

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Major Industrial Permit No. **UT0026212**

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

RIVERTON CITY

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

JORDAN RIVER,

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

This permit shall become effective on April 1, 2022.

This permit expires at midnight on March 31, 2027.

Signed this 21st day of March, 2022.



Erica Brown Gaddis, PhD
Director

DWQ-2021-032366

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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*.

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	Located at latitude 40°31'39" and longitude -111°55'13". The discharge from the Riverton City Green Artesian Well Drinking Water Plant enters the Jordan 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 or chronic toxicity in Outfall 001 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.3.a* of this permit.
2.
 - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	1.0	--	--	--	--
TSS, mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
<i>E. coli</i> , No./100mL	126	157	--	--	--
WET, Chronic Biomonitoring	--	--	--	--	IC ₂₅ > 4.8% effluent
Selenium, mg/L	--	--	--	--	0.0072
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
TDS, mg/L	--	--	--	--	1,200

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Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
TSS *j	Weekly	Composite	mg/L
<i>E. coli</i> *j	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU
DO	Weekly	Grab	mg/L
WET – Biomonitoring *e	Quarterly		
Ceriodaphnia - Chronic	2 nd & 4 th Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 st & 3 rd Quarter	Composite	Pass/Fail
Oil & Grease *d	Weekly/When Sheen Observed	Grab	mg/L
TDS, mg/L *j	Weekly	Composite	mg/L
Temperature, mg/L *f	Weekly	Composite	mg/L
Selenium, mg/L *g	Monthly	Composite	mg/L
Metals *h *i	Monthly	Grab/ Composite	mg/L

- *a See Definitions, *Part VIII*, for definition of terms.
- *b Flow measurements of effluent shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- *c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- *d Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- *e The acute Ceriodaphnia will be tested during the 1st and 3rd quarters and the acute fathead minnows will be tested during the 2nd and 4th quarters. The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters.
- *f Pollutant is being sampled in support of the work being done for the TMDL currently underway for the Jordan River. This Pollutant of Concern (POC) will be monitored and reported (on a monthly basis by the facility on Discharge Monitoring Report), but will not have a limit associated with it. Riverton will report the results of all sampling done for the POC. If Riverton decides to sample more frequently for this POC, the additional data will be welcome.
- *g Selenium has been identified as a POC. The ADR and associated reports were used to determine limit to be protective of water quality in the receiving waterbody.
- *h Below are the metals to be monitored at frequency listed in table. If during any sampling event the ‘highest expected values’ are exceeded, DWQ needs to be notified within 24 hours of receiving the sample. The information will be reviewed by DWQ, and the permit may be modified to include specific metal limit.

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Metals to be Monitored			
Parameter	Sample Type	Highest expected value	Units
Arsenic	Composite	0.0091	mg/L
Cadmium	Composite	0.0004	mg/L
Chromium (VI)	Composite	0.0093	mg/L
Copper	Composite	0.0030	mg/L
Cyanide	Grab	0.0037	mg/L
Iron	Composite	0.1111	mg/L
Lead	Composite	0.0009	mg/L
Mercury*	Grab/Composite	0.0004	mg/L
Nickel	Composite	0.0093	mg/L
Selenium	Composite	0.0072 (Effluent Limit)	mg/L
Silver	Composite	0.0009	mg/L
Zinc	Composite	0.0185	mg/L

*Mercury samples must be analyzed using Method 1631 or other sufficiently sensitive method.

- *i After twelve months of metal value results below the ‘highest expected values’ presented in the permit, Riverton may request Director’s Approval to reduce metals monitoring frequency. These results must be from fully operational plant effluent.
- *j After twelve months of value results below the effluent limits presented in the permit, Riverton may request Director’s Approval to reduce monitoring frequency or to completely remove the limit. These results must be from fully operational plant effluent.

3. Chronic Whole Effluent Toxicity (WET) Testing.

a. *Whole Effluent Testing – Chronic Toxicity.*

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

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

A multi dilution test consisting of at least five concentrations and a control is required at two dilutions below and two above the RWC, if possible. If test acceptability criteria are not met for control survival, growth, or reproduction, the test shall be considered invalid. A valid replacement test is required within the specified sampling period to remain in compliance with this permit. Chronic toxicity occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC25) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to

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4.8% effluent concentration (equivalent to the RWC). If a sample is found to be chronically toxic during a routine test, the monitoring frequency shall become biweekly (see *Part I.C.3.b* Accelerated Testing). (the Director may enter acceptable variations in the test procedure here as documented in the Fact Sheet Statement of Basis and based on the test acceptability criteria as contained in Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control February, 2018). If possible, dilution water should be obtained from the receiving stream.

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

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

- b. *Accelerated Testing.* When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.
- c. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

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

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

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

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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.C.3.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 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

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- (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 28th day of the month following the completed reporting period. The first report is due on May 28, 2022. If no discharge occurs during the reporting period, “no discharge” shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Discharge to POTW.

Any wastewaters discharged to a publicly owned treatment works (POTW), either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of the Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

B. Hazardous Waste Notification. The permittee must notify the POTW, the EPA Regional Waste Management Director, the Director and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

C. General and Specific Prohibitions.

1. **General Prohibitions.** The permittee may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph 2. of this section apply to the introducing pollutants into a POTW whether or not the permittee is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Requirements.
2. **Specific Prohibitions.** The following pollutants shall not be introduced into a POTW:
 - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140°F (60°C);
 - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;
 - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C));
 - f. Petroleum oil, nonbiodegradable 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;
 - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW;
or
 - i. Any pollutant that causes pass through or interference at the POTW.

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

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.
2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
 - a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
 - b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.
3. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
4. *Publicly Owned Treatment Works or POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
5. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:
 - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
 - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
 - c. Is subject to Categorical Pretreatment Standards, or
 - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.
6. *User or Industrial User (IU)* means a source of Indirect Discharge.

III. BIOSOLIDS REQUIREMENTS

- A. The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a drinking water facility, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time.

IV. STORM WATER REQUIREMENTS.

- A. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, utilizing sufficiently sensitive test methods unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 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.

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:
 - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
 - (3) The permittee submitted notices as required under *section VI.G.3*.
- b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

- a. *Anticipated bypass.* Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
 - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
 - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
 - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
 - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
 - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,
 - (6) Any additional information requested by the Director.
- b. *Emergency Bypass.* Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

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- c. *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part V.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

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

VII. GENERAL REQUIREMENTS

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

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representative may thus be either a named individual or any individual occupying a named position.

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

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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

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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 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state or federal regulations.
- Q. Toxicity Limitation - Reopener Provision.
- 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.
 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.

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3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.
4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.

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

This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

VIII. DEFINITIONS

A. Wastewater.

1. The “7-day (and weekly) average”, other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. “Act,” means the *Utah Water Quality Act*.
4. “Acute toxicity” occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or “LC₅₀”).
5. “Bypass,” means the diversion of waste streams from any portion of a treatment facility.
6. “Chronic toxicity” occurs when the IC₂₅< 4.8% effluent. The 4.8% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
7. "IC₂₅" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
8. “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;

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- 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.
9. “CWA” means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
 10. “Daily Maximum” (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
 11. “EPA,” means the United States Environmental Protection Agency.
 12. “Director,” means Director of the Division of Water Quality.
 13. A “grab” sample, for monitoring requirements, is defined as a single “dip and take” sample collected at a representative point in the discharge stream.
 14. An “instantaneous” measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
 15. “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.
 16. “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.

**FACT SHEET AND STATEMENT OF BASIS
RIVERTON CITY
RIVERTON CITY GREEN ARTESIAN WELL DRINKING WATER PLANT
PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026212**

FACILITY CONTACTS

Person Name:	Trent Staggs
Position:	Mayor of Riverton City
Phone Number:	(801) 208-3129
Person Name:	Stacie Olson
Position:	Water Operator
Phone Number:	(801) 208-3187
Person Name:	Camille Smithson
Position:	Consultant/ Engineer
Phone Number:	(435) 406-4996
Permitee:	Riverton City (Riverton)
Facility Name:	Riverton City Green Artesian Well Drinking Water Plant
Mailing and Facility Address:	12830 South Redwood Road Riverton, Utah 84065
Telephone:	(801) 208-3187

DESCRIPTION OF FACILITY

Riverton City Green Artesian Well Drinking Water Plant will be a newly constructed facility designed to treat groundwater from the Riverton City Green Artesian Well. The new water treatment facility will supply clean drinking water to Riverton City and surrounding areas. The water will be treated using reverse osmosis and the reject waste stream water will be discharged into the Jordan River.

DISCHARGE

DESCRIPTION OF DISCHARGE

Riverton will discharge the reverse osmosis reject waste stream into the Jordan River. Water from Riverton City Green Artesian Well is expected to be constant and not highly varied.

<u>Outfall</u>	<u>Description of Discharge Point</u>
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01	Located at latitude 40°31'39" and longitude -111°55'13". The discharge from the Riverton City Green Artesian Well Drinking Water Plant enters the Jordan River.
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RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to the Jordan River, which is classified 2B, 3B, and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

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

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

A QUAL2Kw model of the Jordan River was populated and calibrated as part of the TMDL study (Stantec Consulting 2010, UDWQ 2010). The model was subsequently validated to a synoptic survey conducted by UDWQ and the Jordan River/Farmington Bay Water Quality Council (JRFBWQC) during July 2014 (UDWQ 2015). The model validation identified areas for future improvement of the model; however, the model was considered suitable for application to the wasteload allocation for ammonia only. Due to ongoing studies related to the TMDL, this wasteload allocation used for permit development does not address parameters related to dissolved oxygen, including biochemical oxygen demand (BOD), dissolved oxygen (DO), total nitrogen (TN), and total phosphorus (TP).

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and *Utah Administrative Code (UAC) R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (UAC R317-1-3.2) or Utah Water Quality Standards (UAC R317-2). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits have been developed, Best Professional Judgment (BPJ) may be used where applicable. Limitations on total suspended solids (TSS), *E. coli*, and pH are based on current Utah Secondary Treatment Standards; oil and grease are based on BPJ. Total dissolved solids (TDS) and dissolved oxygen (DO) have been determined by the Wasteload Analysis (WLA), which is attached.

Antidegradation Level I and II reviews (ADR) are required because this is a new discharge to the Jordan River (R317-2-3). As documented by the waste load allocation and reasonable potential analyses, the Level I ADR ensures that existing and designated uses are protected. The Level II ADR documents that any degradation of water quality is necessary to accommodate important economic or social development. Degradation occurs when effluent concentrations of a parameter are greater (e.g. metals) than ambient concentrations in the receiving waters. The Level II ADR also documents that the least degrading, feasible treatment option is being implemented. The Level II ADR identifies selenium as a pollutant of concern (POC) – a limit has been included in this permit based on the concentration capabilities and limitations provided by Riverton. When more information is available regarding the effluent concentrations of other metals, the permit may be modified to reflect the new findings which may include adding additional permit limitations. Until the new information is obtained and the potential modification completed, the permit includes highest expected values (listed below) for the other metals. These values have been determined by the effluent concentration presented in the Level II ADR and are intended to protect the assimilative capacity of the Jordan River. If during any sampling event the results are higher than the highest expected values, DWQ will be notified verbally within 24 hours and within 14 days by writing of Riverton receiving the results. The information will be reviewed by DWQ, and the permit may be modified to include a specific metal limit.

Metals to be Monitored			
Parameter	Sample Type	Highest expected value	Units
Arsenic	Composite	0.0091	mg/L
Cadmium	Composite	0.0004	mg/L
Chromium (VI)	Composite	0.0093	mg/L
Copper	Composite	0.0030	mg/L
Cyanide	Grab	0.0037	mg/L
Iron	Composite	0.1111	mg/L
Lead	Composite	0.0009	mg/L
Mercury*	Grab/Composite	0.0004	mg/L
Nickel	Composite	0.0093	mg/L
Selenium	Composite	0.0072 (Effluent Limit)	mg/L
Silver	Composite	0.0009	mg/L
Zinc	Composite	0.0185	mg/L

*Mercury samples must be analyzed using Method 1631 or other sufficiently sensitive method.

As presented below, the discharge will not cause a violation of water quality standards. The permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date, however, due to the lack of data, RP was not run for this permit. RP for this permit will be run before the next renewal using data and information collected during this permit cycle.

The permit limitations are:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	1.0	--	--	--	--
TSS, mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
<i>E. coli</i> , No./100mL	126	157	--	--	--
WET, Chronic Biomonitoring	--	--	--	--	IC ₂₅ > 4.8% effluent
Selenium, mg/L	--	--	--	--	0.0072
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
TDS, mg/L	--	--	--	--	1,200

SELF-MONITORING AND REPORTING REQUIREMENTS

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

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
TSS *j	Weekly	Composite	mg/L
<i>E. coli</i> *j	Weekly	Grab	No./100mL
pH	Weekly	Grab	SU
DO	Weekly	Grab	mg/L
WET – Biomonitoring *e	Quarterly		
Ceriodaphnia - Chronic	2 nd & 4 th Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 st & 3 rd Quarter	Composite	Pass/Fail
Oil & Grease *d	Weekly/When Sheen Observed	Grab	mg/L
TDS, mg/L *j	Weekly	Composite	mg/L
Temperature, mg/L *f	Weekly	Composite	mg/L
Selenium, mg/L *g	Monthly	Composite	mg/L
Metals *h *i	Monthly	Grab /Composite	mg/L

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

*b Flow measurements of effluent shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

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

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

*e The acute Ceriodaphnia will be tested during the 1st and 3rd quarters and the acute fathead minnows will be tested during the 2nd and 4th quarters. The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters.

*f Pollutant is being sampled in support of the work being done for the TMDL currently underway for the Jordan River. This Pollutant Of Concern (POC) will be monitored and reported (on a monthly basis by the facility on Discharge Monitoring Report), but will not have a limit associated with it. Riverton will report the results of all sampling done for the POC. If Riverton decides to sample more frequently for this POC, the additional data will be welcome.

*g Selenium has been identified as a POC. The ADR and associated reports were used to determine limit to be protective of water quality in the receiving waterbody.

*h Below are the metals to be monitored at frequency listed in table. If during any sampling event the 'highest expected values' are exceeded, DWQ needs to be notified within 24 hours of receiving the sample. The information will be reviewed by DWQ, and the permit may be modified to include specific metal limit.

Metals to be Monitored			
Parameter	Sample Type	Highest expected value	Units
Arsenic	Composite	0.0091	mg/L
Cadmium	Composite	0.0004	mg/L
Chromium (VI)	Composite	0.0093	mg/L
Copper	Composite	0.0030	mg/L
Cyanide	Grab	0.0037	mg/L
Iron	Composite	0.1111	mg/L
Lead	Composite	0.0009	mg/L
Mercury*	Grab/Composite	0.0004	mg/L
Nickel	Composite	0.0093	mg/L
Selenium	Composite	0.0072 (Effluent Limit)	mg/L
Silver	Composite	0.0009	mg/L
Zinc	Composite	0.0185	mg/L

*Mercury samples must be analyzed using Method 1631 or other sufficiently sensitive method.

- *i After twelve months of metal value results below the ‘highest expected values’ presented in the permit, Riverton may request Director’s Approval to reduce metals monitoring frequency. These results must be from fully operational plant effluent.
- *j After twelve months of value results below the effluent limits presented in the permit, Riverton may request Director’s Approval to reduce monitoring frequency or to completely remove the limit. These results must be from fully operational plant effluent.

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a drinking water facility, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time.

STORM WATER

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

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

PRETREATMENT REQUIREMENTS

Process wastewater is not discharged to a publicly owned treatment works (POTW). Any process wastewater that the facility may discharge to a POTW, either as direct discharge or as a hauled waste, is subject to federal, state and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated in 40 CFR Section 403, the State Pretreatment Requirements found in UAC R317-8-8, and any specific local discharge limitations

developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

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 Riverton will be required to conduct Chronic Wet tests quarterly alternating between *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnows) test species. 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 and Reviewed by
Danielle Lenz, Discharge Permit Writer
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Sandy Wingert, TMDL/Watershed
Nick von Stackelberg, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: February 2, 2022
Ended: March 10, 2022

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 on the DWQ webpage.

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

ADDENDUM TO FSSOB

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

RESPONSIVENESS SUMMARY

No comments were received during the Public Notice period.

DWQ-2021-032364

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ATTACHMENT 1

Wasteload Analysis

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

Date: December 6, 2021

Prepared by: Nicholas von Stackelberg, P.E.
Watershed Protection Section

Facility: Riverton City Water Treatment Plant
UPDES No. UT-0026212

Receiving water: Jordan River (2B, 3B, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also considers 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 Reverse osmosis reject water 1,000 gpm max. daily discharge

Receiving Water

The discharge for outfall 001 is the Jordan River. Per UAC R317-2-13.5(a), the designated beneficial uses of Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion are 2B, 3B, 4.

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

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten-year return frequency (7Q10). The 7Q10 flow was obtained from the *Jordan River Low Flow Analysis* (Hansen, Allen & Luce Inc. 2021). The critical low flow condition (7Q10) for the summer season at the discharge location is 44.0 cfs.

**Utah Division of Water Quality
Wasteload Analysis
Riverton City Water Treatment Plant
UPDES No. UT-0026212**

Receiving water quality data were obtained from monitoring site 4994520 Jordan River at Bangerter Highway. The average seasonal value was calculated for each constituent with available data in the receiving water.

TMDL

According to [Utah's 2018-2020 303\(d\) Water Quality Assessment Report](#), the receiving water for the discharge, Jordan River from 7800 South to Bluffdale at 14600 South (AU UT16020204-006) is listed as impaired for TDS, temperature and O/E bioassessment. Additional impairments are listed in downstream segments as outlined in Table 1. In order not to cause or contribute to an impairment, the discharge must be below the water quality criterion for each listed water quality parameter.

Table 1. Jordan River Segments and Impairments Downstream of Discharge.

Segment (moving downstream)	Assessment Unit	Impairment Cause
Jordan River from the confluence with Little Cottonwood Creek to 7800 South	AU UT16020204-005	TDS, Temperature, E. coli
Jordan River from 2100 South to the confluence with Little Cottonwood Creek	AU UT16020204-004	TDS, E. coli, O/E bioassessment
Jordan River from North Temple to 2100 South	AU UT16020204-003	E. coli, O/E bioassessment, Dissolved Oxygen, Total Phosphorous
Jordan River from Davis County line upstream to North Temple Street	AU UT16020204-002	E. coli, O/E bioassessment, Dissolved Oxygen
Jordan River from Farmington Bay upstream contiguous with the Davis County line	AU UT16020204-001	TDS, E. coli, O/E bioassessment, Dissolved Oxygen

Mixing Zone

Per UAC R317-2-5, the maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions. Water quality standards must be met at the end of the mixing zone. The mixing zone was not delineated, but was assumed to fall within the maximum allowable mixing zone.

Parameters of Concern

The potential parameters of concern identified for the discharge were TDS, temperature, and metals.

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a mass balance mixing analysis ([UDWQ 2019](#)). The mass balance analysis is summarized in Appendix A.

Models and supporting documentation are available for review upon request.

WET Limits

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Wasteload Analysis
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UPDES No. UT-0026212

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

Table 2: WET Limits for IC₂₅

Season	Percent Effluent	Dilution Ratio
Annual	4.8%	19.7:1

Effluent Limits

As a result of the Jordan River impairments for TDS and DO, limits were applied to these parameters in order to prevent the discharge from causing or contributing to an impairment. The discharge is not anticipated to have elevated levels of biochemical oxygen demand (BOD) or ammonia, both of which exert oxygen demands on the receiving water.

Select WQBELs are summarized in Table 3. The complete list of WQBELs is attached in Appendix A.

Table 3: Water Quality Based Effluent Limits Summary for Select Parameters

Effluent Constituent	Acute			Chronic		
	Standard	Limit	Averaging Period	Standard	Limit	Averaging Period
Flow (gpm)		1000	1 day			
Dissolved Oxygen (mg/L)	4.0-4.5	5.0	Minimum			
Total Dissolved Solids (mg/L)	1,200	1,200	Maximum			

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is required for this facility, as the flow and pollutant loads are increasing to the receiving water as a result of this new discharge.

**Utah Division of Water Quality
Wasteload Analysis
Riverton City Water Treatment Plant
UPDES No. UT-0026212**

Documents:

WLA Document: *RivertonWTPWLA_2021-12-06.docx*

Wasteload Analysis and Addendums: *RivertonWTPWLA_2021.xlsm*

References:

Hansen, Allen & Luce, Inc. 2021. *Jordan River Low Flow Analysis*. Wasatch Front Water Quality Council.

Utah Division of Water Quality. 2019. *Utah Wasteload Analysis Procedures Version 2.1*.

WASTELOAD ANALYSIS [WLA]

Date: 10/13/2021

Appendix A: Mass Balance Mixing Analysis

Discharging Facility: Riverton City Water Treatment Plant
 UPDES No: Not Assigned
 Permit Flow [gpm]: 1000.0 Max. Daily

Downstream Receiving Water: Jordan River
 Beneficial Uses: 2B, 3A, 4
 Stream Flows [cfs]: 44.00 Jordan River 7Q10 - Summer Season - Jordan River Low Flow Analysis (HAL 2021)

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

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

Model Inputs

Mixing Information

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

	Chronic Flow cfs	Acute Flow cfs	Mean Temp. Deg. C	Max Temp. Deg. C	Mean pH	Max pH
Summer Critical Season						
Receiving Water	44.0	22.0	12.2	24.1	7.60	7.60
Discharge	2.2	2.2	20.0	20.0	8.20	8.50
Mixed	46.2	24.2	12.6	23.7	8.18	8.46

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 Limitations for Whole Effluent Toxicity (WET)

WET Test	Percent Effluent	Dilution Ratio
Chronic IC ₂₅	4.8%	19.7 :1

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

Physical Parameter	Concentration	
	Minimum	Maximum
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Bacteriological

E. coli (30 Day Geometric Mean)	206 (#/100 mL)
E. coli (Maximum)	668 (#/100 mL)

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

Physical Parameter	Concentration	
	Minimum	Maximum
pH	6.5	9.0
Temperature (deg C)		20.0

Inorganics

Parameter	Acute Standard (1 Hour Average)		
	Standard	Background	Conc. Limit
Phenol (mg/L)	0.010		0.010
Hydrogen Sulfide (Undissociated) [mg/L]	0.002		0.002

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Metals-Total Recoverable

Parameter	Chronic (4-day ave)				Acute (1-hour ave)			
	Standard ¹	Background	Conc. Limit	Load Limit	Standard ¹	Background	Conc. Limit	Load Limit
			(µg/L)	(lbs/day)			(µg/L)	(lbs/day)
Aluminum	N/A ²		N/A ²	N/A ²	750	17	7,986	96
Arsenic	150	12.0	2,875	35	340	12.0	3,579	43
Cadmium	0.7	0.1	12.7	0.15	8.3	0.1	90	1.1
Chromium VI	11.0	1.9	191	2.3	16.0	1.9	155	1.9
Chromium III	259	1.9	5,330	64	5,413	1.9	58,839	707
Copper	29.4	4.7	516.6	6.21	49.6	4.7	492.7	5.92
Cyanide	5.2	3.5	39.1	0.5	22.0	3.5	205	2.5
Iron					1,000	32	10,554	127
Lead	17.6	0.45	356	4.3	451	0.5	4897	59
Mercury ²	0.012	0.008	0.090	0.001	2.4	0.008	26.0	0.31
Nickel	162	5.0	3,270	39	1,460	5.0	15,831	190
Selenium	4.6	1.4	67.8	0.815	18.4	1.4	186.3	2.24
Silver					38.1	0.5	409	4.9
Tributyltin ²	0.072	0.048	0.541	0.007	0.46	0.0	4.5	0.05
Zinc	374	23.6	7,286	88	374	23.6	3,830	46

1: Based upon a Hardness of 382.7 mg/l as CaCO3

2: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCQ 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).

Organics [Pesticides]

Parameter	Chronic (4-day ave)				Acute (1-hour ave)			
	Standard	Background	Conc. Limit	Load Limit	Standard	Background	Conc. Limit	Load Limit
			(µg/L)	(lbs/day)			(µg/L)	(lbs/day)
Aldrin					1.5		1.5	
Chlordane	0.0043		0.0043		1.2		1.2	
DDT, DDE	0.001		0.001		0.55		0.55	
Diazinon	0.17		0.17		0.17		0.17	
Dieldrin	0.0056		0.0056		0.24		0.24	
Endosulfan, a & b	0.056		0.056		0.11		0.11	
Endrin	0.036		0.036		0.086		0.086	
Heptachlor & H. epoxide	0.0038		0.0038		0.26		0.26	
Lindane	0.08		0.08		1.0		1.0	
Methoxychlor					0.03		0.03	
Mirex					0.001		0.001	
Nonylphenol	6.6		6.6		28.0		28.0	
Parathion	0.0130		0.0130		0.066		0.066	
PCB's	0.014		0.014					
Pentachlorophenol	15.0		15.0		19.0		19.0	
Toxephene	0.0002		0.0002		0.73		0.73	

Radiological

Parameter	Standard	Maximum Concentration
Gross Alpha (pCi/L)	15	

Utah Division of Water Quality

Numeric Criteria for the Protection of Human Health from Consumption of Water and Fish
Class 1C (Water and Organism)

Class 3 (Organism Only)

Toxic Organics	Class 1C (Water and Organism)				Class 3 (Organism Only)			
	Standard	Background	Conc. Limit (µg/L)	Load Limit (lbs/day)	Standard	Background	Conc. Limit (µg/L)	Load Limit (lbs/day)
Antimony	5.6		N/A	N/A	640		640	
Copper	1300		N/A	N/A				
Nickel	610		N/A	N/A	4600		4600	
Selenium	170		N/A	N/A	4200		4200	
Thallium	0.24		N/A	N/A	0.47		0.47	
Zinc	7400		N/A	N/A	26000		26000	
Cyanide	4		N/A	N/A	400		400	
Asbestos (million fibers/L)	7		N/A	N/A				
2,3,7,8-TCDD Dioxin	5.00E-09		N/A	N/A	5.1E-09		5.1E-09	
Acrolein	3		N/A	N/A	400		400	
Acrylonitrile	0.061		N/A	N/A	7		7.0	
Benzene	2.1		N/A	N/A	51		51	
Bromoform	7		N/A	N/A	120		120	
Carbon Tetrachloride	0.4		N/A	N/A	5		5.0	
Chlorobenzene	100		N/A	N/A	800		800	
Chlorodibromomethane	0.8		N/A	N/A	21		21	
Chloroform	60		N/A	N/A	2000		2000	
Dalapon	200		N/A	N/A				
Dichlorobromomethane	0.95		N/A	N/A	27		27	
1,2-Dichloroethane	9.9		N/A	N/A	2000		2000	
1,1-Dichloroethylene	300		N/A	N/A	20000		20000	
1,2-Dichloropropane	0.9		N/A	N/A	31		31	
1,3-Dichloropropene	0.27		N/A	N/A	12		12	
Ethylbenzene	68		N/A	N/A	130		130	
Ethylene Dibromide	0.05		N/A	N/A				
Methyl Bromide	100		N/A	N/A	10000		10000	
Methylene Chloride	20		N/A	N/A	1000		1000	
1,1,2,2-Tetrachloroethane	0.2		N/A	N/A	3		3.0	
Tetrachloroethylene	10		N/A	N/A	29		29	
Toluene	57		N/A	N/A	520		520	
1,2 -Trans-Dichloroethyle	100		N/A	N/A	4000		4000	
1,1,1-Trichloroethane	10000		N/A	N/A	200000		200000	
1,1,2-Trichloroethane	0.55		N/A	N/A	8.9		8.9	
Trichloroethylene	0.6		N/A	N/A	7		7.0	
Vinyl Chloride	0.022		N/A	N/A	1.6		1.6	
2-Chlorophenol	30		N/A	N/A	800		800	
2,4-Dichlorophenol	10		N/A	N/A	60		60	
2,4-Dimethylphenol	100		N/A	N/A	3000		3000	
2-Methyl-4,6-Dinitrophenol	2		N/A	N/A	30		30	
2,4-Dinitrophenol	10		N/A	N/A	300		300	
3-Methyl-4-Chlorophenol	500		N/A	N/A	2000		2000	
Penetachlorophenol	0.03		N/A	N/A	0.04		0.04	
Phenol	4000		N/A	N/A	300000		300000	
2,4,5-Trichlorophenol	300		N/A	N/A	600		600	
2,4,6-Trichlorophenol	1.5		N/A	N/A	2.8		2.8	
Acenaphthene	70		N/A	N/A	90		90	
Anthracene	300		N/A	N/A	400		400	
Benzidine	0.00014		N/A	N/A	0.011		0.011	
BenzoaAnthracene	0.0012		N/A	N/A	0.0013		0.0013	
BenzoaPyrene	0.00012		N/A	N/A	0.00013		0.00013	
BenzobFluoranthene	0.0012		N/A	N/A	0.0013		0.0013	
BenzokFluoranthene	0.012		N/A	N/A	0.013		0.013	

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	Class 1C (Water and Organism)				Class 3 (Organism Only)			
	Standard	Background	Conc. Limit (µg/L)	Load Limit (lbs/day)	Standard	Background	Conc. Limit (µg/L)	Load Limit (lbs/day)
Toxic Organics								
Bis2-Chloro1methylether	0.00015		N/A	N/A	0.017		0.017	
Bis2-Chloro1methylethylether	200		N/A	N/A	4000		4000	
Bis2-ChloroethylEther	0.03		N/A	N/A	2.2		2.2	
Bis2-Chloroisopropy1Ether	1400		N/A	N/A	65000		65000	
Bis2-EthylhexylPhthalate	0.32		N/A	N/A	0.37		0.37	
Butylbenzyl Phthalate	0.1		N/A	N/A	0.1		0.1	
2-Chloronaphthalene	800		N/A	N/A	1000		1000	
Chrysene	0.12		N/A	N/A	0.13		0.13	
Dibenzoa, (h)Anthracene	0.00012		N/A	N/A	0.00013		0.00013	
1,2-Dichlorobenzene	1000		N/A	N/A	3000		3000	
1,3-Dichlorobenzene	7		N/A	N/A	10		10.0	
1,4-Dichlorobenzene	300		N/A	N/A	900		900	
3,3-Dichlorobenzidine	0.049		N/A	N/A	0.15		0.15	
Diethyl Phthalate	600		N/A	N/A	600		600	
Dimethyl Phthalate	2000		N/A	N/A	2000		2000	
Di-n-Butyl Phthalate	20		N/A	N/A	30		30	
2,4-Dinitrotoluene	0.049		N/A	N/A	1.7		1.7	
Dinitrophenols	10		N/A	N/A	1000		1000	
1,2-Diphenylhydrazine	0.03		N/A	N/A	0.2		0.2	
Fluoranthene	20		N/A	N/A	20		20	
Fluorene	50		N/A	N/A	70		70	
Hexachlorobenzene	0.000079		N/A	N/A	0.000079		0.000079	
Hexachlorobutidine	0.01		N/A	N/A	0.01		0.01	
Hexachloroethane	0.1		N/A	N/A	0.1		0.1	
Hexachlorocyclopentadiene	4		N/A	N/A	4		4.0	
Ideno 1,2,3-cdPyrene	0.0012		N/A	N/A	0.0013		0.0013	
Isophorone	34		N/A	N/A	1800		1800	
Nitrobenzene	10		N/A	N/A	600		600	
N-Nitrosodiethylamine	0.0008		N/A	N/A	1.24		1.2	
N-Nitrosodimethylamine	0.00069		N/A	N/A	3		3	
N-Nitrosodi-n-Propylamine	0.005		N/A	N/A	0.51		0.5	
N-Nitrosodiphenylamine	3.3		N/A	N/A	6		6	
N-Nitrosopyrrolidine	0.016		N/A	N/A	34		34	
Pentachlorobenzene	0.1		N/A	N/A	0.1		0.1	
Pyrene	20		N/A	N/A	30		30	
1,2,4-Trichlorobenzene	0.071		N/A	N/A	0.076		0.076	
Aldrin	0.0000077		N/A	N/A	0.0000077		0.0000077	
alpha-BHC	0.00036		N/A	N/A	0.00039		0.00039	
beta-BHC	0.008		N/A	N/A	0.014		0.014	
gamma-BHC (Lindane)	4.2		N/A	N/A	4.4		4.4	
Hexachlorocyclohexane (HCH)	0.0066		N/A	N/A	0.01		0.01	
Chlordane	0.00031		N/A	N/A	0.00032		0.00032	
4,4-DDT	0.00003		N/A	N/A	0.00003		0.00003	
4,4-DDE	0.000018		N/A	N/A	0.000018		0.000018	
4,4-DDD	0.00012		N/A	N/A	0.00012		0.00012	
Dieldrin	0.0000012		N/A	N/A	0.0000012		0.0000012	
alpha-Endosulfan	20		N/A	N/A	30		30	
beta-Endosulfan	20		N/A	N/A	40		40	
Endosulfan Sulfate	20		N/A	N/A	40		40	
Endrin	0.03		N/A	N/A	0.03		0.03	
Endrin Aldehyde	1		N/A	N/A	1		1.0	
Heptachlor	0.0000059		N/A	N/A	0.0000059		0.0000059	
Heptachlor Epoxide	0.000032		N/A	N/A	0.000032		0.000032	
Methoxychlor	0.02		N/A	N/A	0.02		0.02	
Polychlorinated Biphenyls (PCB)	0.000064		N/A	N/A	0.000064		0.000064	
Toxaphene	0.0007		N/A	N/A	0.00071		0.00071	

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Maximum Concentration

Parameter	Standard	Background	Conc. Limit	Load Limit	Impaired
				(lbs/day)	
Total Dissolved Solids (mg/L)	1,200		1,200	14,421	
Boron (µg/L)	750	305	5,148	62	
Arsenic, Dissolved (µg/L)	100	12.0	969	12	
Cadmium, Dissolved (µg/L)	10	0.1	107	1.3	
Chromium, Dissolved (µg/L)	100	1.9	1,069	13	
Copper, Dissolved (µg/L)	200	4.7	2,128	26	
Lead, Dissolved (µg/L)	100	0.5	1,083	13	
Selenium, Dissolved (µg/L)	50	1.4	530	6	
Gross Alpha (pCi/L)	15		15		

ATTACHMENT 2

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis¹. They are;

- Outcome A: A new effluent limitation will be placed in the permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
- Outcome D: No limitation or routine monitoring requirements are in the permit.

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date, however, due to the lack of data, RP was not run for this permit. RP for this permit will be ran before the next renewal using data and information collected during this permit cycle.

¹ See Reasonable Potential Analysis Guidance for definitions of terms

ATTACHMENT 3

Antidegradation Review

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ANTIDegradation REVIEW FORM

UTAH DIVISION OF WATER QUALITY

Instructions

The objective of antidegradation rules and policies is to protect existing high quality waters and set forth a process for determining where and how much degradation is allowable for socially and/or economically important reasons. In accordance with Utah Administrative Code (UAC R317-2-3), an antidegradation review (ADR) is a permit requirement for any project that will increase the level of pollutants in waters of the state. The rule outlines requirements for Level I and Level II ADRs, as well as public comment procedures. This review form is intended to assist the applicant and Division of Water Quality (DWQ) staff in complying with the rule but is not a substitute for the complete rule in R317-2-3.5. Additional details can be found in the *Utah Antidegradation Implementation Guidance* and relevant sections of the guidance are cited in this review form.

ADRs should be among the first steps of an application for a UPDES permit because the review helps establish treatment expectations. The level of effort and amount of information required for the ADR depends on the nature of the project and the characteristics of the receiving water. To avoid unnecessary delays in permit issuance, the Division of Water Quality (DWQ) recommends that the process be initiated at least one year prior to the date a final approved permit is required.

DWQ will determine if the project will impair beneficial uses (Level I ADR) using information provided by the applicant and whether a Level II ADR is required. The applicant is responsible for conducting the Level II ADR. For the permit to be approved, the Level II ADR must document that all feasible measures have been undertaken to minimize pollution for socially, environmentally or economically beneficial projects resulting in an increase in pollution to waters of the state.

For permits requiring a Level II ADR, this antidegradation form must be completed and approved by DWQ before any UPDES permit can be issued. Typically, the ADR form is completed in an iterative manner in consultation with DWQ. The applicant should first complete the statement of social, environmental and economic importance (SEEI) in Part C and determine the parameters of concern (POC) in Part D. Once the POCs are agreed upon by DWQ, the alternatives analysis and selection of preferred alternative in Part E can be conducted based on minimizing degradation resulting from discharge of the POCs. Once the applicant and DWQ agree upon the preferred alternative, the review is considered complete, and the form must be signed, dated, and submitted to DWQ.

For additional clarification on the antidegradation review process and procedures, please contact Nicholas von Stackelberg (801-536-4374) or Dave Wham (801-536-4337).

Utah Division of Water Quality Antidegradation Review Form

Part A: Applicant Information

Facility Name: Riverton City Green Artesian Well

Facility Owner: Riverton City

Facility Location: 12400 River Vista Drive

Form Prepared By: Sunrise Engineering

Outfall Number: 001

Receiving Water: Jordan River

What Are the Designated Uses of the Receiving Water (R317-2-6)?

Domestic Water Supply: None
Recreation: 2B - Secondary Contact
Aquatic Life: 3A - Cold Water Aquatic Life
Agricultural Water Supply: 4
Great Salt Lake: None

Category of Receiving Water (R317-2-3.2, -3.3, and -3.4): Category 3

UPDES Permit Number (if applicable): N/A

Effluent Flow Reviewed: 700 gpm

Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

What is the application for? (check all that apply)

- A UPDES permit for a new facility, project, or outfall.
- A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.
- A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.
- A UPDES permit renewal with no changes in facility operations.

Part B. Is a Level II ADR required?

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

Yes (Proceed to Part B2 of the Form)

No No Level II ADR is required and there is no need to proceed further with review questions.

B2. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review. For a few pollutants, such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Refer to Section 3.3 of Implementation Guidance)

Yes (Proceed to Part B3 of the Form)

No No Level II ADR is required and there is no need to proceed further with review questions.

B3. Are water quality impacts of the proposed project temporary and limited (Section 3.3.3 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

Yes Identify the reasons used to justify this determination in Part B3.1 and proceed to Part G. No Level II ADR is required.

No A Level II ADR is required (Proceed to Part C)

B3.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.3 of Implementation Guidance):

- Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

- a) The length of time during which water quality will be lowered:
- b) The percent change in ambient concentrations of pollutants:
- c) Pollutants affected:
- d) Likelihood for long-term water quality benefits:
- e) Potential for any residual long-term influences on existing uses:
- f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts:

Additional justification, as needed:

Level II ADR

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name:

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located? *The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.*

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

This deployment will use previous unused water resources that the public have already paid for, provide additional water resources to the west bench of Salt Lake County that is growing significantly and will need additional water resources. This will also add more jobs to the Riverton City Water team.

This deployment will be cheaper for Riverton City than the water that they are currently sourcing.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

The deployment of this Reverse Osmosis system will enable Riverton City to use water resources that have already been developed.

Discharging water into the Jordan River would help contribute to low water levels year round. This would help the river to support all other uses.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

The equipment will be stored on a small portion of a public park. That small portion of the park will no longer be capable of recreation use.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

According to the Utah Division of Water Rights, Riverton City has added 2,633 estimated residential connections to their culinary water system in the last five years. That is an average growth rate of 4.8% per year. That is a very large growth rate in a small amount of time. Riverton City is looking to treat the water from the Green Artesian well in order to add additional water source to their system, with the least cost to their users. This well water would not be put to beneficial use without the treatment of this water.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

A Toray Low Pressure Reverse Osmosis system will be installed in a building near the well. The discharge would be piped to the Jordan River.

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern. *Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.*

Parameters of Concern:

Rank	Pollutant	Ambient		Effluent	
		Concentration / Units	Basis	Concentration / Units	Basis
1	Total Dissolved Solids			1,198 mg/L	
2	Selenium	0.0014 mg/L		0.0072 mg/L	
3	Temperature		12.2 C		20 C
4	Cadium	0.0001 mg/L		0.0004 mg/L	
5	Chromium	0.0019 mg/L		0.0093 mg/L	
6	Cyanide	0.0035 mg/L		0.0037 mg/L	
7	Lead	0.00045 mg/L		0.0009 mg/L	
8	Mercury	0.000008 mg/L		0.0004 mg/L	
9	Nickel	0.005 mg/L		0.0093 mg/L	
10	Silver	0.0005 mg/L		0.0009 mg/L	

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification
Arsenic	0.012 mg/L	0.0091 mg/L	Lower than the WLA
Copper	0.0047 mg/L	0.0030 mg/L	Lower than the WLA
Zinc	0.023 mg/L	0.0185 mg/L	Lower than the WLA

Part E. Alternative Analysis Requirements of a Level II

Antidegradation Review. *Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. For new and expanded discharges, the Alternatives Analysis must be prepared under the supervision of and stamped by a Professional Engineer registered with the State of Utah. DWQ may grant an exception from this requirement under certain circumstances, such as the alternatives considered potentially feasible do not include engineered treatment alternatives. More information regarding the requirements for the Alternatives Analysis is available in Section 5 of the Implementation Guidance.*

E1. The UPDES permit is being renewed without any changes to flow or concentrations. Alternative treatment and discharge options including changes to operations and maintenance were considered and compared to the current processes. No economically feasible treatment or discharge alternatives were identified that were not previously considered for any previous antidegradation review(s).

Yes (Proceed to Part F)

No or Does Not Apply (Proceed to E2)

E2. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Facility Plan, if available.

Report Name:

Riverton City Green Artesian Well Alternative Treatment Report

Waste Stream Treatment Analysis

E3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

E4. Were any of the following alternatives feasible and affordable?

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	No	According to the EPA website on the NPDES Water Quality Trading there is no existing water quality trading to join in Utah. It would also be very difficult to purchase a different companies discharge credits for the Jordan River.
Water Recycling/Reuse	No	The TDS level of the effluent will be too high for the effluent to be used as irrigation of the adjacent park.
Land Application	No	The TDS level of the effluent will be too high for the effluent to be used as irrigation of the adjacent park.
Connection to Other Facilities	No	There are no other facilities nearby that the Reverse Osmosis System may discharge to.
Upgrade to Existing Facility	Yes	
Total Containment	No	There is not enough land nearby to create a total containment pond.
Improved O&M of Existing Systems	No	The well is existing, but has not been in use. There are no existing treatment systems in place.
Seasonal or Controlled Discharge	No	It is not feasible to create a tank large enough to allow for seasonal discharge only.
New Construction	No	The well is existing, and it is more affordable to treat the existing well water than to create a new source of water for the City.
No Discharge	No	The City needs more culinary water, and the well does not meet Division of Drinking Water Standards without additional treatment.

E5. From the applicant's perspective, what is the preferred treatment option?

The preferred method would be to upgrade the existing well with a reverse osmosis treatment plant. This would require the plant to discharge the effluent to the Jordan River.

E6. Is the preferred option also the least polluting feasible alternative?

Yes

No

If no, what were less degrading feasible alternative(s)?

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

Part F. Optional Information

F1. Does the applicant want to conduct optional public review(s) in addition to the mandatory public review? Level II ADRs are public noticed for a thirty day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

No

Yes

F2. Does the project include an optional mitigation plan to compensate for the proposed water quality degradation?

No

Yes


Report Name:

Part G. Certification of Antidegradation Review

G1. Applicant Certification

The form should be signed by the same responsible person who signed the accompanying permit application or certification.

Based on my inquiry of the person(s) who manage the system or those persons directly responsible for gathering the information, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name: John L. Holbrook
Signature: 
Date: 1-12-22

G2. DWQ Approval

To the best of my knowledge, the ADR was conducted in accordance with the rules and regulations outlined in UAC R-317-2-3.

Print Name: _____
Signature: _____
Date: _____

RIVERTON CITY WASTE STREAM TREATMENT ANALYSIS

January 12, 2022

Prepared by:

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1.0 INTRODUCTION

This report is meant to accompany the Antidegradation Review Form as part of the Riverton City's Green Artesian Well Reverse Osmosis Discharge permit application.

Riverton City purchases the majority of their water source from the Jordan River Water Conservancy District. This is expensive and limits the growth that Riverton City can experience.

Riverton City currently owns the Green Artesian Well, but they are not able to use the water from the well because the water does not meet Division of Drinking Water standards. Though the Green Artesian Well remains unused, it has already been paid for and could potentially provide additional water resources to the west bench of Salt Lake County at a lower cost than the current water supply the City is sourcing. For this reason, the City hopes to use a reverse osmosis (RO) system to treat the well water to provide culinary water that meets Division of Drinking Water standards. The proposed RO system will be 46% efficient; therefore, the RO reject will have a higher concentration of toxic metals than the source water.

The City has been monitoring the water quality of the well for the past several years. Samples were taken annually, between 2017 and 2020, and used to in the analysis of this well treatment. Additional samples were taken in 2021 as Riverton City began to explore the possibility of turning the Riverton City well into a culinary well. The results of the sampling are shown on Table 1. Table 1 also shows the calculated RO reject concentration. To be conservative, the RO rejection concentrations were calculated using the maximum values from the historical data. The minimum level detectable was assigned if the samples listed the parameter as non-detectable.

Table 1

Riverton Well - Compiled Historical Analyses								
	7/18/17	9/10/19	7/15/20	4/15/21	8/12/21	Average	Max	RO 46% Recovery Reject Concn.
TDS (mg/L)	576	584	572	620	608	565	620	1148.1
Selenium (µg/L)	3.9	2.9	2.4	2.6	2.8	2	4	7.2
Arsenic (mg/L)	0.0049	0.0045	0.0045	0.0032		0.0043	0.0049	0.0091
* Cadmium (mg/L)	0.0002	0.0002	0.0002			0.0002	0.0002	0.0004
* Chromium (mg/L)	0.005	0.005	0.005			0.0050	0.0050	0.0093
Copper (mg/L)	0.0016	0.001				0.0013	0.0016	0.0030
* Cyanide (mg/L)	0.002	0.002	0.002			0.0020	0.0020	0.0037
* Lead (mg/L)	0.0005	0.0005				0.0005	0.0005	0.0009
* Mercury (mg/L)	0.0002	0.0002	0.0002			0.0002	0.0002	0.0004
* Nickel (mg/L)	0.005	0.005	0.005			0.0050	0.0050	0.0093
* Silver (mg/L)	0.0005	0.0005				0.0005	0.0005	0.0009
* Zinc (mg/L)	0.01	0.01				0.0100	0.0100	0.0185
Iron (mg/L)	0.06	0.05		0.03		0.0467	0.0600	0.1111

* Indicates that levels were considered non-detectable during sampling. To be conservative, the minimum level detectable was assigned.

The purpose of this report is to identify parameters of concern and determine if secondary treatment is recommended prior to discharge. To identify these parameters, the RO reject concentration found in Table 1 was compared to the Chronic Metals-Total Recoverable Background levels, shown on page A-2 of the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review, dated December 6, 2021, see Table 2.

Table 2

Comparison of Maximum RO Recovery Reject Concentration Vs. Chronic Metals-Recoverable Background Levels			
	RO 46% Recovery Reject Concen.	Chronic Metals-Recoverable Background Levels	Acute (1-hour Ave) Background Levels
TDS (mg/L)	1148.1		
Selenium (µg/L)	7.2	1.4	
Arsenic (µg/L)	9.1	12	
* Cadmium (µg/L)	0.4	0.1	
* Chromium (µg/L)	9.3	1.9	
Copper (µg/L)	3.0	4.7	
* Cyanide (µg/L)	3.7	3.5	
* Lead (µg/L)	0.9	0.45	
* Mercury (µg/L)	0.4	0.008	
* Nickel (µg/L)	9.3	5	
* Silver (µg/L)	0.9		0.5
* Zinc (µg/L)	18.5	23.6	
Iron (µg/L)	111.1		32

* Indicates that levels were considered non-detectable during sampling. To be conservative, the minimum level detectable was assigned.

The Division of Water Quality also provided the Jordan Basin Water Reclamation Facility’s wasteload analysis (WLA), which was also used for comparison.

2.0 PARAMETERS OF CONCERN

Parameters of concern were identified by comparing the projected maximum concentration with to the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review, dated December 6, 2021. Parameters in which the projected concentration exceeded the levels identified on the wasteload analysis are of concern and will discussed below.

2.1 SELENIUM

A 46% efficient system would also take the 3.4 µg/L of selenium into the RO and discharge 7.2 µg/L of selenium. We began evaluating selenium reduction methods in May due to the chronic limit of 4.6 µg/L, indicated on a waste load analysis dated May 14, 2020. Zero Valent Iron (ZVI) was investigated as a method to reduce the selenium concentration in the RO reject. This method proved to be effective in reducing the selenium; however, it significantly increases the concentration of iron in the water way above and adds significant construction and operational cost to the City.

Through email communication on October 25, 2021 and the Utah’s Combined 2018/2020 Integrated Report, selenium was delisted as a pollutant of concern in the segment of the Jordan River that the proposed Riverton facility would discharge into. The Jordan Basin Water Reclamation Facility’s wasteload analysis shows a chronic limit for selenium of 8.7 µg/L. The proposed discharge of 7.2 µg/L is below the chronic limit used by the Jordan Basin Water Reclamation Facility; therefore, no additional treatment is recommended at this time.

2.2 CADMIUM

When sampling, cadmium was undetectable. To be conservative, the minimum level detectable (0.2 µg/L) was assigned as the cadmium concentration. The proposed 46% efficient system would concentrate the assumed 0.2 µg/L of cadmium and discharge 0.4 µg/L cadmium. The discharge concentration of 0.4 µg/L is greater than the Chronic Metal-Total Recoverable Background level (0.1 µg/L) assigned in the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level 1 Review and is listed as a parameter of concern; however, it is less than the chronic limit of 0.46 µg/L used by the Jordan Basin Water Reclamation Facility. Therefore, no additional treatment is recommended for cadmium at this time.

2.3 CHROMIUM

Chromium was also undetectable during sampling. Therefore, to be conservative, the minimum level detectable was assigned to chromium, or 5 µg/L. The proposed RO system would concentrate the assumed chromium level to a discharge of 9.3 µg/L. Page A-2 of the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review shows a chronic background level for chromium VI and chromium III of 1.9 µg/L.

The chromium concentrate of the Jordan Basin Water Reclamation Facility's WLA shows a chromium III limit of 526 µg/L and a chromium VI limit of 19.2 µg/L, both of which are considerably higher than the maximum calculated RO reject concentration. For this reason, no additional treatment is recommended for chromium at this time.

2.4 CYANIDE

Cyanide was also undetectable during the sampling; therefore, to be conservative, the minimum level detectable was assigned, or 2 µg/L. The cyanide discharge concentration (3.7 µg/L) is greater the background level indicated on the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review, which shows a level of 3.5 µg/L; however, it is less than the chronic limit of 11.3 µg/L used by the Jordan Basin Water Reclamation Facility. No additional treatment is recommended for cyanide at this time.

2.5 LEAD

Lead was undetectable in the water samples. To remain conservative, the minimum level detectable was assigned, which is 0.5 µg/L in the case of lead. With a 46% efficient RO system, the discharge would have a concentration of 0.9 µg/L of lead. According to the wasteload analysis dated December 6, 2021, the chronic background limit for lead was 0.45 µg/L; therefore, the lead concentration has to the potential to be high, comparatively.

The lead concentration in the Jordan Basin Water Reclamation Facility's WLA shows a limit for lead at 34.5 µg/L, which is higher than the anticipated discharge concentrate. Therefore, no treatment is recommended at this time.

2.6 MERCURY

Mercury was also undetectable in the water samples, so the conservative level of 0.2 µg/L was assigned. Using this minimum detectable level and treatment through the proposed 46% efficient system, the maximum mercury concentration in the discharge would be 0.4 µg/L. The Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review shows a chronic background level of 0.008 µg/L for mercury. Additionally, the Jordan Basin Water Reclamation Facility's WLA shows a chronic limit

of 0.026 µg/L. In comparison, the mercury concentration in the RO recovery reject has the potential of being too high; however, the actual mercury levels are unknown. It is possible that the mercury level is much lower than assigned. For this reason, no treatment is recommended at this time. It is also recommended that mercury should be monitored over time and additional treatment should be evaluated if the concentration is found to exceed 0.026 µg/L.

2.7 NICKEL

Nickel, like many of the other parameters of concern, was undetectable during sampling. To remain conservative, the minimum level detectable was assigned to nickel, or 5 µg/L. A 46% efficient system would also take the 5 µg/L of nickel into the RO and discharge 9.3 µg/L of nickel. A concentrate of 9.3 µg/L is greater than that shown on the Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review (shown at 5 µg/L); however, it is less than the chronic limit of 327 µg/L, shown on the Jordan Basin Water Reclamation Facility's WLA. No treatment is recommended at this time.

2.8 SILVER

Silver was also undetectable in the water samples. For this reason, the minimum level detectable was assigned to silver, or 0.5 µg/L and after treatment, the discharge concentration of silver would be approximately 0.9 µg/L. The Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review indicates an acute (1-hour ave background) level of 0.5 µg/L, which is lower than the discharge concentration. The silver concentration in the Jordan Basin Water Reclamation Facility's WLA shows an acute limit for silver at 53 µg/L, which is higher than the anticipated discharge concentrate. Therefore, no treatment is recommended at this time.

2.9 IRON

A 46% efficient system would take the 46.7 µg/L of iron into the RO and discharge 111 µg/L of iron. The Riverton City Water Treatment Plant Wasteload Analysis and Antidegradation Level I Review indicates an acute (1-hour ave background) level of 32 µg/L, which is lower than the discharge concentration. The iron concentration in the Jordan Basin Water Reclamation Facility's WLA shows an acute limit for iron at 1581 µg/L, which is higher than the anticipated discharge concentrate. Therefore, no treatment is recommended at this time.