Se	Ag	Zn	Boron			
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			
All Seasons	0.0000	2.50	0.50	0.50	12.50	26.9			

* ~80% MDL

**Utah Division of Water Quality
Salt Lake City, Utah**

Projected Discharge Information

Season	Flow, MGD	Temp.
Summer	0.68300	17.0
Fall	0.68300	15.0
Winter	0.68300	12.0
Spring	0.68300	15.0

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.683 MGD	1.057 cfs
Fall	0.683 MGD	1.057 cfs
Winter	0.683 MGD	1.057 cfs
Spring	0.683 MGD	1.057 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.683 MGD. If the discharger is allowed to have a flow greater than 0.683 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	34.6% Effluent	[Chronic]

**Utah Division of Water Quality
Salt Lake City, Utah**

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	142.4 lbs/day
Fall	25.0 mg/l as BOD5	142.4 lbs/day
Winter	25.0 mg/l as BOD5	142.4 lbs/day
Spring	25.0 mg/l as BOD5	142.4 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	10.28 mg/l as N	58.5 lbs/day
	1 Hour Avg. - Acute	28.7 mg/l as N	163.2 lbs/day
Fall	4 Day Avg. - Chronic	14.5 mg/l as N	82.9 lbs/day
	1 Hour Avg. - Acute	22.0 mg/l as N	125.5 lbs/day
Winter	4 Day Avg. - Chronic	22.7 mg/l as N	129.4 lbs/day
	1 Hour Avg. - Acute	37.0 mg/l as N	210.9 lbs/day
Spring	4 Day Avg. - Chronic	12.5 mg/l as N	71.1 lbs/day
	1 Hour Avg. - Acute	22.0 mg/l as N	125.1 lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%. .

**Utah Division of Water Quality
Salt Lake City, Utah**

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.030	mg/l	0.17	lbs/day
	1 Hour Avg. - Acute	0.053	mg/l	0.30	lbs/day
Fall	4 Day Avg. - Chronic	0.047	mg/l	0.27	lbs/day
	1 Hour Avg. - Acute	0.084	mg/l	0.48	lbs/day
Winter	4 Day Avg. - Chronic	0.105	mg/l	0.60	lbs/day
	1 Hour Avg. - Acute	0.189	mg/l	1.08	lbs/day
Spring	4 Day Avg. - Chronic	0.098	mg/l	0.56	lbs/day
	1 Hour Avg. - Acute	0.175	mg/l	1.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	2716.8	mg/l	7.74	tons/day
Fall	Maximum, Acute	2792.1	mg/l	7.95	tons/day
Winter	Maximum, Acute	2802.1	mg/l	7.98	tons/day
Spring	Maximum, Acute	2939.9	mg/l	8.37	tons/day

Colorado Salinity Forum Limits Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 280.1 mg/l):

	4 Day Average		1 Hour Average		Load
	Concentration	Load	Concentration	Load	
Aluminum*	N/A	N/A	1,451.2	ug/l	8.3 lbs/day
Arsenic*	542.64 ug/l	2.0 lbs/day	658.3	ug/l	3.8 lbs/day
Cadmium	5.05 ug/l	0.0 lbs/day	9.5	ug/l	0.1 lbs/day
Chromium III	576.13 ug/l	2.1 lbs/day	8,156.5	ug/l	46.5 lbs/day
Chromium VI*	24.30 ug/l	0.1 lbs/day	27.4	ug/l	0.2 lbs/day
Copper	60.53 ug/l	0.2 lbs/day	69.6	ug/l	0.4 lbs/day
Iron*	N/A	N/A	1,935.5	ug/l	11.0 lbs/day
Lead	33.20 ug/l	0.1 lbs/day	589.2	ug/l	3.4 lbs/day
Mercury*	0.03 ug/l	0.0 lbs/day	4.7	ug/l	0.0 lbs/day
Nickel	355.94 ug/l	1.3 lbs/day	2,180.3	ug/l	12.4 lbs/day
Selenium*	12.36 ug/l	0.0 lbs/day	38.5	ug/l	0.2 lbs/day
Silver	N/A ug/l	N/A lbs/day	42.8	ug/l	0.2 lbs/day

**Utah Division of Water Quality
Salt Lake City, Utah**

Zinc	805.90 ug/l	3.0 lbs/day	546.3	ug/l	3.1 lbs/day
Cyanide*	15.04 ug/l	0.1 lbs/day	42.8	ug/l	0.2 lbs/day

*Limits for these metals are based on the dissolved standard.

**Effluent Limitations for Heat/Temperature based upon
Water Quality Standards**

Summer	22.1 Deg. C.	71.8 Deg. F
Fall	17.0 Deg. C.	62.6 Deg. F
Winter	25.3 Deg. C.	77.6 Deg. F
Spring	30.7 Deg. C.	87.3 Deg. F

**Effluent Limitations for Organics [Pesticides]
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aldrin			1.5E+00	ug/l	1.32E-02 lbs/day
Chlordane	4.30E-03 ug/l	2.45E-02 lbs/day	1.2E+00	ug/l	1.06E-02 lbs/day
DDT, DDE	1.00E-03 ug/l	5.70E-03 lbs/day	5.5E-01	ug/l	4.86E-03 lbs/day
Dieldrin	1.90E-03 ug/l	1.08E-02 lbs/day	1.3E+00	ug/l	1.10E-02 lbs/day
Endosulfan	5.60E-02 ug/l	3.19E-01 lbs/day	1.1E-01	ug/l	9.71E-04 lbs/day
Endrin	2.30E-03 ug/l	1.31E-02 lbs/day	9.0E-02	ug/l	7.94E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	8.83E-05 lbs/day
Heptachlor	3.80E-03 ug/l	2.16E-02 lbs/day	2.6E-01	ug/l	2.30E-03 lbs/day
Lindane	8.00E-02 ug/l	4.56E-01 lbs/day	1.0E+00	ug/l	8.83E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	2.65E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	8.83E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	3.53E-04 lbs/day
PCB's	1.40E-02 ug/l	7.97E-02 lbs/day	2.0E+00	ug/l	1.77E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	7.40E+01 lbs/day	2.0E+01	ug/l	1.77E-01 lbs/day
Toxephene	2.00E-04 ug/l	1.14E-03 lbs/day	7.3E-01	ug/l	6.44E-03 lbs/day

**Utah Division of Water Quality
Salt Lake City, Utah**

**Effluent Targets for Pollution Indicators
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	28.5 lbs/day
Nitrates as N	4.0 mg/l	22.8 lbs/day
Total Phosphorus as P	0.05 mg/l	0.3 lbs/day
Total Suspended Solids	90.0 mg/l	513.6 lbs/day

Note: Pollution indicator targets are for information purposes only.

**Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)**

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

Toxic Organics	Maximum Concentration	
	Concentration	Load
Acenaphthene	7.81E+03 ug/l	4.45E+01 lbs/day
Acrolein	2.26E+03 ug/l	1.29E+01 lbs/day
Acrylonitrile	1.91E+00 ug/l	1.09E-02 lbs/day
Benzene	2.05E+02 ug/l	1.17E+00 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	1.27E+01 ug/l	7.25E-02 lbs/day
Chlorobenzene	6.08E+04 ug/l	3.46E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	2.23E-03 ug/l	1.27E-05 lbs/day
1,2-Dichloroethane	2.86E+02 ug/l	1.63E+00 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	2.57E+01 ug/l	1.47E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	1.22E+02 ug/l	6.92E-01 lbs/day
1,1,2,2-Tetrachloroethane	3.18E+01 ug/l	1.81E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	4.05E+00 ug/l	2.31E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	1.24E+04 ug/l	7.08E+01 lbs/day
2,4,6-Trichlorophenol	1.88E+01 ug/l	1.07E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	1.36E+03 ug/l	7.74E+00 lbs/day
2-Chlorophenol	1.16E+03 ug/l	6.59E+00 lbs/day
1,2-Dichlorobenzene	4.92E+04 ug/l	2.80E+02 lbs/day
1,3-Dichlorobenzene	7.52E+03 ug/l	4.28E+01 lbs/day

**Utah Division of Water Quality
Salt Lake City, Utah**

1,4-Dichlorobenzene	7.52E+03 ug/l	4.28E+01 lbs/day
2,4-Dinitrotoluene	2.63E+01 ug/l	1.50E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.56E+00 ug/l	8.90E-03 lbs/day
Ethylbenzene	8.39E+04 ug/l	4.78E+02 lbs/day
Fluoranthene	1.07E+03 ug/l	6.10E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	4.92E+05 ug/l	2.80E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	4.63E+03 ug/l	2.64E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	1.04E+03 ug/l	5.93E+00 lbs/day
Dichlorobromomethane(HM)	6.36E+01 ug/l	3.62E-01 lbs/day
Chlorodibromomethane (HM)	9.84E+01 ug/l	5.60E-01 lbs/day
Hexachlorocyclopentadiene	4.92E+04 ug/l	2.80E+02 lbs/day
Isophorone	1.74E+03 ug/l	9.89E+00 lbs/day
Naphthalene		
Nitrobenzene	5.50E+03 ug/l	3.13E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	4.05E+04 ug/l	2.31E+02 lbs/day
4,6-Dinitro-o-cresol	2.21E+03 ug/l	1.26E+01 lbs/day
N-Nitrosodimethylamine	2.34E+01 ug/l	1.33E-01 lbs/day
N-Nitrosodiphenylamine	4.63E+01 ug/l	2.64E-01 lbs/day
N-Nitrosodi-n-propylamine	4.05E+00 ug/l	2.31E-02 lbs/day
Pentachlorophenol	2.37E+01 ug/l	1.35E-01 lbs/day
Phenol	1.33E+07 ug/l	7.58E+04 lbs/day
Bis(2-ethylhexyl)phthalate	1.71E+01 ug/l	9.72E-02 lbs/day
Butyl benzyl phthalate	1.50E+04 ug/l	8.57E+01 lbs/day
Di-n-butyl phthalate	3.47E+04 ug/l	1.98E+02 lbs/day
Di-n-octyl phthalate		
Diethyl phthalate	3.47E+05 ug/l	1.98E+03 lbs/day
Dimethyl phthalate	8.39E+06 ug/l	4.78E+04 lbs/day
Benzo(a)anthracene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Benzo(a)pyrene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Benzo(b)fluoranthene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Benzo(k)fluoranthene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Chrysene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	8.97E-02 ug/l	5.11E-04 lbs/day
Pyrene (PAH)	3.18E+04 ug/l	1.81E+02 lbs/day
Tetrachloroethylene	2.57E+01 ug/l	1.47E-01 lbs/day
Toluene	5.79E+05 ug/l	3.30E+03 lbs/day
Trichloroethylene	2.34E+02 ug/l	1.33E+00 lbs/day
Vinyl chloride	1.52E+03 ug/l	8.65E+00 lbs/day

Pesticides

**Utah Division of Water Quality
Salt Lake City, Utah**

Aldrin	4.05E-04 ug/l	2.31E-06 lbs/day
Dieldrin	4.05E-04 ug/l	2.31E-06 lbs/day
Chlordane	1.71E-03 ug/l	9.72E-06 lbs/day
4,4'-DDT	1.71E-03 ug/l	9.72E-06 lbs/day
4,4'-DDE	1.71E-03 ug/l	9.72E-06 lbs/day
4,4'-DDD	2.43E-03 ug/l	1.38E-05 lbs/day
alpha-Endosulfan	5.79E+00 ug/l	3.30E-02 lbs/day
beta-Endosulfan	5.79E+00 ug/l	3.30E-02 lbs/day
Endosulfan sulfate	5.79E+00 ug/l	3.30E-02 lbs/day
Endrin	2.34E+00 ug/l	1.33E-02 lbs/day
PCB-1254 (Arochlor 1254)	1.30E-04 ug/l	7.41E-07 lbs/day
PCB-1221 (Arochlor 1221)	1.30E-04 ug/l	7.41E-07 lbs/day
PCB-1232 (Arochlor 1232)	1.30E-04 ug/l	7.41E-07 lbs/day
PCB-1248 (Arochlor 1248)	1.30E-04 ug/l	7.41E-07 lbs/day
PCB-1260 (Arochlor 1260)	1.30E-04 ug/l	7.41E-07 lbs/day
PCB-1016 (Arochlor 1016)	1.30E-04 ug/l	7.41E-07 lbs/day
Pesticide		
Toxaphene	2.17E-03 ug/l	1.24E-05 lbs/day
Metals		
Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		
Dioxin		
Dioxin (2,3,7,8-TCDD)	4.05E-08 ug/l	2.31E-10 lbs/day

**Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule**

**Utah Division of Water Quality
Salt Lake City, Utah**

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		1451.2				1451.2	N/A
Antimony				12439.3		12439.3	
Arsenic	289.3	658.3				289.3	542.6
Barium							
Beryllium						0.0	
Cadmium	28.6	9.5				9.5	5.0
Chromium (III)		8156.5				8156.5	576.1
Chromium (VI)	285.9	27.4				27.38	24.30
Copper	574.0	69.6				69.6	60.5
Cyanide		42.8	636429.7			42.8	15.0
Iron		1935.5				1935.5	
Lead	288.3	589.2				288.3	33.2
Mercury		4.67		0.43		0.43	0.035
Nickel		2180.3		13307.2		2180.3	355.9
Selenium	143.7	38.5				38.5	12.4
Silver		42.8				42.8	
Thallium				18.2		18.2	
Zinc		546.3				546.3	805.9
Boron	2118.7					2118.7	
Sulfate	5785.7						

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	1451.2	N/A	
Antimony	12439.31		
Arsenic	289.3	542.6	Acute Controls
Asbestos			
Barium			
Beryllium			
Cadmium	9.5	5.0	
Chromium (III)	8156.5	576	
Chromium (VI)	27.4	24.3	
Copper	69.6	60.5	
Cyanide	42.8	15.0	
Iron	1935.5		
Lead	288.3	33.2	
Mercury	0.434	0.035	
Nickel	2180.3	356	
Selenium	38.5	12.4	
Silver	42.8	N/A	
Thallium	18.2		
Zinc	546.3	805.9	Acute Controls

**Utah Division of Water Quality
Salt Lake City, Utah**

Boron	2118.73	
Sulfate	5785.7	N/A at this Waterbody

Other Effluent Limitations are based upon R317-1.

E. coli	126.0 organisms per 100 ml
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X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required. The proposed permit is a simple renewal, with no increase in flow or concentration over that which was approved in the existing permit.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important downstream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.