

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. **UT0023663**

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

Castle Valley Special Service District and Castle Dale City Lagoons

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **Cottonwood Creek (tributary to the Colorado River)**,

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

This permit shall become effective on October 1, 2015.

This permit expires at midnight on September 30, 2020.

Signed this 17th day of September 2015.



Walter L. Baker, P.E.
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*.

Outfall Number(s)

001

Location of Discharge Outfall(s)

12" outfall pipe to Cottonwood Creek, on the southeast corner of the lagoon system, at latitude 39° 11' 30" and longitude 111° 00' 30".

- 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.

- 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:

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Parameter	Effluent Limitations *a			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
BOD ₅ , mg/L	25	35	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-Coli, No./100mL	126	158	NA	NA
TRC, mg/L	NA	NA	NA	0.06
NH ₃ -N, mg/L:				
Summer (July – Sept.)	6.8	NA	NA	9.5
Fall (Oct. – Dec.)	8.3	NA	NA	9.1
Winter (Jan. – March)	6.3	NA	NA	9.3
Spring (April – June)	8.8	NA	NA	9.1
TDS, mg/L	NA	NA	NA	3500
TDS, tons/day/year	NA	NA	NA	1.0/366
Oil & Grease, mg/L	NA	NA	NA	10
DO, mg/L	NA	NA	5.0	NA
pH, Standard Units	NA	NA	6.5	9
Total Flow MGD	0.70	NA	NA	0.95

NA – Not Applicable

mg/L – milligrams per liter

MGD – million gallons per day

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Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b *c	Continuous	Recorder	MGD
BOD₅, Influent *d	Twice monthly		mg/L
Effluent	Twice monthly	Grab	mg/L
TSS, Influent *d	Twice monthly		mg/L
Effluent	Twice monthly	Grab	mg/L
E. Coli	Twice monthly	Grab	No./100mL
TRC *e	Daily when chlorinating	Grab	mg/L
PH	Twice monthly	Grab	SU
TDS *f	Twice monthly		mg/L
		Grab	Tons/day/year
DO	Twice monthly	Grab	mg/L
NH₃-N	Twice monthly	Grab	mg/L
Oil & Grease, *g	Twice Monthly	Visual/Grab	Yes/No, mg/L
Total phosphorus, *h			
Influent	Monthly	Composite*	mg/L
Effluent	Monthly	Composite*	mg/L
Total Kjeldahl nitrogen, *h			
Influent	Monthly	Composite*	mg/L
Effluent	Monthly	Composite*	mg/L
Orthophosphate, *h			
Effluent	Monthly	Composite*	mg/L
Nitrate-nitrite, *h,			
Effluent	Monthly	Composite*	mg/L

*Composite – 24 hour composite sample completed by use of automatic sampler or minimum of four grab samples collected a minimum of two hours apart.

- *a See Definitions, *Part VIII*, for definition of terms.
- *b Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- *c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- *d In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- *e TRC shall be analyzed only if the effluent is chlorinated prior to discharge. Values greater than or equal to 0.06 mg/L shall be a violation of this permit, while values less than 0.06 mg/L shall be considered in compliance with the permit.
- *f In addition to the total dissolved solids (TDS) effluent concentration limitation, TDS effluent loading is limited to one-ton/day. If the one-ton/day effluent loading limitation cannot be met, then the permittee is limited to 366-tons/year total TDS effluent loading from the facility. It is the responsibility of the permittee to maintain annual TDS loading information and upon request the permittee shall submit to the Director the annual TDS loading information.

- *g Oil and grease shall be a visual test. If any oil and /or grease sheens are observed visually, then a sample of the effluent must be taken and this sample shall not exceed 10 mg/L.
- *h This lagoon shall be evaluated to determine the current annual average total phosphorus load based on average flows and concentrations. This permit will require at least monthly monitoring of the influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations, and the effluent for total phosphorus and orthophosphate (as P), and ammonia, nitrate-nitrite, and total Kjeldahl nitrogen (as N) concentrations.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1) or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on November 28, 2015. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these reports, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Definitions.

For this section the following definitions shall apply:

1. Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources both:
 - a. Inhibits or disrupts the publicly-owned treatment works (POTW), its treatment processes or operations, or its sludge processes, use or disposal and
 - b. Therefore is a cause of a violation or any requirement of the POTW's UPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge disposal in compliance with the following statutory provision and regulations or permits issued.
2. Local Limit is defined as a limit designed to prevent pass through and/or interference. And is developed in accordance with 40 CFR 403.5(c).
3. Pass through is a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of violation of any requirement of the POTW's UPDES permit (including an increase in the magnitude or duration of violation).
4. 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 greater than 25,000 gallons;
 - b. Contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant;
 - c. Is subject to Categorical Pretreatment Standards, or
 - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

B. Pretreatment Reporting Requirements.

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

C. Industrial Waste Survey (IWS).

1. As required by *Part II.B.1.* the industrial waste survey consists of:
 - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
 - b. Determination of the qualitative and quantitative characteristics of each discharge, and
 - c. Appropriate production data.
2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.

D. General and Specific Prohibitions.

1. Developed pursuant to *Section 307 of The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:
 - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140°F (60°C);
 - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;

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- e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,
 - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
 - i. Any pollutant that causes pass through or interference at the POTW.
2. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307 of the Water Quality Act of 1987 as amended (WQA)*. (See 40 CFR, Subchapter N, Parts 400 through 500, for specific information).

E. Signification Industrial Users Discharging to the POTW.

The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;

1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301 or 306 of the WQA* if it were directly discharging those pollutants;
2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
3. For the purposes of this section, adequate notice shall include information on:
 - a. The quality and quantity of effluent to be introduced into such treatment works; and,
 - b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.
4. Any SIU that must comply with applicable requirements under *Subtitles C and D of the Resource Conservation and Recovery Act (RCRA)*.

F. Change of Conditions.

At such time as a specific pretreatment limitation becomes applicable to an industrial user of the permittee, the Director may, as appropriate, do the following:

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1. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;
2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations at 40 CFR 403*;
3. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste; and/or,
4. Require the permittee to develop an approved pretreatment program.

G. Legal Action.

1. 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.
2. The permittee must notify the Director if a Significant Industrial User is in significant noncompliance (or if any Industrial User violates Part II.G.(c), (d), or (h)). Significant noncompliance is when one or more of the following criteria is met:
 - a. Chronic violations of wastewater discharge limits, defined here as those in which sixty-six percent or more of all of the measurements taken during a six month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement including instantaneous limits, for the same pollutant parameter;
 - b. Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent or more of all of the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the numeric Pretreatment Standard or Requirement including instantaneous limit multiplied by the applicable TRC. TRC = 1.4 for BOD, TSS, fats, oil and grease, and 1.2 for all other pollutants except pH;
 - c. Any other violation of a pretreatment effluent limit (daily maximum or longer-term average) that the Control Authority determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public);

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- d. Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of its emergency authority under R317-8-8.8(6)(a)8. to halt or prevent such a discharge;
- e. Failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance;
- f. Failure to provide within 45 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules;
- g. Failure to accurately report noncompliance; and
- h. Any other violation or group of violations, which may include a violation of Best Management Practices, which the Control Authority determines will adversely affect the operation or implementation of the local pretreatment program.

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.

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.

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

The Castle Valley Special Service District – Castle Dale City Lagoons does not meet both of the above criteria; therefore this permit does not include storm water provisions. The permit does however include a storm water re-opener provision.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any noncompliance which may endanger health or the environment;
 - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.*);
 - c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions.*);
 - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected;
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

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

VI. COMPLIANCE RESPONSIBILITIES

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

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

- (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
- (3) The permittee submitted notices as required under *section VI.G.3.*

b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3).*

3. Notice.

a. *Anticipated bypass.* Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

- (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
- (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

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- (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 V.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

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

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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.

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2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized 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.

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- 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;
 2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
 3. Revisions to the current CWA § 208 area wide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state or federal regulations.

This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, 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.

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

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for e-coli bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
5. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
 - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
 - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

PART VIII
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DEFINITIONS

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

**FACT SHEET STATEMENT OF BASIS
CASTLE VALLEY SPECIAL SERVICE DISTRICT
CASTLE DALE WASTEWATER TREATMENT PLANT
UPDES PERMIT NUMBER: UT0023663
MINOR MUNICIPAL RENEWAL PERMIT**

FACILITY CONTACT AND INFORMATION

Jacob Sharp, District Manager
Castle Valley Special Service District
Castle Dale Lagoons
Mailing address: P.O. Box 877
Facility address: 86 South 100 East
Castle Dale, UT 84513
Telephone (435) 381-5333

DESCRIPTION OF FACILITY AND DISCHARGE

The Castle Valley Special Service District's Castle Dale Wastewater Treatment Facility (Castle Dale) serves the cities of Castle Dale and Orangeville with a current total population of approximately 3,200. The Castle Dale design capacity is for a population equivalent of 7,020 and an average daily treatment flow of 0.4 to 0.5 million gallons per day (MGD). The monthly average design flow is 0.7 MGD. The facility consists of 4 lagoon cells, which are mechanically aerated and with a total area of 49.9 acres. The first cell is 30 acres in size followed by three smaller lagoon cells of 6-7 acres each, which are followed by three sand filters that are alternated as needed. Chlorination facilities are available, but have not been used for a number of years. The discharge location, referred to as outfall number 001, is from a 12-inch pipe near the southeast corner of the lagoon system following the sand filters and chlorine treatment building. The discharge is to Cottonwood Creek at latitude 39°11'30" and longitude 111°00'30".

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into Cottonwood Creek, which is part of the San Rafael and Colorado River systems. Cottonwood Creek is classified according to *Utah Administrative Code (UAC) R317-2-13* as follows:

- Class 2B -protected for secondary contact recreation (boating, wading and similar uses).
- Class 3C -protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 -protected for agricultural uses including irrigation of crops.

BASIS FOR EFFLUENT LIMITATIONS

Parameters of concern: The only parameters the facility monitors for are those contained in the permit. Parameters of concern are 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), dissolved oxygen, total phosphorous (TP), orthophosphate, total nitrogen (TN), total Kjeldahl nitrogen, total ammonia as nitrogen (TAN), nitrate-nitrite, E coli, and pH. Oil and grease and total residual chlorine are not included in parameters of concern, because oil and grease is visually monitored and has not been sampled, and chlorine has not been used in the system over the last permit period.

Limitations on TSS, BOD₅, E. coli, pH and percent removal for TSS and BOD₅ are based on current Utah Secondary Treatment Standards, *Utah Administrative Code (UAC) R317-1-3.2*. Based on R317-1-3.3A & B, this lagoon shall be evaluated to determine the current annual average total phosphorus load based on average flows and concentrations. This permit will require at least monthly monitoring of the influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations, and the effluent for total phosphorus and orthophosphate (as P), and ammonia, nitrate-nitrite, and total Kjeldahl nitrogen (as N) concentrations.

Seasonal ammonia as nitrogen (NH₃-N), dissolved oxygen (DO), and total flow limitations are water quality based, and were derived by the waste load analysis. Total residual chlorine (TRC) effluent limit is taken from the, "Total Residual Chlorine Analysis and Effluent Limit Policy" (adopted February 3, 2015). Oil and Grease limitations are based on best professional judgment which includes visual observation. If oil or grease sheen is observed a sample must be taken and the concentration cannot exceed 10 mg/L. This is consistent with many other similar facilities throughout the State.

Discharges from Castle Dale eventually reach the Colorado River, which places it in the guidance of the Colorado River Basin Salinity Control Forum (CRBSCF). Total dissolved solids (TDS) are limited in loading by the CRBSCF and in February 1977 they produced the "*Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program*" (Policy). This Policy is still in effect and under Part II (Municipal Discharges) it states, "...Requirements for establishing incremental increases may be waived in those cases where the incremental salt load reaching the main stem of the Colorado River is less than one ton per day or 366 tons per year." Castle Dale is an intermittent discharger, discharging less than 366 tons per year total TDS on average. Therefore, the effluent will once again be limited to a maximum discharge of 1.0 ton per day or 366 tons per year of TDS. It is the responsibility of the permittee to maintain annual TDS loading information and submit it to the Director.

The TDS concentration limit of 3,500 mg/L is based upon the approved Total Maximum Daily Load (TMDL) study for the San Rafael watershed (which includes Cottonwood Creek), in which a site specific criterion was developed for TDS and can be found in Table A-12 of the document entitled, "*Price River, San Rafael River, and Muddy Creek TMDLs for Total Dissolved Solids, West Colorado Watershed Management Unit, Utah*", EPA Approval Date: August 4, 2004.

EFFLUENT LIMITATIONS & SELF MONITORING AND REPORTING REQUIREMENTS

A review of the past five years of monitoring data reveals very few violations of permit limits. There were two violations for ammonia nitrogen and two for maximum pH. This data has been compiled and is included as ADDENDUM II. Based on this monitoring data, the permittee is expected to be able to continue to comply with the following effluent limitations upon future discharges:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD ₅ , mg/L	25	35	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E. Coli, No./100mL	126	158	NA	NA
TRC, mg/L,	NA	NA	NA	0.06
NH ₃ -N, mg/L:				
Summer (Jul-Sep)	6.8	NA	NA	9.5
Fall (Oct-Dec)	8.3	NA	NA	9.1
Winter (Jan-Mar)	6.3	NA	NA	9.3
Spring (Apr-Jun)	8.8	NA	NA	9.1
TDS, mg/L	NA	NA	NA	3,500
TDS, tons/day/year,	NA	NA	NA	1.0/366
Oil & Grease	NA	NA	NA	10
pH, Standard Units(SU)	NA	NA	6.5	9.0
Dissolved Oxygen, mg/L	NA	NA	5.0	NA
Total Effluent Flow, MGD	0.7	NA	NA	0.95

NA – Not Applicable

mg/L – milligrams per liter

MGD – million gallons per day

Discharge monitoring report (DMR) forms shall be submitted monthly and are due 28 days after the end of the monitoring period and shall include the following self-monitoring and reporting information:

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD ₅ , Influent d/ Effluent	Twice Monthly	Grab	mg/L
	Twice Monthly	Grab	mg/L
TSS, Influent d/ Effluent	Twice Monthly	Grab	mg/L
	Twice Monthly	Grab	mg/L
E. Coli e/	Twice Monthly	Grab	No./100mL
NH ₃ -N	Twice Monthly	Grab	mg/L
TRC, a/	Daily, when chlorinating	Grab	mg/L
Dissolved Oxygen	Twice Monthly	Grab	mg/L
TDS, f/	Twice Monthly	Grab	mg/L, tons/day/year
pH	Twice Monthly	Grab	SU
Oil & Grease, g/	Twice Monthly	Visual, Grab	Yes/No, mg/L
h/ Total phosphorus, Influent Effluent	Monthly	Composite*	mg/L
	Monthly	Composite*	mg/L
h/Total Kjeldahl nitrogen, Influent Effluent	Monthly	Composite*	mg/L
	Monthly	Composite*	mg/L
h/ Orthophosphate, Effluent	Monthly	Composite*	mg/L
h/ Nitrate-Nitrite, Effluent	Monthly	Composite*	mg/L

*Composite – 24 hour composite sample completed by use of automatic sampler or minimum of four grab samples collected a minimum of two hours apart.

- a/ See Definitions, *Part VIII*, for definition of terms.
- b/ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- c/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- d/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- e/ TRC shall be analyzed only if the effluent is chlorinated prior to discharge. Values greater than or equal to 0.06 mg/L shall be a violation of this permit, while values less than 0.06 mg/L shall be considered in compliance with the permit.
- f/ In addition to the total dissolved solids (TDS) effluent concentration limitation, TDS effluent loading is limited to one-ton/day. If the one-ton/day effluent loading limitation cannot be met, then the permittee is limited to 366-tons/year total TDS effluent loading from the facility. It is the responsibility of the permittee to maintain annual TDS loading information and upon request the permittee shall submit to the Director the annual TDS loading information.
- g/ Oil and grease shall be a visual test. If any oil and /or grease sheens are observed visually, then a sample of the effluent must be taken and this sample shall not exceed 10 mg/L.
- h/ This lagoon shall be evaluated to determine the current annual average total phosphorus load based on average flows and concentrations. This permit will require at least monthly monitoring of the influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations, and the effluent for total phosphorus and orthophosphate (as P), and ammonia, nitrate-nitrite, and total Kjeldahl nitrogen (as N) concentrations.

WASTE LOAD ANALYSIS AND ANTIDegradation REVIEW

Effluent limitations are also derived using a waste load analysis (WLA), which is appended to this statement of basis as ADDENDUM I. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was not required. The WLA indicates that the existing effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The potential discharge was evaluated and determined not to cause a violation of State Water Quality Standards in downstream receiving waters.

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

The major changes in this permit renewal are the inclusion of seasonal ammonia nitrogen effluent limits and inclusion of nutrient monitoring.

STORM WATER REQUIREMENTS

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

1. The facility has an approved pretreatment program as described in *40 CFR Part 403*.
2. The facility has a design flow of 1.0 MGD or greater.

The Castle Dale lagoon facility does not meet either of the criteria; therefore a storm water permit is not required at this time. However, a storm water re-opener provision is included in the permit should a storm water permit be needed in the future, following proper administrative procedures as per *UAC R317-8*, to include any applicable storm water provisions and requirements if appropriate.

PRETREATMENT REQUIREMENTS

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

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the plant, industrial discharges comprise less than 10 percent of the flow through the plant, and there is no indication of pass through or interference with the operation of the plant such as upsets or violations of the POTW's UPDES permit limits. However, the permittee is required to conduct an Industrial Wastewater Survey, as described in Part I.D.2 of the draft permit, in order to assess the need for the future development of a pretreatment program.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3* and *Water Quality Standards, UAC R317-2-5 and R317-2-7.2*.

The permittee is a minor municipal intermittent discharging facility with no significant industrial users on the system to date. Discharges will continue to be primarily from domestic sources only, which contributes a small volume of effluent when compared to the existing stream flows, in which toxicity is neither an existing concern, nor likely to be present in the discharge. Based on these considerations, 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 future discharges.

BIOSOLIDS MANAGEMENT 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.

PERMIT DURATION

As stated in *UAC R317-8-5.1(1)*, UPDES permits shall be effective for a fixed term not to exceed five (5) years.

Drafted by Mike Herkimer
Environmental Scientist
Utah Division of Water Quality
June 9, 2015

Also review and comments by:
Dan Griffin –Biosolids
Jennifer Robinson – Pretreatment
Mike George – Industrial Storm Water
Nick von Stackelberg – WLA/Antideg.
Amy Dickey - TMDL

ADDENDUM I: Castle Dale wasteload analysis

ADDENDUM II: DMR data

The draft Fact Sheet and Statement of Basis, wasteload allocation and draft permit for Castle Dale Lagoon were public noticed in the Emery County Progress, and under "Public Participation" on the Division of Water Quality Web Site, www.waterquality.utah.gov, from August 4, 2015 through September 4, 2015. No comments were received during the public notice period.

Utah Division of Water Quality

Statement of Basis

ADDENDUM

Wasteload Analysis and Antidegradation Level I Review - PRELIMINARY

Date: June 9, 2015

Facility: Castle Dale Wastewater Treatment Facility
Castle Valley Special Service District
UPDES No. UT0026663

Receiving water: Cottonwood Creek (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: Cottonwood Creek

The maximum daily design discharge is 0.95 MGD and the maximum monthly design discharge is 0.70 MGD for the facility.

Effluent parameters were characterized using data from monitoring site 4930900 Castle Dale Lagoons Outfall.

Receiving Water

The receiving water for Outfall 001 is Cottonwood Creek, which is tributary to Huntington Creek, which drains to the San Rafael River and the Colorado River.

Per UAC R317-2-13.1(b), the designated beneficial uses for Cottonwood Creek from confluence with Huntington Creek to Highway U-57 crossing are 2B, 3C and 4.

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 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.*

Utah Division of Water Quality
Wasteload Analysis
Castle Dale Wastewater Treatment Facility
UPDES No. UT0026663

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Cottonwood Creek, the 20th percentile of flow measurements taken upstream of the outfall at the Highway U-10 crossing was calculated to estimate annual critical flow in the receiving water (Table 1).

Table 1: Annual critical low flow for Cottonwood Creek at U-10 crossing

Season	Flow (cfs)
Annual	1.1

Receiving water quality data were obtained from monitoring site 4930930 Cottonwood Creek at U-10 Crossing in Castle Dale. The average seasonal value was calculated for each constituent with available data in the receiving water.

Mixing Zone

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

The actual length of the mixing zone was not determined; however, it was presumed to remain within the maximum allowable mixing zone dimensions. Acute limits were calculated using 50% of the seasonal critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total suspended solids (TSS), dissolved oxygen (DO), BOD₅, total phosphorus (TP), total nitrogen (TN), total ammonia (TAN), E. coli, pH, and total residual chlorine (TRC) as determined in consultation with the UPDES Permit Writer.

TMDL

Cottonwood Creek is listed as not impaired according to the 2010 303(d) list. The San Rafael River downstream of the confluence with Cottonwood Creek is listed as impaired for benthic macroinvertebrates.

Per UAC R317-2-14, Cottonwood Creek from the confluence with Huntington Creek to U-57 has a site specific criterion for TDS concentration of 3,500 mg/L that is based upon the EPA approved Total Maximum Daily Load (TMDL) *Price River, San Rafael River, and Muddy Creek TMDLs for Total Dissolved Solids, West Colorado Watershed Management Unit, Utah* (MFG Inc., 2004).

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WET Limits

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

Table 2: WET Limits for IC₂₅

Season	Percent Effluent
Annual	50%

Effluent Limits

Effluent limits for conservative pollutants were determined using a mass balance mixing analysis (UDWQ 2012). The mass balance analysis is summarized in Appendix A.

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 Appendix B.

The effluent limits for DO and BOD₅ in order to meet minimum DO criteria in the receiving water was evaluated using the Utah River Model. The analysis is summarized in Appendix B.

The limits for total residual chlorine were determined assuming a decay rate of 20 /day (at 20 °C) and a travel time of 8.3 minutes in the outlet pipe prior to discharge to Cottonwood Creek (approximately 1000 linear feet at 0.5 feet per second velocity). The analysis for TRC is summarized in Appendix C.

Table 3: Water Quality Based Effluent Limits Summary

Effluent Constituent	Acute			Chronic		
	Standard	Limit	Averaging Period	Standard	Limit	Averaging Period
Flow (MGD)		0.95	1 day		0.70	30 days
Ammonia (mg/L)			1 hour			30 days
Summer (Jul-Sep)	6.1	9.5		2.2	6.8	
Fall (Oct-Dec)	6.1	9.1		2.7	8.3	
Winter (Jan-Mar)	6.1	9.3		2.8	6.3	
Spring (Apr-Jun)	6.1	9.1		2.6	8.8	
CBOD ₅ (mg/L)	N/A	35	7 days	N/A	25	30 days
Dissolved Oxygen (mg/L)	3.0	5.0	Minimum	5.0	5.0	30 days
Total Dissolved Solids (mg/L)	3,500	3,500	Maximum			
Total Residual Chlorine (mg/L)	0.019	0.03	1 hour	0.011	0.03	4 days

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Model and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this discharge since the pollutant concentration and load is not increasing under this permit renewal.

**Prepared by:
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Water Quality Management Section**

Documents:

WLA Document: *castledale_potw_wla_2015_final.docx*
Wasteload Analysis: *castledale_potw_utstreamdo_wla_2015.xlsm*

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.

MFG Inc. 2004. *Price River, San Rafael River, and Muddy Creek TMDLs for Total Dissolved Solids, West Colorado Watershed Management Unit, Utah*. Utah Division of Water Quality.

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WASTELOAD ANALYSIS [WLA]

Date: 6/9/2015

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility: Castle Dale Lagoons
UPDES No: UT-0026663
Permit Flow [MGD]: 0.95 Annual Max. Daily
0.70 Annual Max. Monthly

Receiving Water: Cottonwood Creek
Stream Classification: 2B, 3C, 4
Stream Flows [cfs]: 1.1 All Seasons Critical Low Flow

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

Modeling Information

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

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

Effluent Limitations

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

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

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

No dilution in unnamed irrigation ditch.

Physical

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

Bacteriological

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

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

Inorganics	Chronic Standard (4 Day Average)		Acute Standard (1 Hour Average)
	Parameter	Standard	Standard
	Phenol (mg/L)		0.010
	Hydrogen Sulfide (Undissociated) [mg/L]		0.002

Metals-Total Recoverable

Parameter	Chronic (4-day ave)			Acute (1-hour ave)		
	Standard ¹	Background	Limit	Standard ¹	Background	Limit
Aluminum (µg/L)	N/A ³	20.4	N/A	750.0	20.4	1023.0
Arsenic (µg/L)	150.0	2.1	300.2	340.0	2.1	466.5
Cadmium (µg/L)	0.6	0.40	0.9	7.7	0.40	10.5
Chromium III (µg/L)	11.0	4.4	17.7	16.0	4.4	20.3
Chromium VI (µg/L)	230.7	4.4	460.5	1773.3	4.4	2435.3
Copper (µg/L)	29.3	5.0	53.9	49.6	5.0	66.3
Cyanide (µg/L) ²	5.2	3.5	6.9	22.0	3.5	28.9
Iron (µg/L)				1000.0	23.0	1365.6
Lead (µg/L)	10.9	0.9	21.1	280.8	0.9	385.6
Mercury (µg/L) ²	0.012	0.008	0.016	2.4	0.008	3.3
Nickel (µg/L)	168.0	5.4	333.2	1512.9	5.4	2077.1
Selenium (µg/L)	4.6	1.1	8.2	18.4	1.1	24.9
Silver (µg/L)				34.9	0.9	47.6
Tributyltin (µg/L) ²	0.072	0.048	0.096	0.46	0.048	0.61
Zinc (µg/L)	382.4	17.9	752.7	379.3	17.9	514.5

1: Based upon a hardness of 400 mg/l as CaCO₃

2: Background concentration assumed 67% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO₃ in the receiving water after mixing, the 87 ug/L chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/L acute aluminum criterion (expressed as total recoverable).

Organics [Pesticides]

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

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Radiological

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

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Parameter	Maximum Concentration			Site specific standard
	Standard	Background	Limit	
Total Dissolved Solids (mg/L)	3500	3500	3500	
Boron (µg/L)	750	127.6	1382	
Arsenic, Dissolved (µg/L)	100	2.1	199	
Cadmium, Dissolved (µg/L)	10	0.4	20	
Chromium, Dissolved (µg/L)	100	4.4	197	
Copper, Dissolved (µg/L)	200	5.0	398	
Lead, Dissolved (µg/L)	100	0.9	201	
Selenium, Dissolved (µg/L)	50	1.1	100	
Gross Alpha (pCi/L)	15	0.0	30	

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Projected Discharge Information

Season	Flow (MGD)		Temp.	pH	pH	Org N	NO3
	Max Daily	Ave Monthly	Deg. C	Ave	Max	mg/L as N	mg/L as N
Summer	1.0	0.7	16.5	7.30	8.10	1.00	1.00
Fall	1.0	0.7	11.4	7.33	8.10	1.00	1.00
Winter	1.0	0.7	8.6	7.63	8.10	1.00	1.00
Spring	1.0	0.7	12.4	7.26	8.10	1.00	1.00

Effluent Limitations

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

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

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

Temperature (deg C)	Maximum
Instantaneous	27.0
Change	4.0

pH	Concentration
Minimum	6.5
Maximum	9.0

Dissolved Oxygen (mg/L)	Standard	Limit
Instantaneous Minimum	3.0	5.0
30-day Average Minimum	5.0	5.0

CBOD5 (mg/L)	Standard	Limit
Daily Maximum	N/A	35.0
30-day Average	N/A	25.0

Ammonia-Total (mg/L)	Chronic (30-day ave)			Acute (1-hour ave)		
	Season	Standard	Background	Limit	Standard	Background
Summer	2.2	0.05	6.8	6.1	0.05	9.5
Fall	2.7	0.05	8.3	6.1	0.05	9.1
Winter	2.8	0.05	6.3	6.1	0.05	9.3
Spring	2.6	0.05	8.8	6.1	0.05	9.1

Model Rate Parameters and Coefficients

CBOD	CBOD	REAER.	REAER.	NBOD	NBOD		
Kd(20)	Kd(T)	Ka(20)	Ka(T)	Kn(20)	Kn(T)		
/day	/day	/day	/day	/day	/day		
1.00	0.93	20.0	19.3	1.00	0.89		
NH3	NH3	NO3	NO3	BENTHIC	BENTHIC		
LOSS	LOSS	LOSS	LOSS	DEMAND	DEMAND		
K5(20)	K5(T)	K6(20)	K6(T)	SOD(20)	SOD(T)		
/day	/day	/day	/day	gm/m2/day	gm/m2/day		
3.00	2.80	0.25	0.23	1.00	0.91		
Kd	Ka	Kn	K4	K5	K6	KCl	SOD
CBOD	Reaer.	NH3	Open	NH3 Loss	NO2+3	TRC	Benthic
{theta}	{theta}	{theta}	{theta}	{theta}	{theta}	{theta}	{theta}
1.047	1.024	1.08	1	1.047	1.045	1.06	1.065

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WASTELOAD ANALYSIS [WLA]
Appendix C: Total Residual Chlorine

Date: 6/9/2015

Discharging Facility: Castle Dale Lagoons
 UPDES No: UT-0026663

CHRONIC

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day)		Travel Time (min)	Decay Coefficient	Effluent Limit
								@ 20 deg C	@ T deg C			
Discharge (cfs)	Annual	1.1		1.1	2.2							
TRC (mg/L)	Annual	0.000	0.011			0.022	20.0	20	20.0	8.333333	0.89	0.025

ACUTE

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day)		Travel Time (min)	Decay Coefficient	Effluent Limit
								@ 20 °C	@ T °C			
Discharge (cfs)	Annual	0.6		1.5	2.0							
TRC (mg/L)	Annual	0.000	0.019			0.026	20.0	20	20.0	8.333333	0.89	0.029