

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. **UT0026034**  
Biosolids Permit No. **UTL-026034**

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

**Garland City Municipal Wastewater Treatment Plan (WWTP)**

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named

**Malad River,**

to dispose of biosolids,

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

This permit shall become effective on **March 01, 2020**

This permit expires at midnight on **February 28, 2025.**

Signed this 4<sup>th</sup> day of February, 2020.



Erica Brown Gaddis, PhD  
Director

DWQ-2020-002283



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**I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS**

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

Outfall Number(s)

001

Location of Discharge Outfall

Located at latitude 41° 43' 42" and longitude -112°09' 00 ". The discharge will be through a steel encased pipe to the Malad River.

- 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 toxicity in Outfall 001 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.4a* 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 on the following 3 pages.

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Parameter	Effluent Limitations <sup>1</sup>				
	Maximum Monthly Avg	Maximum Weekly Avg	Annual Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.45	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	1.0	--	--	--	12.0
Fall (Oct-Dec)	2.5	--	--	--	17.0
Winter (Jan-Mar)	15.0	--	--	--	25.0
Spring (Apr-Jun)	15.0	--	--	--	30.0
<i>E. coli</i> , No./100mL	126	157	--	--	--
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
Total Phosphorous, mg/L	--	--	1.0	--	--

<sup>1</sup> See Definitions, Part VIII, for definition of terms.

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Self-Monitoring and Reporting Requirements <sup>1</sup>			
Parameter	Frequency	Sample Type	Units
Total Flow <sup>2,3</sup>	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent <sup>4</sup>	2 X Month	Composite	mg/L
Effluent	2 X Month	Composite	mg/L
TSS, Influent <sup>4</sup>	2 X Month	Composite	mg/L
Effluent	2 X Month	Composite	mg/L
<i>E. coli</i>	2 X Month	Grab	No./100mL
pH	2 X Month	Grab	SU
Total Ammonia (as N)	2 X Month	Composite	mg/L
DO	2 X Month	Grab	mg/L
WET – Biomonitoring <sup>7</sup>			
Ceriodaphnia - Acute	1 <sup>st</sup> and 3 <sup>rd</sup> Quarter	Composite	Pass/Fail
Fathead Minnows - Acute	2 <sup>nd</sup> and 4 <sup>th</sup> Quarter	Composite	Pass/Fail
Oil & Grease <sup>5</sup>	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) <sup>6</sup>			
Effluent	Monthly	Composite	mg/L
Phosphorus, Total <sup>6</sup>			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Phosphorus, Total <sup>6</sup>			
Influent	Monthly	Composite	lbs/day
Effluent	Monthly	Composite	lbs/day
Total Kjeldahl Nitrogen, TKN (as N) <sup>6</sup>			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO <sub>3</sub> <sup>6</sup>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub> <sup>6</sup>	Monthly	Composite	mg/L
Metals, Influent <sup>8</sup>	2 X in Permit Cycle	Composite	mg/L
Effluent	2 X in Permit Cycle	Composite	mg/L

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

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

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

4 In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

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

6 These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

7 If no toxicity is observed for **10 consecutive tests**, testing frequency may be reduced or removed if approved by the Director in accordance with administrative procedures for modifying the permit.

8 First sample shall be within 90 days of first discharge and second sample shall be 6 months after

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

3. Compliance Schedule

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

4. Acute Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Acute Toxicity.* Starting within 90 days of first discharge, the permittee shall (quarterly), conduct acute 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.

The monitoring frequency for acute tests shall be (quarterly) unless a sample is found to be acutely toxic during a routine test. If that occurs, the monitoring frequency shall become weekly (See Part I.C.4.b, Accelerated Testing). Unless otherwise approved by the Director, samples shall be collected on a two day progression; i.e., if the first sample is on a Monday, during the next sampling period, the sampling shall begin on a Wednesday, etc.

The static-renewal acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012 as per 40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS. The permittee shall conduct the 48-hour static renewal toxicity test using Ceriodaphnia dubia (solution renewal every 24 hours) and the acute 96-hour static renewal toxicity test using Pimephales promelas (fathead minnow)(solution renewal every 24 hours). Based on the Test Acceptability Criteria included in Utah Pollutant Discharge Elimination System (UPDES) Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring) January, 2017, the Director may require acceptable variations in the test, i.e. temperature, carbon dioxide atmosphere, or any other acceptable variations in the testing procedure, as documented in the Fact Sheet Statement of Basis. If possible dilution water should be taken from the receiving stream. A valid replacement test is required within the specified sampling period to remain in compliance.



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Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the results to be considered valid. If more than 10 percent control survival occurs, the test shall be repeated until satisfactory control mortality is achieved. The permittee shall meet all QA/QC requirements of the acute WET testing method listed in this Section of the permit.

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 approved USEPA methods for WET testing the sample. If dechlorination is 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 (Biomonitoring), Utah Division of Water Quality, February 2018.

If the results for ten consecutive tests indicate no acute toxicity, the permittee may request a reduction in acute toxicity testing by a reduction in monitoring frequency, alternating species, or using only the most sensitive species. The Director may approve or deny the request. If the request is approved, the test procedures are to be the same as specified above for the test species. Under no circumstances shall monitoring for WET at major facilities be reduced less than quarterly. Minor facilities may be less than quarterly at the discretion of the Director.

- 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 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

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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 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 I.4.e) 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

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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 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. If no discharge occurs during the reporting period, “no discharge” shall be

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

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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

## **II. INDUSTRIAL PRETREATMENT PROGRAM**

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

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

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

**B. Self-Monitoring and Reporting Requirements**

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

**C. Industrial Waste Survey (IWS)**

1. As required by *Part II.B.1.* the industrial waste survey 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. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act* (RCRA).
5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.

**D. General and Specific Prohibitions**

1. 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 source of non-domestic discharge:
  - 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;

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- 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.
2. 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. Signification 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:
    - 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 SIU 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:

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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 pretreatment program.
- G. Legal Action. The Director retains, at all times, the right to take legal action against the industrial user and/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, public notice and approval, as required by R317-8-8.5(4)(c).



### **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. Garland City WWTP has not stated which method or how they will treat their biosolids. Prior to the commencement of operations, Garland City WWTP will submit a Biosolids Management Plan to the Director for review.

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.

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 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 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.

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Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits, (mg/kg)	CPLR <sup>†</sup> , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR <sup>‡</sup> , (mg/ha-yr)
Total Arsenic	75	41	41	41
Total Cadmium	85	39	39	39
Total Copper	4300	1500	1500	1500
Total Lead	840	300	300	300
Total Mercury	57	17	17	17
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	420
Total Selenium	100	100	100	100
Total Zinc	7500	2800	2800	2800

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*.
  - 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*. In addition, the permittee shall comply with all applicable site restrictions listed below (*40 CFR Part 503.32, (b), (5)*):
    - (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.

<sup>†</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>‡</sup> APLR – Annual Pollutant Loading Rate

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- (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	
Class A	Class B
B Salmonella species –less than three (3) MPN§ per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids). or	Fecal Coliforms – less than 2,000,000 MPN per gram total solids. or
Fecal Coliforms – less than 1,000 MPN per gram total solids.	Fecal Coliforms – less than 2,000,000 CFU** per gram total solids.
And - Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
And - Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

3. Vector Attraction Reduction Requirements.

- a. The permittee will meet vector attraction reduction through use of one of the methods listed in *40 CFR 503.33*. Garland City WWTP has not stated which method or how they will treat their biosolids.

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 503.16(1)(a)*.

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§ MPN – Most Probable Number  
\*\* CFU – Colony Forming Units

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Minimum Frequency of Monitoring <sup>††</sup> (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

- b. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CFR 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

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<sup>††</sup> The Garland City WWTP has not been put into operation yet, and as such they have not produced any biosolids. When Garland City WWTP does start up operating they will be required to sample once the first calendar year, and then estimate how much biosolids they will produce the next year and sample accordingly.

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 applicator 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.
    - (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

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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

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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 by NetDMR<sup>‡‡</sup> or at the following address:

Original to:     Biosolids Coordinator  
                      Utah Division of Water Quality  
                      PO Box 144870  
                      Salt Lake City Utah, 84114-4870

- 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).

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<sup>‡‡</sup> Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Annual Biosolids Reports should also be submitted through this system.

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- 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.



**PART IV**  
**STORM WATER**

**IV. STORM WATER REQUIREMENTS.**

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

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

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

**V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS**

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

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

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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.

**PART VI**  
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**VI. COMPLIANCE RESPONSIBILITIES**

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

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- (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 judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
    - (3) The permittee submitted notices as required under *section VI.G.3*.
  - b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.
3. Notice.
- a. *Anticipated bypass.* Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
    - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
    - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
    - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
    - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
    - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,
    - (6) Any additional information requested by the Director.
  - b. *Emergency Bypass.* Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.
  - c. *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H*, Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural

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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.

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**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,



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

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

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

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1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
  2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
  3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
  2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
  3. Revisions to the current CWA § 208 area-wide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.
- Q. Toxicity Limitation - Reopener Provision. 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.

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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.
- R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

## **VIII. DEFINITIONS**

### **A. Wastewater.**

1. The “7-day (and weekly) average”, other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The “30-day (and monthly) average,” other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. “Act,” means the *Utah Water Quality Act*.
4. “Acute toxicity” occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or “LC<sub>50</sub>”).
5. “Bypass,” means the diversion of waste streams from any portion of a treatment facility.
6. 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:
  - 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.

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7. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
8. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
9. "EPA," means the United States Environmental Protection Agency.
10. "Director," means Director of the Division of Water Quality.
11. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
12. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
13. "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.
14. "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 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,

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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, mosquitoes 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 user's 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.
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.

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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**  
**Garland City Municipal Wastewater Treatment Plant (WWTP)**  
**NEW PERMIT: DISCHARGE, BIOSOLIDS**  
**UPDES PERMIT NUMBER: UT0026034**  
**UPDES BIOSOLIDS PERMIT NUMBER: UTL-026034**  
**MINOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name:	Matt Cutler
Position:	City Water Superintendent
Phone Number:	(435) 257-3118
Facility Name:	Garland City
Mailing and Facility Address:	PO Box 129 Garland, UT 84312
Telephone:	(435) 257-3118
Actual Address:	1206 South 1050 East Garland, UT 84312

**DESCRIPTION OF FACILITY**

The Garland City Wastewater Treatment Plant (WWTP) is a new planned activated sludge facility to be located at 1206 South 1050 East in Garland, Utah. Currently Garland City owns and operates a wastewater collection system that services approximately 2750 people with a mix of residential and commercial properties, public schools, businesses, and community meeting houses. Garland City entered an interlocal agreement with the City of Tremonton as early as 1962 for treatment of wastewater. The most recent agreement had ended in 2015 and Garland is currently operating around an automatic 2-year renewal. Garland city has decided to construct a new wastewater treatment plant.

The treatment process would be designed for an average flow of 0.45 MGD and a peak flow of 0.90 MGD. The facility will have a preliminary treatment process consisting of an in-channel automated screen with bagging mechanism, a manual bypass bar rack and a vortex grit chamber, classifier and screw conveyor. The secondary treatment process will consist of biological assimilation of organics through aerobic cellular metabolism. Phosphorous will be removed from the wastewater during secondary clarification. Onsite waste activated sludge will be stabilized, thickened, and reduced through endogenous respiration. The facility will utilize ultra-violet light (UV) disinfection. Waste by-products, including screenings and dewatered biosolids, will be hauled to the Box Elder County Landfill.



## **DISCHARGE**

### **DESCRIPTION OF DISCHARGE**

#### Outfall

#### Description of Discharge Point

01 Located at latitude 41°43'42" and longitude -112°09'00". The discharge will be through a steel encased pipe to the Malad River.

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

The final discharge will flow into the Malad River, in the Bear River watershed. The Malad River is classified as 2B and 3C 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 3C -- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

### **BASIS FOR EFFLUENT LIMITATIONS**

Limitations on total suspended solids (TSS), biochemical oxygen demand (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 limit is based on best professional judgment (BPJ). Limits for the ammonia are based on the waste load analysis. Attached is a Waste load Analysis for this discharge into the Malad River. It has been determined that this discharge will not cause a violation of water quality standards. Since this is a new UPDES permit and the discharge will use assimilative capacity of the receiving water, a Level II Antidegradation review (ADR) was required. The level II ADR was public noticed from April 3, 2019 to May 3, 2019. The permittee is expected to be able to comply with these limitations. The permit limitations are on the following page.

DWQ is currently revising the Lower Bear River Total Maximum Daily Load (TMDL). At this point in time, there is some level of uncertainty as to what the ultimate TMDL total phosphorous (TP) allocations will be for the identified point source facilities, including Garland City WWTP. Therefore, the total phosphorous TP monitoring requirements included in the permit primarily addresses the TBPEL Rule in UAC R317-1-3.3. The permit may be re-opened once the TMDL is finalized.

Parameter	Effluent Limitations <sup>1</sup>				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.45	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	1.0	--	--	--	12.0
Fall (Oct-Dec)	2.5	--	--	--	17.0
Winter (Jan-Mar)	15.0	--	--	--	25.0
Spring (Apr-Jun)	15.0	--	--	--	30.0
<i>E. coli</i> , No./100mL	126	157	--	--	--
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
Total Phosphorous, mg/L	--	--	1.0	--	--

## REASONABLE POTENTIAL ANALYSIS

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit was not conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance) because there is inadequate data for use in a RP. As a result, monitoring for metals will be included in this permit. The monitoring will help establish a record of presence or absence of each pollutant. Monitoring for metals will be required 2 X during this permit cycle. The first time should be within 90 days of the initial discharge and the second shall occur 6 months after the first sample.

## 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 must be attached to the DMRs.

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<sup>1</sup> See Definitions, Part VIII, for definition of terms.

Self-Monitoring and Reporting Requirements <sup>1</sup>			
Parameter	Frequency	Sample Type	Units
Total Flow <sup>2,3</sup>	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent <sup>4</sup>	2 X Month	Composite	mg/L
Effluent	2 X Month	Composite	mg/L
TSS, Influent <sup>4</sup>	2 X Month	Composite	mg/L
Effluent	2 X Month	Composite	mg/L
<i>E. coli</i>	2 X Month	Grab	No./100mL
pH	2 X Month	Grab	SU
Total Ammonia (as N)	2 X Month	Composite	mg/L
DO	2 X Month	Grab	mg/L
WET – Biomonitoring <sup>7</sup>			
Ceriodaphnia - Acute	1 <sup>st</sup> and 3 <sup>rd</sup> Quarter	Composite	Pass/Fail
Fathead Minnows - Acute	2 <sup>nd</sup> and 4 <sup>th</sup> Quarter	Composite	Pass/Fail
Oil & Grease <sup>5</sup>	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) <sup>6</sup>			
Effluent	Monthly	Composite	mg/L
Phosphorus, Total <sup>6</sup>			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Phosphorus, Total <sup>6</sup>			
Influent	Monthly	Composite	lbs/day
Effluent	Monthly	Composite	lbs/day
Total Kjeldahl Nitrogen, TKN (as N) <sup>6</sup>			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO <sub>3</sub> <sup>6</sup>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub> <sup>6</sup>	Monthly	Composite	mg/L
Metals, Influent <sup>8</sup>	2 X in Permit Cycle	Composite	mg/L
Effluent	2 X in Permit Cycle	Composite	mg/L

<sup>1</sup> See Definitions, *Part VIII*, for definition of terms.

<sup>2</sup> 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.

<sup>3</sup> If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

<sup>4</sup> 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.

<sup>5</sup> Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

<sup>6</sup> These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

<sup>8</sup> First sample shall be within 90 days of first discharge and second sample shall be 6 months after

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

## **TBPEL**

The Water Quality Board adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule as it relates to "non-lagoon" wastewater treatment plants establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for non-lagoon wastewater treatment plants:

The TBPEL requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will produce effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. This TBPEL shall be achieved by January 1, 2020. The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2015:

R317-1-3.3, D, I Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, D, 2. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

In R3 17-1-3.3, D, 3 the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

## **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**

Garland City WWTP has not stated which method or how they will treat their biosolids. Prior to the commencement of operations, Garland City WWTP will submit a Biosolids Management Plan to the Director for review.

## 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

The Garland City WWTP has not been put into operation yet, and as such they have not produced any biosolids. When Garland City WWTP does start up operating they will be required to sample once the first calendar year, and then estimate how much biosolids they will produce the next year and sample accordingly.

### 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 1 and the monthly average pollutant concentrations in Table 3 (see Table 1 and 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, (mg/kg)	CPLR <sup>1</sup> , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR <sup>2</sup> , (mg/ha-yr)
Total Arsenic	75	41	41	41
Total Cadmium	85	39	39	39
Total Copper	4300	1500	1500	1500
Total Lead	840	300	300	300
Total Mercury	57	17	17	17
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	420
Total Selenium	100	100	100	100
Total Zinc	7500	2800	2800	2800

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	
Class A	Class B
B Salmonella species –less than three (3) MPN <sup>3</sup> per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids). or	Fecal Coliforms – less than 2,000,000 MPN per gram total solids. or

<sup>1</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>2</sup> APLR – Annual Pollutant Loading Rate

<sup>3</sup> MPN – Most Probable Number

Pathogen Control Class	
Class A	Class B
Fecal Coliforms – less than 1,000 MPN per gram total solids.	Fecal Coliforms – less than 2,000,000 CFU <sup>4</sup> per gram total solids.
And - Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
And - Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

#### 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.

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).

#### Vector Attraction Reduction (VAR)

If the biosolids are land applied Garland City WWTP will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*.

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the permittee intends to use another 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.

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<sup>4</sup> CFU – Colony Forming Units

### Reporting

Garland City 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 Garland City WWTP has not been put into operation yet, and as such they have not produced any biosolids to monitor or report on yet.

### **STORM WATER**

#### **STORMWATER REQUIREMENTS**

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

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

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

#### **PRETREATMENT REQUIREMENTS**

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant will be less than five (5) MGD, there are no known categorical industries that will be discharging to the treatment facility, and there is no indication that pass through or interference will occur once the treatment facility begins to discharge.

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

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

It is required that the permittee submit for review any local limits that are developed to the Division of Water Quality for review. If local limits are developed it is required that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed.



### **BIOMONITORING REQUIREMENTS**

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

Since the permittee is a new facility, the permit will require whole effluent toxicity (WET) testing. For this permit cycle Garland City WWTP will be required to conduct Acute Wet tests quarterly alternating between *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnows) test species. If no toxicity is observed for 10 consecutive tests, testing frequency may be reduced or removed if approved by the Director in accordance with administrative procedures for modifying the permit. Decisions on type of WET testing and species were based on the *revised* UPDES Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control dated February 2018.

The permit will also contain the standard requirements for accelerated testing upon failure of a WET test and PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

**PERMIT DURATION**

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

Drafted by  
Leanna Littler, Discharge  
Daniel Griffin, Biosolids  
Jennifer Robinson, Pretreatment  
Lonnie Shull, Biomonitoring  
Lisa Stevens, Storm Water  
Nick von Stackelberg, Waste load Analysis  
Mike Allred, TMDL/Watershed  
Utah Division of Water Quality, (801) 536-4300

**PUBLIC NOTICE**

Began: December 25, 2019  
Ended: January 27, 2020

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 in the (Tremonton Leader-Garland Times).

**Responsiveness Summary**

The DWQ received comments via email from a concerned citizen related to concerns of future odors, transport of biosolids, general facility design, and request for the facility to be built at another location further from residential areas. The comments received did not pertain to water quality or items permitted through an NPDES permit. Since the comments were unrelated to water quality, no changes were made to the permit. A response was emailed to the citizen explaining the purpose of NPDES permits and provided him with information on who he should contact about his concerns.

DWQ-2020-002281

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# **ATTACHMENT 1**

## *Industrial Waste Survey*

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# Industrial Pretreatment Wastewater Survey



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

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

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

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

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

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

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

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

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

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

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

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

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

## An Industrial Waste Survey consists of:

### Step 1: Identify Industrial Users

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

Sources for the list:

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

Split the list into two groups:

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

### Step 2: Preliminary Inspection

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

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

### Step 3: Informing the State

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

Jennifer Robinson

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

Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-mail: [jenrobinson@utah.gov](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 blow down     |
| 4. <input type="checkbox"/> Cooling water, contact       | 5. <input type="checkbox"/> Process                    |
| 6. <input type="checkbox"/> Equipment/Facility wash-down | 7. <input type="checkbox"/> Air Pollution Control Unit |
| 8. <input type="checkbox"/> Storm water runoff to sewer  | 9. <input type="checkbox"/> Other describe             |

Wastes are discharged to (check all that apply):

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

Name of waste hauler(s), if used

Is a grease trap installed?    Yes    No

Is it operational?                Yes    No

Does the business discharge a lot of process wastewater?

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



**Does the business do any of the following:**

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

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

---

**Inspector**

---

**Waste Treatment Facility**

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

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


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

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

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## **ATTACHMENT 2**

### *Waste load Analysis*

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

**Date:** April 29, 2019

NvS

**Facility:** Garland Wastewater Treatment Facility  
Garland, UT  
UPDES No. UT0026034

**Receiving water:** Malad River (2B, 3C)

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: Malad River → Bear River

The maximum daily design discharge is 0.90 MGD and the maximum monthly design discharge is 0.45 MGD.

Receiving Water

The receiving water for Outfall 001 is the Malad River, which is tributary to Bear River, which drains to Bear River Bay of the Great Salt Lake.

Per UAC R317-2-13, the designated beneficial uses for Malad River and tributaries, from confluence with Bear River to state line are 2B and 3C.

- *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 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain*

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Wasteload Analysis  
Garland Wastewater Treatment Plant  
UPDES No. UT0026034**

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for the Malad River in Garland, the 20<sup>th</sup> percentile of flow measurements from monitoring site 4902720 Malad River above Tremonton WWTP was calculated to estimate seasonal critical flow in the receiving water (Table 1).

**Table 1: Malad River critical low flow**

Season	Flow (cfs)
Summer	22.0
Fall	20.6
Winter	34.0
Spring	42.8

**Total Maximum Daily Load (TMDL)**

The immediate receiving water for Garland City's proposed discharge is the Malad River. Due to insufficient data, the Malad River was not assessed in the *Utah's 2016 Integrated Report* (DWQ).

The downstream receiving water, Bear River from Great Salt Lake to Malad River, was listed as impaired on the 2016 303(d) list for dissolved oxygen, total dissolved solids, and benthic macroinvertebrates. Refer to the Watershed Protection Section for the status of the Lower Bear River TMDL for dissolved oxygen.

**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 mixing zone was not delineated as part of this WLA, but was assumed to remain within the maximum allowable mixing zone specified in the rule.

**Parameters of Concern**

The potential parameters of concern identified for the discharge and receiving waters were total suspended solids (TSS), dissolved oxygen (DO), BOD<sub>5</sub>, total phosphorus (TP), total nitrogen (TN), total ammonia (TAM), and pH as determined in consultation with the UPDES Permit Writer.

**Water Quality Modeling**

A QUAL2Kw model of the Malad River downstream of the Tremonton WWTP was built and calibrated to synoptic survey data collected in August of 2011 by DWQ staff. The methods and results of the model calibration are summarized in the *QUAL2Kw Calibration Report for the Malad River* (DWQ 2019).

The calibrated model was extended approximately 5.5 kilometers upstream from the Tremonton WWTP to the Garland WWTP and continues downstream approximately 4.8 kilometers from the

Utah Division of Water Quality  
Wasteload Analysis  
Garland Wastewater Treatment Plant  
UPDES No. UT0026034

Tremonton WWTP to the crossing at West 8800 North.

Receiving water quality data was obtained from monitoring site 4902720 Malad River above Tremonton WWTP. The average seasonal value was calculated for each constituent with available data in the receiving water.

The QUAL2Kw model was used for determining WQBELs related to eutrophication and low dissolved oxygen, including oxygen consumption associated with the nitrification of ammonia. Effluent concentrations were adjusted so that water quality standards were not exceeded in the receiving water.

The QUAL2Kw model was also used to determine the limits for ammonia. 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. QUAL2Kw rates, input and output are summarized in Appendix A.

A mass balance mixing analysis was conducted for conservative constituents such as dissolved metals. The WQBELs determined using the mass balance mixing analysis are summarized in Appendix B.

Where WQBELs exceeded secondary standards or categorical limits, the concentration in the model was set at the secondary standard or categorical limit.

Models and supporting documentation are available for review upon request.

Whole Effluent Toxicity (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.

**Table 2: WET Limits for IC<sub>25</sub>**

Season	Percent Effluent
Summer	3%
Fall	3%
Winter	2%
Spring	2%

Effluent Limits

Eutrophication and dissolved oxygen in the receiving water were evaluated using the QUAL2Kw model. Significant algal growth was predicted downstream of the WWTP during critical conditions; however, the DO was not predicted to go below the criteria for 3C waters with limits as specified in Table 3 for DO and Utah Secondary Treatment Standards for BOD<sub>5</sub>.



**Utah Division of Water Quality**  
**Wasteload Analysis**  
**Garland Wastewater Treatment Plant**  
**UPDES No. UT0026034**

**Table 3: Water Quality Based Effluent Limits Summary**

Effluent Constituent	Acute			Chronic		
	Standard	Limit	Averaging Period	Standard	Limit	Averaging Period
Flow (MGD)		0.90	1 day		0.45	30 days
Ammonia (mg/L) <sup>1</sup>	Varies		1 hour	Varies		30 days
Summer		12			1.0	
Fall		17			2.5	
Winter		25			15	
Spring		30			15	
Min. Dissolved Oxygen (mg/L) <sup>2</sup>	3.0	5.0	Instantaneous	5.0	5.0	30 days
BOD <sub>5</sub> (mg/L) <sup>2</sup>	None	35	7 days	None	25	30 days

1: Limits due to toxicity criteria.  
2: Limits based on Utah Secondary Treatment Standards (UAC R317-1-3.2).

**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.

Since Garland WWTP is a new discharge and the pollutant concentration and load are increasing to the receiving water, a Level II Antidegradation Review (ADR) is required.

**Prepared by:**

Nicholas von Stackelberg, P.E.  
Watershed Protection Section

**Documents:**

WLA Document: *garland\_potw\_wla\_2019-04-29.docx*  
QUAL2Kw Wasteload Model: *garland\_potw\_wla\_2016.xlsm*

**References:**

*Lower Bear River Watershed Restoration Action Strategy*. 2002. Utah Division of Water Quality

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

*Field Data Collection for QUAL2Kw Model Build and Calibration Standard Operating Procedures Version 1.0*. 2012. Utah Division of Water Quality.

*Using QUAL2K Modeling to Support Nutrient Criteria Development and Wasteload Analyses in Utah*. 2013. Neilson, B.T., A.J. Hobson, N. von Stackelberg, M. Shupryt, and J.D. Ostermiller.

*Utah's 2016 Final Integrated Report*. 2016. Utah Division of Water Quality.

*QUAL2Kw Calibration Report for the Malad River*. 2019. Utah Division of Water Quality.

# Utah Division of Water Quality

## WASTELOAD ANALYSIS [WLA]

Date: 7/12/2016

### Appendix A: QUAL2Kw Analysis Results

Discharging Facility: Garland WWTP  
 UPDES No: New  
 Permit Flow [MGD]: 0.90 Max. Daily  
 0.45 Max. Monthly Average

Receiving Water: Malad River  
 Stream Classification: 2B, 3C  
 Stream Flows [cfs]: 22.00 Summer (July-Sept) Critical Low Flow  
 20.60 Fall (Oct-Dec)  
 34.04 Winter (Jan-Mar)  
 42.80 Spring (Apr-June)

Instantaneously Fully Mixed: No  
 Acute River Width: 50%  
 Chronic River Width: 100%

### Modeling Information

A QUAL2Kw model was used to determine these effluent limits.

### 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.

Headwater/Upstream Information	Summer	Fall	Winter	Spring
Flow (cfs)	22.0	20.6	34.0	42.8
Temperature (deg C)	21.2	9.9	2.7	14.2
Specific Conductance (µmhos)	4,664	4,360	3,695	4,207
Inorganic Suspended Solids (mg/L)	80.5	43.6	31.2	85.6
Dissolved Oxygen (mg/L)	8.1	11.1	11.4	9.2
Dissolved Oxygen Diel Range (mg/L)	3.3	2.0	2.0	2.0
CBOD <sub>5</sub> (mg/L)	3.8	2.3	1.8	4.0
Organic Nitrogen (mg/L)	1.867	1.867	1.867	1.867
NH <sub>4</sub> -Nitrogen (mg/L)	0.052	0.055	0.049	0.098
NO <sub>3</sub> -Nitrogen (mg/L)	2.392	1.342	1.153	1.730
Organic Phosphorus (mg/L)	0.076	0.030	0.059	0.109
Inorganic Ortho-Phosphorus (mg/L)	0.017	0.021	0.038	0.028
Phytoplankton (µg/L)	35.0	35.0	35.0	35.0
Detritus [POM] (mg/L)	16.6	7.4	4.3	17.9
Alkalinity (mg/L)	363	363	363	363
pH	8.2	8.2	8.2	8.2

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<b>Tremonton WWTP Information</b>	<b>Summer</b>	<b>Fall</b>	<b>Winter</b>	<b>Spring</b>
Flow (cfs)	1.8	1.2	1.4	1.7
Temperature (deg C)	19.9	15.5	10.7	14.6
Specific Conductance (µmhos)	1,476	1,532	1,486	1,444
Inorganic Suspended Solids (mg/L)	4.5	4.5	11.2	5.1
Dissolved Oxygen (mg/L)	6.7	7.4	7.8	7.2
CBOD <sub>5</sub> (mg/L)	8.1	6.3	16.2	5.1
Organic Nitrogen (mg/L)	3.170	3.170	3.170	3.170
NH <sub>4</sub> -Nitrogen (mg/L)	1.755	5.378	5.117	5.153
NO <sub>3</sub> -Nitrogen (mg/L)	2.007	2.020	2.635	4.147
Organic Phosphorus (mg/L)	1.436	1.523	1.565	1.495
Inorganic Ortho-Phosphorus (mg/L)	0.479	0.508	0.522	0.498
Phytoplankton (µg/L)	0.000	0.000	0.000	0.000
Detritus [POM] (mg/L)	0.000	0.000	0.000	0.000
Alkalinity (mg/L)	383	383	383	383
pH	7.8	7.7	7.6	7.7

<b>Discharge Information</b>	<b>Summer</b>	<b>Fall</b>	<b>Winter</b>	<b>Spring</b>
<b>Acute</b>				
Flow (cfs)	0.9	0.9	0.9	0.9
Temperature (deg C)	19.9	15.5	10.7	14.6
Specific Conductance (µmhos)	1,476	1,532	1,486	1,444
Inorganic Suspended Solids (mg/L)	15.0	15.0	15.0	15.0
Dissolved Oxygen (mg/L)	5.0	5.0	5.0	5.0
CBOD <sub>5</sub> (mg/L)	35.0	35.0	35.0	35.0
Organic Nitrogen (mg/L)	2.200	2.200	2.200	2.200
NH <sub>4</sub> -Nitrogen (mg/L)	12.000	17.000	25.000	30.000
NO <sub>3</sub> -Nitrogen (mg/L)	5.000	5.000	5.000	5.000
Organic Phosphorus (mg/L)	0.750	0.750	0.750	0.750
Inorganic Ortho-Phosphorus (mg/L)	0.250	0.250	0.250	0.250
Phytoplankton (µg/L)	0.000	0.000	0.000	0.000
Detritus [POM] (mg/L)	0.000	0.000	0.000	0.000
Alkalinity (mg/L)	383	383	383	383
pH	8.1	8.1	8.1	8.1

<b>Chronic</b>	<b>Summer</b>	<b>Fall</b>	<b>Winter</b>	<b>Spring</b>
Flow (cfs)	0.45	0.45	0.45	0.45
Temperature (deg C)	19.9	15.5	10.7	14.6
Specific Conductance (µmhos)	1,476	1,532	1,486	1,444
Inorganic Suspended Solids (mg/L)	15.0	15.0	15.0	15.0
Dissolved Oxygen (mg/L)	5.0	5.0	5.0	5.0
CBOD <sub>5</sub> (mg/L)	25.0	25.0	25.0	25.0
Organic Nitrogen (mg/L)	2.200	2.200	2.200	2.200
NH <sub>4</sub> -Nitrogen (mg/L)	1.000	2.500	15.000	15.000
NO <sub>3</sub> -Nitrogen (mg/L)	5.000	5.000	5.000	5.000
Organic Phosphorus (mg/L)	0.750	0.750	0.750	0.750
Inorganic Ortho-Phosphorus (mg/L)	0.250	0.250	0.250	0.250
Phytoplankton (µg/L)	0.000	0.000	0.000	0.000
Detritus [POM] (mg/L)	0.000	0.000	0.000	0.000
Alkalinity (mg/L)	383	383	383	383
pH	7.6	7.6	7.6	7.6

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

## 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 reflect the environmental conditions expected at low stream flows.

### Effluent Limitation for Biological Oxygen Demand (BODs) based upon Secondary Standards

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

Season	Concentration	
	Chronic	Acute
Summer	25.0	35.0 mg/L as CBOD5
Fall	25.0	35.0 mg/L as CBOD5
Winter	25.0	35.0 mg/L as CBOD5
Spring	25.0	35.0 mg/L as CBOD5

### Effluent Limitation for Dissolved Oxygen (DO) based upon Secondary Standards

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

Season	Concentration	
	Chronic	Acute
Summer	5.0	5.0 mg/L
Fall	5.0	5.0 mg/L
Winter	5.0	5.0 mg/L
Spring	5.0	5.0 mg/L

### 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	Total Ammonia	
	Chronic	Acute
Summer	1.0	12.0 mg/L as N
Fall	2.5	17.0 mg/L as N
Winter	15.0	25.0 mg/L as N
Spring	15.0	30.0 mg/L as N

## 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.

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## Coefficients and Other Model Information

Parameter	Value	Units
<b>Stoichiometry:</b>		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
<b>Inorganic suspended solids:</b>		
Settling velocity	0.001	m/d
<b>Oxygen:</b>		
Reaeration model	Churchill	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
<b>Slow CBOD:</b>		
Hydrolysis rate	0	/d
Temp correction	1.047	
Oxidation rate	0.103	/d
Temp correction	1.047	
<b>Fast CBOD:</b>		
Oxidation rate	10	/d
Temp correction	1.047	
<b>Organic N:</b>		
Hydrolysis	0.2903475	/d
Temp correction	1.07	
Settling velocity	0.242158	m/d
<b>Ammonium:</b>		
Nitrification	0.2693435	/d
Temp correction	1.07	
<b>Nitrate:</b>		
Denitrification	1.6900865	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.21487	m/d
Temp correction	1.07	
<b>Organic P:</b>		
Hydrolysis	0.228215	/d
Temp correction	1.07	
Settling velocity	0.05548	m/d
<b>Inorganic P:</b>		
Settling velocity	0.85204	m/d
Sed P oxygen attenuation half sat constant	1.98778	mgO2/L

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## Phytoplankton:

Max Growth rate	2.8944	/d
Temp correction	1.07	
Respiration rate	0.480803	/d
Temp correction	1.07	
Death rate	0.86518	/d
Temp correction	1	
Nitrogen half sat constant	15	ugN/L
Phosphorus half sat constant	2	ugP/L
Inorganic carbon half sat constant	1.30E-05	moles/L
Phytoplankton use HCO3- as substrate	Yes	
Light model	Smith	
Light constant	57.6	langleys/d
Ammonia preference	25.4151	ugN/L
Settling velocity	0.05	m/d

## Bottom Plants:

Growth model	Zero-order	
Max Growth rate	72.858765	gD/m2/d or /d
Temp correction	1.07	
First-order model carrying capacity	100	gD/m2
Basal respiration rate	0.1996688	/d
Photo-respiration rate parameter	0.01	unitless
Temp correction	1.07	
Excretion rate	0.225035	/d
Temp correction	1.07	
Death rate	1.1864	/d
Temp correction	1.07	
External nitrogen half sat constant	424.656	ugN/L
External phosphorus half sat constant	63.89725	ugP/L
Inorganic carbon half sat constant	3.89E-05	moles/L
Bottom algae use HCO3- as substrate	Yes	
Light model	Smith	
Light constant	93.4186	mgO <sup>2</sup> /L
Ammonia preference	19.602	ugN/L
Subsistence quota for nitrogen	0.3791592	mgN/gD
Subsistence quota for phosphorus	0.1186205	mgP/gD
Maximum uptake rate for nitrogen	1474.3665	mgN/gD/d
Maximum uptake rate for phosphorus	111.866	mgP/gD/d
Internal nitrogen half sat ratio	3.167674	
Internal phosphorus half sat ratio	2.9784295	
Nitrogen uptake water column fraction	1	
Phosphorus uptake water column fraction	1	

## Detritus (POM):

Dissolution rate	0.168998	/d
Temp correction	1.07	
Settling velocity	0.206573	m/d

## pH:

Partial pressure of carbon dioxide	370	ppm
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## Atmospheric Inputs:

	Summer	Fall	Winter	Spring
Max. Air Temperature, F	89.1	47.7	38.8	70.4
Min. Air Temperature, F	58.6	26.6	20.7	44.2
Dew Point, Temp., F	57.2	34.0	28.6	47.3
Wind, ft./sec. @ 21 ft.	7.7	6.1	6.2	7.8
Cloud Cover, %	0.1	0.1	0.1	0.1

## Other Inputs:

Bottom Algae Coverage	10.0%
Bottom SOD Coverage	100.0%
Prescribed SOD	0.0 gO2/m2/d

**WASTELOAD ANALYSIS [WLA]**

Date: 7/12/2016

**Appendix B: Simple Mixing Analysis for Conservative Constituents**

Discharging Facility:	Garland WWTP		
UPDES No:	New		
Permit Flow [MGD]:	0.45	Maximum Monthly Flow	
	0.90	Maximum Daily Flow	
Receiving Water:	Malad River		
Stream Classification:	2B, 3C		
Stream Flows [cfs]:	22.0	Summer (July-Sept)	Critical Low Flow
	20.6	Fall (Oct-Dec)	
	34.0	Winter (Jan-Mar)	
	42.8	Spring (Apr-June)	
Instantaneously Fully Mixed:	No		
Acute River Width:	50%		
Chronic River Width:	100%		

**Modeling Information**

A simple mixing analysis was used to determine these effluent limits.

**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.

**Headwater/Upstream Information**

	<b>Malad River</b>
	cfs
Chronic	20.6
Acute	10.3

**Effluent Information**

	<b>Flow</b>
	MGD
Maximum Monthly	0.45
Maximum Daily	0.90

**Mixed Information**

	<b>Flow</b>
	cfs
Chronic	21.3
Acute	11.7

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

**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 reflect the environmental conditions expected at low stream flows.

**Utah Division of Water Quality**

**Effluent Limitations for Protection of Recreation (Class 2B Waters)**

<b>Physical Parameter</b>		<b>Maximum Concentration</b>
	pH Minimum	6.5
	pH Maximum	9.0
<b>Bacteriological</b>		
	E. coli (30 Day Geometric Mean)	206 (#/100 mL)
	E. coli (Maximum)	668 (#/100 mL)

**Effluent Limitations for Protection of Aquatic Wildlife (Class 3C Waters)**

<b>Physical Parameter</b>		<b>Maximum Concentration</b>
	Temperature (deg C)	27
	Temperature Change (deg C)	4
<b>Inorganics</b>		<b>Maximum Concentration</b>
	<b>Parameter</b>	<b>Standard</b>
	Phenol (mg/L)	0.010
	Hydrogen Sulfide (Undissociated) [m	0.002

<b>Metals (µg/L)</b>	<b>Dissolved</b>			<b>Total Recoverable</b>	
	<b>Chronic Standard (4 Day Average)<sup>1</sup></b>	<b>Standard</b>	<b>Background Limit</b>	<b>Conversion Factor</b>	<b>Limit</b>
	Aluminum	N/A	15.0 N/A	1.000	N/A
	Arsenic	150.0	22.0	6,092	1.000
	Cadmium	0.6	0.5	7.6	0.851
	Chromium VI	11.0	5.6	264	1.000
	Chromium III	230.7	5.6	10,660	0.860
	Copper	29.3	6.0	1,111	0.960
	Cyanide <sup>2</sup>	5.2	3.5	87	1.000
	Lead	10.9	1.5	449	0.589
	Mercury <sup>2</sup>	0.012	0.008	0.200	1.000
	Nickel	168.0	5.0	7,723	0.997
	Selenium	4.6	3.3	66.6	1.000
	Tributyltin <sup>2</sup>	0.072	0.048	1.199	1.000
	Zinc	382.4	19.3	17,214	0.986

1: Based upon a Hardness of 400 mg/l as CaCO<sub>3</sub>

2: Background concentration assumed 67% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO<sub>3</sub> in the receiving water after mixing, the 87 ug/L chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/L acute aluminum criterion (expressed as total recoverable).



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Metals (µg/L)	Dissolved			Total Recoverable		
	Acute Standard (1 Hour Average) <sup>1</sup>	Standard	Background <sup>2</sup>	Limit	Conversion	
					Factor	Limit
Aluminum		750.0	15.0	19,144	1.000	19,144
Arsenic		340.0	22.0	8,331	1.000	8,331
Cadmium		7.7	0.5	190	0.886	214
Chromium VI		7.7	5.6	72.8	1.000	72.8
Chromium III		16.0	5.6	288	0.316	910
Copper		49.6	6.0	1,152	0.960	1,200
Cyanide <sup>2</sup>		22.0	3.5	492	1.000	492
Iron		1000.0	47.0	24,908	1.000	24,908
Lead		280.8	1.5	7,263	0.589	12,331
Mercury <sup>2</sup>		2.400	0.0	62.2	1.000	62.2
Nickel		1512.9	5.0	39,195	0.998	39,274
Selenium		18.4	3.3	403	1.000	403
Silver		34.9	1.0	884	0.850	1,040
Tributylin <sup>2</sup>		0.460	0.048	10.8	1.000	10.8
Zinc		379.3	19.3	9,414	0.978	9,625

1: Based upon a Hardness of 50 mg/l as CaCO<sub>3</sub>

2: Background concentration assumed 67% of chronic standard

Organics [Pesticides] (µg/L)	Chronic Standard (4 Day Average)				Acute Standard (1 Hour Average)			
	Parameter	Standard	Background <sup>1</sup>	Limit	Standard	Background <sup>1</sup>	Limit	
	Acrolein	3.0	2.0	50.0	3.0	2.0	31.9	
	Aldrin				1.5	1.0	16.0	
	Chlordane	0.0043	0.0029	0.0716	1.2	0.0	31.1	
	DDT, DDE	0.001	0.001	0.017	0.55	0.00	14.3	
	Diazinon	0.17	0.11	2.83	0.17	0.11	1.81	
	Dieldrin	0.0056	0.0038	0.0933	0.24	0.00	6.15	
	Endosulfan, a & b	0.056	0.038	0.933	0.11	0.04	2.00	
	Endrin	0.036	0.024	0.600	0.086	0.024	1.68	
	Heptachlor & H. epoxide	0.0038	0.0025	0.0633	0.26	0.00	6.70	
	Lindane	0.08	0.05	1.33	1.0	0.1	24.8	
	Methoxychlor (Maximum)				0.03	0.02	0.32	
	Mirex (Maximum)				0.001	0.001	0.011	
	Nonylphenol	6.6	4.4	110	28.0	4.4	626	
	Parathion	0.0130	0.0087	0.2165	0.066	0.009	1.52	
	PCB's	0.014	0.009	0.233				
	Pentachlorophenol	15.0	10.1	250	19.0	10.1	264	
	Toxephene	0.0002	0.0001	0.0033	0.73	0.00	19.0	

1: Background concentration assumed 67% of chronic standard

Radiological	Maximum Concentration			
	Parameter	Standard	Background <sup>1</sup>	Limit
	Gross Alpha (pCi/L)	15	10.1	159.7

1: Background concentration assumed 67% of chronic standard; TDS is based on observed ambient data