

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. **UT0025224**

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

THE TOWN OF SPRINGDALE

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

VIRGIN RIVER,

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

This permit shall become effective on May 1, 2019

This permit expires at midnight on April 30, 2024.

Signed this 1st day of May, 2019.



Erica Brown Gaddis, PhD
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	An eight inch green PVC pipe discharging directly to the Virgin River located at latitude 37° 09' 45" and longitude 113° 04' 17".

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	lbs./Year	Daily Minimum	Daily Maximum
Total Flow	0.29	-	-	-	-
BOD ₅ , mg/L	45	65	-	-	-
BOD ₅ Min. % Removal	85	-	-	-	-
TSS, mg/L	45	65	-	-	-
TSS Min. % Removal	85	-	-	-	-
Dissolved Oxygen, mg/L	-	-	-	4.0	-
<i>E. coli</i> , No./100mL	126	158	-	-	-
Total Phosphorous, lbs/year	-	-	3,490	-	-
pH, Standard Units	-	-	-	6.5	9
TDS, mg/L ²	<400 Increase	-	-	-	-

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

2 The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS or the permittee could request 1 ton/day salt loading, or 366 tons/year.

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Self-Monitoring and Reporting Requirements ¹			
Parameter	Minimum Frequency	Sample Type	Units
Total Flow ^{3, 4}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁵	2 x Monthly	Composite	mg/L
Effluent	2 x Monthly	Composite	mg/L
TSS, Influent ⁵	2 x Monthly	Composite	mg/L
Effluent	2 x Monthly	Composite	mg/L
<i>E. coli</i>	2 x Monthly	Grab	No./100mL
pH	2 x Monthly	Grab	SU
Ammonia	2 x Monthly	Grab	mg/L
DO	2 x Monthly	Grab	mg/L
TDS ⁶ , Effluent	Quarterly	Grab	mg/L
Source Water	Quarterly	Grab	mg/L
Boron ⁷	2 x Monthly	Composite	mg/L
Temperature ⁷	2 x Monthly	Grab	°C

TBPEL Rule Monitoring and Reporting Requirements ^{1, 8}			
Parameter	Minimum Frequency	Sample Type	Units
Total Ammonia (as N)	Monthly	Composite	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃	Monthly	Composite	mg/L
Nitrite, NO ₂	Monthly	Composite	mg/L

3. Compliance Schedule

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

D. Reporting of Monitoring Results.

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

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

5 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. During months where a discharge will not occur influent samples shall be taken and analyzed for this constituent at a minimum frequency of once per month.

6 The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS or the permittee could request 1 ton/day salt loading, or 366 tons/year.

7 Temperature and Boron are being sampled in support of the work being done for the TMDL currently underway for the Virgin River. The Pollutants Of Concern (POC) will be monitored and reported, but will not have a limit associated with them.

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

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1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported by NetDMR⁹, entered into NetDMR no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, “no discharge” shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the Act.
2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
 - a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
 - b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.
3. *Local Limit* is defined as a limit designed to prevent pass through and/or interference. And is developed in accordance with 40 CFR 403.5(c).
4. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
5. *Publicly Owned Treatment Works or POTW* means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
6. *Significant industrial user (SIU)* is defined as an industrial user discharging to a 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

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

7. *User or Industrial User (IU)* means a source of Indirect Discharge
- B. Pretreatment Reporting Requirements. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop a State-approved industrial pretreatment program at this time. However, in order to determine if development of an industrial pretreatment program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.C.1*, and submit it to the Division of Water Quality within **sixty (60) calendar days** of the effective date of this permit.
- C. Industrial Wastes.
1. The "Industrial Waste Survey" as required by *Part II.B.1*. consists of;
 - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
 - b. Determination of the qualitative and quantitative characteristics of each discharge, and
 - c. Appropriate production data.
 2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
 3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
 4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
 5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.
- D. General and Specific Prohibitions. The general prohibitions and the specific prohibitions apply to each User introducing pollutants into a POTW whether or not the User is subject to other Pretreatment Standards or any national, State or local Pretreatment Requirements.
1. General prohibition Standards. A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference.
 2. Specific Prohibited Standards. Developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any User (*40 CFR 403.5*):

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- a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140°F (60°C);
 - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;
 - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
 - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,
 - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
 - i. Any pollutant that causes pass through or interference at the POTW.
3. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307 of the Water Quality Act of 1987 as amended (WQA)*. (See *40 CFR, Subchapter N, Parts 400 through 500*, for specific information).
- E. Significant Industrial Users Discharging to the POTW. The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;
1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301 or 306* of the *WQA* if it were directly discharging those pollutants;
 2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
 3. For the purposes of this section, adequate notice shall include information on:
 - 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.

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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*; and/or,
 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.
 4. Require the permittee to develop an approved pretreatment program.
- G. Legal Action. The Director retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level. If the permittee has failed to properly delineate maximum acceptable industrial contributor levels, the Director will look primarily to the permittee as the responsible party.
- H. Local Limits. If local limits are developed per R317-8-8.5(4)(b) to protect the POTW from pass-through or interference, then the POTW must submit limits to DWQ for review and public notice, as required by R317-8-8.5(4)(c).

III. BIOSOLIDS REQUIREMENTS

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

IV. STORM WATER REQUIREMENTS.

- A. Coverage of This Section. The requirements listed under this section shall apply to storm water discharges if No Exposure Conditions are not met or a No Exposure Certification is not filed within 30 days of the permit's effective date. Storm water discharges from the following portions of the facility may be eligible for coverage under this permit: biosolids drying beds, haul or access roads on which transportation of biosolids may occur, grit screen cleaning areas, chemical loading, unloading and storage areas, salt or sand storage areas, vehicle or equipment storage and maintenance areas, or any other wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility that may have a reasonable expectation to contribute to pollutants in a storm water discharge.
- B. Prohibition of Non-Storm Water Discharges. Except for discharges identified in *Part I.*, and discharges described below in this paragraph, non-storm water discharges are prohibited. The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from firefighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.
- C. Storm Water Pollution Prevention Plan Requirements. The permittee must have (on site) and implement a storm water pollution prevention plan as a condition of this permit.
1. Contents of the Plan. The plan shall include, at a minimum, the following items:
- a. *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
- b. *Description of Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:
- (1) *Drainage.* A site map indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present

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in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:

- (a) Drainage direction and discharge points from all wastewater associated activities including but not limited to grit screen cleaning, bio-solids drying beds and transport, chemical/material loading, unloading and storage areas, vehicle maintenance areas, salt or sand storage areas.
 - (b) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.
 - (c) Location of bio-solids drying beds where exposed to precipitation or where the transportation of bio-solids may be spilled onto internal roadways or tracked off site.
 - (d) Location where grit screen cleaning or other routinely performed industrial activities are located and are exposed to precipitation.
 - (e) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.
 - (f) Locations where any major spills or leaks of toxic or hazardous materials have occurred.
 - (g) Location of any sand or salt piles.
 - (h) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.
 - (i) Location of receiving streams or other surface water bodies.
 - (j) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.
- (2) *Inventory of Exposed Materials.* An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

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- (3) *Spills and Leaks.* A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.
 - (4) *Sampling Data.* A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
 - (5) *Summary of Potential Pollutant Sources and Risk Assessment.* A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.
- c. *Measures and Controls.* The permittee shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
- (1) *Good Housekeeping.* All areas that may contribute pollutants to storm water discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.
 - (2) *Preventive Maintenance.* A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
 - (3) *Spill Prevention and Response Procedures.* Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for

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cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

- (4) *Inspections.* In addition to the comprehensive site evaluation required under paragraph (*Part IV.C.1.c.(10)*) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.
- (5) *Employee Training.* Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.
- (6) *Record keeping and Internal Reporting Procedures.* A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- (7) *Non-storm Water Discharges.*
 - (a) *Certification.* The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part VII.G* of this permit.
 - (b) *Exceptions.* Except for flows from firefighting activities, sources of non-storm water listed in *Part IV.B. (Prohibition of Non-storm Water Discharges)* of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

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- (c) *Failure to Certify.* Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Director* within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.
- (8) *Sediment and Erosion Control.* The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- (9) *Management of Runoff.* The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.
- (10) *Comprehensive Site Compliance Evaluation.* Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:
- (a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
- (b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this section and pollution prevention measures and controls identified in the plan in accordance with

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Part IV.C.1.c. (Measures and Controls) of this section shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

- (c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph (b) (above) shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part VII.G* (Signatory Requirements) of this permit.

- (11) *Deadlines for Plan Preparation and Compliance.* The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part IV.C.1.c.(10)*, Comprehensive Site Evaluation.

- (12) *Keeping Plans Current.* The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

D. Monitoring and Reporting Requirements.

- 1. Quarterly Visual Examination of Storm Water Quality. Facilities shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.
 - a. *Sample and Data Collection.* Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where practicable, the same individual should carry out the collection and examination of discharges for entire permit term.

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- b. *Visual Storm Water Discharge Examination Reports.* Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

- c. *Representative Discharge.* When the permittee has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may collect a sample of effluent of one of such outfalls and report that the observation data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.

- d. *Adverse Conditions.* When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather conditions, which may prohibit the collection of samples, include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

- e. *Inactive and Unstaffed Site.* When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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

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

VI. COMPLIANCE RESPONSIBILITIES

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

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

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

H. Upset Conditions.

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

VII. GENERAL REQUIREMENTS

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

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

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

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

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

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

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water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

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

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

**FACT SHEET AND STATEMENT OF BASIS
SPRINGDALE WASTEWATER LAGOONS
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0025224
MINOR MUNICIPAL**

FACILITY CONTACTS

Person Name:	Stanley J. Smith
Position:	Mayor
Person Name:	Rick Wixom
Position:	City Manager
Person Name:	Robert Tottem
Position:	Public Works Superintendent
Phone Number:	(435) 243-3686
Facility Name:	Springdale Wastewater Lagoons
Mailing and Facility Address:	Springdale City Offices PO Box 187 118 Lion Blvd Springdale, Utah 84767
Telephone:	(435) 772-6907

DESCRIPTION OF FACILITY

The Springdale Wastewater Lagoons (Springdale) serves the towns of Springdale and Rockville, as well as Zion National Park. This facility was originally designed as a total containment lagoon system, but has expanded to discharge because of growth in the area. The permit to discharge was first issued in 1995. This facility has a total design population equivalent of 4500 people and an influent organic loading of 765 lbs. per day for BOD5 and 900 lbs. a day for TSS. Since this facility discharges as needed, there is not any increase or decrease between wet weather and dry weather flows. This facility has a grinder, two aerated primary cells, and one secondary cell for sedimentation and clarification. The effluent is treated with ultraviolet light for disinfection. The total surface area of the lagoons is 19.38 acres, and has a capacity of 52 million gallons. The average influent design flow is 0.29 MGD. The facility is located in Springdale, Washington County, Utah, with latitude 37°09'45" and longitude 113°04'17", with STORET Number 495088, and outfall 001 discharging to the Virgin River. Springdale only discharges on a periodic basis.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

1. TMDL Monitoring

Temperature and Boron are being sampled in support of the work being done for the TMDL currently underway for the Virgin River. The Pollutants of Concern (POC) will be monitored and reported, but will not have a limit associated with them. Springdale will report the results of all POC sampling. If Springdale samples more frequently than required in the permit, the additional data will be entered into the DMR.

2. Alternative Limits for Lagoons

Alternative effluent limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5) and percent removal for BOD5 and TSS are being included in the renewal permit. The alternative BOD5 and TSS effluent concentrations limits for discharging domestic wastewater lagoons may be adjusted up to 45 mg/L for a monthly average and 65 mg/L weekly average. This is in accordance with the UAC R317-1-3.2.G. These limits are being included in the permit.

3. Monitoring Changes

The monitoring frequency is being updated to reflect the historic flows and follow the DWQ Monitoring, Recording, and Reporting Guidelines policy. The frequency will be increased from monthly to twice monthly.

With the change in the BOD5 and TSS effluent concentration limits in the permit being justified in part on the high influent concentrations for BOD5 and TSS, and the only data available on those pollutants is during months with a discharge, more influent data will be wanted for evaluation during future renewals. To accomplish this influent monitoring for the facility during months that do not have a discharge will be required at a frequency of once a month.

4. TBPEL Rule

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule on December 16, 2014. No TBPEL will be instituted for discharging treatment lagoons. Instead, each discharging lagoon was evaluated to determine the current annual average total phosphorus load measured in pounds per year based on monthly average flow rates and concentrations. Absent field data to determine these loads, and in case of intermittent discharging lagoons, the phosphorus load cap will be estimated by the Director.

The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2018:

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.

A cap of 125% of the current annual total phosphorus load has been established and is referred to as phosphorus loading cap. It is the intent of *UAC R317-3.3.B* to provide capacity for growth within your facility's service area by setting the loading cap at 125 percent of your current annual total phosphorus load. Springdale's current annual total phosphorus load was calculated based on the data reported on your monthly discharge monitoring reports.

The permit was modified to include the new phosphorus loading cap. Springdale's phosphorus loading cap is 3,490 lbs/year and the modified permit went into effect July 1, 2018.

The phosphorus annual loading cap is defined as

"Annual Loading Cap" is the highest allowable phosphorus loading discharged over a calendar year, calculated as the sum of all the monthly loading discharges measured during a calendar year divided by the number of monthly discharges measured during that year.

The reported monthly loading is calculated as shown here;

$$\text{Monthyl Mass Loading, } \frac{\text{lbs}}{\text{Month}} \\ = (\text{Ave Flow}) * (\text{Ave Concetration}) * \left(8.34 \frac{\text{lbs}}{\text{gal}}\right) * \left(\frac{\text{Days Discharged}}{\text{Month}}\right)$$

The annual total phosphorus loading

$$\text{Annual Mass Loading, lbs} = \text{Sum} \left(\text{Monthyl Mass Loading, } \frac{\text{lbs}}{\text{Month}} \right)$$

Once the lagoon's phosphorus loading cap has been reached, the owner of the facility will have five years to construct treatment processes or implement treatment alternatives to prevent the total phosphorus loading cap from being exceeded.

The permit effluent limits will incorporate the following change as a result of the phosphorus loading cap:

Parameter	Effluent Limitations				
	Maximum Monthly Avg	Maximum Weekly Avg	lbs./Year	Daily Minimum	Daily Maximum
Total Phosphorus, lbs	-	-	3,490	-	-

DISCHARGE

DESCRIPTION OF DISCHARGE

The wastewater treatment plant has one discharge point, known as 001. This 001 outfall has a latitude 37°09'45" and longitude 113°04'17". The discharge is an eight inch green PVC pipe discharging directly to the Virgin River. The average flow over the last thirty six months is 0.284 MGD per day.

Outfall

Description of Discharge Point

001 Located at latitude 37°09'45" and longitude 113°04'17".
The discharge is an eight inch green PVC pipe discharging directly to the Virgin River.

RECEIVING WATERS AND STREAM CLASSIFICATION

The Virgin River is classified as a Class 1C, 2B, 3C and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

- Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water
- Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
- Class 3C -- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- 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 is based on best professional judgment (BPJ). Attached is a Wasteload Analysis for this discharge into the Virgin River. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations.

Total dissolved solids (TDS) limitations are based upon Utah Water Quality Standards for concentration values and the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable as authorized in UAC R317-2-4. CRBSCF has established a policy for the reasonable increase of salinity for municipal discharges to any portion of the Colorado River stream system that has an impact on the lower main stem. The CRBSCF Policy entitled “NPDES Permit Program Policy for Implementation of Colorado River Salinity Standards” (Policy), with the most current version dated October 2017, states that the incremental increase in salinity shall be 400 mg/L or less, which is considered to be a reasonable incremental increase above the flow weighted average salinity of the intake water supply.

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

Springdale has not monitored for metals in the past. As a result there is no data to evaluate in a RP analysis. Springdale does not have an approved pretreatment program, does not have any industrial users contributing pollutants, and has a discharge that is less than 1 MGD and is therefore not required to sample metals according to the UPDES Pretreatment Guidance for Sampling of POTWs. Therefore there is a low probability of RP for metals to cause a violation of a WQBEL or subsequent downstream water quality standard for the Virgin River as a result of the discharge.

The permit limitations are;

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	lbs./Year	Daily Minimum	Daily Maximum
Total Flow	0.29	-	-	-	-
BOD ₅ , mg/L	45	65	-	-	-
BOD ₅ Min. % Removal	85	-	-	-	-
TSS, mg/L	45	65	-	-	-
TSS Min. % Removal	85	-	-	-	-
Dissolved Oxygen, mg/L	-	-	-	4.0	-
<i>E. coli</i> , No./100mL	126	158	-	-	-
Total Phosphorous, lbs/year	-	-	3,490	-	-
pH, Standard Units	-	-	-	6.5	9

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

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	lbs./Year	Daily Minimum	Daily Maximum
TDS, mg/L ²	<400 Increase	-	-	-	-

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements have been modified and updated from the previous permit. The frequency of monitoring has been adjusted to reflect the DWQ Guidance. A requirement for influent monitoring for BOD₅ and TSS during non-discharging months has been added to the permit. It now includes monitoring requirements for TBPEL and 303d impairment listed (TMDL) parameters. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements ¹			
Parameter	Minimum Frequency	Sample Type	Units
Total Flow ^{3, 4}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁵	2 x Monthly	Composite	mg/L
Effluent	2 x Monthly	Composite	mg/L
TSS, Influent ⁵	2 x Monthly	Composite	mg/L
Effluent	2 x Monthly	Composite	mg/L
<i>E. coli</i>	2 x Monthly	Grab	No./100mL
pH	2 x Monthly	Grab	SU
Ammonia	2 x Monthly	Grab	mg/L
DO	2 x Monthly	Grab	mg/L
TDS ⁶ , Effluent	Quarterly	Grab	mg/L
Source Water	Quarterly	Grab	mg/L
Boron ⁷	2 x Monthly	Composite	mg/L
Temperature ⁷	2 x Monthly	Grab	°C

TBPEL Rule Monitoring and Reporting Requirements ^{1, 8}			
Parameter	Minimum Frequency	Sample Type	Units
Total Ammonia (as N)	Monthly	Composite	mg/L

² The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS or the permittee could request 1 ton/day salt loading, or 366 tons/year.

³ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being.

⁴ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

⁵ 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. During months where a discharge will not occur influent samples shall be taken and analyzed for this constituent at a minimum frequency of once per month.

⁶ The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS or the permittee could request 1 ton/day salt loading, or 366 tons/year.

⁷ Temperature and Boron are being sampled in support of the work being done for the TMDL currently underway for the Virgin River. The Pollutants Of Concern (POC) will be monitored and reported, but will not have a limit associated with them.

⁸ These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

TBPEL Rule Monitoring and Reporting Requirements ^{1, 8}			
Parameter	Minimum Frequency	Sample Type	Units
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃	Monthly	Composite	mg/L
Nitrite, NO ₂	Monthly	Composite	mg/L

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

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,

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

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD and there are no categorical industries discharging to the treatment facility. Based on the information provided, by the wastewater operator for the City, the lagoon system has not experienced interference in the last three years. The facility has had violations of permit limits in the last three years for BOD₅, TSS, e-coli and percent removal for BOD₅ and TSS. With the data currently available it is unknown if pass through has occurred. The violations for TSS and the percent removal have been ongoing without a determination of the cause for the violations. With the additional influent sampling and sampling procedures being composite rather than grab a better understanding of loading will be available to the

POTW. If violations of TSS continue the facility must investigate the violations. If it is determine that violations are occurring due to industrial users or dischargers from campgrounds operational changes may need to occur to prevent the violations from continuing.

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

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

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

BIOMONITORING REQUIREMENTS

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

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

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ATTACHMENT 1

Industrial Waste Survey

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Industrial Pretreatment Wastewater Survey



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

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

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

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

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

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

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

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

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

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

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

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

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

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

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

Sources for the list:

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

Split the list into two groups:

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

Step 2: Preliminary Inspection

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

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

Step 3: Informing the State

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

Jennifer Robinson

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

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

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ___ /

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

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

Production process is: Batch Continuous Both

Is production subject to seasonal variation? yes no

If yes, briefly describe seasonal production cycle.

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

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

Wastes are discharged to (check all that apply):

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

Name of waste hauler(s), if used

Is a grease trap installed? Yes No

Is it operational? Yes No

Does the business discharge a lot of process wastewater?

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

Does the business do any of the following:

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

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

Inspector

Waste Treatment Facility

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

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

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

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

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ATTACHMENT 2

Effluent Monitoring Data

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TBPEL Results

Month	Influent		Effluent			
	TKN	Tot P	NH3 + NO2	Ortho P	TKN	Tot P
Oct-15						
Nov-15						
Dec-15						
Jan-16						
Feb-16	57	8.4	2	5.6	10	6.3
Mar-16						
Apr-16						
May-16	53	5	2.3	3.8	7	5.3
Jun-16						
Jul-16						
Aug-16						
Sep-16	54	4.6	0	2.9	9	3.9
Oct-16						
Nov-16						
Dec-16	45	6	2.4	5.7	8.1	6.1
Jan-17	60.7	6.7	2.5	5.4	6.2	5.8
Feb-17						
Mar-17						
Apr-17	75.3	11	0.4	3	5.1	2.9
May-17	48	5.1	0.9	1.6	4	3.1
Jun-17						
Jul-17						
Aug-17	38.1	4.3	0	3.5	9.5	4.1
Sep-17	60.3	24	0	5.2	10.6	5
Oct-17						
Nov-17						
Dec-17	4.4	6.9	2.6	6.3	6	7
Jan-18						
Feb-18						
Mar-18						
Apr-18						
May-18						
Jun-18						
Jul-18						
Aug-18	7.6	8	0	1.8	70.8	2.6
Sep-18	91.8	8.9	0.2	2.6	8.4	5.1
Oct-18						

ATTACHMENT 3

Wasteload Analysis

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

Date: January 24, 2019

Prepared by: Dave Wham 
Standards and Technical Services

Facility: Springdale Wastewater Lagoons
UPDES No. UT-025224

Receiving water: Virgin River (1C, 2B, 3C, 4)

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

Discharge

Outfall 001: Virgin River

The maximum monthly average design flow for the facility is 0.29 MGD (0.54 cfs).

Receiving Water

The receiving water for Outfall 001 is the Virgin River.

Per UAC R317-2-13.2(a), the designated beneficial uses for the Virgin River and tributaries from the Quail Creek Diversion to headwaters (with exceptions) are 1C, 2B, 3C and 4.

- *Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water*
- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.*

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

Critical Low Flow

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). The 7Q10 was calculated using daily average flow values from USGS station #09406000 Virgin River at Virgin, UT for the period 1999-2018. Receiving water quality was characterized using data from DWQ Monitoring Station #4950850, Virgin River 1 Mile East of Virgin for the period 2001-2013.

The calculated annual 7Q10 is 49.5 cfs.

Both of the above monitoring stations are below Springdale's discharge location. However, review of available stations and data led to the conclusion that they are the most appropriate sites to characterize the receiving water. Upstream stations on the Virgin River are upstream of the confluence with major tributaries (East Fork of the Virgin River). Discharge data from Springdale's Lagoons indicate that they discharge on a very intermittent basis (on the order of 4 times per year). Additionally, the lagoon discharge rate (.45 cfs) is very small compared to the receiving water flow (even at critical low flow of 49.5 cfs). Given these factors, it is unlikely that downstream data is significantly influence by the lagoon discharge.

TMDL

According to DWQ's 2016 303(d) Assessment, the Virgin River and tributaries from North Creek confluence to North Fork Virgin River (Assessment Unit UT15010008-012_00), is fully supporting its beneficial uses.

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.

Modeling results show that the effluent was totally mixed with the receiving water within the chronic mixing zone. Acute limits were calculated using 50% of the seasonal critical low flow.

Parameters of Concern

No specific parameters of concern were identified by based on review of the past permit and the impairment status of the receiving water. Addition parameters of concern may become apparent as a result of reasonable potential analysis, technology based standards, or other factors as determined by the UPDES Permit Writer.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET

Utah Division of Water Quality
Wasteload Analysis
Springdale Lagoons
No. UT-025224

limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

Table 1: WET Limits for IC₂₅

Outfall	Percent Effluent
Outfall 001	0.9%

Wasteload Allocation Methods

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

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: *Springdale_WLADoc_1-24-19.docx*
Wasteload Analysis and Addendum: *Springdale_WLA_1-25-19.xls*

References:

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

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

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility: Springdale Lagoons
UPDES No: UT-025224
Design Flow 0.29 MGD

Receiving Water: Springdale_WLA_1-25-19.xls
Stream Classification: 1C, 2B, 3C, 4
Stream Flows [cfs]:
49.50 Summer (July-Sept) 7Q10
49.50 Fall (Oct-Dec) 7Q10
49.50 Winter (Jan-Mar) 7Q10
49.50 Spring (Apr-June) 7Q10
0.0 Average
Stream TDS Values:
480.8 Summer (July-Sept) Average
492.2 Fall (Oct-Dec) Average
457.3 Winter (Jan-Mar) Average
512.2 Spring (Apr-June) Average

Effluent Limits:		WQ Standard:	
Flow, MGD:	0.29 MGD	Design Flow	
BOD, mg/l:	35.0 Summer	5.0	Indicator
Dissolved Oxygen, mg/l	4.0 Summer	5.0	30 Day Average
TNH3, Chronic, mg/l:	108.0 Summer	Varies	Function of pH and Temperature
TDS, mg/l:	80553.6 Summer	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: 1/25/2019

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WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

25-Jan-19
4:00 PM

Facilities: Springdale Lagoons
Discharging to: Springdale_WLA_1-25-19.xls

UPDES No: UT-025224

THIS IS A DRAFT DOCUMENT

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

Virgin River:	1C, 2B, 3C, 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)	5.00 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

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Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.211 lbs/day	750.00	ug/l	1.817 lbs/day
Arsenic	190.00 ug/l	0.460 lbs/day	340.00	ug/l	0.824 lbs/day
Cadmium	2.01 ug/l	0.005 lbs/day	5.40	ug/l	0.013 lbs/day
Chromium III	215.32 ug/l	0.522 lbs/day	4504.99	ug/l	10.915 lbs/day
ChromiumVI	11.00 ug/l	0.027 lbs/day	16.00	ug/l	0.039 lbs/day
Copper	24.25 ug/l	0.059 lbs/day	40.14	ug/l	0.097 lbs/day
Iron			1000.00	ug/l	2.423 lbs/day
Lead	13.21 ug/l	0.032 lbs/day	338.90	ug/l	0.821 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.006 lbs/day
Nickel	134.33 ug/l	0.325 lbs/day	1208.18	ug/l	2.927 lbs/day
Selenium	4.60 ug/l	0.011 lbs/day	20.00	ug/l	0.048 lbs/day
Silver	N/A ug/l	N/A lbs/day	25.89	ug/l	0.063 lbs/day
Zinc	308.99 ug/l	0.749 lbs/day	308.99	ug/l	0.749 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 305.9 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	0.004 lbs/day
Chlordane	0.004 ug/l	1.158 lbs/day	1.200	ug/l	0.003 lbs/day
DDT, DDE	0.001 ug/l	0.269 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.512 lbs/day	1.250	ug/l	0.003 lbs/day
Endosulfan	0.056 ug/l	15.076 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.619 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	1.023 lbs/day	0.260	ug/l	0.001 lbs/day
Lindane	0.080 ug/l	21.538 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	3.769 lbs/day	2.000	ug/l	0.005 lbs/day
Pentachlorophenol	13.00 ug/l	3499.901 lbs/day	20.000	ug/l	0.048 lbs/day
Toxephene	0.0002 ug/l	0.054 lbs/day	0.7300	ug/l	0.002 lbs/day

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IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	0.91 lbs/day
Cadmium			10.0 ug/l	0.01 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	1.45 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			50.0 ug/l	13.461 lbs/day
Barium			1000.0 ug/l	269.223 lbs/day
Cadmium			10.0 ug/l	2.692 lbs/day
Chromium			50.0 ug/l	13.461 lbs/day
Lead			50.0 ug/l	13.461 lbs/day
Mercury			2.0 ug/l	0.538 lbs/day
Selenium			10.0 ug/l	2.692 lbs/day
Silver			50.0 ug/l	13.461 lbs/day
Fluoride (3)			1.4 ug/l	0.377 lbs/day
to			2.4 ug/l	0.646 lbs/day
Nitrates as N			10.0 ug/l	2.692 lbs/day

Chlorophenoxy Herbicides

2,4-D			100.0 ug/l	26.922 lbs/day
2,4,5-TP			10.0 ug/l	2.692 lbs/day
Endrin			0.2 ug/l	0.054 lbs/day
cyclohexane (Lindane)			4.0 ug/l	1.077 lbs/day
Methoxychlor			100.0 ug/l	26.922 lbs/day
Toxaphene			5.0 ug/l	1.346 lbs/day

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

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	1200.00 ug/l	323.07 lbs/day	2700.0 ug/l	726.90 lbs/day
Acrolein	320.00 ug/l	86.15 lbs/day	780.0 ug/l	209.99 lbs/day
Acrylonitrile	0.06 ug/l	0.02 lbs/day	0.7 ug/l	0.18 lbs/day
Benzene	1.20 ug/l	0.32 lbs/day	71.0 ug/l	19.11 lbs/day
Benzidine	0.00012 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	0.25 ug/l	0.07 lbs/day	4.4 ug/l	1.18 lbs/day
Chlorobenzene	680.00 ug/l	183.07 lbs/day	21000.0 ug/l	5653.69 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	0.38 ug/l	0.10 lbs/day	99.0 ug/l	26.65 lbs/day

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1,1,1-Trichloroethane				
Hexachloroethane	1.90 ug/l	0.51 lbs/day	8.9 ug/l	2.40 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	0.61 ug/l	0.16 lbs/day	42.0 ug/l	11.31 lbs/day
1,1,2,2-Tetrachloroethane	0.17 ug/l	0.05 lbs/day	11.0 ug/l	2.96 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	0.03 ug/l	0.01 lbs/day	1.4 ug/l	0.38 lbs/day
2-Chloroethyl vinyl ether	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	1700.00 ug/l	457.68 lbs/day	4300.0 ug/l	1157.66 lbs/day
2,4,6-Trichlorophenol	2.10 ug/l	0.57 lbs/day	6.5 ug/l	1.75 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	5.70 ug/l	1.53 lbs/day	470.0 ug/l	126.53 lbs/day
2-Chlorophenol	120.00 ug/l	32.31 lbs/day	400.0 ug/l	107.69 lbs/day
1,2-Dichlorobenzene	2700.00 ug/l	726.90 lbs/day	17000.0 ug/l	4576.79 lbs/day
1,3-Dichlorobenzene	400.00 ug/l	107.69 lbs/day	2600.0 ug/l	699.98 lbs/day
1,4-Dichlorobenzene	400.00 ug/l	107.69 lbs/day	2600.0 ug/l	699.98 lbs/day
3,3'-Dichlorobenzidine	0.04 ug/l	0.01 lbs/day	0.1 ug/l	0.02 lbs/day
1,1-Dichloroethylene	0.06 ug/l	0.02 lbs/day	3.2 ug/l	0.86 lbs/day
1,2-trans-Dichloroethylene	700.00 ug/l	188.46 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	93.00 ug/l	25.04 lbs/day	790.0 ug/l	212.69 lbs/day
1,2-Dichloropropane	0.52 ug/l	0.14 lbs/day	39.0 ug/l	10.50 lbs/day
1,3-Dichloropropylene	10.00 ug/l	2.69 lbs/day	1700.0 ug/l	457.68 lbs/day
2,4-Dimethylphenol	540.00 ug/l	145.38 lbs/day	2300.0 ug/l	619.21 lbs/day
2,4-Dinitrotoluene	0.11 ug/l	0.03 lbs/day	9.1 ug/l	2.45 lbs/day
2,6-Dinitrotoluene	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	0.04 ug/l	0.01 lbs/day	0.5 ug/l	0.15 lbs/day
Ethylbenzene	3100.00 ug/l	834.59 lbs/day	29000.0 ug/l	7807.47 lbs/day
Fluoranthene	300.00 ug/l	80.77 lbs/day	370.0 ug/l	99.61 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	1400.00 ug/l	376.91 lbs/day	170000.0 ug/l	45767.93 lbs/day
Bis(2-chloroethoxy) methane	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	4.70 ug/l	1.27 lbs/day	1600.0 ug/l	430.76 lbs/day
Methyl chloride (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	4.30 ug/l	1.16 lbs/day	360.0 ug/l	96.92 lbs/day
Dichlorobromomethane	0.27 ug/l	0.07 lbs/day	22.0 ug/l	5.92 lbs/day
Chlorodibromomethane	0.41 ug/l	0.11 lbs/day	34.0 ug/l	9.15 lbs/day
Hexachlorobutadiene(c)	0.44 ug/l	0.12 lbs/day	50.0 ug/l	13.46 lbs/day
Hexachlorocyclopentadiene	240.00 ug/l	64.61 lbs/day	17000.0 ug/l	4576.79 lbs/day
Isophorone	8.40 ug/l	2.26 lbs/day	600.0 ug/l	161.53 lbs/day
Naphthalene				
Nitrobenzene	17.00 ug/l	4.58 lbs/day	1900.0 ug/l	511.52 lbs/day
2-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	70.00 ug/l	18.85 lbs/day	14000.0 ug/l	3769.12 lbs/day
4,6-Dinitro-o-cresol	13.00 ug/l	3.50 lbs/day	765.0 ug/l	205.96 lbs/day
N-Nitrosodimethylamine	0.00069 ug/l	0.00 lbs/day	8.1 ug/l	2.18 lbs/day
N-Nitrosodiphenylamine	5.00 ug/l	1.35 lbs/day	16.0 ug/l	4.31 lbs/day
N-Nitrosodi-n-propylamine	0.01 ug/l	0.00 lbs/day	1.4 ug/l	0.38 lbs/day
Pentachlorophenol	0.28 ug/l	0.08 lbs/day	8.2 ug/l	2.21 lbs/day

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Phenol	2.10E+04 ug/l	5.65E+03 lbs/day	4.6E+06 ug/l	1.24E+06 lbs/day
Bis(2-ethylhexyl)phthala	1.80 ug/l	0.48 lbs/day	5.9 ug/l	1.59 lbs/day
Butyl benzyl phthalate	3000.00 ug/l	807.67 lbs/day	5200.0 ug/l	1399.96 lbs/day
Di-n-butyl phthalate	2700.00 ug/l	726.90 lbs/day	12000.0 ug/l	3230.68 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	23000.00 ug/l	6192.13 lbs/day	120000.0 ug/l	32306.77 lbs/day
Dimethyl phthlate	3.13E+05 ug/l	8.43E+04 lbs/day	2.9E+06 ug/l	7.81E+05 lbs/day
Benzo(a)anthracene (P/	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(a)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(b)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(k)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Chrysene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	9600.00 ug/l	2584.54 lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Indeno(1,2,3-cd)pyrene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Pyrene (PAH)	960.00 ug/l	258.45 lbs/day	11000.0 ug/l	2961.45 lbs/day
Tetrachloroethylene	0.80 ug/l	0.22 lbs/day	8.9 ug/l	2.40 lbs/day
Toluene	6800.00 ug/l	1830.72 lbs/day	200000 ug/l	53844.62 lbs/day
Trichloroethylene	2.70 ug/l	0.73 lbs/day	81.0 ug/l	21.81 lbs/day
Vinyl chloride	2.00 ug/l	0.54 lbs/day	525.0 ug/l	141.34 lbs/day
			0.0	0.00 lbs/day
			0.0	0.00 lbs/day
Pesticides				
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	0.25 lbs/day	2.0 ug/l	0.54 lbs/day
beta-Endosulfan	0.9300 ug/l	0.25 lbs/day	2.0 ug/l	0.54 lbs/day
Endosulfan sulfate	0.9300 ug/l	0.25 lbs/day	2.0 ug/l	0.54 lbs/day
Endrin	0.7600 ug/l	0.20 lbs/day	0.8 ug/l	0.22 lbs/day
Endrin aldehyde	0.7600 ug/l	0.20 lbs/day	0.8 ug/l	0.22 lbs/day
Heptachlor	0.0002 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 122	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 122	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 101	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00

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Metals

Antimony	14.0 ug/l	3.77 lbs/day		
Arsenic	50.0 ug/l	13.46 lbs/day	4300.00 ug/l	1157.66 lbs/day
Asbestos	7.00E+06 ug/l	1.88E+06 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	349.99 lbs/day	2.2E+05 ug/l	59229.09 lbs/day
Lead	700.0 ug/l	188.46 lbs/day		
Mercury			0.15 ug/l	0.04 lbs/day
Nickel			4600.00 ug/l	1238.43 lbs/day
Selenium	0.1 ug/l	0.04 lbs/day		
Silver	610.0 ug/l	164.23 lbs/day		
Thallium			6.30 ug/l	1.70 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.

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

VIII. Modeling Information

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

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

Other Conditions

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

Model Inputs

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

Current Upstream Information

	Stream								
	Critical Low								
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS	
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l	
Summer (Irrig. Season)	49.50	21.7	8.3	0.01	1.00	6.97	0.00	480.8	
Fall	49.50	10.1	8.2	0.01	1.00	---	0.00	492.2	
Winter	49.50	7.8	8.1	0.01	1.00	---	0.00	457.3	
Spring	49.50	15.7	8.1	0.01	1.00	---	0.00	512.2	
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	11.20	1.30	0.20	1.80	3.975*	2.80	12.2	0.60	
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron			
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			
All Seasons	0.0000	3.00	0.50	0.50	10.50	69.9		* ~80% MDL	

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Projected Discharge Information

Season	Flow, MGD	Temp.
Summer	0.29000	22.0
Fall	0.29000	12.0
Winter	0.29000	8.0
Spring	0.29000	12.0

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

IX. Effluent Limitations

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

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

Effluent Limitation for Flow based upon Water Quality Standards

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

Season	Daily Average	
Summer	0.290 MGD	0.449 cfs
Fall	0.290 MGD	0.449 cfs
Winter	0.290 MGD	0.449 cfs
Spring	0.290 MGD	0.449 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.29 MGD. If the discharger is allowed to have a flow greater than 0.29 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	0.9% Effluent	[Chronic]

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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	35.0 mg/l as BOD5	84.6 lbs/day
Fall	35.0 mg/l as BOD5	84.6 lbs/day
Winter	35.0 mg/l as BOD5	84.6 lbs/day
Spring	35.0 mg/l as BOD5	84.6 lbs/day

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

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

Season	Concentration
Summer	4.00
Fall	4.00
Winter	4.00
Spring	4.00

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	107.98 mg/l as N	261.1 lbs/day
	1 Hour Avg. - Acute	182.5 mg/l as N	441.4 lbs/day
Fall	4 Day Avg. - Chronic	218.2 mg/l as N	527.6 lbs/day
	1 Hour Avg. - Acute	266.4 mg/l as N	644.3 lbs/day
Winter	4 Day Avg. - Chronic	220.1 mg/l as N	532.3 lbs/day
	1 Hour Avg. - Acute	264.4 mg/l as N	639.3 lbs/day
Spring	4 Day Avg. - Chronic	187.6 mg/l as N	453.7 lbs/day
	1 Hour Avg. - Acute	218.2 mg/l as N	527.7 lbs/day

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

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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	1.112	mg/l	2.69	lbs/day
	1 Hour Avg. - Acute	1.010	mg/l	2.44	lbs/day
Fall	4 Day Avg. - Chronic	1.112	mg/l	2.69	lbs/day
	1 Hour Avg. - Acute	1.010	mg/l	2.44	lbs/day
Winter	4 Day Avg. - Chronic	1.112	mg/l	2.69	lbs/day
	1 Hour Avg. - Acute	1.010	mg/l	2.44	lbs/day
Spring	4 Day Avg. - Chronic	1.112	mg/l	2.69	lbs/day
	1 Hour Avg. - Acute	1.010	mg/l	2.44	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	80553.6	mg/l	97.39	tons/day
Fall	Maximum, Acute	79295.8	mg/l	95.87	tons/day
Winter	Maximum, Acute	83146.5	mg/l	100.53	tons/day
Spring	Maximum, Acute	77089.0	mg/l	93.21	tons/day

Colorado Salinity Forum Limits Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 305.9 mg/l):

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aluminum*	N/A	N/A	41,508.1	ug/l	100.6 lbs/day
Arsenic*	21,010.39 ug/l	32.8 lbs/day	19,025.4	ug/l	46.1 lbs/day
Cadmium	202.01 ug/l	0.3 lbs/day	292.0	ug/l	0.7 lbs/day
Chromium III	23,774.69 ug/l	37.2 lbs/day	252,937.0	ug/l	612.8 lbs/day
Chromium VI*	786.11 ug/l	1.2 lbs/day	679.4	ug/l	1.6 lbs/day
Copper	2,391.24 ug/l	3.7 lbs/day	2,100.3	ug/l	5.1 lbs/day
Iron*	N/A	N/A	55,494.9	ug/l	134.5 lbs/day
Lead	1,404.15 ug/l	2.2 lbs/day	19,002.2	ug/l	46.0 lbs/day
Mercury*	1.33 ug/l	0.0 lbs/day	134.8	ug/l	0.3 lbs/day
Nickel	14,624.34 ug/l	22.9 lbs/day	67,695.5	ug/l	164.0 lbs/day
Selenium*	456.98 ug/l	0.7 lbs/day	1,095.8	ug/l	2.7 lbs/day
Silver	N/A ug/l	N/A lbs/day	1,426.8	ug/l	3.5 lbs/day

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Zinc	33,243.26 ug/l	52.0 lbs/day	16,776.1	ug/l	40.6 lbs/day
Cyanide*	578.95 ug/l	0.9 lbs/day	1,235.7	ug/l	3.0 lbs/day

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

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

Summer	467.0 Deg. C.	872.7 Deg. F
Fall	455.4 Deg. C.	851.8 Deg. F
Winter	453.1 Deg. C.	847.7 Deg. F
Spring	461.0 Deg. C.	861.9 Deg. F

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

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

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aldrin			1.5E+00	ug/l	5.62E-03 lbs/day
Chlordane	4.30E-03 ug/l	1.04E-02 lbs/day	1.2E+00	ug/l	4.50E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	2.42E-03 lbs/day	5.5E-01	ug/l	2.06E-03 lbs/day
Dieldrin	1.90E-03 ug/l	4.59E-03 lbs/day	1.3E+00	ug/l	4.69E-03 lbs/day
Endosulfan	5.60E-02 ug/l	1.35E-01 lbs/day	1.1E-01	ug/l	4.12E-04 lbs/day
Endrin	2.30E-03 ug/l	5.56E-03 lbs/day	9.0E-02	ug/l	3.37E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	3.75E-05 lbs/day
Heptachlor	3.80E-03 ug/l	9.19E-03 lbs/day	2.6E-01	ug/l	9.75E-04 lbs/day
Lindane	8.00E-02 ug/l	1.93E-01 lbs/day	1.0E+00	ug/l	3.75E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	1.12E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	3.75E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	1.50E-04 lbs/day
PCB's	1.40E-02 ug/l	3.39E-02 lbs/day	2.0E+00	ug/l	7.50E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	3.14E+01 lbs/day	2.0E+01	ug/l	7.50E-02 lbs/day
Toxephene	2.00E-04 ug/l	4.84E-04 lbs/day	7.3E-01	ug/l	2.74E-03 lbs/day

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

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

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	12.1 lbs/day
Nitrates as N	4.0 mg/l	9.7 lbs/day
Total Phosphorus as P	0.05 mg/l	0.1 lbs/day
Total Suspended Solids	90.0 mg/l	218.1 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:

	Maximum Concentration	
	Concentration	Load
Toxic Organics		
Acenaphthene	1.34E+05 ug/l	3.23E+02 lbs/day
Acrolein	3.56E+04 ug/l	8.62E+01 lbs/day
Acrylonitrile	6.57E+00 ug/l	1.59E-02 lbs/day
Benzene	1.34E+02 ug/l	3.23E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	2.78E+01 ug/l	6.73E-02 lbs/day
Chlorobenzene	7.57E+04 ug/l	1.83E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	8.35E-02 ug/l	2.02E-04 lbs/day
1,2-Dichloroethane	4.23E+01 ug/l	1.02E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	2.12E+02 ug/l	5.12E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	6.79E+01 ug/l	1.64E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.89E+01 ug/l	4.58E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	3.45E+00 ug/l	8.35E-03 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	1.89E+05 ug/l	4.58E+02 lbs/day
2,4,6-Trichlorophenol	2.34E+02 ug/l	5.65E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	6.35E+02 ug/l	1.53E+00 lbs/day
2-Chlorophenol	1.34E+04 ug/l	3.23E+01 lbs/day
1,2-Dichlorobenzene	3.01E+05 ug/l	7.27E+02 lbs/day
1,3-Dichlorobenzene	4.45E+04 ug/l	1.08E+02 lbs/day

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1,4-Dichlorobenzene	4.45E+04 ug/l	1.08E+02 lbs/day
3,3'-Dichlorobenzidine	4.45E+00 ug/l	1.08E-02 lbs/day
1,1-Dichloroethylene	6.35E+00 ug/l	1.53E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	1.04E+04 ug/l	2.50E+01 lbs/day
1,2-Dichloropropane	5.79E+01 ug/l	1.40E-01 lbs/day
1,3-Dichloropropylene	1.11E+03 ug/l	2.69E+00 lbs/day
2,4-Dimethylphenol	6.01E+04 ug/l	1.45E+02 lbs/day
2,4-Dinitrotoluene	1.22E+01 ug/l	2.96E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	4.45E+00 ug/l	1.08E-02 lbs/day
Ethylbenzene	3.45E+05 ug/l	8.35E+02 lbs/day
Fluoranthene	3.34E+04 ug/l	8.08E+01 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.56E+05 ug/l	3.77E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	5.23E+02 ug/l	1.27E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	4.79E+02 ug/l	1.16E+00 lbs/day
Dichlorobromomethane(HM)	3.01E+01 ug/l	7.27E-02 lbs/day
Chlorodibromomethane (HM)	4.56E+01 ug/l	1.10E-01 lbs/day
Hexachlorocyclopentadiene	2.67E+04 ug/l	6.46E+01 lbs/day
Isophorone	9.35E+02 ug/l	2.26E+00 lbs/day
Naphthalene		
Nitrobenzene	1.89E+03 ug/l	4.58E+00 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	7.79E+03 ug/l	1.88E+01 lbs/day
4,6-Dinitro-o-cresol	1.45E+03 ug/l	3.50E+00 lbs/day
N-Nitrosodimethylamine	7.68E-02 ug/l	1.86E-04 lbs/day
N-Nitrosodiphenylamine	5.57E+02 ug/l	1.35E+00 lbs/day
N-Nitrosodi-n-propylamine	5.57E-01 ug/l	1.35E-03 lbs/day
Pentachlorophenol	3.12E+01 ug/l	7.54E-02 lbs/day
Phenol	2.34E+06 ug/l	5.65E+03 lbs/day
Bis(2-ethylhexyl)phthalate	2.00E+02 ug/l	4.85E-01 lbs/day
Butyl benzyl phthalate	3.34E+05 ug/l	8.08E+02 lbs/day
Di-n-butyl phthalate	3.01E+05 ug/l	7.27E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	2.56E+06 ug/l	6.19E+03 lbs/day
Dimethyl phthlate	3.48E+07 ug/l	8.43E+04 lbs/day
Benzo(a)anthracene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Benzo(a)pyrene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Benzo(b)fluoranthene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Benzo(k)fluoranthene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Chrysene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.12E-01 ug/l	7.54E-04 lbs/day

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Pyrene (PAH)	1.07E+05 ug/l	2.58E+02 lbs/day
Tetrachloroethylene	8.91E+01 ug/l	2.15E-01 lbs/day
Toluene	7.57E+05 ug/l	1.83E+03 lbs/day
Trichloroethylene	3.01E+02 ug/l	7.27E-01 lbs/day
Vinyl chloride	2.23E+02 ug/l	5.38E-01 lbs/day

Pesticides

Aldrin	1.45E-02 ug/l	3.50E-05 lbs/day
Dieldrin	1.56E-02 ug/l	3.77E-05 lbs/day
Chlordane	6.35E-02 ug/l	1.53E-04 lbs/day
4,4'-DDT	6.57E-02 ug/l	1.59E-04 lbs/day
4,4'-DDE	6.57E-02 ug/l	1.59E-04 lbs/day
4,4'-DDD	9.24E-02 ug/l	2.23E-04 lbs/day
alpha-Endosulfan	1.04E+02 ug/l	2.50E-01 lbs/day
beta-Endosulfan	1.04E+02 ug/l	2.50E-01 lbs/day
Endosulfan sulfate	1.04E+02 ug/l	2.50E-01 lbs/day
Endrin	8.46E+01 ug/l	2.05E-01 lbs/day
Endrin aldehyde	8.46E+01 ug/l	2.05E-01 lbs/day
Heptachlor	2.34E-02 ug/l	5.65E-05 lbs/day
Heptachlor epoxide		

PCB's

PCB 1242 (Arochlor 1242)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1254 (Arochlor 1254)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1221 (Arochlor 1221)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1232 (Arochlor 1232)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1248 (Arochlor 1248)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1260 (Arochlor 1260)	4.90E-03 ug/l	1.18E-05 lbs/day
PCB-1016 (Arochlor 1016)	4.90E-03 ug/l	1.18E-05 lbs/day

Pesticide

Toxaphene	8.13E-02 ug/l	1.97E-04 lbs/day
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Metals

Antimony	1558.70 ug/l	3.77 lbs/day
Arsenic	5423.36 ug/l	13.11 lbs/day
Asbestos	7.79E+08 ug/l	1.88E+06 lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	144736.69 ug/l	349.99 lbs/day
Cyanide	77935.14 ug/l	188.46 lbs/day
Lead	0.00	0.00
Mercury	15.59 ug/l	0.04 lbs/day
Nickel	67914.91 ug/l	164.23 lbs/day
Selenium	0.00	0.00
Silver	0.00	0.00
Thallium	189.27 ug/l	0.46 lbs/day
Zinc		

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Dioxin
Dioxin (2,3,7,8-TCDD) 1.45E-06 ug/l 3.50E-09 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		41508.1				41508.1	N/A
Antimony			1558.7	478744.4		1558.7	
Arsenic	11133.6	19025.4	5423.4			5423.4	21010.4
Barium					111335.9	111335.9	
Beryllium						0.0	
Cadmium	1091.3	292.0				292.0	202.0
Chromium (III)		252937.0				252937.0	23774.7
Chromium (VI)	10935.0	679.4				679.39	786.11
Copper	21958.2	2100.3	144736.7			2100.3	2391.2
Cyanide		1235.7	24493900.5			1235.7	578.9
Iron		55494.9				55494.9	
Lead	11067.4	19002.2				11067.4	1404.1
Mercury		134.80	15.6	16.70		15.59	1.335
Nickel		67695.5	67914.9	512145.2		67695.5	14624.3
Selenium	5511.6	1095.8				1095.8	457.0
Silver		1426.8				1426.8	
Thallium			189.3	701.4		189.3	
Zinc		16776.1				16776.1	33243.3
Boron	75789.5					75789.5	
Sulfate	222671.8					222671.8	

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	41508.1	N/A	
Antimony	1558.70		
Arsenic	5423.4	21010.4	Acute Controls
Asbestos	7.79E+08		
Barium			
Beryllium			
Cadmium	292.0	202.0	
Chromium (III)	252937.0	23775	
Chromium (VI)	679.4	786.1	Acute Controls
Copper	2100.3	2391.2	Acute Controls

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Cyanide	1235.7	578.9	
Iron	55494.9		
Lead	11067.4	1404.1	
Mercury	15.586	1.335	
Nickel	67695.5	14624	
Selenium	1095.8	457.0	
Silver	1426.8	N/A	
Thallium	189.3		
Zinc	16776.1	33243.3	Acute Controls
Boron	75789.45		
Sulfate	222671.8		N/A at this Waterbody

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.

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

XI. Colorado River Salinity Forum Considerations

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

XII. Summary Comments

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

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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 Springdale 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 C or D and the monitoring requirements in the permit will not change..

⁹ See Reasonable Potential Analysis Guidance for definitions of terms