

**STATEMENT OF BASIS
KAMAS CITY CORPORATION
WASTEWATER TREATMENT FACILITY
UPDES PERMIT NO. UT0020966
RENEWAL PERMIT
MINOR MUNICIPAL**

FACILITY CONTACT:

Responsible Official: Lewis Marchant, Mayor
Kamas City
170 North Main
Kamas, UT 84036-0007
Phone: (435) 783-4630

Facility Locations: Simpson Road
Kamas, UT 84036

Operator: Darrell Thomas
Phone: (435) 783-6208

DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION: The Kamas City Wastewater Treatment Facility was last upgraded in 1991. At present, the facility consists of an 18" inlet pipe, barscreen, Marsh McBurney influent flow meter, followed by 5 waste stabilization ponds (first 3 are aerated), ultraviolet light disinfection, Control Manufacturing Company (CMC) effluent flow meter and a 10 KW Koler generator. The facility has seven 20 HP Aero-O2 aerators manufactured by Aeratrion Industries International, Inc. The five cells cover 3.4, 6.7, 3.4, 3.2 and 2.1 acres respectively. Total surface area of the lagoon is approximately 18.8 acres. The total area of the facility is contained within a chain link fence and occupies an area of 900 feet by 1300 feet. The wastewater lagoon is located approximately one-quarter (0.25) mile northwest of Kamas, Utah in Summit County.

The design capacity of the facility is 1.0 MGD and was originally designed for a population equivalent of 1,000. The current population of Kamas is approximately 1,900. The treatment facility was originally designed for an influent organic loading of 420 lbs/day of Biochemical Oxygen Demand (BOD) and 375 lbs/day of Total suspended solids (TSS). Since the facility was built, it has added additional aerators to their system. With this addition, the facility can now treat 1,750 lbs of BOD per day with a population equivalent of approximately 4,000.

DESCRIPTION OF DISCHARGE: The effluent discharges to the west approximately one quarter mile through an underground 10" pipe to an un-named irrigation ditch, which is a tributary of Beaver Creek. From this location, Beaver Creek flows approximately 3 miles to the Weber River. Outfall 001A is located at latitude 40° 39' 06" and longitude 111° 17' 06".

RECEIVING WATERS AND STREAM CLASSIFICATION: The final discharge is to Beaver Creek and to the Weber River, both classified as 1C, 2B, 3A and 4.

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| Class 1C | - | Protected for domestic purposes with prior treatment by treatment process as required by the Utah Division of Drinking Water. |
| Class 2B | - | Protected for secondary contact recreation such as boating, wading |

- or similar uses.
- Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary organisms in their food chain.
- Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.

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

A cap of 125% of the current annual total phosphorus load will be established and referred to as phosphorus loading cap. Once the lagoon's phosphorus loading cap has been reached, the owner of the facility will have five years to construct treatment processes or implement treatment alternatives to prevent the total phosphorus loading cap from being exceeded. The load cap shall become effective July 1, 2018.

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

- R317-1-3.3, D, 1 Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;
- R317-1-3.3, D, 2. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

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

The Ammonia effluent limit in the renewal permit is more stringent than in the previous permit. The change was due to a more accurate characterization of the 7Q10 flow for Beaver Creek. As a result of the new wasteload allocation, the new 30-day average ammonia limitations are:

Winter Season (January-March): 5.1 mg/L, Spring (April-June): 3.5 mg/L, Summer (July-September): 6.0 mg/L, Fall (October-December): 3.6 mg/L. While the wasteload allocation stated a value of 3.6 for fall a value of 3.5 will be used for the limit to standardize it with the spring season based on best professional judgement.

As a result of this change the new chronic ammonia standards will be difficult to meet with the current lagoons. Given the treatment required to meet this more stringent chronic ammonia limit, DWQ is working with the facility to resolve this issue and help the facility to comply with future permit limits through a compliance schedule and other means. It is anticipated that the facility will have to construct a new treatment plant capable of meeting the most stringent seasonal limit of 3.5 mg/L 30 day average effluent limit for Ammonia.

Due to impairments to Rockport Reservoir's coldwater fishery beneficial use and its associated TMDL, Kamas City will need to meet limits for TP and TN as allocated in the 2014 Rockport Reservoir and Echo Reservoir TMDL (adopted into rule by the Water Quality Board 3/26/2014 and approved by EPA 9/16/2014). The TMDL outlines both annual and summer load limits, defining summer as April 1 through September 30 (183 days). At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. This equates to 3.3 lbs/day TP and 33 lbs/day TN.

As a result of the change in the chronic ammonia limits, and the facility's anticipated inability to meet the 3.5 mg/L 30-day average for Ammonia during the spring season and the total phosphorus and total nitrogen limits in the 2014 Rockport TMDL, a compliance schedule is included in the permit to allow the facility time to come into compliance with the new effluent limits. That schedule is listed below.

- a. By August 1, 2018 Kamas City shall submit for Director approval the Wastewater Master Plan describing in detail the community needs, alternatives considered, pretreatment requirements (if necessary), and plans for financing and implementing the recommended and necessary improvements to the Kamas wastewater treatment.
- b. By February 1, 2020 Kamas City shall submit detailed construction plans and specifications to DWQ to obtain a construction permit.
- c. By February 1, 2021 Kamas City shall commence construction of approved wastewater treatment upgrades as outlined in the DWQ construction permit.
- d. By August 1, 2023 Kamas City shall complete construction of wastewater treatment upgrades and begin startup and optimization of upgraded wastewater treatment processes.
- e. After 6 months from the time construction is complete at the facility, Kamas City shall achieve compliance with all effluent limits prescribed in UPDES Permit No. UT0020907. At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually.

BASIS FOR EFFLUENT LIMITATIONS: Limitations on TSS, BOD, *E. coli* and pH are based on Utah Secondary Treatment Standards, Utah Administrative Code (UAC) R317-1-3.2. The facility has requested and has been granted the alternative effluent limits for lagoons for BOD₅, TSS and percent removal. The dissolved oxygen (D.O.) and ammonia (NH₃) limitations are based upon water quality considerations (the derivation of these are included in a wasteload allocation which is the addendum). The wasteload allocation indicates that a D.O. effluent limit of 4.0 mg/L is protective, however the current permit limit of 5.5 mg/L will be continued in the renewal permit and is based on the fact that Echo reservoir, which Beaver Creek is a tributary, is under a TMDL for Dissolved Oxygen. The wasteload analysis indicates these limitations should be sufficient to protect water quality, in order to meet State Water Quality Standards in receiving waters (see ADDENDUM). Based on self monitoring data during the last permit period, with the exception of ammonia, Kamas should have no difficulty meeting these limitations. A link to Kamas City's compliance status can be found at the link below.

<https://echo.epa.gov/detailed-facility-report?fid=110020117924>

As mentioned above, Total Phosphorus and Total Nitrogen limits are being set by the 2014 Rockport TMDL. At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. This equates to 3.3 lbs/day TP and 33 lbs/day TN.

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. 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 required because it discharges to a 1C drinking water source. The results are included with the WLA. The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The discharge was evaluated and determined not to cause a violation of State Water Quality Standards in downstream receiving waters.

Antidegradation Reviews are intended to ensure that waters that have better quality than required by the standards are not degraded unless the degradation is necessary for important social or economic reasons.

An Antidegradation Level II was required for this facility during the last permit cycle. Since there have been no significant changes at the facility during this permit cycle, a new Level II ADR is not needed at this time as the previous ADR is still in effect. The DWQ agrees with the findings of the Level II Reviews and has determined that the discharges will not cause or contribute to a violation of water quality standards.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These outcomes provide a frame work for what routine monitoring or effluent limitations are required. No metals data was available at the time of permit review. During this permit cycle metals monitoring will be required on a semi-annual basis. A quantitative RP analysis will be performed at the next permit renewal cycle.

SELF-MONITORING AND REPORTING REQUIREMENTS: The following effluent self-monitoring requirements are based upon the Utah Monitoring Recording and Reporting Frequency Guideline as effective December 1, 1991. Reports shall be made on DMR forms or NetDMR, and are due 28 days after the end of the monitoring month.

Parameter	Effluent Limitations and Sampling Frequency a/					
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, MGD b/ c/	NA	NA	NA	1.0	Continuous	Recorder
BOD ₅ , mg/L, Influent d/	NA	NA	NA	NA	Monthly	Grab
BOD ₅ , mg/L, Effluent d/	45	65	NA	NA	Monthly	Grab
BOD ₅ Min. % Removal	65	NA	NA	NA	Monthly	Grab
TSS, mg/L, Influent d/	NA	NA	NA	NA	Monthly	Grab
TSS, mg/L, Effluent d/	45	65	NA	NA	Monthly	Grab
TSS Min. % Removal	65	NA	NA	NA	Monthly	Grab
<i>E. coli</i> , No./100mL	126	157	NA	NA	Monthly	Grab
TRC, mg/L e/	NA	NA	NA	0.047	Daily	Grab
DO, mg/L	NA	NA	5.5	NA	Monthly	Grab
Oil and Grease, mg/L f/	NA	NA	NA	Visual/10	Monthly	Visual/Grab
pH, Standard Units	NA	NA	6.5	9.0	Weekly	Grab
Total Phosphorus, Influent mg/L	NA	NA	NA	NA	Monthly	Composite
Total Phosphorus, Effluent mg/L g/ i/	NA	NA	NA	NA	Monthly	Composite
Total Nitrogen, Effluent mg/L h/ i/	NA	NA	NA	NA	Monthly	Composite
Total Kjeldahl Nitrogen, Influent mg/L b/	NA	NA	NA	NA	Monthly	Composite
Total Kjeldahl Nitrogen, Effluent mg/L b/	NA	NA	NA	NA	Monthly	Composite
Orthophosphate, mg/L	NA	NA	NA	NA	Monthly	Composite
Ammonia, mg/L i/						
Summer (July-September)	NA	NA	NA	6.0	Monthly	Grab
Spring, Fall (Apr-June, Oct-Dec)	NA	NA	NA	3.5	Monthly	Grab
Winter (Jan-Mar)	NA	NA	NA	5.1	Monthly	Grab
Nitrate-Nitrite, mg/L	NA	NA	NA	NA	Monthly	Composite
Metals, µg/L j/	NA	NA	NA	NA	Semi-Annually	Composite
Organic Toxics, mg/L k/	NA	NA	NA	NA	1 st , 3 rd and 5 th Year	Grab

a/ See Definitions, *Part VI*, 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 will only be required to be sampled if the UV system is not being used for disinfection.
- f/ Visual monitoring will be conducted monthly for an oil and grease sheen. If a sheen is observed, then a grab sample shall be taken and shall not exceed 10 mg/L.
- g/ Total phosphorus is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually.
- h/ Total nitrogen is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually.
- i/ Final effluent limitations for Outfall 001 will become effective in a future permit in accordance with compliance schedule as found in Part 1.C.2 of the permit.
- j/ One sample should be in Spring/Summer Season and one sample should be in the Fall/Winter Season.
- k/ The sampling for metals and organic toxics must be on the influent and effluent.

NA Not Applicable

STORM WATER REQUIREMENTS: A treatment works facility treating domestic sewage or any other sewage sludge, a wastewater treatment device or system used in the storage, treatment, recycling and reclamation of municipal sewage, and lands dedicated to the disposal of sewage sludge that are located within the confines of the facility are required to submit a Notice of Intent (NOI) specifically for the Utah Pollutant Discharge Elimination System Multi Sector General Permit for Industrial if the treatment facility meets one of the following two criteria,

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

Kamas fits one of these criteria and has previously applied for exclusion from a UPDES Storm Water Permit by a No Exposure Certification. However the facility will need to reapply for a No Exposure Certification upon permit renewal. This office anticipates approval of the exclusion as the Kamas Waste Water Treatment Plant appears to meet the requirements therein. Therefore, no storm water permit will be required at this time.

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

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

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

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

The permit requires semi-annual sampling for metals. Sampling for organic toxics must be done in the 1st, 3rd and 5th years of the permit. The sampling for metals and organic toxics must be on the influent and effluent.

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 (WET) 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.*

Kamas City Corporation is a minor municipal facility, which discharges one (1) MGD, and has no industries contributing to the wastewater system. The dilution ratio of the irrigation ditch to discharge is approximately 2 to 1. Based on these considerations, there is no reasonable potential for toxicity in Kamas City's discharge (per *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity 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. This provision allows for modification of the permit, should additional information indicate the presence of toxicity in the discharge.

BIOSOLIDS (SLUDGE) DISPOSAL 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 no 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 disposed of, 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:

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

PUBLIC NOTICE:

This permit was public noticed in the Park Record and also on the Division of Water Quality's website from February 15, 2017 – March 20, 2017. No comments were received during the public comment period therefore the final version is the same as the version public noticed.

Drafted by Lonnie Shull
Environmental Scientist
Utah Division of Water Quality
September 15, 2016
Revised January 20, 2017
Finalized March 28, 2017

Wasteload Allocation by Dave Wham
Pretreatment Review by Jennifer Robinson
TMDL Review by Karl Adams and Kari Lundeen
Reasonable Potential Review by Ken Hoffman

PND DRAFT

Appendix A

Wasteload Allocation