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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0025704**

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

CENTERFIELD REGIONAL CULINARY WATER TREATMENT PLANT

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

TWELVE MILE CREEK,

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

This permit shall become effective on September 1, 2018

This permit expires at midnight on August 31, 2023.

Signed this 3rd day of May, 2018.

Kim Shelley
Acting Director

Table of Contents

Outline Page Number

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS 3
A. Description of Discharge Points 3
B. Narrative Standard 3
C. Specific Limitations and Self-Monitoring Requirements 3
D. Reporting of Monitoring Results 4
II. STORM WATER REQUIREMENTS 5
III. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS 6
A. Representative Sampling 6
B. Monitoring Procedures 6
C. Penalties for Tampering 6
D. Compliance Schedules 6
E. Additional Monitoring by the Permittee 6
F. Records Contents 6
G. Retention of Records 6
H. Twenty-four Hour Notice of Noncompliance Reporting 6
I. Other Noncompliance Reporting 7
J. Inspection and Entry 7
IV. COMPLIANCE RESPONSIBILITIES 9
A. Duty to Comply 9
B. Penalties for Violations of Permit Conditions 9
C. Need to Halt or Reduce Activity not a Defense 9
D. Duty to Mitigate 9
E. Proper Operation and Maintenance 9
F. Removed Substances 9
G. Bypass of Treatment Facilities 9
H. Upset Conditions 11
V. GENERAL REQUIREMENTS 12
A. Planned Changes 12
B. Anticipated Noncompliance 12
C. Permit Actions 12
D. Duty to Reapply 12
E. Duty to Provide Information 12
F. Other Information 12
G. Signatory Requirements 12
H. Penalties for Falsification of Reports 13
I. Availability of Reports 13
J. Oil and Hazardous Substance Liability 13
K. Property Rights 13
L. Severability 13
M. Transfers 13
N. State or Federal Laws 14
O. Water Quality - Reopener Provision 14
P. Biosolids – Reopener Provision 14
Q. Toxicity Limitation - Reopener Provision 144
R. Storm Water-Reopener Provision 144
VI. DEFINITIONS 155
A. Wastewater 155

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	Location of Discharge Outfall
001	Located at latitude 39° 07' 21" and longitude 111° 42' 42". Discharge through a one mile length 4 inch pipe from the facility to Twelve Mile Creek.

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 the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations *a			
	30 - Day Average	Maximum 7 - Day Average	Daily Minimum	Daily Maximum
Total Flow, gpd	300,000	NA	NA	NA
BOD_5, mg/L	25	35	NA	NA
Total Suspended Solids, mg/L	25	35	NA	NA
Total Dissolved Solids, mg/L	NA	NA	NA	4000
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable; gpd – gallons per day; mg/L – milligrams per liter

*a See *Part VI* for definition of terms.

Self-Monitoring and Reporting Requirements *a *b			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	gpd
BOD_5	2 x Month	Composite	mg/L
Total Suspended Solids	2 x Month	Composite	mg/L
Total Dissolved Solids	2 x Month	Grab	mg/L
pH	2 x Month	Grab	SU

*a See *Part VI* for definition of terms.

*b In addition to the self-monitoring requirements listed above, Centerfield regional treatment plant upon startup will be required to perform an acute biomonitoring test two times, using both the Ceriodaphnia dubia and Pimephales promelas (fathead minnows) species. The first time will be within 30 days of when the treatment plant first discharges, the second time will be within 90 days of the first test. If either of the acute biomonitoring tests fails, the permit may be re-opened and biomonitoring limits may be included in the permit.

2. There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

3. Samples taken in compliance with the monitoring requirements specified above shall be taken at Outfall 001: 39°07'21" N, 111°42'42" W.

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 via NetDMR, or on a Discharge Monitoring Report Form (EPA No. 3320-1)*, post-marked or 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 V.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

II. STORM WATER REQUIREMENTS.

The permittee does not meet the criteria for Industrial Storm Water permit coverage; therefore this permit does not include storm water provisions. The permit does however include a storm water re-opener provision in *Part V.R.*

III. 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 IV.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part IV.H, Upset Conditions*.);

   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit; or,

   e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected;

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results*.

I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part III.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.

IV. 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 IV.G, Bypass of Treatment Facilities* and *Part IV.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 IV.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 IV.G.2.a (1), (2) and (3)*.

3. Notice.

a. *Anticipated bypass*. Except as provided above in *section IV.G.2* and below in *section IV.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 IV.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 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 III.H, Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part IV.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.

V. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Director, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position

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

3. Changes to authorization. If an authorization under *paragraph V.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 V.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;

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 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".

VI. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act*.

4. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

5. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous sample volume, with sample collection rate proportional to flow rate.

6. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

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 AND STATEMENT OF BASIS
CENTERFIELD REGIONAL CULINARY WATER TREATMENT PLANT
UPDES RENEWAL PERMIT NUMBER: UT0025704
MINOR INDUSTRIAL FACILITY

FACILITY CONTACTS

Person Name:	Stewart Jensen
Position:	Water Superintendent
Facility Name:	Centerfield Regional Culinary Water Treatment Plant
Mailing Address:	P.O. Box 220200 Centerfield, Utah 84622
Telephone:	(435) 528-3296
Facility Address:	1600 North Highway 137 Mayfield, UT 84643

DESCRIPTION OF FACILITY

Centerfield City presently operates and maintains a culinary water treatment plant (plant), with some water sources previously known to have nitrate concentrations that exceed the 10 mg/L maximum for drinking water standards. Small amounts of water from higher nitrate sources can be blended with Centerfield City's spring, which is a lower nitrate source, to provide acceptable drinking water. Centerfield City intends to operate this plant, which is a small reverse osmosis facility when needed for the purpose of providing a water source to blend with other sources with elevated nitrate levels. The amount of water treated will vary beginning at 200 gallons per minute (gpm). Treatment of this water will produce 150 gpm of potable water and 50 gpm of wastewater. Operation of the plant will be intermittent as needed. The plant will only be operated during peak demand periods when significant volumes are required to meet the demand. To date, the plant has not been operating to the point of discharging any wastewater.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

All limitations will remain the same as those in the previous permit. Although there have been no effluent discharges to date, upon future startup and operation, the plant is expected to be able to comply with the permit limitations.

DISCHARGE

DESCRIPTION OF DISCHARGE

The Centerfield plant has been consistently reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis as required. There have been no discharges and no significant permit violations during the past five year permit term.

Outfall	Description of Discharge Point
001	Located at latitude 39° 07' 21" and longitude 111° 42' 42". The discharge is through a 4-inch diameter pipe leading from the water treatment plant to Twelve Mile Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION
The final discharge is to Twelve Mile Creek, which is classified as 2B, 3C, 3D, and 4.

Class 2B	Protected for secondary contact recreation such as boating, wading, or similar uses.
Class 3C	Protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
Class 3D	Protected for waterfowl, shorebirds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, 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), and pH are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. Total Flow limitation is based upon the Waste-load Analysis (WLA). The limitation for total dissolved solids (TDS) was determined based upon a previous Anti-degradation Review (ADR) Level II. Both the WLA and ADR are described in further detail herein and are included as attachments to this document. Upon start up and discharge, the permittee is expected to be able to comply with the following permit limitations:

Parameter	Effluent Limitations *a			
	30 - Day Average	Maximum 7 - Day Average	Daily Minimum	Daily Maximum
Total Flow, gpd	300,000	NA	NA	NA
BOD5, mg/L	25	35	NA	NA
Total Suspended Solids, mg/L	25	35	NA	NA
Total Dissolved Solids, mg/L	NA	NA	NA	4,000
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable; gpd – gallons per day; mg/L – milligrams per liter

*a See Definitions in Permit, *Part VI*, for definition of terms.

Reasonable Potential Analysis
Since January 1, 2016, DWQ has conducted reasonable potential (RP) analysis on all new and renewal applications received after that date following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). A formal RP analysis for this permit renewal was not conducted because there has been a lack of discharge data from the plant. The plant remains idled until there is a need for additional culinary water in the community. Once the plant begins operating and discharging regularly, a qualitative RP analysis can then be performed on subsequent permit renewals as appropriate.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit will require reports to be submitted monthly via NetDMR, or 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 when applicable.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	gpd
BOD5	2 x Month	Composite	mg/L
Total Suspended Solids	2 x Month	Composite	mg/L
Total Dissolved Solids	2 x Month	Grab	mg/L
pH	2 x Month	Grab	SU

*a See Definitions in Permit, *Part I*, for definition of terms.

In addition to the self-monitoring and reporting requirements listed above, the permittee upon start up and operation, will be required to perform Whole Effluent Toxicity testing via an acute biomonitoring test two times, using both the Ceriodaphnia dubia and Pimephales promelas (fathead minnows) species. The first time will be within 30 days of when the treatment plant first discharges, the second time will be within 90 days of the first test. If either of the acute biomonitoring tests fails, the permit may be re-opened and biomonitoring limits may be included in the permit. See the Biomonitoring Requirements section of this document for further information.

WASTE LOAD ANALYSIS AND ANTIDEGRADATION REVIEW

Effluent limitations are also derived using a waste load analysis (WLA), which is included hereto as Attachment I. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Anti-degradation 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 as required. Previously an ADR Level I review was initially performed and concluded that an ADR Level II review regarding TDS was necessary. Sunrise Engineering, Inc. prepared that Level II ADR input report addressing all of the points required in R317-2, which was dated March 16, 2007. A Level II ADR was subsequently completed by the Division with a review committee that consisted of various Division managers and staff. After discussion and deliberation, it was the unanimous consensus of the Level II ADR committee that the project would not cause an objectionable increase in TDS concentrations to the receiving waters of Twelve Mile Creek. During the development of this renewal permit, a Level I ADR was conducted and determined that a subsequent Level II ADR was not required for the plant since there were no discharges to date and no increases in the permit flows or pollutant concentrations being proposed. A Copy of the current WLA and the ADR are attached to the statement of basis.

STORM WATER

The facility's Standard Industrial Classification (SIC) code is 4941 for Water Supply. This classification combined with the lack of any bulk storage of any contaminants at the facility obviates the need for any Industrial Storm Water provisions to be included in this permit. A storm water re-opener provision however, is included in the permit should storm water requirements become necessary in the future.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the State of Utah UPDES 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 industrial facility that upon startup will be discharging intermittently. The potential for toxicity is not deemed sufficient to require regular biomonitoring or whole effluent toxicity (WET) limits. Based on these considerations, there is no reasonable potential for toxicity in the permittee's discharge (per State of Utah UPDES Permitting and Enforcement Guidance Document for WET Control). Centerfield regional treatment plant will, however be required to perform an acute biomonitoring test two times, using both the Ceriodaphnia dubia and Pimephales promelas (fathead minnows) species. The first time will be within 30 days of when the treatment plant first discharges, the second time will be within 90 days of the first test. If either of the acute biomonitoring tests fails, the permit may be re-opened and biomonitoring limits will be included in the permit. The permit will once again 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.

PERMIT DURATION

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

Drafted by
Jeff Studenka, Environmental Scientist
March 15, 2018

DWQ Draft Permit Reviews
Michael George, Storm Water
Lonnie Shull, Biomonitoring
Nate Nichols, Reasonable Potential Analysis
Dave Wham, WLA & ADR Review

PUBLIC NOTICE INFORMATION (updated May 1, 2018)

Began: March 28, 2018
Ended: April 30, 2018

The Public Notice of the draft renewal permit was published in the Sanpete Messenger.

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

ADDENDUM TO FSSOB

ATTACHMENT 1: Waste-load Analysis & Anti-degradation Review

DWQ-2018-002515

ATTACHMENT 1

Waste-load Analysis &
Anti-degradation Review

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

Date: **January 29, 2018**

Prepared by: **Dave Wham**
Standards and Technical Services

Facility: **Centerfield Regional Culinary Water Treatment Plant**
UPDES No. UT-0025704

Receiving water: **Twelve Mile Creek (2B, 3C, 3D, 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

001 Reverse osmosis retort water discharge: 0.33 MGD

Receiving Water

The receiving water for the discharge is Twelve Mile Creek.

Per UAC R317-2-13.6(a), the designated beneficial uses of San Pitch River and tributaries, from confluence with Sevier River to Highway U-132 crossing (with exceptions) are 2B, 3C, 3D, 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 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.*

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

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Twelvemile Creek, the 20th percentile of available flow measurements from DWQ monitoring station #4946160, TWELVE MILE CK @ U-137 XING IN MAYFIELD, was calculated from available flow data from the period 2001-2007. Ambient upstream water quality was characterized using the same data set.

The critical low flow condition for discharge 001 is 4.0 cfs.

TMDL

According to the Utah's 2016 303(d) Water Quality Assessment Report, the receiving water for the discharge, San Pitch River and tributaries from confluence with Sevier River to tailwaters of Gunnison Reservoir (excluding all of Sixmile Creek and Twelvemile Creek above USFS boundary), (AU UT16030004-001_00) is listed as impaired for total dissolved solids (TDS). A TMDL addressing TDS for the San Pitch River was completed November 18, 2003.

A Level II Antidegradation review of the proposed Centerfield Drinking Water Plant discharge was completed in October 2007. That review found that the discharge would not have a detrimental impact on the San Pitch River TMDL. As detailed in that document, nearly 100 percent of the water in 12 Mile Creek is diverted into the Highland Canal during the irrigation season. It is reasonable to assume that the majority of the diverted water is consumed and that a negligible amount reaches the San Pitch River in the form of irrigation return flows. Therefore, it is unlikely that the higher TDS concentrations on the RO retort effluent will have an impact on the San Pitch River TMDL. During periods of high spring runoff, water can bypass the Highland Canal and enter the San Pitch River via the lower section of 12 Mile Creek. This scenario is unlikely to have an impact on established TMDLs based on the fact that spring flows are much greater than the RO effluent and net TDS concentrations should be well below the established TMDL Criteria.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. The mixing zone model showed complete mixing within 2,500 feet for chronic conditions. Acute limits were calculated using 50% of the seasonal critical low flow.

Parameters of Concern

The potential parameter of concern identified for the discharge was TDS, as determined by the impairment status of the receiving water.

WET Limits

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

IC25 WET limits for Outfall 001 should be based on 10.4% effluent.

Wasteload Allocation Methods

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

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

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this facility. The proposed permit is a simple renewal of an existing UPDES permit. No increase in flow or concentration of pollutants over those authorized in the the existing permit is being requested.

Documents:

WLA Document: *Centerfield _WLADoc_12-29-17.docx*
Wasteload Analysis and Addendums: *Centerfield _WLA_12-29-17.xlsm*

References:

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

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Centerfield Regional Culinary Water Treatment Plant**		
UPDES No:	UT-0025704		
Current Flow:	0.30	MGD	Design Flow
Design Flow	0.30	MGD	

Receiving Water:	**Twelve-mile Creek**		
Stream Classification:	2B, 3B, 3D, 4		
Stream Flows [cfs]:	4.0	Summer (July-Sept)	20th Percentile
	4.0	Fall (Oct-Dec)	20th Percentile
	4.0	Winter (Jan-Mar)	20th Percentile
	4.0	Spring (Apr-June)	20th Percentile
	13.0	Average	
Stream TDS Values:	274.0	Summer (July-Sept)	Mean
	274.0	Fall (Oct-Dec)	Mean
	274.0	Winter (Jan-Mar)	Mean
	274.0	Spring (Apr-June)	Mean

Effluent Limits:				**WQ Standard:**
Flow, MGD:	0.30	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	4.0	Summer	5.5	30 Day Average
TNH3, Chronic, mg/l:	56.0	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	9181.0	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: 1/29/2018

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

29-Jan-18
4:00 PM

Facilities: **Centerfield Regional Culinary Water Treatment Plant** **UPDES No: UT-0025704**
Discharging to: **Twelve-mile Creek**

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 interms 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

Twelve-mile Creek:	2B, 3B, 3D, 4
Antidegradation Review:	Antidegradation Level II Review is NOT Required

III. Numeric Stream Standards for Protection of Aquatic Wildlife

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

Utah Division of Water Quality
Salt Lake City, Utah

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Aluminum	87.00 ug/l**	0.218 lbs/day	750.00 ug/l	1.876 lbs/day
Arsenic	190.00 ug/l	0.475 lbs/day	340.00 ug/l	0.851 lbs/day
Cadmium	0.49 ug/l	0.001 lbs/day	4.88 ug/l	0.012 lbs/day
Chromium III	167.82 ug/l	0.420 lbs/day	3511.04 ug/l	8.783 lbs/day
ChromiumVI	11.00 ug/l	0.028 lbs/day	16.00 ug/l	0.040 lbs/day
Copper	18.70 ug/l	0.047 lbs/day	30.13 ug/l	0.075 lbs/day
Iron			1000.00 ug/l	2.501 lbs/day
Lead	8.96 ug/l	0.022 lbs/day	230.04 ug/l	0.575 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40 ug/l	0.006 lbs/day
Nickel	103.83 ug/l	0.260 lbs/day	933.91 ug/l	2.336 lbs/day
Selenium	4.60 ug/l	0.012 lbs/day	20.00 ug/l	0.050 lbs/day
Silver	N/A ug/l	N/A lbs/day	15.34 ug/l	0.038 lbs/day
Zinc	238.75 ug/l	0.597 lbs/day	238.75 ug/l	0.597 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 225.63 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Aldrin			1.500 ug/l	0.004 lbs/day
Chlordane	0.004 ug/l	0.103 lbs/day	1.200 ug/l	0.003 lbs/day
DDT, DDE	0.001 ug/l	0.024 lbs/day	0.550 ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.046 lbs/day	1.250 ug/l	0.003 lbs/day
Endosulfan	0.056 ug/l	1.347 lbs/day	0.110 ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.055 lbs/day	0.090 ug/l	0.000 lbs/day
Guthion			0.010 ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.091 lbs/day	0.260 ug/l	0.001 lbs/day
Lindane	0.080 ug/l	1.925 lbs/day	1.000 ug/l	0.003 lbs/day
Methoxychlor			0.030 ug/l	0.000 lbs/day
Mirex			0.010 ug/l	0.000 lbs/day
Parathion			0.040 ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.337 lbs/day	2.000 ug/l	0.005 lbs/day
Pentachlorophenol	13.00 ug/l	312.799 lbs/day	20.000 ug/l	0.050 lbs/day
Toxephene	0.0002 ug/l	0.005 lbs/day	0.7300 ug/l	0.002 lbs/day

Utah Division of Water Quality
Salt Lake City, Utah

IV. Numeric Stream Standards for Protection of Agriculture

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

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

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	Concentration	Load*	Concentration	Load*
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

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

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	64.97 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	18.77 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.02 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	1.71 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.11 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	505.29 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	2.38 lbs/day

1,1,1-Trichloroethane					
Hexachloroethane	ug/l	lbs/day	8.9	ug/l	0.21 lbs/day
1,1-Dichloroethane					
1,1,2-Trichloroethane	ug/l	lbs/day	42.0	ug/l	1.01 lbs/day
1,1,2,2-Tetrachloroethai	ug/l	lbs/day	11.0	ug/l	0.26 lbs/day
Chloroethane			0.0	ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4	ug/l	0.03 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0	ug/l	103.46 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5	ug/l	0.16 lbs/day
p-Chloro-m-cresol			0.0	ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0	ug/l	11.31 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0	ug/l	9.62 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0	ug/l	409.05 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	62.56 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	62.56 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1	ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2	ug/l	0.08 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	19.01 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0	ug/l	0.94 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0	ug/l	40.90 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	55.34 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1	ug/l	0.22 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5	ug/l	0.01 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0	ug/l	697.78 lbs/day
Fluoranthene	ug/l	lbs/day	370.0	ug/l	8.90 lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0	ug/l	4090.45 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	38.50 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0	ug/l	8.66 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0	ug/l	0.53 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0	ug/l	0.82 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0	ug/l	1.20 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	409.05 lbs/day
Isophorone	ug/l	lbs/day	600.0	ug/l	14.44 lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	1900.0	ug/l	45.72 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0	ug/l	336.86 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0	ug/l	18.41 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1	ug/l	0.19 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0	ug/l	0.38 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4	ug/l	0.03 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2	ug/l	0.20 lbs/day

Phenol	ug/l	lbs/day	4.6E+06	ug/l	1.11E+05 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9	ug/l	0.14 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0	ug/l	125.12 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	288.74 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	2887.38 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06	ug/l	6.98E+04 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Acenaphthylene (PAH)					
Anthracene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0	ug/l	264.68 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.21 lbs/day
Toluene	ug/l	lbs/day	200000	ug/l	4812.30 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0	ug/l	1.95 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0	ug/l	12.63 lbs/day
					lbs/day
Pesticides					lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.05 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.05 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0	ug/l	0.05 lbs/day
Endrin	ug/l	lbs/day	0.8	ug/l	0.02 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8	ug/l	0.02 lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Heptachlor epoxide					
PCB's					
PCB 1242 (Arochlor 12/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1254 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1221 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1232 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1248 (Arochlor 12/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1260 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pesticide					
Toxaphene	ug/l		0.0	ug/l	0.00 lbs/day
Dioxin					
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day			

Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	103.46 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	5293.53 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	110.68 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.15 lbs/day
Zinc				

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

VII. Mathematical Modeling of Stream Quality

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

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

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

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

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

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

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

VIII. Modeling Information

The required information for the model may include the following information for both the 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 cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	4.0	20.0	8.2	0.10	0.50	6.76	0.00	274.0
Fall	4.0	12.0	8.1	0.10	0.50	---	0.00	274.0
Winter	4.0	4.0	8.0	0.10	0.50	---	0.00	274.0
Spring	4.0	12.0	8.1	0.10	0.50	---	0.00	274.0

Dissolved Metals	Al ug/l	As ug/l	Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*

Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l	
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0	* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.30000	12.0	0.00	0.00000
Fall	0.30000	12.0		
Winter	0.30000	12.0		
Spring	0.30000	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	0.300 MGD	0.464 cfs
Fall	0.300 MGD	0.464 cfs
Winter	0.300 MGD	0.464 cfs
Spring	0.300 MGD	0.464 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.3 MGD. If the discharger is allowed to have a flow greater than 0.3 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation 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 segements if the values below are met.

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	10.4% Effluent	[Chronic]

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	62.5 lbs/day
Fall	25.0 mg/l as BOD5	62.5 lbs/day
Winter	25.0 mg/l as BOD5	62.5 lbs/day
Spring	25.0 mg/l as BOD5	62.5 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	56.0	mg/l as N	140.0	lbs/day
	1 Hour Avg. - Acute	234.8	mg/l as N	587.4	lbs/day
Fall	4 Day Avg. - Chronic	69.0	mg/l as N	172.5	lbs/day
	1 Hour Avg. - Acute	231.4	mg/l as N	578.9	lbs/day
Winter	4 Day Avg. - Chronic	68.3	mg/l as N	170.8	lbs/day
	1 Hour Avg. - Acute	229.3	mg/l as N	573.6	lbs/day
Spring	4 Day Avg. - Chronic	69.0	mg/l as N	0.0	lbs/day
	1 Hour Avg. - Acute	231.4	mg/l as N	0.0	lbs/day

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

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

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

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.105	mg/l	0.26	lbs/day
	1 Hour Avg. - Acute	0.100	mg/l	0.25	lbs/day
Fall	4 Day Avg. - Chronic	0.105	mg/l	0.26	lbs/day
	1 Hour Avg. - Acute	0.100	mg/l	0.25	lbs/day
Winter	4 Day Avg. - Chronic	0.105	mg/l	0.26	lbs/day
	1 Hour Avg. - Acute	0.100	mg/l	0.25	lbs/day
Spring	4 Day Avg. - Chronic	0.105	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.100	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	9181.0	mg/l	11.48	tons/day
Fall	Maximum, Acute	9181.0	mg/l	11.48	tons/day
Winter	Maximum, Acute	9181.0	mg/l	11.48	tons/day
Spring	Maximum, Acute	9181.0	mg/l	11.48	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 225.63 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum	N/A		N/A	3,971.8	ug/l	9.9 lbs/day
Arsenic	1,820.73	ug/l	2.9 lbs/day	1,801.8	ug/l	4.5 lbs/day
Cadmium	4.07	ug/l	0.0 lbs/day	25.6	ug/l	0.1 lbs/day
Chromium III	1,607.34	ug/l	2.6 lbs/day	18,638.1	ug/l	46.6 lbs/day
Chromium VI	71.55	ug/l	0.1 lbs/day	67.8	ug/l	0.2 lbs/day
Copper	173.01	ug/l	0.3 lbs/day	156.6	ug/l	0.4 lbs/day
Iron	N/A		N/A	5,304.0	ug/l	13.3 lbs/day
Lead	79.37	ug/l	0.1 lbs/day	1,217.9	ug/l	3.0 lbs/day
Mercury	0.12	ug/l	0.0 lbs/day	12.7	ug/l	0.0 lbs/day
Nickel	991.90	ug/l	1.6 lbs/day	4,955.1	ug/l	12.4 lbs/day
Selenium	30.54	ug/l	0.0 lbs/day	99.3	ug/l	0.2 lbs/day
Silver	N/A	ug/l	N/A lbs/day	81.4	ug/l	0.2 lbs/day

Zinc	2,295.83 ug/l	3.7 lbs/day	1,267.3	ug/l	3.2 lbs/day
Cyanide	50.02 ug/l	0.1 lbs/day	116.8	ug/l	0.3 lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	30.6 Deg. C.	87.1 Deg. F
Fall	22.6 Deg. C.	72.7 Deg. F
Winter	14.6 Deg. C.	58.3 Deg. F
Spring	22.6 Deg. C.	72.7 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	5.80E-03 lbs/day
Chlordane	4.30E-03 ug/l	1.08E-02 lbs/day	1.2E+00 ug/l	4.64E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	2.50E-03 lbs/day	5.5E-01 ug/l	2.13E-03 lbs/day
Dieldrin	1.90E-03 ug/l	4.75E-03 lbs/day	1.3E+00 ug/l	4.84E-03 lbs/day
Endosulfan	5.60E-02 ug/l	1.40E-01 lbs/day	1.1E-01 ug/l	4.26E-04 lbs/day
Endrin	2.30E-03 ug/l	5.75E-03 lbs/day	9.0E-02 ug/l	3.48E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	3.87E-05 lbs/day
Heptachlor	3.80E-03 ug/l	9.51E-03 lbs/day	2.6E-01 ug/l	1.01E-03 lbs/day
Lindane	8.00E-02 ug/l	2.00E-01 lbs/day	1.0E+00 ug/l	3.87E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02 ug/l	1.16E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	3.87E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02 ug/l	1.55E-04 lbs/day
PCB's	1.40E-02 ug/l	3.50E-02 lbs/day	2.0E+00 ug/l	7.74E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	3.25E+01 lbs/day	2.0E+01 ug/l	7.74E-02 lbs/day
Toxephene	2.00E-04 ug/l	5.00E-04 lbs/day	7.3E-01 ug/l	2.82E-03 lbs/day

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	12.5 lbs/day
Nitrates as N	4.0 mg/l	10.0 lbs/day
Total Phosphorus as P	0.05 mg/l	0.1 lbs/day
Total Suspended Solids	90.0 mg/l	225.1 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	2.60E+04 ug/l	6.50E+01 lbs/day
Acrolein	7.50E+03 ug/l	1.88E+01 lbs/day
Acrylonitrile	6.35E+00 ug/l	1.59E-02 lbs/day
Benzene	6.83E+02 ug/l	1.71E+00 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.23E+01 ug/l	1.06E-01 lbs/day
Chlorobenzene	2.02E+05 ug/l	5.05E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.41E-03 ug/l	1.85E-05 lbs/day
1,2-Dichloroethane	9.52E+02 ug/l	2.38E+00 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.56E+01 ug/l	2.14E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.04E+02 ug/l	1.01E+00 lbs/day
1,1,2,2-Tetrachloroethane	1.06E+02 ug/l	2.65E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.35E+01 ug/l	3.37E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.14E+04 ug/l	1.03E+02 lbs/day
2,4,6-Trichlorophenol	6.25E+01 ug/l	1.56E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.52E+03 ug/l	1.13E+01 lbs/day
2-Chlorophenol	3.85E+03 ug/l	9.62E+00 lbs/day
1,2-Dichlorobenzene	1.64E+05 ug/l	4.09E+02 lbs/day
1,3-Dichlorobenzene	2.50E+04 ug/l	6.26E+01 lbs/day

1,4-Dichlorobenzene	2.50E+04 ug/l	6.26E+01 lbs/day
3,3'-Dichlorobenzidine	7.41E-01 ug/l	1.85E-03 lbs/day
1,1-Dichloroethylene	3.08E+01 ug/l	7.70E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	7.60E+03 ug/l	1.90E+01 lbs/day
1,2-Dichloropropane	3.75E+02 ug/l	9.38E-01 lbs/day
1,3-Dichloropropylene	1.64E+04 ug/l	4.09E+01 lbs/day
2,4-Dimethylphenol	2.21E+04 ug/l	5.53E+01 lbs/day
2,4-Dinitrotoluene	8.75E+01 ug/l	2.19E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.19E+00 ug/l	1.30E-02 lbs/day
Ethylbenzene	2.79E+05 ug/l	6.98E+02 lbs/day
Fluoranthene	3.56E+03 ug/l	8.90E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.64E+06 ug/l	4.09E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.54E+04 ug/l	3.85E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.46E+03 ug/l	8.66E+00 lbs/day
Dichlorobromomethane(HM)	2.12E+02 ug/l	5.29E-01 lbs/day
Chlorodibromomethane (HM)	3.27E+02 ug/l	8.18E-01 lbs/day
Hexachlorocyclopentadiene	1.64E+05 ug/l	4.09E+02 lbs/day
Isophorone	5.77E+03 ug/l	1.44E+01 lbs/day
Naphthalene		
Nitrobenzene	1.83E+04 ug/l	4.57E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.35E+05 ug/l	3.37E+02 lbs/day
4,6-Dinitro-o-cresol	7.36E+03 ug/l	1.84E+01 lbs/day
N-Nitrosodimethylamine	7.79E+01 ug/l	1.95E-01 lbs/day
N-Nitrosodiphenylamine	1.54E+02 ug/l	3.85E-01 lbs/day
N-Nitrosodi-n-propylamine	1.35E+01 ug/l	3.37E-02 lbs/day
Pentachlorophenol	7.89E+01 ug/l	1.97E-01 lbs/day
Phenol	4.42E+07 ug/l	1.11E+05 lbs/day
Bis(2-ethylhexyl)phthalate	5.68E+01 ug/l	1.42E-01 lbs/day
Butyl benzyl phthalate	5.00E+04 ug/l	1.25E+02 lbs/day
Di-n-butyl phthalate	1.15E+05 ug/l	2.89E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.15E+06 ug/l	2.89E+03 lbs/day
Dimethyl phthlate	2.79E+07 ug/l	6.98E+04 lbs/day
Benzo(a)anthracene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Benzo(a)pyrene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Benzo(b)fluoranthene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Benzo(k)fluoranthene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Chrysene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	2.98E-01 ug/l	7.46E-04 lbs/day

Pyrene (PAH)	1.06E+05 ug/l	2.65E+02 lbs/day
Tetrachloroethylene	8.56E+01 ug/l	2.14E-01 lbs/day
Toluene	1.92E+06 ug/l	4.81E+03 lbs/day
Trichloroethylene	7.79E+02 ug/l	1.95E+00 lbs/day
Vinyl chloride	5.05E+03 ug/l	1.26E+01 lbs/day
Pesticides		
Aldrin	1.35E-03 ug/l	3.37E-06 lbs/day
Dieldrin	1.35E-03 ug/l	3.37E-06 lbs/day
Chlordane	5.68E-03 ug/l	1.42E-05 lbs/day
4,4'-DDT	5.68E-03 ug/l	1.42E-05 lbs/day
4,4'-DDE	5.68E-03 ug/l	1.42E-05 lbs/day
4,4'-DDD	8.08E-03 ug/l	2.02E-05 lbs/day
alpha-Endosulfan	1.92E+01 ug/l	4.81E-02 lbs/day
beta-Endosulfan	1.92E+01 ug/l	4.81E-02 lbs/day
Endosulfan sulfate	1.92E+01 ug/l	4.81E-02 lbs/day
Endrin	7.79E+00 ug/l	1.95E-02 lbs/day
Endrin aldehyde	7.79E+00 ug/l	1.95E-02 lbs/day
Heptachlor	2.02E-03 ug/l	5.05E-06 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1254 (Arochlor 1254)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1221 (Arochlor 1221)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1232 (Arochlor 1232)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1248 (Arochlor 1248)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1260 (Arochlor 1260)	4.33E-04 ug/l	1.08E-06 lbs/day
PCB-1016 (Arochlor 1016)	4.33E-04 ug/l	1.08E-06 lbs/day
Pesticide		
Toxaphene	7.21E-03 ug/l	1.80E-05 lbs/day
Metals		
Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		

Dioxin		
Dioxin (2,3,7,8-TCDD)	1.35E-07 ug/l	3.37E-10 lbs/day

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

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		3971.8				3971.8	N/A
Antimony				41361.0		41361.0	
Arsenic	961.9	1801.8			0.0	961.9	1820.7
Barium						0.0	
Beryllium						0.0	
Cadmium	95.5	25.6			0.0	25.6	4.1
Chromium (III)		18638.1			0.0	18638.1	1607.3
Chromium (VI)	955.0	67.8			0.0	67.82	71.55
Copper	1916.9	156.6				156.6	173.0
Cyanide		116.8	2116143.1			116.8	50.0
Iron		5304.0				5304.0	
Lead	955.0	1217.9			0.0	955.0	79.4
Mercury		12.74		1.44	0.0	1.44	0.115
Nickel		4955.1		44246.6		4955.1	991.9
Selenium	467.2	99.3			0.0	99.3	30.5
Silver		81.4			0.0	81.4	
Thallium				60.6		60.6	
Zinc		1267.3				1267.3	2295.8
Boron	7214.1					7214.1	

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	3971.8	N/A	
Antimony	41360.98		
Arsenic	961.9	1820.7	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	25.6	4.1	
Chromium (III)	18638.1	1607	
Chromium (VI)	67.8	71.5	Acute Controls
Copper	156.6	173.0	Acute Controls

Cyanide	116.8	50.0	
Iron	5304.0		
Lead	955.0	79.4	
Mercury	1.443	0.115	
Nickel	4955.1	992	
Selenium	99.3	30.5	
Silver	81.4	N/A	
Thallium	60.6		
Zinc	1267.3	2295.8	Acute Controls
Boron	7214.12		

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

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

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

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**

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.

XIII. Notice of UPDES Requirement

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

THIS IS A DRAFT DOCUMENT

Utah Division of Water Quality
801-538-6052
File Name: Centerfield_WLA_1-29-18

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	2.000	58.547	0.000	58.547	0.600	0.600

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	4.000	0.000	0.000	32.000	32.000

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	1.000

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Level I Antidegradation Review for: Centerfield Regional Culinary Water Treatment Plant

THIS IS A DRAFT DOCUMENT

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR found that the proposed activity meets the requirements of R317-2-3.5(b)(1) (water quality will not be lowered by the proposed activity) and, therefore does not require a Level II review. The proposed activity is a basic permit renewal. No increase in effluent concentration or load is requested over that allowed under the current UPDES Permit.