

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. **UT00202014**
Storm Water Permit No. **UTR000000**

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

LEWISTON CITY

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

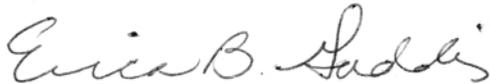
and to discharge storm water,

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

This permit shall become effective on January 1, 2018

This permit expires at midnight on July 31, 2022

Signed this 18th day of December, 2017.



Erica Brown Gaddis, PhD
Director

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PART I
DISCHARGE PERMIT NO. UT0020214
WASTEWATER

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	Located at latitude 40° 58' 00" and longitude 111° 49' 20" through a pipe to the Cub 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*, 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 ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.21	--	--	--	--
BOD ₅ , mg/L	25	35	--	--	--
BOD ₅ Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L	--	--	--	--	14.4
Oil & Grease, mg/L	--	--	--	--	10
TRC, mg/L	--	--	--	--	0.14
<i>E. coli</i> , No./100mL	126	157	--	--	--
pH, Standard Units	--	--	--	6.5	9

Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2, 3}	Instantaneous	Recorder	MGD

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

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Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
BOD ₅ , Influent ⁴	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
TSS, Influent ⁴	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
DO	Monthly	Grab	mg/L
TRC, mg/L	Monthly	Grab	mg/L
Oil & Grease ⁵	Monthly	Grab	mg/L
Total Ammonia (as N) ⁶	Monthly	Composite	mg/L
Orthophosphate, (as P) ⁶	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Phosphorus ⁶	Monthly	Composite	mg/L
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) ⁶	Monthly	Composite	mg/L
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃ ⁶	Monthly	Composite	mg/L
Nitrite, NO ₂ ⁶	Monthly	Composite	mg/L
Metals ⁷ , Influent	Once	Composite/Grab	mg/L
Effluent	Once	Composite/Grab	mg/L
Organic Toxics ⁸	Once	Grab	mg/L

Metals to be Monitored for RP
Total Arsenic
Total Cadmium
Total Chromium
Total Copper
Total Cyanide
Total Lead
Total Mercury
Total Molybdenum
Total Nickel
Total Selenium
Total Silver

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

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

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

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

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

⁷ Testing for metals listed in the table below must be performed during the first discharge of the renewed permits life cycle. The testing is conducted to support future RP analysis.

⁸ Testing must be performed during the first discharge of the renewed permits life cycle. A list of the organics to be tested can be found in 40CFR122 appendix D table II.

Metals to be Monitored for RP
Total Zinc

3. Compliance Schedule

There is no Compliance Schedule included in this renewal permit.

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

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

Lewiston City is a minor facility infrequently discharging approximately a minor amount of effluent. Comparison of the laboratory analysis performed on their effluent to the waste load analysis on the Cub River, Lewiston's discharge is not likely to be toxic. As a result, biomonitoring of the effluent will not be required. However, the permit will contain a WET reopener provision.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)⁹ 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 February 28, 2018. 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

⁹ Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. INDUSTRIAL PRETREATMENT PROGRAM

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

1. Significant industrial user (SIU) is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:
 - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
 - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
 - c. Is subject to Categorical Pretreatment Standards, or
 - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.
2. Local Limit is defined as a limit designed to prevent pass through and/or interference. And is developed in accordance with 40 CFR 403.5(c).

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

C. Industrial Waste Survey (IWS)

1. As required by *Part II.B.1*, the industrial waste survey consists of;
 - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
 - b. Determination of the qualitative and quantitative characteristics of each discharge, and
 - c. Appropriate production data.
2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.

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4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.

D. General and Specific Prohibitions

1. Developed pursuant to *Section 307 of The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:
 - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, 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; or,
 - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
 - i. Any pollutant that causes pass through or interference at the POTW.
2. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307 of the Water Quality Act of 1987 as amended*

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(*WQA*). (See 40 CFR, Subchapter N, Parts 400 through 500, for specific information).

- E. Signification Industrial Users Discharging to the POTW. The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;
1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301* or *306* of the *WQA* if it were directly discharging those pollutants;
 2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
 3. For the purposes of this section, adequate notice shall include information on:
 - a. The quality and quantity of effluent to be introduced into such treatment works; and,
 - b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.
 4. Any SIU that must comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
- F. Change of Conditions. At such time as a specific pretreatment limitation becomes applicable to an industrial user of the permittee, the Director may, as appropriate, do the following:
1. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;
 2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations* at 40 CFR 403;
 3. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste; and/or,
 4. Require the permittee to develop an approved pretreatment program.
- G. Legal Action. The Director retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a permit violation

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

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

III. BIOSOLIDS REQUIREMENTS

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

IV. STORM WATER REQUIREMENTS.

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

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

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

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V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.
- F. Records Contents. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) and time(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and,
 6. The results of such analyses.
- G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.
- H. Twenty-four Hour Notice of Noncompliance Reporting.
1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality at (801) 536-4300 or the 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 maximum daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected;
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*
- I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*
- J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

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

PART VI
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VI. COMPLIANCE RESPONSIBILITIES

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

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- 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 IV.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.

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VII. GENERAL REQUIREMENTS

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

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

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

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

H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

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1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
 2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
 3. Revisions to the current CWA § 208 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 of federal regulations.
- Q. Toxicity Limitation - Reopener Provision:
- 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.

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

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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. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
5. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
 - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
 - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
 - c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
 - d. Continuous sample volume, with sample collection rate proportional to flow rate.
6. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

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7. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
8. "EPA," means the United States Environmental Protection Agency.
9. "Director," means Director of the Division of Water Quality.
10. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
11. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
12. "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.
13. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

B. Storm Water.

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.
3. "Co-located industrial activity" means when a facility has industrial activities being conducted onsite that are described under more than one of the coverage sections of *Appendix II* in the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity. Facilities with co-located industrial activities shall comply with all applicable monitoring and pollution prevention plan requirements of each section in which a co-located industrial activity is described.
4. "Commercial Treatment and Disposal Facilities" means facilities that receive, on a commercial basis, any produced hazardous waste (not their own) and treat or dispose of those wastes as a service to the generators. Such facilities treating and/or disposing exclusively residential hazardous wastes are not included in this definition.

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5. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.
6. "Land application unit" means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.
7. "Municipal separate storm sewer system" (large and/or medium) means all municipal separate storm sewers that are either:
 - a. Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (at the issuance date of this permit, Salt Lake City is the only city in Utah that falls in this category); or
 - b. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (at the issuance date of this permit Salt Lake County is the only county that falls in this category); or
 - c. Owned or operated by a municipality other than those described in paragraph *a.* or *b.* (above) and that are designated by the *Director* as part of the large or medium municipal separate storm sewer system.
8. "NOI" means "notice of intent", it is an application form that is used to obtain coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
9. "NOT" means "notice of termination", it is a form used to terminate coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
10. "Point source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
11. "Section 313 water priority chemical" means a chemical or chemical categories that:
 - a. Are listed at *40 CFR 372.65* pursuant to *Section 313* of the *Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III of the Superfund Amendments and Reauthorization Act (SARA)* of 1986);
 - b. Are present at or above threshold levels at a facility subject to *EPCRA Section 313* reporting requirements; and
 - c. Meet at least one of the following criteria:

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- (1) Are listed in *Appendix D* of *40 CFR Part 122* on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);
 - (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or
 - (3) Are pollutants for which EPA has published acute or chronic water quality criteria. See *Appendix III* of this permit. This appendix was revised based on final rulemaking EPA published in the *Federal Register* November 30, 1994.
12. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *CERCLA*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.
13. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311 of the Clean Water Act* (see *40 CFR 110.10* and *CFR 117.21*) or *Section 102* of *CERCLA* (see *40 CFR 302.4*).
14. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.
15. "SWDMR" means "storm water discharge monitoring report", a report of the results of storm water monitoring required by the permit. The Division of Water Quality provides the storm water discharge monitoring report form.
16. "Storm water associated with industrial activity" (*UAC R317-8-3.8(6)(c) & (d)*) means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the *UPDES* program. For the categories of industries identified in paragraphs (a) through (j) of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined in *40 CFR Part 401*); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph (k) of this definition, the term includes only storm water discharges from all areas (except access roads and rail lines) listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw

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material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (a) to (k) of this definition) include those facilities designated under *UAC R317-8-3.8(1)(a)5*. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

- a. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under *40 CFR Subchapter N* (except facilities with toxic pollutant effluent standards that are exempted under category (k) of this definition);
- b. Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;
- c. Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under *40 CFR 434.11(l)* because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations that have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but that have an identifiable owner/operator;
- d. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;
- e. Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under *Subtitle D* of RCRA;
- f. Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;
- g. Steam electric power generating facilities, including coal handling sites;
- h. Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45 and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle

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rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified under paragraphs (a) to (g) or (I) to (k) of this subsection are associated with industrial activity;

- i. Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under *40 CFR Part 403*. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and that are not physically located in the confines of the facility, or areas that are in compliance with *40 CFR Part 503*;
 - j. Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area that are not part of a larger common plan of development or sale;
 - k. Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and that are not otherwise included within categories (a) to (j))
17. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

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**FACT SHEET AND STATEMENT OF BASIS
LEWISTON CITY
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0020214
MINOR MUNICIPAL**

FACILITY CONTACTS

Person Name: Paul Swainston
Position: Public Works Director

Facility Name: Lewiston City
Mailing and Facility Address: 29 South Main
Lewiston City, Utah 84320

Telephone: (435) 258-2141
(435) 258-5191 (Shop)
(435) 770-1696 (Cell)

DESCRIPTION OF FACILITY

The Lewiston City treatment facility (Lewiston Lagoons) consists of a three (3) cell lagoon system located east of Lewiston on the west bank of the Cub River which is the receiving stream during discharge periods. The lagoon system is located at 41°58'00" north latitude and 111°49'20" west longitude. The system was built in 1974 with a total surface area of 16.1 acres. The city had a population of 1,877 in 2000, with 558 housing units. Approximately 850 persons (estimated) are served by the lagoon system. The rest are on septic tanks. The facility is designed for a flow of 0.11 million gallons per day if operated as a total containment system. The lagoons can treat up to 0.21 MGD if they discharge. The system has the ability to use chlorine for disinfection. The lagoon receives a large amount of wastewater from Presto Products Incorporated, a producer of plastic bags. The water from Presto Products is non-contact cooling water and is not considered a significant industrial user at this time. The facility currently discharges one month each year.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The WLA developed for this renewal permit contains total ammonia effluent limitations ranging from 14.4 mg/L to 45.1 mg/L on a seasonal basis. This is a result of a change in where the background flows were measured and a change in the background flows. Previously the flows were calculated by taking flows from a station downstream of Lewiston and subtracting out flows. This time there is a limited data set from just above the Lewiston discharge collected during the 2014/2015 intensive monitoring run. At this time there is not a need for seasonal effluent limits so the limit will be reduced from 16.4 mg/L to 14.4 mg/L as a maximum value. The change in the basis for the WLA also resulted in a reduction in the TRC Limit from 0.31 mg/L to 0.14 mg/L.

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule as it relates to "lagoon" wastewater treatment plants establishes new regulations

for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for lagoon wastewater treatment plants:

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

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

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

Lewiston City has started to land apply effluent for disposal, therefore reducing the requirement to discharge to the Cub River under normal operating conditions. As a result of this operational change, there is a chance that the facility may not need to discharge during normal operations. If there is no discharge to surface waters of the State during the life cycle of the permit, there will be no need to collect samples of the effluent.

DISCHARGE

The Lewiston Lagoons discharge to a segment of the Cub River that is 303(d) listed for total phosphorous (TP). A TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a de minimus source and neither a load allocation nor load reduction for phosphorous were indicated.

The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year. The Lewiston Lagoons discharge an average of 0.135 kg/d (Calculation based on limited flow and concentration data) TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d. Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration should be adequate to characterize the intermittent nature of the lagoon's discharge.

DESCRIPTION OF DISCHARGE

The City of Lewiston has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. Lewiston has discharged during only one month since 2012. The discharge complied with permit effluent limits.

Outfall

Description of Discharge Point

001

Located at latitude 41°58'00" and longitude 111°49'20" to the Cub River.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to the Cub River. The Cub River is classified 2B, 3B and 4 at this location 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.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), *E. coli*, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease limit is based on best professional judgment (BPJ). Attached is a Wasteload Analysis (WLA) for this discharge into the Cub River. It has been determined that this discharge will not cause a violation of water quality standards. The limits for ammonia, total residual chlorine, and dissolved oxygen are based on the limits calculated in the WLA. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

Lewiston has not monitored for metals in the past. As a result there is no data to evaluate in a RP analysis. Lewiston also has had minimal discharge during the permit cycle and has limited industrial activity. To address this lack of information to support an RP analysis during future renewals metals monitoring will be included in the renewal permit without any corresponding effluent limits.

The permit limitations are:

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.21	--	--	--	--
BOD ₅ , mg/L	25	35	--	--	--
BOD ₅ Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L	--	--	--	--	14.4

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

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	--	--	--	--	10
TRC, mg/L	--	--	--	--	0.14
<i>E. coli</i> , No./100mL	126	157	--	--	--
pH, Standard Units	--	--	--	6.5	9

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements for Flow, BOD, TSS, Ammonia, *E. coli* pH, DO and TRC are the same as in the previous permit, the monitoring related to the TBPEL Rule, metals and total toxic organics are new to the permit, the monitoring for and oil & grease has been modified from the last permit.. 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 submitted with the DMRs.

Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{2,3}	Instantaneous	Recorder	MGD
BOD ₅ , Influent ⁴	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
TSS, Influent ⁴	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
Ammonia (as N) ⁵	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
DO	Monthly	Grab	mg/L
TRC, mg/L	Monthly	Grab	mg/L
Oil & Grease ⁶	Monthly	Grab	mg/L
Total Ammonia (as N) ⁵ *k	Monthly	Composite	mg/L
Orthophosphate, (as P) ⁵ *k Effluent	Monthly	Composite	mg/L
Total Phosphorus ⁵ , Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L

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

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

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

⁵ These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

⁶ Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA

Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Kjeldahl Nitrogen, TKN (as N) ⁵	Influent	Monthly	Composite
	Effluent	Monthly	Composite
Nitrate, NO ₃ ⁵	Monthly	Composite	mg/L
Nitrite, NO ₂ ⁵	Monthly	Composite	mg/L
Metals ⁷ , Influent	Once	Composite/Grab	mg/L
	Effluent		Once
Organic Toxics ⁸	Once	Grab	mg/L

Metals to be Monitored for RP
Total Arsenic
Total Cadmium
Total Chromium
Total Copper
Total Cyanide
Total Lead
Total Mercury
Total Molybdenum
Total Nickel
Total Selenium
Total Silver
Total Zinc

BIOSOLIDS

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

STORM WATER

STORMWATER REQUIREMENTS

Wastewater treatment facilities, which includes treatment lagoons, are required to comply with storm water permit requirements if they meet one or both of the following criteria,

1. The facility has an approved pretreatment program as described in 40 CFR Part 403.

⁷ Testing for metals listed in the table below must be performed during the first discharge of the renewed permits life cycle. The testing is conducted to support future RP analysis.

⁸ Testing must be performed during the first discharge of the renewed permits life cycle. A list of the organics to be tested can be found in 40CFR122 appendix D table II.

2. The facility has a design flow of 1.0 MGD or greater.

The Lewiston City facility does not meet either of the criteria; therefore a storm water permit is not required at this time. A storm water re-opener provision is included in the permit should a storm water permit be needed in the future.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

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

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

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

BIOMONITORING REQUIREMENTS

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

The potential for toxicity is not deemed sufficient to require biomonitoring or whole effluent toxicity (WET) limits because there are no present or anticipated industrial dischargers on the system nor are there any anticipated for the duration of this permit. The waste discharge is anticipated to be household waste only. Therefore, biomonitoring is not required in this permit; however the permit will contain a WET reopener provision.

PERMIT DURATION

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

Drafted by
Daniel Griffin, Discharge, Biosolids
Jennifer Robinson, Pretreatment
Michael George, Storm Water
Daniel Griffin, Reasonable Potential Analysis
Dave Wham, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: November 7, 2017

Ended: December 7, 2017

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

The Public Noticed of the draft permit was published in the Herald Journal.

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 will be completed. Due to the nature of these changes they are not considered Major and the permit may not be required to be re Public Noticed.

Responsiveness Summary

No Comments were received on this permit and/or Fact Sheet during the public comment period.

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ATTACHMENT 1

Industrial Waste Survey

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Industrial Pretreatment Wastewater Survey



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

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

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

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

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

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

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

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

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

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

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

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

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

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

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

Sources for the list:

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

Split the list into two groups:

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

Step 2: Preliminary Inspection

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

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

Step 3: Informing the State

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

Jennifer Robinson

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

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

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ___ /

Name of Business _____
Address _____

Person Contacted _____
Phone Number _____

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

Production process is: Batch Continuous Both

Is production subject to seasonal variation? yes no

If yes, briefly describe seasonal production cycle.

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

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

Wastes are discharged to (check all that apply):

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

Name of waste hauler(s), if used

Is a grease trap installed? Yes No

Is it operational? Yes No

Does the business discharge a lot of process wastewater?

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

Does the business do any of the following:

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

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

Inspector

Waste Treatment Facility

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

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

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

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

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ATTACHMENT 2

Effluent Monitoring Data

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Effluent Monitoring Data

Month	<i>E. coli</i>		DO mg/L	pH		O&G mg/L	BOD5, mg/L		TSS, mg/L		TRC Max
	Ave	Max		Min	Max		Ave	Max	Ave	Max	
Limit	126	157		6.5	9	10	15	21	25	35	0.31
Mar-02	TNTC	TNTC	5.1	8.5	8.5	0	18	18	21	21	0.05
May-03	NR	NR	4	8.4	8.4	NR	5	5	6	6	0.03
May-04	20	20	1.9	8.5	8.7	0	6	6	4	4	0.09
Sep-05	2	2	12	7.8	7.8	0	12	12	21	21	0.02
Apr-06	170	170	6.4	8.7	9	0	20	20	16	16	0.22
Apr-07	2	2	25	8.6	8.7	0	25	25	28	28	0.07
May-09	6	6	5.8	8.2	9	0	13	13	29	29	0.09
Apr-11	4	4	7.5	8.7	9	0	20	20	2.1	2.1	0.12
Oct-11	5	5	3	8.7	8.7	0	20	20	35	35	0.06
Apr-12	ND	ND	8.5	8.6	8.6	ND	9.0	9.0	23.0	23.0	0.2

Month	Ammonia, mg/L			Phosphorus	
	Max	TKN	NH3 + NH4	Total	Ortho
Limit	16.4				
Mar-02	--	--	--	2.56	--
May-03	3.11	--	--	2.5	--
May-04	1.48	--	--	2.7	--
Apr-05	4	--	--	2.5	--
Sep-05	1	--	--	1.6	--
Apr-06	9.5	--	--	2	--
Apr-07	0.29	--	--	2.4	--
May-09	4.04	--	--	2.1	--
Apr-11	3.94			2.1	
Oct-11	2.7			2.1	
Apr-12	3.5	-	-	1.6	-

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ATTACHMENT 3

Wasteload Analysis

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ATTACHMENT 4

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 Analysis⁹. 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.

As a result of the infrequent discharge and low flow conditions Lewiston has not been required to sample for metals in previous permit cycles. This results in no data for an RP. This result is similar to one that would result in Outcome B and the addition or increase of monitoring for the permit. In this case metal monitoring will be added to the draft renewal permit.

⁹ See Reasonable Potential Analysis Guidance for definitions of terms

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

Date: April 3, 2017
Prepared by: Dave Wham 
Standards and Technical Services
Facility: Lewiston Lagoons
UPDES No. UT0020214
Receiving water: Cub 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 takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

UPDES discharge point 001, with an estimated maximum monthly discharge of 0.21 MGD (0.33 cfs).

Receiving Water

Cub River. Per UAC R317-2-13.3(a), the designated beneficial uses of the Cub River and tributaries, from confluence with Bear River to state line, are:

- *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). Due to a lack of flow records,

Utah Division of Water Quality
Wasteload Analysis
Lewiston Lagoons
UPDES No. UT0020214

the 20th percentile of available flow measurements was calculated for the period of record to approximate the 7Q10 low flow condition. Flow data for the receiving water was obtained from DWQ Monitoring Station #4903770 CUB R AT U61 XING for the period 2014-2015. The critical low flow value is 4.0 cfs.

Ambient water quality was characterized using data from the same station from the period 2008 - 2015.

TMDL

According to the Utah's 2016 303(d) Water Quality Assessment, the assessment unit for the Cub River from its confluence with the Bear River to the Utah-Idaho state line (AU #UT16010202-010), is listed in Assessment Category 4A ; Impaired: TMDL Approved. A total phosphorous TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a *de minimis* source, and indicated neither a load allocation nor load reduction for phosphorous. The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year. Lewiston's lagoons contribute an average of .135 kg/d (calculation based on limited flow and concentration data) TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d. Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration monitoring should be adequate to characterize the intermittent nature of the lagoon's discharge by specifying duration of discharge and an average flow value.

The Cutler Reservoir and Cub River TMDLs are currently scheduled for revision. It is recommended that the revised Cub River TMDL include a specific load allocation for the Lewiston Lagoons.

Mixing Zone

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

Mixing zone modeling showed 100 % mixing within 2,500 feet, and acute limits defaulted to 50% of the seasonal critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were TRC and ammonia, as determined in consultation with the UPDES Permit Writer.

Utah Division of Water Quality
Wasteload Analysis
Lewiston Lagoons
UPDES No. UT0020214

WET Limits

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

LC50 WET Limits for Outfall 001 should be based on 54.1% effluent.

IC25 WET limits for Outfalls 001 should be based on 7.5% effluent.

Wasteload Allocation Methods

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

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

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this facility. The proposed permit is a simple renewal, with no increase in flow or concentration over that which was approved in the existing permit.

Documents:

WLA Document: *Lewiston WLADoc_4-4-17.docx*

Wasteload Analysis and Addendums: *Lewiston_WLA_4-4-17.xlsm*

References:

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

**WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY**

Discharging Facility: Lewiston Lagoons

UPDES No: UT-0020214

Current Flow: 0.02 MGD

Design Flow: 0.21 MGD

Current flow is intermittent. This value represents an average flow over the

Receiving Water: Cub River

Stream Classification: 2B, 3B, 4

Stream Flows [cfs]: 4.0 Summer (July-Sept) 20th Percentile value used for all seasons

4.0 Fall (Oct-Dec) 20th Percentile

4.0 Winter (Jan-Mar) 20th Percentile

4.0 Spring (Apr-June) 20th Percentile

58.9 Average

Stream TDS Values: 254.0 Summer (July-Sept) 80th Percentile value used for all seasons

254.0 Fall (Oct-Dec) 80th Percentile

254.0 Winter (Jan-Mar) 80th Percentile

254.0 Spring (Apr-June) 80th Percentile

Effluent Limits:

Flow, MGD: 0.21 MGD

BOD, mg/l: 25.0 Summer

Dissolved Oxygen, mg/l: 5.0 Summer

TNH3, Chronic, mg/l: 14.4 Summer

TDS, mg/l: 12847.7 Summer

WQ Standard:

Design Flow

5.0 Indicator

5.5 30 Day Average

Varies Function of pH and Temperature

1200.0

Modeling Parameters:

Acute River Width: 50.0%

Chronic River Width: 100.0%

Level 1 Antidegradation Level Completed: Level II Review not required.

Date:

4-4-17

Permit Writer:

WLA by:

WQM Sec. Approval:

TMDL Sec. Approval:

David M. Wynn

4-4-17

Utah Division of Water Quality
Salt Lake City, Utah

**WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis**

7-Aug-12
4:00 PM

Facilities: Lewiston Lagoons
Discharging to: Cub River

UPDES No: UT-0020214

I. Introduction

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

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

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

II. Receiving Water and Stream Classification

Cub River:	2B, 3B, 4
Antidegradation Review:	Level I review completed. Level II review not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.50 mg/l (30 Day Average) 4.00 mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

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

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.152 lbs/day	750.00	ug/l	1.313 lbs/day
Arsenic	190.00 ug/l	0.333 lbs/day	340.00	ug/l	0.595 lbs/day
Cadmium	0.48 ug/l	0.001 lbs/day	4.68	ug/l	0.008 lbs/day
Chromium III	162.39 ug/l	0.284 lbs/day	3397.61	ug/l	5.949 lbs/day
ChromiumVI	11.00 ug/l	0.019 lbs/day	16.00	ug/l	0.028 lbs/day
Copper	18.07 ug/l	0.032 lbs/day	29.02	ug/l	0.051 lbs/day
Iron			1000.00	ug/l	1.751 lbs/day
Lead	8.52 ug/l	0.015 lbs/day	218.59	ug/l	0.383 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.004 lbs/day
Nickel	100.37 ug/l	0.176 lbs/day	902.76	ug/l	1.581 lbs/day
Selenium	4.60 ug/l	0.008 lbs/day	20.00	ug/l	0.035 lbs/day
Silver	N/A ug/l	N/A lbs/day	14.32	ug/l	0.025 lbs/day
Zinc	230.78 ug/l	0.404 lbs/day	230.78	ug/l	0.404 lbs/day

* Allowed below discharge

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

Metals Standards Based upon a Hardness of 216.76 mg/l as CaCO₃

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.003 lbs/day
Chlordane	0.004 ug/l	0.100 lbs/day	1.200	ug/l	0.002 lbs/day
DDT, DDE	0.001 ug/l	0.023 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.044 lbs/day	1.250	ug/l	0.002 lbs/day
Endosulfan	0.056 ug/l	1.305 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.054 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.089 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080 ug/l	1.865 lbs/day	1.000	ug/l	0.002 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.326 lbs/day	2.000	ug/l	0.004 lbs/day
Pentachlorophenol	13.00 ug/l	303.044 lbs/day	20.000	ug/l	0.035 lbs/day
Toxephene	0.0002 ug/l	0.005 lbs/day	0.7300	ug/l	0.001 lbs/day

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.01 lbs/day
Chromium			100.0 ug/l	lbs/day

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Copper	200.0 ug/l	lbs/day
Lead	100.0 ug/l	lbs/day
Selenium	50.0 ug/l	lbs/day
TDS, Summer	1200.0 mg/l	1.05 tons/day

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

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day

Chlorophenoxy Herbicides

2,4-D	ug/l	lbs/day
2,4,5-TP	ug/l	lbs/day
Endrin	ug/l	lbs/day
cyclohexane (Lindane)	ug/l	lbs/day
Methoxychlor	ug/l	lbs/day
Toxaphene	ug/l	lbs/day

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

Maximum Conc., ug/l - Acute Standards

Toxic Organics	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
	ug/l	lbs/day	ug/l	lbs/day
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	62.94 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	18.18 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.02 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	1.66 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.10 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	489.53 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	2.31 lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.21 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	0.98 lbs/day
1,1,2,2-Tetrachloroetha	ug/l	lbs/day	11.0 ug/l	0.26 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.03 lbs/day

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2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	100.24 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	0.15 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	10.96 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	9.32 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	396.29 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	60.61 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	60.61 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1 ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2 ug/l	0.07 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	18.42 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.91 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	39.63 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	53.62 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.21 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5 ug/l	0.01 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l	676.02 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	8.63 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0 ug/l	3962.88 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	37.30 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0 ug/l	8.39 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.51 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.79 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	1.17 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0 ug/l	396.29 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	13.99 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	44.29 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l	326.35 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	17.83 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.19 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.37 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4 ug/l	0.03 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	0.19 lbs/day
Phenol	ug/l	lbs/day	4.6E+06 ug/l	1.07E+05 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	0.14 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	121.22 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	279.73 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	2797.33 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	6.76E+04 lbs/day

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Benzo(a)anthracene (P/	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0 ug/l	256.42 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.21 lbs/day
Toluene	ug/l	lbs/day	200000.0 ug/l	4662.21 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	1.89 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	12.24 lbs/day
				lbs/day
Pesticides				lbs/day
Aldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.05 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.05 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.05 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	0.02 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	0.02 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 125	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 122	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 123	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 126	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 101	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		
Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	100.24 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				

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Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	5128.43 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	107.23 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.15 lbs/day
Zinc				

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

VII. Mathematical Modeling of Stream Quality

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

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

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

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

- (1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.
- (2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the

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upstream conditions at low flow and the effluent conditions:

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

Other Conditions

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

Model Inputs

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

Current Upstream Information

	Stream									
	Critical									
	Low Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS		
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l		
Summer (Irrig. Season)	4.0	20.2	8.5	0.10	0.50	6.89	0.00	254.0		
Fall	4.0	2.5	8.4	0.10	0.50	---	0.00	254.0		
Winter	4.0	3.8	8.2	0.10	0.50	---	0.00	254.0		
Spring	4.0	7.9	8.3	0.10	0.50	---	0.00	254.0		
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*		
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron				
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l				
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0		* 1/2 MDL		

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.21000	17.0	600.00	0.52531
Fall	0.21000	15.0		
Winter	0.21000	12.0		
Spring	0.21000	15.0		

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

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IX. Effluent Limitations

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

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

Effluent Limitation for Flow based upon Water Quality Standards

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

Season	Daily Average	
Summer	0.210 MGD	0.325 cfs
Fall	0.210 MGD	0.325 cfs
Winter	0.210 MGD	0.325 cfs
Spring	0.210 MGD	0.325 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.21 MGD. If the discharger is allowed to have a flow greater than 0.21 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

WET Requirements	LC50 >	54.1% Effluent	[Acute]
	IC25 >	7.5% Effluent	[Chronic]

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	43.8 lbs/day
Fall	25.0 mg/l as BOD5	43.8 lbs/day
Winter	25.0 mg/l as BOD5	43.8 lbs/day
Spring	25.0 mg/l as BOD5	43.8 lbs/day

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

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

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	14.4 mg/l as N	25.3 lbs/day
	1 Hour Avg. - Acute	39.7 mg/l as N	69.5 lbs/day
Fall	4 Day Avg. - Chronic	18.3 mg/l as N	32.1 lbs/day
	1 Hour Avg. - Acute	37.1 mg/l as N	65.0 lbs/day
Winter	4 Day Avg. - Chronic	25.3 mg/l as N	44.2 lbs/day
	1 Hour Avg. - Acute	45.1 mg/l as N	78.9 lbs/day
Spring	4 Day Avg. - Chronic	17.1 mg/l as N	0.0 lbs/day
	1 Hour Avg. - Acute	37.1 mg/l as N	0.0 lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 50.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	0.146 mg/l	0.26 lbs/day
	1 Hour Avg. - Acute	0.136 mg/l	0.24 lbs/day
Fall	4 Day Avg. - Chronic	0.146 mg/l	0.26 lbs/day
	1 Hour Avg. - Acute	0.136 mg/l	0.24 lbs/day
Winter	4 Day Avg. - Chronic	0.146 mg/l	0.26 lbs/day
	1 Hour Avg. - Acute	0.136 mg/l	0.24 lbs/day
Spring	4 Day Avg. - Chronic	0.146 mg/l	0.00 lbs/day
	1 Hour Avg. - Acute	0.136 mg/l	0.00 lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

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Season		Concentration	Load
Summer	Maximum, Acute	12847.7 mg/l	11.25 tons/day
Fall	Maximum, Acute	12847.7 mg/l	11.25 tons/day
Winter	Maximum, Acute	12847.7 mg/l	11.25 tons/day
Spring	4 Day Avg. - Chronic	12847.7 mg/l	11.25 tons/day

Colorado Salinity Form Limits Determined by Permitting Section

**Effluent Limitations for Total Recoverable Metals based upon
Water Quality Standards**

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 216.76 mg/l):

	4 Day Average		1 Hour Average		Load
	Concentration	Load	Concentration	Load	
Aluminum	N/A	N/A	5,352.5	ug/l	9.4 lbs/day
Arsenic	2,519.61 ug/l	2.9 lbs/day	2,428.3	ug/l	4.3 lbs/day
Cadmium	5.41 ug/l	0.0 lbs/day	33.0	ug/l	0.1 lbs/day
Chromium III	2,152.11 ug/l	2.4 lbs/day	24,309.4	ug/l	42.6 lbs/day
Chromium VI	97.50 ug/l	0.1 lbs/day	90.0	ug/l	0.2 lbs/day
Copper	230.75 ug/l	0.3 lbs/day	202.8	ug/l	0.4 lbs/day
Iron	N/A	N/A	7,148.6	ug/l	12.5 lbs/day
Lead	103.61 ug/l	0.1 lbs/day	1,559.4	ug/l	2.7 lbs/day
Mercury	0.16 ug/l	0.0 lbs/day	17.2	ug/l	0.0 lbs/day
Nickel	1,326.39 ug/l	1.5 lbs/day	6,455.5	ug/l	11.3 lbs/day
Selenium	41.66 ug/l	0.0 lbs/day	133.3	ug/l	0.2 lbs/day
Silver	N/A ug/l	N/A lbs/day	102.5	ug/l	0.2 lbs/day
Zinc	3,071.25 ug/l	3.5 lbs/day	1,651.0	ug/l	2.9 lbs/day
Cyanide	69.23 ug/l	0.1 lbs/day	157.4	ug/l	0.3 lbs/day

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

Summer	34.5 Deg. C.	94.1 Deg. F
Fall	16.8 Deg. C.	62.3 Deg. F
Winter	18.1 Deg. C.	64.6 Deg. F
Spring	22.2 Deg. C.	72.0 Deg. F

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

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

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	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aldrin			1.5E+00	ug/l 4.06E-03 lbs/day
Chlordane	4.30E-03 ug/l	7.53E-03 lbs/day	1.2E+00	ug/l 3.25E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	1.75E-03 lbs/day	5.5E-01	ug/l 1.49E-03 lbs/day
Dieldrin	1.90E-03 ug/l	3.33E-03 lbs/day	1.3E+00	ug/l 3.39E-03 lbs/day
Endosulfan	5.60E-02 ug/l	9.81E-02 lbs/day	1.1E-01	ug/l 2.98E-04 lbs/day
Endrin	2.30E-03 ug/l	4.03E-03 lbs/day	9.0E-02	ug/l 2.44E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l 2.71E-05 lbs/day
Heptachlor	3.80E-03 ug/l	6.65E-03 lbs/day	2.6E-01	ug/l 7.04E-04 lbs/day
Lindane	8.00E-02 ug/l	1.40E-01 lbs/day	1.0E+00	ug/l 2.71E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l 8.13E-05 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l 2.71E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l 1.08E-04 lbs/day
PCB's	1.40E-02 ug/l	2.45E-02 lbs/day	2.0E+00	ug/l 5.42E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	2.28E+01 lbs/day	2.0E+01	ug/l 5.42E-02 lbs/day
Toxephene	2.00E-04 ug/l	3.50E-04 lbs/day	7.3E-01	ug/l 1.98E-03 lbs/day

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

In-stream indicator criteria of downstream segments for Pollution Indicators would be met by achieving the following effluent targets

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	8.8 lbs/day
Nitrates as N	4.0 mg/l	7.0 lbs/day
Total Phosphorus as P	0.05 mg/l	0.1 lbs/day
Total Suspended Solids	90.0 mg/l	157.6 lbs/day

Note: Pollution indicator targets are for information purposes only.

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

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

Toxic Organics	Maximum Concentration	
	Concentration	Load
Acenaphthene	3.59E+04 ug/l	6.29E+01 lbs/day
Acrolein	1.04E+04 ug/l	1.82E+01 lbs/day
Acrylonitrile	8.79E+00 ug/l	1.54E-02 lbs/day
Benzene	9.45E+02 ug/l	1.66E+00 lbs/day

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	ug/l	lbs/day
Benzidine		
Carbon tetrachloride	5.86E+01	1.03E-01
Chlorobenzene	2.80E+05	4.90E+02
1,2,4-Trichlorobenzene		
Hexachlorobenzene	1.03E-02	1.79E-05
1,2-Dichloroethane	1.32E+03	2.31E+00
1,1,1-Trichloroethane		
Hexachloroethane	1.18E+02	2.07E-01
1,1-Dichloroethane		
1,1,2-Trichloroethane	5.59E+02	9.79E-01
1,1,2,2-Tetrachloroethane	1.46E+02	2.56E-01
Chloroethane		
Bis(2-chloroethyl) ether	1.86E+01	3.26E-02
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	5.72E+04	1.00E+02
2,4,6-Trichlorophenol	8.65E+01	1.52E-01
p-Chloro-m-cresol		
Chloroform (HM)	6.26E+03	1.10E+01
2-Chlorophenol	5.33E+03	9.32E+00
1,2-Dichlorobenzene	2.26E+05	3.96E+02
1,3-Dichlorobenzene	3.46E+04	6.06E+01
1,4-Dichlorobenzene	3.46E+04	6.06E+01
3,3'-Dichlorobenzidine	1.03E+00	1.79E-03
1,1-Dichloroethylene	4.26E+01	7.46E-02
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	1.05E+04	1.84E+01
1,2-Dichloropropane	5.19E+02	9.09E-01
1,3-Dichloropropylene	2.26E+04	3.96E+01
2,4-Dimethylphenol	3.06E+04	5.36E+01
2,4-Dinitrotoluene	1.21E+02	2.12E-01
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	7.19E+00	1.26E-02
Ethylbenzene	3.86E+05	6.76E+02
Fluoranthene	4.93E+03	8.63E+00
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	2.26E+06	3.96E+03
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	2.13E+04	3.73E+01
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	4.79E+03	8.39E+00
Dichlorobromomethane(HM)	2.93E+02	5.13E-01
Chlorodibromomethane (HM)	4.53E+02	7.93E-01
Hexachlorocyclopentadiene	2.26E+05	3.96E+02
Isophorone	7.99E+03	1.40E+01
Naphthalene		
Nitrobenzene	2.53E+04	4.43E+01
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.86E+05	3.26E+02

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4,6-Dinitro-o-cresol	1.02E+04 ug/l	1.78E+01 lbs/day
N-Nitrosodimethylamine	1.08E+02 ug/l	1.89E-01 lbs/day
N-Nitrosodiphenylamine	2.13E+02 ug/l	3.73E-01 lbs/day
N-Nitrosodi-n-propylamine	1.86E+01 ug/l	3.26E-02 lbs/day
Pentachlorophenol	1.09E+02 ug/l	1.91E-01 lbs/day
Phenol	6.12E+07 ug/l	1.07E+05 lbs/day
Bis(2-ethylhexyl)phthalate	7.85E+01 ug/l	1.38E-01 lbs/day
Butyl benzyl phthalate	6.92E+04 ug/l	1.21E+02 lbs/day
Di-n-butyl phthalate	1.60E+05 ug/l	2.80E+02 lbs/day
Di-n-octyl phthiate		
Diethyl phthalate	1.60E+06 ug/l	2.80E+03 lbs/day
Dimethyl phthlate	3.86E+07 ug/l	6.76E+04 lbs/day
Benzo(a)anthracene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Benzo(a)pyrene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Benzo(b)fluoranthene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Benzo(k)fluoranthene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Chrysene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	4.13E-01 ug/l	7.23E-04 lbs/day
Pyrene (PAH)	1.46E+05 ug/l	2.56E+02 lbs/day
Tetrachloroethylene	1.18E+02 ug/l	2.07E-01 lbs/day
Toluene	2.66E+06 ug/l	4.66E+03 lbs/day
Trichloroethylene	1.08E+03 ug/l	1.89E+00 lbs/day
Vinyl chloride	6.99E+03 ug/l	1.22E+01 lbs/day
Pesticides		
Aldrin	1.86E-03 ug/l	3.26E-06 lbs/day
Dieldrin	1.86E-03 ug/l	3.26E-06 lbs/day
Chlordane	7.85E-03 ug/l	1.38E-05 lbs/day
4,4'-DDT	7.85E-03 ug/l	1.38E-05 lbs/day
4,4'-DDE	7.85E-03 ug/l	1.38E-05 lbs/day
4,4'-DDD	1.12E-02 ug/l	1.96E-05 lbs/day
alpha-Endosulfan	2.66E+01 ug/l	4.66E-02 lbs/day
beta-Endosulfan	2.66E+01 ug/l	4.66E-02 lbs/day
Endosulfan sulfate	2.66E+01 ug/l	4.66E-02 lbs/day
Endrin	1.08E+01 ug/l	1.89E-02 lbs/day
Endrin aldehyde	1.08E+01 ug/l	1.89E-02 lbs/day
Heptachlor	2.80E-03 ug/l	4.90E-06 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1254 (Arochlor 1254)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1221 (Arochlor 1221)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1232 (Arochlor 1232)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1248 (Arochlor 1248)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1260 (Arochlor 1260)	5.99E-04 ug/l	1.05E-06 lbs/day
PCB-1016 (Arochlor 1016)	5.99E-04 ug/l	1.05E-06 lbs/day

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Pesticide		
Toxaphene	9.98E-03 ug/l	1.75E-05 lbs/day
Metals		
Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		
Dioxin		
Dioxin (2,3,7,8-TCDD)	1.86E-07 ug/l	3.26E-10 lbs/day

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

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		5352.5				5352.5	N/A
Antimony				57244.3		57244.3	
Arsenic	1331.3	2428.3			0.0	1331.3	2519.6
Barium						0.0	
Beryllium						0.0	
Cadmium	132.1	33.0			0.0	33.0	5.4
Chromium (III)		24309.4			0.0	24309.4	2152.1
Chromium (VI)	1321.5	90.0			0.0	90.03	97.50
Copper	2652.7	202.8				202.8	230.8
Cyanide		157.4	2928775.8			157.4	69.2
Iron		7148.6				7148.6	
Lead	1321.5	1559.4			0.0	1321.5	103.6
Mercury		17.18		2.00	0.0	2.00	0.160
Nickel		6455.5		61238.0		6455.5	1326.4
Selenium	646.1	133.3			0.0	133.3	41.7

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Silver	102.5		0.0	102.5	
Thallium		83.9		83.9	
Zinc	1651.0			1651.0	3071.3
Boron	9984.5			9984.5	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]

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

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	5352.5	N/A	
Antimony	57244.25		
Arsenic	1331.3	2519.6	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	33.0	5.4	
Chromium (III)	24309.4	2152	
Chromium (VI)	90.0	97.5	Acute Controls
Copper	202.8	230.8	Acute Controls
Cyanide	157.4	69.2	
Iron	7148.6		
Lead	1321.5	103.6	
Mercury	1.997	0.160	
Nickel	6455.5	1326	
Selenium	133.3	41.7	
Silver	102.5	N/A	
Thallium	83.9		
Zinc	1651.0	3071.3	Acute Controls
Boron	9984.46		

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

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

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

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An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required. Basic renewal, no increase in effluent flow or concentration.

XI. Colorado River Salinity Forum Considerations

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

XII. Summary Comments

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

XIII. Notice of UPDES Requirement

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

XIV. Special Considerations - TMDL

The Lewiston Lagoons discharge to a segment of the Cub River that is 303(d) listed for total phosphorous (TP). A TP TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a de minimis source indicated neither a load allocation nor load reduction for phosphorous. The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year. Lewiston's lagoons contribute an average of .135 kg/d* TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d. Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration monitoring should be adequate to characterize the intermittent nature of the lagoon's discharge by specifying a duration of discharge and an average flow value.

The Cutler Reservoir and Cub River TMDLs are currently scheduled for revision. It is recommended that the revised Cub River TMDL include a specific load allocation for the Lewiston Lagoons.

*Calculation based on limited flow and concentration data

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File Name: Lewiston_Lagoons_WLA_4-4-17

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day 2.000	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 2.018	REAER. Coeff. (Ka)20 (Ka)/day 41.279	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 41.475	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.406
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 4.037	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(CI)20 1/day 32.000	TRC K(CI)(T) 1/day 32.375
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 1.013						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(CI) TRC {theta} 1.1	S Benthic {theta} 1.1