

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Major Municipal Permit No. **UT0025721**  
Biosolids Permit No. **UTL-025721**

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

**THE CITY OF PERRY**

is hereby authorized to discharge from

**PERRY / WILLARD REGIONAL WASTEWATER TREATMENT PLANT**

to receiving waters named **GREAT SALT LAKE TRANSITIONAL WETLANDS, WILLARD SPUR, BEAR RIVER NATIONAL WILDLIFE REFUGE,**

to dispose biosolids,

and to distribute effluent for reuse,

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

This permit shall become effective on April 1, 2024

This permit expires at midnight on March 31, 2029

Signed this eleventh day of April, 2024



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John K. Mackey, P.E.  
Director

Table of Contents

<u>Outline</u>	<u>Page Number</u>
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.....	8
II. PRETREATMENT REQUIREMENTS.....	9
A. Definitions.....	9
B. Pretreatment Monitoring and Reporting Requirements .....	10
C. Industrial Wastes .....	11
D. General and Specific Prohibitions .....	11
E. Significant Industrial Users Discharging to the POTW .....	12
F. Change of Conditions.....	13
G. Legal Action.....	13
H. Local Limits .....	13
III. BIOSOLIDS REQUIREMENTS .....	14
A. Biosolids Treatment and Disposal.....	14
B. Specific Limitations and Monitoring Requirements.....	14
C. Management Practices of Biosolids.....	17
D. Special Conditions on Biosolids Storage .....	20
E. Representative Sampling.....	20
F. Reporting of Monitoring Results .....	20
G. Additional Record Keeping Requirements Specific to Biosolids.....	20
IV. STORM WATER REQUIREMENTS.....	22
V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS.....	23
A. Representative Sampling .....	23
B. Monitoring Procedures.....	23
C. Penalties for Tampering.....	23
D. Compliance Schedules.....	23
E. Additional Monitoring by the Permittee.....	23
F. Records Contents .....	23
G. Retention of Records .....	23
H. Twenty-four Hour Notice of Noncompliance Reporting.....	23
I. Other Noncompliance Reporting .....	24
J. Inspection and Entry .....	24
VI. COMPLIANCE RESPONSIBILITIES .....	26
A. Duty to Comply .....	26
B. Penalties for Violations of Permit Conditions.....	26
C. Need to Halt or Reduce Activity not a Defense .....	26
D. Duty to Mitigate .....	26
E. Proper Operation and Maintenance.....	26
F. Removed Substances.....	26
G. Bypass of Treatment Facilities.....	26
H. Upset Conditions .....	28
VII. GENERAL REQUIREMENTS .....	29
A. Planned Changes .....	29
B. Anticipated Noncompliance .....	29
C. Permit Actions.....	29
D. Duty to Reapply.....	29
E. Duty to Provide Information.....	29

**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

F. Other Information .....	29
G. Signatory Requirements.....	29
H. Penalties for Falsification of Reports.....	30
I. Availability of Reports .....	30
J. Oil and Hazardous Substance Liability.....	30
K. Property Rights.....	30
L. Severability.....	30
M. Transfers.....	30
N. State or Federal Laws .....	31
O. Water Quality - Reopener Provision.....	31
P. Biosolids – Reopener Provision.....	31
Q. Toxicity Limitation - Reopener Provision .....	31
VIII. DEFINITIONS .....	33
A. Wastewater.....	33
B. Biosolids.....	34

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

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*.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 41°25'36" and longitude 112°03'43". The discharge is from the UV disinfection system into an existing drainage ditch, thence to the Great Salt Lake transitional wetlands, thence to the Willard Spur of the Great Salt Lake.
001R	Located at latitude 41°25'22" and longitude 112°03'54". The discharge is diverted from the discharge pipeline to be used for Type II Reuse on adjacent fields. There should be no runoff of water from the field to any waterway or the Willard Spur.

- 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*, and determined by test procedures described in *Part I. C.3.a & b* of this permit.
2.
  - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

Parameter	Outfall 001 Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	2.0	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	11
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.5	--
Total Ammonia (as N), mg/L Outfall 001					
Summer (Jul-Sep)	5.3	--	--	--	33.5
Fall (Oct-Dec)	3.6	--	--	--	9.5
Winter (Jan-Mar)	5.0	--	--	--	16.5
Spring (Apr-Jun)	3.6	--	--	--	9.5
<i>E. coli</i> , No./100mL	126	157	--	--	--
Total Phosphorous, mg/L (July, August, September)	--	--	1.0	--	--
WET, Chronic Biomonitoring *i	--	--	--	--	TU <sub>c</sub> ≤ 1.6
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9

Outfall 001 Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent *d	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
TSS, Influent *d	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU
Total Ammonia (as N)	Weekly	Grab	mg/L
Dissolved Oxygen	Weekly	Grab	mg/L
WET – Biomonitoring *i			
Ceriodaphnia - Chronic	2 <sup>nd</sup> & 4 <sup>th</sup> Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 <sup>st</sup> & 3 <sup>rd</sup> Quarter	Composite	Pass/Fail
Oil & Grease *e	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) *f	Monthly	Composite	mg/L

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

Phosphorus, Total *f Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Total Kjeldahl Nitrogen, TKN (as N) *f Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Nitrate, NO3 *f	Monthly	Composite	mg/L
Nitrite, NO2 *f	Monthly	Composite	mg/L
Metals, Influent *g Effluent *g	Quarterly Quarterly	Composite/Grab Composite/Grab	mg/L mg/L
Organic Toxics *h	2 <sup>nd</sup> and 4 <sup>th</sup> Year of the Permit Cycle	Grab	mg/L

- \*a See Definitions, *Part VIII*, for definition of terms.
- \*b 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.
- \*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- \*d 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.
- \*e Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- \*f These reflect changes required with the adoption of UAC R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.
- \*g The minimum detection limit (MDL) of the test method used for analysis of the metals must be below the values found in the “Monitoring for Pretreatment Program” table found in Part II.B.1 of the permit.
- \*h In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D Table II (Organic Toxic Pollutants). The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present. TTO’s will be sampled in 2018, 2020, and 2022.
- \*i TUC is calculated by dividing the receiving water effluent concentration determined in accordance with R317-2-5 by the chronic test IC25. The TUC is an indicator and an exceedance is not used for determining compliance.

- 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 *a				
	Max Monthly Average	Max Weekly Median	Max Daily Average	Minimum	Maximum
BOD <sub>5</sub> , mg/L	25	--	--	--	--
TSS, mg/L	25	35	--	-	--
<i>E. coli</i> , No/100mL		126	--	--	500
pH, Standard Units	--	--	--	6.0	9.0

Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements *a *j			
Parameter	Frequency	Sample Type	Units
Total Flow, *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L

**PART I  
DISCHARGE PERMIT NO. UT0025721  
WASTEWATER**

<i>E. coli</i> *k	2x Weekly	Grab	No./100mL
pH	2x Weekly	Grab/Recorder	SU

- \*a See Definitions, Part VIII, for definition of terms.
- \*b 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.
- \*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- \*j Reuse monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period.
- \*k The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, or other chemical disinfectants, UV radiation. Or other approved processes. Chlorine residual is recommended but no longer required. Sampling not required if chlorination is not being used. The total residual chlorine shall be measured continuously and shall at no time be less than 1.0 mg/l after 30 minutes contact time at peak flow. If an alternative disinfection process is used, it must be demonstrated to the satisfaction of the Director that the alternative process is comparable to that achieved by chlorination with a 1 mg/l residual after 30 minutes contact time. If the effectiveness cannot be related to chlorination, then the effectiveness of the alternative disinfection process must be demonstrated by testing for pathogen destruction as determined by the Director. A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.

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) 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)

3. Compliance Schedule

- a. There is no compliance schedule included in this renewal permit.

4. Chronic Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Chronic Toxicity.*

Chronic WET tests are considered an indicator for Class 5 waters (Great Salt Lake) because of uncertainties regarding the representativeness of the standard test species for Great Salt Lake. If a separate acute test is not conducted, the results of the acute duration portion of a chronic test are reported as specified in Part a. Whole Effluent

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

Testing – Acute Toxicity. As an indicator, the chronic test results can demonstrate compliance with portions of the Narrative Standards (R317-2-7.2). However, the chronic WET test results alone do not demonstrate noncompliance with the Narrative Standards. As indicators, the chronic WET test results alone are not used for determining reasonable potential for toxicity or noncompliance with the permit.

Starting on immediately, the permittee shall quarterly, conduct chronic static renewal toxicity tests on a composite sample of the final effluent at Outfall 001. The sample shall be collected at the point of compliance before mixing with the receiving water.

Three samples are required and samples shall be collected on Monday, Wednesday and Friday of each sampling period or collected on a two day progression for each sampling period. This may be changed with Director approval. The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition*, October 2002, EPA—821-R-02-013 as per 40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS . Test species shall consist of *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow).

A multi dilution test consisting of at least five concentrations and a control is required at two dilutions below and two above the RWC, if possible. If test acceptability criteria are not met for control survival, growth, or reproduction, the test shall be considered invalid. A valid replacement test is required within the specified sampling period to remain in compliance with this permit. Chronic toxicity occurs when, during a chronic toxicity test, the  $TUc \geq 1.6$ . Toxic unit chronic (TUc) is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period and is calculated as  $100/IC25$ . If a sample is found to be chronically toxic during a routine test, the monitoring frequency shall become biweekly (see Part-I.C.3.b, Accelerated Testing). (the Director may enter acceptable variations in the test procedure here based on the test acceptability criteria as contained in Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity February 2018 and as documented in the Fact Sheet Statement of Basis). If possible, dilution water should be obtained from the receiving stream.

If the permit contains a total residual chlorine limitation such that it may interfere with WET testing ( $>0.20$  mg/L), the permittee may dechlorinate the sample in accordance with the standard method. If dechlorination is negatively affecting the test, the permittee may collect the sample just before chlorination with Director approval.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the required reporting period (e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with Appendix C of “Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity, Utah Division of Water Quality, February, 2018.

- b. *Accelerated Testing*. When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an



**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.

- c. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

If two (2) consecutive tests (not including the scheduled test which triggered the search for a pattern of toxicity) do not result in an exceedance of the acute or chronic toxicity criteria, no further accelerated testing will be required and no pattern of toxicity will be found to exist. The permittee will provide written verification to the Director within 5 days of determining no pattern of toxicity exists, and resume routine monitoring.

A pattern of toxicity may or may not be established based on the following:

WET tests should be run at least weekly (acute) or every two weeks (chronic) (note that only one test should be run at a time), for up to 5 tests, until either:

- 1) 2 consecutive tests fail, or 3 out of 5 tests fail, at which point a pattern of toxicity will have been identified, or
- 2) 2 consecutive tests pass, or 3 out of 5 tests pass, in which case no pattern of toxicity is identified.

- d. *Preliminary Toxicity Investigation.*

- (1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.
- (2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the Director, will be incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

outlined in this permit. With adequate justification, the Director may extend these deadlines.

- (3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (see Part f Toxicity Reduction Evaluation
  - (4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.
- e. *Toxicity Reduction Evaluation (TRE)*. If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

- (1) Phase I – Toxicity Characterization
- (2) Phase II – Toxicity Identification Procedures
- (3) Phase III – Toxicity Control Procedures
- (4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If toxicity spontaneously disappears during the TIE/TRE, the permittee shall submit written notification to that effect to the Director.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee shall submit the following:

- (a) An alternative control program for compliance with the numerical requirements.
- (b) If necessary, as determined by the Director, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

This permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or modified WET testing requirements without public notice.

Failure to conduct an adequate TIE/TRE plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be

**PART I**  
**DISCHARGE PERMIT NO. UT0025721**  
**WASTEWATER**

considered a violation of this permit. After implementation of TIE/TRE plan, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit.

**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 28<sup>th</sup> day of the month following the completed reporting period. The first report is due on May 28, 2024. 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

2. Reporting of Reuse Monitoring Results. Reuse monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on May 28, 2024. If no reuse occurs during the reporting period, “no reuse” shall be reported for those applicable effluent parameters. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of Signatory Requirements (see Part VII.G), and submitted 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

3. Annual Reporting of Wastewater Monitoring Results. Monitoring results obtained during the previous year shall be summarized and included in the Municipal Wastewater Planning Program (MWPP) submitted annually by April 1st. If no reuse occurs during the reporting period, “no reuse” shall be reported for those applicable effluent parameters. Legible copies of these, and all other reports required herein, shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of Signatory Requirements (see Part VII.G), and submitted 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

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

II. PRETREATMENT REQUIREMENTS

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 CWA.
2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
  - a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
  - b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.
3. *Local Limit* is defined as a limit designed to prevent Pass Through or Interference. And is developed in accordance with *40 CFR 403.5(c)*.
4. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
5. *Publicly Owned Treatment Works or POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). 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 CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
6. *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

**PART II**  
**DISCHARGE PERMIT NO. UT0025721**  
**PRETREATMENT**

d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

7. *User or Industrial User (IU)* means a source of Indirect Discharge

**B. Pretreatment Monitoring and Reporting Requirements.**

1. Because the design capacity of the POTW is less than 5 MGD, the permittee will not be required to develop an Approved POTW Pretreatment Program (Program). However, in order to determine if the development of a Program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.C.1* and submit updates as required to the Division of Water Quality.
2. Monitoring will be required of the permittee for the pretreatment requirements at this time. If changes occur monitoring may be required for parameters not currently listed in the permit or current monitoring requirements may be required to be increased to determine the impact of an Industrial User or to investigate sources of pollutant loading. This could include but is not limited to sampling of the influent and effluent of the wastewater treatment plant and within the collection system.
3. Influent and Effluent Monitoring and Reporting Requirements. The permittee shall sample and analyze both the influent and effluent, for the parameters listed in the Pretreatment Monitoring Table.

Pretreatment Monitoring Table				
Parameter	MDL	Sample Type	Frequency	Units
Total Arsenic	0.196	Composite	2 X Yearly	mg/L
Total Cadmium	0.0004			
Total Chromium	0.0112			
Total Copper	0.0166			
Total Lead	0.0074			
Total Molybdenum	NA			
Total Nickel	0.093			
Total Selenium	0.0047			
Total Silver	0.0118			
Total Zinc	0.213			
Total Cyanide	0.0054			
Total Mercury	0.000012			
Organic Toxic Pollutants	NA			

- a. The minimum detection limit (MDL) of the test method used for analysis must be below this limit, if a test method is not available the permittee must submit documentation to the Director regarding the method that will be used
- b. In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in *40 CFR 122* Appendix D Table II. This must be sampled during the 2<sup>nd</sup> and 4<sup>th</sup> year of the permit cycle. The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present.

**PART II**  
**DISCHARGE PERMIT NO. UT0025721**  
**PRETREATMENT**

4. The results of the analyses of metals, cyanide and organic toxic pollutants shall be submitted along with the Discharge Monitoring Report (DMR) at the end of the earliest possible reporting period. Also, the permittee must submit a copy of the organic toxic pollutants data to the Pretreatment Coordinator for the Division of Water Quality via email.
5. For Local Limit parameters it is recommended that the most sensitive method be used for analysis. This will determine if the parameter is present and provide removal efficiencies based on actual data rather than literature values. If a parameter load is greater than the allowable head works load, for any pollutant listed in Part II.B.3. or a pollutant of concern listed in the Local Limit development document or determined by the Director, the permittee must report this information to the Pretreatment Coordinator for the Division of Water Quality. If the loading exceeds the allowable headworks load, increase sampling must occur based on the requirements given by the Pretreatment Coordinator for the Division of Water Quality. If needed sampling may need to occur to find the source(s) of the increase. This may include sampling of the collection system. Notification regarding the exceedances of the allowable headworks loading can be provided via email.

C. Industrial Wastes.

1. The "Industrial Waste Survey" or "IWS" as required by *Part II.B.1.* 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
  - 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. 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)*.
4. 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 permittee must ensure that no IU violates any of the general or specific standards. If an IU is found violating a general or specific standard the permittee must notify the Director within 24 hours of the event. 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.

**PART II**  
**DISCHARGE PERMIT NO. UT0025721**  
**PRETREATMENT**

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 publicly owned treatment works (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,
    - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
    - i. Any pollutant that causes pass through or interference at the POTW.
    - j. Any prohibited standard which the permittee has adopted in an ordinance or rule to control IU discharge to the POTW.
  3. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307 of the Water Quality Act of 1987 as amended (WQA)*. (See *40 CFR, Subchapter N, Parts 400 through 500*, for specific information).
- E. Significant Industrial Users Discharging to the POTW. The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;
1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., Industrial User) which would be subject to *Sections 301 or 306* of the *WQA* if it were directly discharging those pollutants;
  2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
  3. For the purposes of this section, adequate notice shall include information on:

**PART II**  
**DISCHARGE PERMIT NO. UT0025721**  
**PRETREATMENT**

- a. The quality and quantity of effluent to be introduced into such treatment works; and,
  - b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.
4. Any IU that must comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA).
- F. Change of Conditions. At such time as a specific pretreatment limitation becomes applicable to an Industrial User of the permittee, the Director may, as appropriate, do the following:
1. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;
  2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations* at 40 CFR 403;
  3. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the Industrial User fail to properly pretreat its waste; and/or
  4. Require the permittee to develop an Approved POTW Pretreatment Program.
- G. Legal Action. The Director retains, at all times, the right to take legal action against the Industrial User or the treatment works, in those cases where a permit violation has 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). Local Limits should be developed in accordance with the latest revision of the EPA Local Limits Development Guidance and per R317-8-8.5.



**III. BIOSOLIDS REQUIREMENTS**

A. Biosolids Treatment and Disposal. The authorization to dispose of biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee. The treatment methods and disposal practices are designated below.

1. Treatment

a. Biosolids are dewatered and transferred to the Central Weber Water Reclamation Facility (Central Weber) for further processing by Central Weber into Class A Biosolids.

2. Description of Biosolids Disposal Method

a. Class A biosolids may be sold or given away to the public for lawn and garden use or land application.

b. Class B biosolids may be land applied for agriculture use or at reclamation sites at agronomic rates.

c. Biosolids may be disposed of in a landfill or transferred to another facility for treatment and/or disposal.

3. Changes in Treatment Systems and Disposal Practices.

a. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 30 days in advance if the process/method is specified in *40 CFR Part 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.

b. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 180 days in advance if the process/method is not specified in *40 CFR Part 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.

For any biosolids that are land filled, the requirements in *Section 2.12* of the latest version of the *EPA Region VIII Biosolids Management Handbook* must be followed

B. Specific Limitations and Monitoring Requirements. All biosolids generated by this facility to be sold or given away to the public shall meet the requirements of *Part III.B.1, 2, 3 and 4* listed below.

1. Metals Limitations. All biosolids sold or given away in a bag or similar container for application to lawns and home gardens must meet the metals limitations as described below. If these metals limitations are not met, the biosolids must be landfilled.

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits <sup>1</sup> , (mg/kg)	CPLR <sup>2</sup> , (mg/ha)	Pollutant Conc. Limits <sup>3</sup> (mg/kg)	APLR <sup>4</sup> , (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits <sup>1</sup> , (mg/kg)	CPLR <sup>2</sup> , (mg/ha)	Pollutant Conc. Limits <sup>3</sup> (mg/kg)	APLR <sup>4</sup> , (mg/ha-yr)
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0
Total Zinc	7500	2800	2800	140
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

2. Pathogen Limitations. All biosolids sold or given away in a bag or a similar container for application to lawns and home gardens must meet the pathogen limitations for Class A. Land applied biosolids must meet the pathogen limitations for Class B as described below. If the pathogen limitations are not met, the biosolids must be landfilled.
  - a. Class A biosolids shall meet one of the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to Further Reduce Pathogens as defined in *40 CFR Part 503.32(a) Sewage Sludge – Class A*.
    - (1) At this time PW-WWTP does not intend to distribute biosolids to the public for use on the lawn and garden and thus is not required meet Class A Biosolids requirements currently.
  - b. Class B biosolids shall meet the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to Significantly Reduce Pathogens as defined in *40 CFR Part 503.32(b) Sewage Sludge – Class B*.
    - (1) At this time PW-WWTP does not intend to distribute bulk biosolids for land application and thus is not required meet Class B Biosolids requirements currently.
  - c. In addition, the permittee shall comply with all applicable site restrictions listed below (*40 CFR 503.32,(b),(5)*):

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

- (1) Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application.
- (2) Food crops with harvested parts below the land surface shall not be harvested for 20 months after application if the biosolids remains on the land surface for four months or more prior to incorporation into the soil.
- (3) Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
- (4) Food crops, feed crops, and fiber crops shall not be harvested from the land for 30 days after application.
- (5) Animals shall not be allowed to graze on the land for 30 days after application.
- (6) Turf grown on land where biosolids is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- (7) Public access to land with a high potential for public exposure shall be restricted for one year after application.
- (8) Public access to land with a low potential for public exposure shall be restricted for 30 days after application.
- (9) The sludge or the application of the sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application.

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN <sup>1</sup> per four (4) grams total solids (DWB) <sup>2</sup> or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU <sup>3</sup> per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	

3. Vector Attraction Reduction Requirements.

- a. The PW-WWTP will meet vector attraction reduction through use of one of the methods listed in *40 CFR Part 503.33*.
  - (1) PW-WWTP transfers solids to another facility (Central Weber) where they are blended with their biosolids and processed for land application

If the permittee intends to use another one of the alternatives, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public comment.

4. Self-Monitoring Requirements.

- a. At a minimum, upon the effective date of this permit, all chemical pollutants, pathogens and applicable vector attraction reduction requirements shall be monitored according to *40 CFR Part 503.16(1)(a)*.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times
Over the previous 10 years PW-WWTP has produced on average 185 DMT of biosolids each year, therefore they are required to sample at least once a year.		

- b. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CRF 503* and/or other criteria specific to this permit. A metals analysis is to be performed using *Method SW 846* with *Method 3050* used for digestion. For the digestion procedure, an amount of biosolids equivalent to a dry weight of one gram shall be used. The methods are also described in the latest version of the *Region VIII Biosolids Management Handbook*.
- c. The Director may request additional monitoring for specific pollutants derived from biosolids if the data shows a potential for concern.
- d. After two (2) years of monitoring at the frequency specified, the permittee may request that the Director reduce the sampling frequency for the heavy metals. The frequency cannot be reduced to less than once per year for biosolids that are sold or given away to the public for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

C. Management Practices of Biosolids.

1. Biosolids Distribution Information

- a. For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
  - (1) The name and address of the person who prepared the biosolids for a sale or to be given away.

- (2) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.

2. Biosolids Application Site Storage

- a. For biosolids or material derived from biosolids that are stored in piles for one year or longer, measures shall be taken to ensure that erosion (whether by wind or water) does not occur. However, best management practices should also be used for piles used for biosolids treatment. If a treatment pile is considered to have caused a problem, best management practices could be added as a requirement in the next permit renewal

3. Land Application Practices

- a. The permittee shall operate and maintain the land application site operations in accordance with the following requirements:
  - (1) The permittee shall provide to the Director and the EPA within 90 days of the effective date of this permit a land application plan.
  - (2) Application of biosolids shall be conducted in a manner that will not contaminate the groundwater or impair the use classification for that water underlying the sites.
  - (3) Application of biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Biosolids shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR 122.2).
  - (4) No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:
    - (a) there is 80 percent vegetative ground cover; or,
    - (b) approval has been obtained based upon a plan demonstrating adequate runoff containment measures.
  - (5) Application of biosolids is prohibited to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent.
  - (6) Agronomic Rate
    - (a) Application of biosolids shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the latest version of the *Region VIII Biosolids Management Handbook* (other methods may be approved by the Director). The treatment plant shall provide written notification to the applier of the biosolids of the concentration of total nitrogen (as N on a dry weight basis) in the biosolids. Written permission from the Director is required to exceed the agronomic rate.

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

- (b) The permittee may request the limits of *Part III, C, 6* be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.
  - (c) Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites
- (7) Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in *Part III.C.(6),(c)*. is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.
- (8) The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.
- (9) When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.
- (10) For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
- (a) The name and address of the person who prepared the biosolids for sale or give away for application to the land.
  - (b) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.
  - (c) The annual whole biosolids application rate for the biosolids that do not cause the metals loading rates in Tables 1, 2, and 3 (*Part III.B.1.*) to be exceeded.
- (11) Biosolids subject to the cumulative pollutant loading rates in Table 2 (*Part III.B.1.*) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.

- (12) If the treatment plant applies the biosolids, it shall provide the owner or leaseholder of the land on which the biosolids are applied notice and necessary information to comply with the requirements in this permit.
- (13) The permittee shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges, which may cause or lead to the release of biosolids to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.
- D. Special Conditions on Biosolids Storage. Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two (2) years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.
- E. Representative Sampling. Biosolids samples used to measure compliance with *Part III* of this Permit shall be collected at locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.
- F. Reporting of Monitoring Results.
1. Biosolids. The permittee shall provide the results of all monitoring performed in accordance with Part III.B, and information on management practices, biosolids treatment, site restrictions and certifications shall be provided no later than February 19 of each year. Each report is for the previous calendar year. If no biosolids were sold or given away during the reporting period, "no biosolids were sold or given away" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part VII.G), and submitted to the Utah Division of Water Quality and the EPA by the NeT-Biosolids system through the EPA Central Data Exchange (CDX) System.
- G. Additional Record Keeping Requirements Specific to Biosolids.
1. Unless otherwise required by the Director, **the permittee is not required to keep records** on compost products if the permittee prepared them from biosolids that meet the limits in Table 3 (*Part III.B.1*), the Class A pathogen requirements in *Part III.B.2* and the vector attraction reduction requirements in *Part III.B.3*. The Director may notify the permittee that additional record keeping is required if it is determined to be significant to protecting public health and the environment.
  2. **The permittee is required** to keep the following information for at least 5 years:
    - a. Concentration of each heavy metal in Table 3 (*Part III.B.1*).
    - b. A description of how the pathogen reduction requirements in *Part III.B.2* were met.
    - c. A description of how the vector attraction reduction requirements in *Part III.B.3* were met.

- d. A description of how the management practices in *Part III.C* were met (if necessary).
- e. The following certification statement:

"I certify under the penalty of law, that the heavy metals requirements in *Part III.B.1*, the pathogen requirements in *Part III.B.2*, the vector attraction requirements in *Part III.B.3*, the management practices in *Part III.C*. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements and the management practices have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

- 3. 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 the life of the permit. Data collected on site, copies of Biosolids Report forms, and a copy of this UPDES biosolids-only permit must be maintained on site during the duration of activity at the permitted location.



IV. STORM WATER REQUIREMENTS.

- A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.
  
- B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC000000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

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*, utilizing sufficiently sensitive test methods 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 Part* 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

**PART V**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

report shall be made to the Division of Water Quality (DWQ) via the 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall initially be reported by telephone to the DWQ via the 24-hour answering service 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. For other permit violations which will not endanger health or the environment, DWQ may otherwise be notified during business hours (801) 536-4300; 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;

**PART V**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
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. 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. UT0025721  
BIOSOLIDS PERMIT NO. UTL-0025721**

- (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 *Part 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 *Parts VI.G.2.a (1), (2) and (3)*.
3. Notice.
- a. *Anticipated bypass.* Except as provided above in *Part VI.G.2* and below in *Part 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 *Part 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. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

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.

**PART VII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

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 having overall responsibility for environmental matters. A duly authorized



**PART VII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

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. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

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 *Sections 19-5-117 and 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 areawide 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 or federal regulations.
- Q. Toxicity Limitation - Reopener Provision. Use the following paragraph if WET testing is required at the facility:
- This permit may be reopened and modified (following proper administrative procedures) to include, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;
1. Toxicity is detected, as per *Part I.C.4.a* of this permit, during the duration of this permit.

**PART VII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

2. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits, and the Director concludes that numerical controls are appropriate.
3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.
4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.

Use the following paragraph if there is no WET testing is required at the facility:

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.

**PART VIII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

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. "Average annual discharge limit" means maximum allowable average of monthly discharges over a calendar year, calculated as the sum of all monthly discharges measured during a calendar year divided by the number of monthly discharges measured during the year. The timeframe is defined as from January 1st to December 31st.
4. "Act," means the *Utah Water Quality Act*.
5. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC<sub>50</sub>").
6. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
7. "Chronic toxicity" occurs when the IC<sub>25</sub> < XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
8. "IC<sub>25</sub>" 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. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

- 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.
- B. Biosolids.
1. "Biosolids," means any material or material derived from sewage solids that have been biologically treated.
  2. "Dry Weight-Basis," means 100 percent solids (i.e. zero percent moisture).
  3. "Land Application" is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so that the biosolids can either condition the soil or fertilize crops or vegetation grown in

**PART VIII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the biosolids).

4. "Pathogen," means an organism that is capable of producing an infection or disease in a susceptible host.
5. "Pollutant" for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.
6. "Runoff" is rainwater, leachate, or other liquid that drains over any part of a land surface and runs off the land surface.
7. "Similar Container" is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.
8. "Total Solids" are the materials in the biosolids that remain as a residue if the biosolids are dried at 103° or 105° Celsius.
9. "Treatment Works" are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste or liquid manure.
10. "Vector Attraction" is the characteristic of biosolids that attracts rodents, flies mosquito's or other organisms capable of transporting infectious agents.
11. "Animals" for the purpose of this permit are domestic livestock.
12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.
13. "Agronomic Rate" is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.
14. "Annual Pollutant Loading Rate" is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
15. "Application Site or Land Application Site" means all contiguous areas of a users' property intended for sludge application.
16. "Cumulative Pollutant Loading Rate" is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

**PART VIII**  
**DISCHARGE PERMIT NO. UT0025721**  
**BIOSOLIDS PERMIT NO. UTL-0025721**

17. "Grit and Screenings" are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to *40 CFR 258*.
18. "High Potential for Public Contact Site" is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
19. "Low Potential for Public Contact Site" is the land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.
20. "Monthly Average" is the arithmetic mean of all measurements taken during the month.
21. "Volatile Solids" is the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

**FACT SHEET AND STATEMENT OF BASIS  
PERRY / WILLARD REGIONAL WASTEWATER TREATMENT PLANT  
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER  
UPDES PERMIT NUMBER: UT0025721  
UPDES BIOSOLIDS PERMIT NUMBER: UTL-025721  
MAJOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name:	Jeff Hollingsworth
Position:	Lead Operator
Phone Number:	(801) 745-5013
Permittee:	City of Perry
Facility Name:	Perry / Willard Regional Wastewater Treatment Plant
Mailing Address:	P.O. Box 213 Willard, UT 84340
Actual Address:	975 North 1000 West Willard, UT 84340

**DESCRIPTION OF FACILITY**

The Perry/Willard Regional Wastewater Treatment Plant (PW-WWTP) serves Perry City and Willard City. The wastewater flows received by the 2.0 MGD PW-WWTP travels through two Parshall Flumes, one for Perry City and one for Willard City, prior to combining and entering the treatment plant. The Parshall Flumes measure flow and transmit the data to the treatment plant via a SCADA system. The wastewater enters the treatment plant and passes through a Huber SSL Fine Step Screen to remove debris and various items from the wastewater. As an emergency back-up, the flow can be diverted to a manual bar screen should the Huber SSL Fine Step Screen malfunction or require maintenance. After passing the Screening area, the wastewater flows into a Grit Removal System where sand, grit, and fine particles are removed. Once the wastewater flows through the screen and grit removal, it is pumped to the top of the plant, where the biological process begins.

The biological process for the PW-WWTP is an STM Aerotor, or more generically, an Integrated Fixed Film and Activated Sludge Bioreactor (IFAS). The IFAS system performs the dual function of an activated sludge tank, as well as a fixed film media bed. From the IFAS, the wastewater flows into clarifiers, where the solid biomass settles and is removed, and the clean water is sent to a Trojan Ultraviolet (UV) Disinfection system and then discharged into a pipeline to the Willard Spur Tailrace, thence to the Great Salt Lake Transitional Wetlands/Bear River Wildlife Refuge. PW-WWTP can divert the water from the pipeline to be used for Type II Reuse on property adjacent to the treatment plant. The solid biomass from the clarifier goes into an aerated digester tank where it is thickened and ultimately sent to a Huber Screw Press Sludge Dewatering system, where an approximate 15% cake solid is placed in a hopper and taken to the landfill and disposed of.



### **SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

Ammonia limits are more stringent than the previous permit. The ammonia effluent limits are based on the Wasteload Analysis (WLA). Additionally, seasonality has been implemented for ammonia limitations. Biochemical oxygen demand (BOD<sub>5</sub>) limits are more stringent than the previous permit. A daily maximum of 11 mg/L is being implemented in the permit. This limit does not apply if the facility is discharging via Outfall 001R.

Monitoring frequency for metals has been increased from yearly to quarterly to gather enough data to complete RP analysis at the next permit renewal. Reuse Outfall Monitoring has also increased as a result of additional reuse information provided by the Permittee.

The E.coli daily max for 001R has been relaxed to be consistent with Utah Administrative Code (UAC) R317-3-11.5, requirements for type II reuse. Best Management Practices (BMPs) for Land Application of Treated Effluent are included in the renewal permit. Those BMPs can be found in Part I.C.2.c of the permit. Of particular note is that *'The application of treated effluent to frozen, ice-covered, or snow covered land is prohibited.'*

Storm water coverage has been removed from this permit. See the Storm Water Section below for more details on obtaining coverage.

The Permittee is now listed as The City of Perry.

### **DISCHARGE**

#### **DESCRIPTION OF DISCHARGE**

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 41°25'36" and longitude 112°03'43". The discharge is from the UV disinfection system into an existing drainage ditch, thence to the Great Salt Lake transitional wetlands, thence to the Willard Spur of the Great Salt Lake.
001R	Located at latitude 41°25'22" and longitude 112°03'54". The discharge is diverted from the discharge pipeline to be used for Type II Reuse on adjacent fields. There should be no runoff of water from the field to any waterway or the Willard Spur.

#### **RECEIVING WATERS AND STREAM CLASSIFICATION**

The final discharge is to the Willard Spur Tailrace, thence to the Great Salt Lake Transitional Wetlands/Bear River National Wildlife Refuge. Willard Spur Tailrace is classified as a 2B, 3E drainage canal/ditch. The Great Salt Lake Transitional Wetlands classification is 5E. Waters within the Bear River National Wildlife Refuge are classified as 2B, 3B, and 3D. These classifications are 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 3B -- Protected for warm water species of game fish and other warm 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 3E -- Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.
- Class 5E Transitional Waters along the Shoreline of the Great Salt Lake Geographical Boundary – Geographical Boundary -- All waters below approximately 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs and streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional waters change corresponding to the fluctuation of open water elevation.  
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**

##### **Outfall 001:**

Limitations on total suspended solids (TSS), BOD<sub>5</sub>, *E. coli*, pH, and percent removal for BOD<sub>5</sub> and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease is based on best professional judgment (BPJ). Limits for ammonia, daily maximum BOD<sub>5</sub>, and dissolved oxygen are based on the WLA. The limit for Whole Effluent Toxicity (WET) are in accordance with the State of Utah Permitting and Enforcement Guidance Document for WET. The total phosphorus limit is based on the Technology-based Phosphorus Effluent Limits rule (UAC R317-1-3.3). Attached is the WLA for this discharge. It has been determined that this discharge will not cause a violation of water quality standards. The permittee is expected to be able to comply with these limitations.

##### **Outfall 001R:**

The discharge requirements for this outfall come from Division of Water Quality (DWQ) rules on treated effluent (Reuse) UAC R317-3-11 - *Use, Land Application and Alternate Methods for Disposal of Treated Wastewater Effluents*. The discharge from this facility is considered Type II Reuse, or Treated Domestic Wastewater Effluent Where Human Exposure is Unlikely (UAC R317-11.5).

#### **Reasonable Potential Analysis**

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

For the previous permit cycle, the facility has been doing Type II reuse. Additionally, they have only been doing yearly metals sampling and only have 5 data points. This is not enough data points to properly run RP analysis. Consequently, there is no need to do any further RP analysis for metals. RP analysis will be done at the next permit renewal or when enough data points have been collected if metals appear to be an issue.

The permit limitations are:

Parameter	Outfall 001 Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	2	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	11
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.5	--
Total Ammonia (as N), mg/L Outfall 001					
Summer (Jul-Sep)	5.3	--	--	--	33.5
Fall (Oct-Dec)	3.6	--	--	--	9.5
Winter (Jan-Mar)	5.0	--	--	--	16.5
Spring (Apr-Jun)	3.6	--	--	--	9.5
<i>E. coli</i> , No./100mL	126	157	--	--	--
Total Phosphorous, mg/L (July, August, September)	--	--	1	--	--
WET, Chronic Biomonitoring *i	--	--	--	--	TU <sub>c</sub> ≤ 1.6
Oil & Grease, mg/L	--	--	--	--	10
pH, Standard Units	--	--	--	6.5	9

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

Parameter	Type II Reuse Outfall 001R Effluent Limitations *a			
	Maximum Monthly Avg.	Maximum Weekly Avg.	Daily Minimum	Daily Maximum
BOD <sub>5</sub> , 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 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.

Outfall 001 Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent *d	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
TSS, Influent *d	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU
Total Ammonia (as N)	Weekly	Grab	mg/L
Dissolved Oxygen	Weekly	Grab	mg/L
WET – Biomonitoring *i			
Ceriodaphnia - Chronic	2 <sup>nd</sup> & 4 <sup>th</sup> Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 <sup>st</sup> & 3 <sup>rd</sup> Quarter	Composite	Pass/Fail
Oil & Grease *e	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) *f	Monthly	Composite	mg/L
Phosphorus, Total *f			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) *f			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO <sub>3</sub> *f	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub> *f	Monthly	Composite	mg/L
Metals, Influent *g	Quarterly	Composite/Grab	mg/L
Effluent *g	Quarterly	Composite/Grab	mg/L
Organic Toxics *h	2 <sup>nd</sup> and 4 <sup>th</sup> Year of the Permit Cycle	Grab	mg/L

\*a See Definitions, *Part VIII*, for definition of terms.

\*b 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.

\*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

\*d 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.

\*e Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

\*f These reflect changes required with the adoption of UAC R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

\*g The minimum detection limit (MDL) of the test method used for analysis of the metals must be below the values found in the “Monitoring for Pretreatment Program” table found in Part II.B.1 of the permit.

- \*h In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D Table II (Organic Toxic Pollutants). The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present. TTO's will be sampled in 2018, 2020, and 2022.
- \*i TUC is calculated by dividing the receiving water effluent concentration determined in accordance with R317-2-5 by the chronic test IC25. The TUC is an indicator and an exceedance is not used for determining compliance.

The following is a summary of the Type II reuse reporting requirements.

Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements *a *j			
Parameter	Frequency	Sample Type	Units
Total Flow, *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L
<i>E. coli</i> *k	2x Weekly	Grab	No./100mL
pH	2x Weekly	Grab/Recorder	SU

- \*a See Definitions, Part VIII, for definition of terms.
- \*b 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.
- \*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- \*j Reuse monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period.
- \*k The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, or other chemical disinfectants, UV radiation. Or other approved processes. Chlorine residual is recommended but no longer required. Sampling not required if chlorination is not being used. The total residual chlorine shall be measured continuously and shall at no time be less than 1.0 mg/l after 30 minutes contact time at peak flow. If an alternative disinfection process is used, it must be demonstrated to the satisfaction of the Director that the alternative process is comparable to that achieved by chlorination with a 1 mg/l residual after 30 minutes contact time. If the effectiveness cannot be related to chlorination, then the effectiveness of the alternative disinfection process must be demonstrated by testing for pathogen destruction as determined by the Director. A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.
  - a. 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**

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

**DESCRIPTION OF TREATMENT AND DISPOSAL**

The PW-WWTP submitted their 2022 annual biosolids report on February 1, 2023. The report states the Permittee produced 141 dry metric tons (DMT) of solids. The wastewater solids are stabilized during the IFAS process with an average retention time of over 60 days. The wastewater solids from the IFAS process are then de-watered with a screw press to about 15% solids. All sludge from the PW-WWTP is transferred to the Central Weber Water Reclamation Facility where they are incorporated into their solids for further processing through composting into Class A biosolids.

**SELF-MONITORING REQUIREMENTS**

Under *40 CFR 503.16(a)(1)*, the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

Over the previous 10 years PW-WWTP has produced on average 185 DMT of biosolids each year, therefore they are required to sample at least once a year.

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

**BIOSOLIDS LIMITATIONS**

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

The intent of the heavy metals regulations of Table 3, *40 CFR 503.13* is to ensure the heavy metals do not

build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C.* of the permit) to made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements With Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 3 below. If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of *40 CFR 503.13* is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C.* of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of *40 CFR 503.13*, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

The maximum heavy metals listed in *40 CFR Part 503.13(b) Table 1* and the heavy metals loading rates in *40 CFR Part 503.13(b) Table 2*; or

The maximum heavy metals in *40 CFR Part 503.13(b) Table 1* and the monthly heavy metals concentrations in *40 CFR Part 503.13(b) Table 3*.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits <sup>1</sup> , (mg/kg)	CPLR <sup>2</sup> , (mg/ha)	Pollutant Conc. Limits <sup>3</sup> (mg/kg)	APLR <sup>4</sup> , (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits <sup>1</sup> , (mg/kg)	CPLR <sup>2</sup> , (mg/ha)	Pollutant Conc. Limits <sup>3</sup> (mg/kg)	APLR <sup>4</sup> , (mg/ha-yr)
Total Zinc	7500	2800	2800	140
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit .If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN <sup>1</sup> per four (4) grams total solids (DWB) <sup>2</sup> or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU <sup>3</sup> per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	



#### Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids.

PW-WWTP does not intend to further treat biosolids. Currently they are transferring it to Central Weber and will transfer it to a landfill if that option is eliminated. The solids that PW-WWTP is only a small percentage of what they produce. And it easily is added to their processing. Therefore they are not required to meet PFRP. If the permittee changes their intentions in the future, they will need to meet a specific PFRP, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

#### Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP).

PW-WWTP does not intend to land apply the biosolids and will therefore not be required to meet PSRP. If the permittee intends to land apply in the future, they will need to meet a specific PSRP, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

#### Vector Attraction Reduction (VAR)

If the biosolids are land applied PW-WWTP will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. PW-WWTP does not intend to land apply the biosolids and will therefore not be required to meet VAR.

If the permittee intends to land apply in the future, they need to meet one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

#### Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

#### Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G.* of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

#### Reporting

PW-WWTP must report annually as required in *40 CFR 503.18*. This report is to include the results of all

monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

## **MONITORING DATA**

The PW-WWTP is not required to monitor for metals or pathogens, so there is no data to report.

## **STORM WATER**

Separate storm water permits may be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at <http://stormwater.utah.gov>

## **PRETREATMENT REQUIREMENTS**

PW-WWTP does not have an Approved POTW Pretreatment Program (Program). This is due to the flow through the plant being less than five (5) MGD and no known Significant Industrial Users. Although a Program does not need to be developed, information regarding Industrial Users discharging to the Publicly Owned Treatment Works (POTW) must be submitted as stated in Part II of the permit. This information will assist in determining the needs of the DWQ to assist PW-WWTP with implementing the Pretreatment Standards and Requirements. If an Industrial User begins to discharge or an existing Industrial User changes its discharge, the PW-WWTP must resubmit the information stated in Part II within sixty days of the introduction or change.

Any wastewater discharged to the POTW from an Industrial User is subject to Federal, State and local regulations. Pursuant to Section 307 of the Clean Water Act, the PW-WWTP and the Industrial Users discharging to the POTW 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.

It is required that any Local Limits be submitted to DWQ for review. If Local Limits are developed, it is required that PW-WWTP 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 State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring). 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.

Since the permittee is a major municipal discharger, the renewal permit will require whole effluent toxicity (WET) testing. Chronic testing will be required using a five dilution test, and establishing a percent effluent equivalent to an  $IC_{25}$ . PW-WWTP will pass the chronic WET test if the  $TU_c \leq 1.6$ .  $TU_c$  is calculated by dividing the receiving water effluent concentration determined in accordance with R317-2-5 by the chronic test  $IC_{25}$ . The  $TU_c$  is an indicator and an exceedance is not used for determining compliance. Chronic WET tests will be completed quarterly alternating between Ceriodaphnia dubia and Pimephales promelas (fathead minnows). A WET reopener section is included in the boilerplate of the permit which allows for the permit to be opened and modified following proper administrative procedures.

**PERMIT DURATION**

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

Drafted and Reviewed by  
Lonnie Shull, Discharge Permit Writer, Biomonitoring  
Daniel Griffin, Biosolids  
Jennifer Robinson, Pretreatment  
Jordan Bryant, Industrial Storm Water  
Jim Harris, TMDL/Watershed  
Suzan Tahir, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

**PUBLIC NOTICE**

Began: March 1, 2024

Ended: April 1, 2024

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

The Public Noticed of the draft permit was published DWQ webpage.

During the public comment period provided under UAC R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

**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.

**Responsiveness Summary**

No comments were received during the public notice period. The permit will be issued as drafted.

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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, blueing 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, nonbiodegradable 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  
P.O. Box 144870  
Salt Lake City, UT 84114-4870

Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-mail: [jenrobinson@utah.gov](mailto: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 washdown | 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

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Waste Treatment Facility

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

**Jennifer Robinson  
Division of Water Quality  
P. O. Box 144870  
Salt Lake City, Utah 84114-4870**

**Phone: (801) 536-4383  
Fax: (801) 536-4301**

**E-Mail: [jenrobinson@utah.gov](mailto:jenrobinson@utah.gov)**

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

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## **ATTACHMENT 2**

### *Wasteload Analysis*

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

**Date:** February 3, 2023

**Prepared by:** Suzan Tahir  
Standards and Technical Services

**Facility:** Perry/Willard Regional WWTP  
UPDES No. UT- 025721

**Receiving water:** Willard Spur Tailrace (2B, 3D) => Great Salt Lake  
Transitional Wetlands/Bear River National Wildlife  
Refuge (5E/2B, 3B, 3D)

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: The mean monthly discharge for the facility is 2 MGD (3.1 cfs).

**Receiving Water**

The receiving water for Outfall 001 is the Willard Spur tailrace, and then to the Great Salt Lake Transitional Wetlands/Bear River National Wildlife Refuge.

Willard Spur Tailrace is classified as a 2B, 3E drainage canal/ditch as per UAC R317-2-13.10:

- *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 3E -- Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.*



**Utah Division of Water Quality  
Wasteload Analysis  
Perry/Willard Regional WWTP  
UPDES No. UT- 025721**

The receiving water of the Willard Spur tailrace is a combination of the Great Salt Lake Transitional Wetlands (5E) and the Bear River National Wildlife Refuge (2B, 3B, 3D). GSL Transitional Wetlands are classified as 5E as per UAC R317-2-13.11:

- *Class 5E - Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.*

Waters within the Bear River National Wildlife Refuge are classified as 2B, 3B, 3D as per UAC R317-2-13.11:

- *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 3B -- Protected for warm water species of game fish and other warm 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.*

The hydrology in the area of the area of the Perry/Willard WWTP discharge is complicated and appears to vary considerably both seasonally and in relation to wet and dry climatic periods. A hydrologic assessment of the Willard Spur (CH2M HILL, 2016) summarized the findings of investigations conducted by DWQ and others over the last several years. Willard Spur water levels and the surface area over which the effluent spreads were identified as two most significant factors controlling the quantity of effluent reaching the open waters of the Willard Spur.

Local runoff, irrigation return flow and leakage from Willard Reservoir into the Tailrace were characterized as likely reach the open waters of Willard Spur only during spring runoff and when water levels in Willard Spur are high. Evaporation and more significantly, infiltration rates appear to be high in periods when water levels in Willard Spur are low. The report noted that effluent discharged to the Willard Bay Tailrace was more likely to reach the open water of Willard Spur when water levels were low than if discharged to wetlands simply because the channel is deep and remains connected to the open water for most dry conditions.

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) or alternatively, the 20<sup>th</sup> percentile value of available flow data. Due to a lack of flow records for the Willard Spur tailrace neither approach could be used. The critical low flow condition for Willard Spur tailrace was estimated at 0.1 cfs.

To ensure protection of downstream uses, applicable water quality criteria associated with 2B, 3B and 3D uses classes will be met after complete mixing with the Willard Spur Tailrace. Ambient

Utah Division of Water Quality  
Wasteload Analysis  
Perry/Willard Regional WWTP  
UPDES No. UT- 025721

water quality for the Willard Spur tailrace was characterized by samples collected from DWQ sampling station 4920420, WB-RES-N-OUTLET (2011-2013).

**TMDL**

None of the receiving waters are listed on the state's 2022 303(d) Water Quality Assessment.

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

The effluent was considered to be totally mixed as the ratio of receiving water flow (estimated 7Q10) to discharge flow was .03 ( $\leq 2$ ). Acute limits were calculated using 50% of the seasonal critical low flow.

**Parameters of Concern**

The potential parameters of concern identified for the discharge/receiving water were ammonia and nutrients as determined in consultation with the UPDES Permit Writer. Nutrients controls are addressed in a separate document; *Incorporating Results of Willard Spur Scientific Investigations into the UPDES Permit for the Perry-Willard POTW* (DWQ 2016).

**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 LC<sub>50</sub> (lethal concentration, 50%) percent effluent for acute toxicity and the IC<sub>25</sub> (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 LC<sub>50</sub> is typically 100% effluent and does not need to be determined by the WLA.

IC<sub>25</sub> WET limits for Outfall 011 should be based on 96.9% effluent.

**Effluent Limits**

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.

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.

**Utah Division of Water Quality  
Wasteload Analysis  
Perry/Willard Regional WWTP  
UPDES No. UT- 025721**

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 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 not required for this discharge since the pollutant concentration and load is not increasing under this permit renewal.

**Documents:**

WLA Document : *Willard-PerryWLADoc\_2023.docx*

Wasteload Analysis and Addendum: *Willard-PerryWLADoc\_2023.xlsm*

**References:**

Utah Division of Water Quality. 2022. *Final 2022 Integrated Report on Water Quality*

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0.*

CH2M HILL. 2016. *Hydrology Assessment of Willard Spur, Great Salt Lake, 2011-2013: Development of Water Quality Standards for Willard Spur. Final report prepared for Utah Division of Water Quality. January 2016.*

DWQ. 2016. *Incorporating Results of Willard Spur Scientific Investigations into the UPDES Permit for the Perry-Willard POTW.*

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Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]  
Addendum: Statement of Basis

30-Nov-22  
4:00 PM

Facilities: Willard/Perry UPDES No: UT-025721  
Discharging to: Willard Spur Tailrace-> 5E transitional Wetlands->BRMBR

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

Willard Spur Tailrace-> 5E transitiona 2B,3B,3D,3E,5E  
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)	5.50 mg/l (30 Day Average) 4.00 mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	N/A mg/l background

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**Acute and Chronic Heavy Metals (Dissolved)**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	1.454 lbs/day	750.00	ug/l	12.532 lbs/day
Arsenic	190.00 ug/l	3.175 lbs/day	340.00	ug/l	5.681 lbs/day
Cadmium	0.44 ug/l	0.007 lbs/day	4.09	ug/l	0.068 lbs/day
Chromium III	145.65 ug/l	2.434 lbs/day	3047.28	ug/l	50.917 lbs/day
ChromiumVI	11.00 ug/l	0.184 lbs/day	16.00	ug/l	0.267 lbs/day
Copper	16.13 ug/l	0.270 lbs/day	25.60	ug/l	0.428 lbs/day
Iron			1000.00	ug/l	16.709 lbs/day
Lead	7.19 ug/l	0.120 lbs/day	184.58	ug/l	3.084 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.040 lbs/day
Nickel	89.70 ug/l	1.499 lbs/day	806.78	ug/l	13.480 lbs/day
Selenium	4.60 ug/l	0.077 lbs/day	20.00	ug/l	0.334 lbs/day
Silver	N/A ug/l	N/A lbs/day	11.39	ug/l	0.190 lbs/day
Zinc	206.20 ug/l	3.445 lbs/day	206.20	ug/l	3.445 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 189.79 mg/l as CaCO3

**Organics [Pesticides]**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.025 lbs/day
Chlordane	0.004 ug/l	0.074 lbs/day	1.200	ug/l	0.020 lbs/day
DDT, DDE	0.001 ug/l	0.017 lbs/day	0.550	ug/l	0.009 lbs/day
Dieldrin	0.002 ug/l	0.033 lbs/day	1.250	ug/l	0.021 lbs/day
Endosulfan	0.056 ug/l	0.964 lbs/day	0.110	ug/l	0.002 lbs/day
Endrin	0.002 ug/l	0.040 lbs/day	0.090	ug/l	0.002 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.065 lbs/day	0.260	ug/l	0.004 lbs/day
Lindane	0.080 ug/l	1.377 lbs/day	1.000	ug/l	0.017 lbs/day
Methoxychlor			0.030	ug/l	0.001 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.001 lbs/day
PCB's	0.014 ug/l	0.241 lbs/day	2.000	ug/l	0.033 lbs/day
Pentachlorophenol	13.00 ug/l	223.804 lbs/day	20.000	ug/l	0.334 lbs/day
Toxephene	0.0002 ug/l	0.003 lbs/day	0.7300	ug/l	0.012 lbs/day

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**IV. Numeric Stream Standards for Protection of Agriculture**

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			ug/l	lbs/day
Boron			ug/l	lbs/day
Cadmium			ug/l	#VALUE!
Chromium			ug/l	lbs/day
Copper			ug/l	lbs/day
Lead			ug/l	lbs/day
Selenium			ug/l	lbs/day
TDS, Summer			mg/l	tons/day

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

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
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)			ug/l	lbs/day
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
γ-cyclohexane (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	46.48 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	13.43 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.01 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	1.22 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	0.08 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	361.53 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	1.70 lbs/day
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	0.72 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l	0.19 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

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Salt Lake City, Utah**

2-Chloroethyl vinyl ethe	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	74.03 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	8.09 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	6.89 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	292.67 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	44.76 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	44.76 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	0.06 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	13.60 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.67 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	29.27 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	39.60 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.16 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	499.25 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	6.37 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0 ug/l	2926.66 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	27.55 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	6.20 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.38 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.59 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	0.86 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0 ug/l	292.67 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	10.33 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	32.71 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	241.02 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	13.17 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.14 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.28 lbs/day
N-Nitrosodi-n-propylami	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
Phenol	ug/l	lbs/day	4.6E+06 ug/l	7.92E+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	89.52 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	206.59 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	2065.88 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	4.99E+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

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

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	189.37 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.15 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	3443.13 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	1.39 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	9.04 lbs/day
<b>Pesticides</b>				
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				
<b>PCB's</b>				
PCB 1242 (Arochlor 1242)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 1254)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 1221)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 1232)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 1248)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 1260)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 1016)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
<b>Pesticide</b>				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
<b>Dioxin</b>				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		
<b>Metals</b>				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	74.03 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	3787.45 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	79.19 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.11 lbs/day
Zinc				

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



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

**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.
- (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.

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

**Current Upstream Information**

	<b>Stream</b>								
	<b>Critical Low</b>								
	<b>Flow</b>	<b>Temp.</b>	<b>pH</b>	<b>T-NH3</b>	<b>BOD5</b>	<b>DO</b>	<b>TRC TDS</b>		
	<b>cfs</b>	<b>Deg. C</b>		<b>mg/l as N</b>	<b>mg/l</b>	<b>mg/l</b>	<b>mg/l</b>	<b>mg/l</b>	
Summer (Irrig. Season)	0.1	24.5	8.0	0.03	1.50	---	0.00	###	
Fall	0.1	12.0	8.0	0.03	1.50	---	0.00	###	
Winter	0.1	7.4	8.0	0.03	1.50	---	0.00	###	
Spring	0.1	16.8	8.0	0.03	1.50	7.48	0.00	###	
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb	
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*	
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron			
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0		* 1/2 MDL	

**Projected Discharge Information**

<b>Season</b>	<b>Flow, MGD</b>	<b>Temp.</b>	<b>TDS mg/l</b>	<b>TDS tons/day</b>
Summer	2.00000	20.3	600.33	5.00575
Fall	2.00000	14.0		
Winter	2.00000	10.8		
Spring	2.00000	15.3		

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

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

**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	2.000 MGD	3.094 cfs
Fall	2.000 MGD	3.094 cfs
Winter	2.000 MGD	3.094 cfs
Spring	2.000 MGD	3.094 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 2 MGD. If the discharger is allowed to have a flow greater than 2 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 >	EOP Effluent	[Acute]
	IC25 >	96.9% 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	11.0 mg/l as BOD5	183.4 lbs/day
Fall	11.0 mg/l as BOD5	183.4 lbs/day
Winter	11.0 mg/l as BOD5	183.4 lbs/day
Spring	11.0 mg/l as BOD5	183.4 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	5.50
Fall	5.50
Winter	5.50
Spring	5.50

**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	5.3 mg/l as N	87.9 lbs/day
	1 Hour Avg. - Acute	33.5 mg/l as N	558.8 lbs/day
Fall	4 Day Avg. - Chronic	3.6 mg/l as N	59.4 lbs/day
	1 Hour Avg. - Acute	9.5 mg/l as N	158.9 lbs/day
Winter	4 Day Avg. - Chronic	5.0 mg/l as N	83.8 lbs/day
	1 Hour Avg. - Acute	16.5 mg/l as N	275.3 lbs/day
Spring	4 Day Avg. - Chronic	3.6 mg/l as N	59.4 lbs/day
	1 Hour Avg. - Acute	9.5 mg/l as N	158.9 lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.0%.

**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	0.011	mg/l	0.19	lbs/day
	1 Hour Avg. - Acute	0.020	mg/l	0.33	lbs/day
Fall	4 Day Avg. - Chronic	0.011	mg/l	0.19	lbs/day
	1 Hour Avg. - Acute	0.020	mg/l	0.33	lbs/day
Winter	4 Day Avg. - Chronic	0.011	mg/l	0.19	lbs/day
	1 Hour Avg. - Acute	0.020	mg/l	0.33	lbs/day
Spring	4 Day Avg. - Chronic	0.011	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.020	mg/l	0.00	lbs/day

**Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards**

Season		Concentration		Load	
Summer	Maximum, Acute	None	mg/l	None	tons/day
Fall	Maximum, Acute	None	mg/l	None	tons/day
Winter	Maximum, Acute	None	mg/l	None	tons/day
Spring	4 Day Avg. - Chronic	None	mg/l	None	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 189.79 mg/l):

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aluminum	N/A	N/A	774.2	ug/l	12.9 lbs/day
Arsenic	196.12 ug/l	2.1 lbs/day	351.0	ug/l	5.9 lbs/day
Cadmium	0.45 ug/l	0.0 lbs/day	4.2	ug/l	0.1 lbs/day
Chromium III	150.33 ug/l	1.6 lbs/day	3,145.7	ug/l	52.6 lbs/day
Chromium VI	11.23 ug/l	0.1 lbs/day	16.4	ug/l	0.3 lbs/day
Copper	16.62 ug/l	0.2 lbs/day	26.4	ug/l	0.4 lbs/day
Iron	N/A	N/A	1,032.3	ug/l	17.2 lbs/day
Lead	7.40 ug/l	0.1 lbs/day	190.5	ug/l	3.2 lbs/day
Mercury	0.01 ug/l	0.0 lbs/day	2.5	ug/l	0.0 lbs/day
Nickel	92.57 ug/l	1.0 lbs/day	832.8	ug/l	13.9 lbs/day
Selenium	4.70 ug/l	0.1 lbs/day	20.6	ug/l	0.3 lbs/day
Silver	N/A ug/l	N/A lbs/day	11.8	ug/l	0.2 lbs/day
Zinc	212.87 ug/l	2.3 lbs/day	212.9	ug/l	3.6 lbs/day
Cyanide	5.37 ug/l	0.1 lbs/day	22.7	ug/l	0.4 lbs/day

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

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

Summer	26.6 Deg. C.	79.8 Deg. F
Fall	14.1 Deg. C.	57.3 Deg. F
Winter	9.5 Deg. C.	49.0 Deg. F
Spring	18.9 Deg. C.	66.0 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	3.88E-02 lbs/day
Chlordane	4.30E-03 ug/l	7.17E-02 lbs/day	1.2E+00	ug/l	3.10E-02 lbs/day
DDT, DDE	1.00E-03 ug/l	1.67E-02 lbs/day	5.5E-01	ug/l	1.42E-02 lbs/day
Dieldrin	1.90E-03 ug/l	3.17E-02 lbs/day	1.3E+00	ug/l	3.23E-02 lbs/day
Endosulfan	5.60E-02 ug/l	9.34E-01 lbs/day	1.1E-01	ug/l	2.84E-03 lbs/day
Endrin	2.30E-03 ug/l	3.84E-02 lbs/day	9.0E-02	ug/l	2.33E-03 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	2.58E-04 lbs/day
Heptachlor	3.80E-03 ug/l	6.34E-02 lbs/day	2.6E-01	ug/l	6.72E-03 lbs/day
Lindane	8.00E-02 ug/l	1.33E+00 lbs/day	1.0E+00	ug/l	2.58E-02 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	7.75E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	2.58E-04 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	1.03E-03 lbs/day
PCB's	1.40E-02 ug/l	2.33E-01 lbs/day	2.0E+00	ug/l	5.17E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	2.17E+02 lbs/day	2.0E+01	ug/l	5.17E-01 lbs/day
Toxephene	2.00E-04 ug/l	3.34E-03 lbs/day	7.3E-01	ug/l	1.89E-02 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:

	<b>1 Hour Average</b>	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	83.5 lbs/day
Nitrates as N	4.0 mg/l	66.8 lbs/day
Total Phosphorus as P	0.05 mg/l	0.8 lbs/day
Total Suspended Solids	90.0 mg/l	1503.8 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:

	<b>Maximum Concentration</b>	
	Concentration	Load
<b>Toxic Organics</b>		
Acenaphthene	2.79E+03 ug/l	4.65E+01 lbs/day
Acrolein	8.05E+02 ug/l	1.34E+01 lbs/day
Acrylonitrile	6.81E-01 ug/l	1.14E-02 lbs/day
Benzene	7.33E+01 ug/l	1.22E+00 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.54E+00 ug/l	7.57E-02 lbs/day
Chlorobenzene	2.17E+04 ug/l	3.62E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.95E-04 ug/l	1.33E-05 lbs/day
1,2-Dichloroethane	1.02E+02 ug/l	1.70E+00 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	9.19E+00 ug/l	1.53E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.34E+01 ug/l	7.23E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.14E+01 ug/l	1.89E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.45E+00 ug/l	2.41E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.44E+03 ug/l	7.40E+01 lbs/day
2,4,6-Trichlorophenol	6.71E+00 ug/l	1.12E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.85E+02 ug/l	8.09E+00 lbs/day
2-Chlorophenol	4.13E+02 ug/l	6.89E+00 lbs/day
1,2-Dichlorobenzene	1.75E+04 ug/l	2.93E+02 lbs/day
1,3-Dichlorobenzene	2.68E+03 ug/l	4.48E+01 lbs/day
1,4-Dichlorobenzene	2.68E+03 ug/l	4.48E+01 lbs/day
3,3'-Dichlorobenzidine	7.95E-02 ug/l	1.33E-03 lbs/day
1,1-Dichloroethylene	3.30E+00 ug/l	5.51E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	8.16E+02 ug/l	1.36E+01 lbs/day
1,2-Dichloropropane	4.03E+01 ug/l	6.71E-01 lbs/day
1,3-Dichloropropylene	1.75E+03 ug/l	2.93E+01 lbs/day

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

2,4-Dimethylphenol	2.37E+03 ug/l	3.96E+01 lbs/day
2,4-Dinitrotoluene	9.39E+00 ug/l	1.57E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.57E-01 ug/l	9.30E-03 lbs/day
Ethylbenzene	2.99E+04 ug/l	4.99E+02 lbs/day
Fluoranthene	3.82E+02 ug/l	6.37E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.75E+05 ug/l	2.93E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.65E+03 ug/l	2.75E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.72E+02 ug/l	6.20E+00 lbs/day
Dichlorobromomethane(HM)	2.27E+01 ug/l	3.79E-01 lbs/day
Chlorodibromomethane (HM)	3.51E+01 ug/l	5.85E-01 lbs/day
Hexachlorocyclopentadiene	1.75E+04 ug/l	2.93E+02 lbs/day
Isophorone	6.19E+02 ug/l	1.03E+01 lbs/day
Naphthalene		
Nitrobenzene	1.96E+03 ug/l	3.27E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.45E+04 ug/l	2.41E+02 lbs/day
4,6-Dinitro-o-cresol	7.90E+02 ug/l	1.32E+01 lbs/day
N-Nitrosodimethylamine	8.36E+00 ug/l	1.39E-01 lbs/day
N-Nitrosodiphenylamine	1.65E+01 ug/l	2.75E-01 lbs/day
N-Nitrosodi-n-propylamine	1.45E+00 ug/l	2.41E-02 lbs/day
Pentachlorophenol	8.47E+00 ug/l	1.41E-01 lbs/day
Phenol	4.75E+06 ug/l	7.92E+04 lbs/day
Bis(2-ethylhexyl)phthalate	6.09E+00 ug/l	1.02E-01 lbs/day
Butyl benzyl phthalate	5.37E+03 ug/l	8.95E+01 lbs/day
Di-n-butyl phthalate	1.24E+04 ug/l	2.07E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.24E+05 ug/l	2.07E+03 lbs/day
Dimethyl phthlate	2.99E+06 ug/l	4.99E+04 lbs/day
Benzo(a)anthracene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Benzo(a)pyrene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Benzo(b)fluoranthene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Benzo(k)fluoranthene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Chrysene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.20E-02 ug/l	5.34E-04 lbs/day
Pyrene (PAH)	1.14E+04 ug/l	1.89E+02 lbs/day
Tetrachloroethylene	9.19E+00 ug/l	1.53E-01 lbs/day
Toluene	2.06E+05 ug/l	3.44E+03 lbs/day
Trichloroethylene	8.36E+01 ug/l	1.39E+00 lbs/day
Vinyl chloride	5.42E+02 ug/l	9.04E+00 lbs/day
<b>Pesticides</b>		
Aldrin	1.45E-04 ug/l	2.41E-06 lbs/day
Dieldrin	1.45E-04 ug/l	2.41E-06 lbs/day
Chlordane	6.09E-04 ug/l	1.02E-05 lbs/day
4,4'-DDT	6.09E-04 ug/l	1.02E-05 lbs/day
4,4'-DDE	6.09E-04 ug/l	1.02E-05 lbs/day
4,4'-DDD	8.67E-04 ug/l	1.45E-05 lbs/day
alpha-Endosulfan	2.06E+00 ug/l	3.44E-02 lbs/day
beta-Endosulfan	2.06E+00 ug/l	3.44E-02 lbs/day



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

Endosulfan sulfate	2.06E+00 ug/l	3.44E-02 lbs/day
Endrin	8.36E-01 ug/l	1.39E-02 lbs/day
Endrin aldehyde	8.36E-01 ug/l	1.39E-02 lbs/day
Heptachlor	2.17E-04 ug/l	3.62E-06 lbs/day
Heptachlor epoxide		

**PCB's**

PCB 1242 (Arochlor 1242)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1254 (Arochlor 1254)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1221 (Arochlor 1221)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1232 (Arochlor 1232)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1248 (Arochlor 1248)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1260 (Arochlor 1260)	4.65E-05 ug/l	7.75E-07 lbs/day
PCB-1016 (Arochlor 1016)	4.65E-05 ug/l	7.75E-07 lbs/day

**Pesticide**

Toxaphene	7.74E-04 ug/l	1.29E-05 lbs/day
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**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)	1.45E-08 ug/l	2.41E-10 lbs/day
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**Metals Effluent Limitations for Protection of All Beneficial Uses  
Based upon Water Quality Standards and Toxics Rule**

	<b>Class 4 Acute Agricultural ug/l</b>	<b>Class 3 Acute Aquatic Wildlife ug/l</b>	<b>Acute Toxics Drinking Water Source ug/l</b>	<b>Acute Toxics Wildlife ug/l</b>	<b>1C Acute Health Criteria ug/l</b>	<b>Acute Most Stringent ug/l</b>	<b>Class 3 Chronic Aquatic Wildlife ug/l</b>
Aluminum		774.2				774.2	N/A
Antimony				4439.0		4439.0	
Arsenic		351.0			0.0	351.0	196.1
Barium						0.0	
Beryllium						0.0	
Cadmium		4.2			0.0	4.2	0.4
Chromium (III)		3145.7			0.0	3145.7	150.3

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

Chromium (VI)	16.4		0.0	16.39	11.23
Copper	26.4			26.4	16.6
Cyanide	22.7	227110.5		22.7	5.4
Iron	1032.3			1032.3	
Lead	190.5		0.0	190.5	7.4
Mercury	2.48		0.15	0.15	0.012
Nickel	832.8	4748.7		832.8	92.6
Selenium	20.6		0.0	20.6	4.7
Silver	11.8		0.0	11.8	
Thallium		6.5		6.5	
Zinc	212.9			212.9	212.9
Boron	774.2			774.2	

**Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]**

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	<b>WLA Acute ug/l</b>	<b>WLA Chronic ug/l</b>
Aluminum	774.2	N/A
Antimony	4438.98	
Arsenic	351.0	196.1
Asbestos	0.00E+00	
Barium		
Beryllium		
Cadmium	4.2	0.4
Chromium (III)	3145.7	150
Chromium (VI)	16.4	11.2
Copper	26.4	16.6
Cyanide	22.7	5.4
Iron	1032.3	
Lead	190.5	7.4
Mercury	0.155	0.012
Nickel	832.8	93
Selenium	20.6	4.7
Silver	11.8	N/A
Thallium	6.5	
Zinc	212.9	212.9
Boron	774.24	

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

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

**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.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

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 was not required.

**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. This doesn't apply to facilities that do not discharge to the Colorado River Basin.

**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.

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

**XIII. Notice of UPDES Requirement**

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

Utah Division of Water Quality  
801-538-6052  
File Name: Willard\_Perry\_WLA\_2023

**APPENDIX - Coefficients and Other Model Information**

CBOD Coeff. (Kd)20 1/day 2.000	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 1.727	REAER. Coeff. (Ka)20 (Ka)/day 99.264	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 92.009	NBOD Coeff. (Kn)20 1/day 0.600	NBOD Coeff. (Kn)T 1/day 0.469
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 3.453	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(CI)20 1/day 32.000	TRC K(CI)(T) 1/day 26.557
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 0.817						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(CI) TRC {theta} 1.1	S Benthic {theta} 1.1

**Antidegradation Review**

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II Antidegradation Review is not required.