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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Major Municipal Permit No. **UT0020222**
Biosolids Permit No. **UTL020222**

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

PITMAN FAMILY FARMS, INC.

is hereby authorized to discharge from

MORONI CITY WASTEWATER TREATMENT PLANT

to receiving waters named **SAN PITCH RIVER**,

an to dispose of biosolids,

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

This permit shall become effective on October 16, 2023

This permit expires at midnight on October 16, 2028.

Signed this Sixteenth day of October, 2023

John K. Mackey, P.E.
Director

DWQ-2023-123662

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

Outfall Number(s)	Location of Discharge Outfall
001	An 18" underground pipe runs southeast from the treatment plant and discharges through a diffuser into the San Pitch River at latitude 39°30'52" and longitude 111°35'10".

B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.3.a & b* of this permit.

2.

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

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	1.1	--	--	--	--
BOD_5, mg/L	25	35	--	--	--
BOD_5 Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L					
Summer (Jul-Sep)	--	5.5	--	5.5	--
Fall (Oct-Dec)		5.5		5.5	
Winter (Jan-Mar)		5.5		5.5	
Spring (Apr-Jun)		5.5		5.5	
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	5.3	--	--	--	21.4
Fall (Oct-Dec)	38.5	--	--	--	24.1
Winter (Jan-Mar)	38.5	--	--	--	49.5
Spring (Apr-Jun)	5.3	--	--	--	13.7
E. coli, No./100mL	126	157	--	--	--
WET, Chronic Biomonitoring					
Summer (Jul-Sep)	--	--	--	--	IC25> 32% effluent
Fall (Oct-Dec)	--	--	--	--	IC25> 16% effluent
Winter (Jan-Mar)	--	--	--	--	IC25> 6% effluent
Spring (Apr-Jun)	--	--	--	--	IC25> 19% effluent
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
Mercury *h	.000020				.0049
TDS, mg/L	--	--	--	--	1200
Total Phosphorous, mg/L	--	--	1.0	--	--

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent *d	2 X weekly	Composite	mg/L
Effluent	2 X weekly	Composite	mg/L
TSS, Influent *d	2 X weekly	Composite	mg/L
Effluent	2 X weekly	Composite	mg/L
E. coli	2 X weekly	Grab	No./100mL
pH	2 X weekly	Grab	SU

Total Ammonia (as N)	2 X weekly	Composite	mg/L
DO	2 X weekly	Grab	mg/L
WET – Biomonitoring *f Ceriodaphnia - Chronic Fathead Minnows - Chronic	 Quarterly Quarterly	 Composite Composite	 Pass/Fail Pass/Fail
Oil & Grease *e	Monthly	Grab	mg/L
Orthophosphate (as P), Effluent	 Monthly	 Composite	 mg/L
Total Phosphorus (as P), Influent Effluent	 Monthly Monthly	 Composite Composite	 mg/L mg/L
Total Kjeldahl Nitrogen TKN (as N), Influent Effluent	 Monthly Monthly	 Composite Composite	 mg/L mg/L
Nitrate, NO3	Monthly	Composite	mg/L
Nitrite, NO2	Monthly	Composite	mg/L
TDS, mg/L	Monthly	Composite	mg/L
Temperature, mg/L	Monthly	Composite	mg/L
Metals *g, Influent Effluent	 Quarterly Monthly	 Composite Composite	 mg/L mg/L
Mercury Effluent	 Monthly	 Composite	 mg/L

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

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

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

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

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

*f WET testing shall occur four times a year, two times during the irrigation season, and two times during the non-irrigation season. WET tests shall be at least 45 days apart. The chronic Ceriodaphnia will be tested during the 1st and 3rd quarters and the chronic fathead minnows will be tested during the 2nd and 4th quarters.

*g All effluent metals must be sampled monthly. Metals results were reviewed for the last 36 months. A reasonable potential analysis was run on arsenic, cadmium, copper, lead, nickel, selenium, and zinc. Effluent limitations were established for mercury.

*h EPA Method 1631 (or a more sensitive method than EPA Method 245.1) must be used for mercury analysis.

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

a. *Whole Effluent Testing – Chronic Toxicity*.

Effective immediately, the permittee shall quarterly, conduct chronic static renewal toxicity tests on a composite sample of the final effluent at Outfall(s) 001. The sample shall be collected at the point of compliance before mixing with the receiving water.

Three samples are required and samples shall be collected on Monday, Wednesday and Friday of each sampling period or collected on a two-day progression for each sampling period. This may be changed with Director approval. The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition*, October 2002, *EPA—821-R-02-013* as per *40 CFR 136.3(a)* TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS. Test species shall consist of *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow).

A multi dilution test consisting of at least five concentrations and a control is required at two dilutions below and two above the RWC, if possible. If test acceptability criteria are not met for control survival, growth, or reproduction, the test shall be considered invalid. A valid replacement test is required within the specified sampling period to remain in compliance with this permit. Chronic toxicity occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC25) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to effluent concentration (equivalent to the RWC). If a sample is found to be chronically toxic during a routine test, the monitoring frequency shall become biweekly (see Part ¬¬___Accelerated Testing). (the Director may enter acceptable variations in the test procedure here as documented in the Fact Sheet Statement of Basis and based on the test acceptability criteria as contained in Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control February, 2018). If possible, dilution water should be obtained from the receiving stream.

If the permit contains a total residual chlorine limitation such that it may interfere with WET testing (>0.20 mg/L), the permittee may dechlorinate the sample in accordance with the standard method. If dechlorination is negatively affecting the test, the permittee may collect the sample just before chlorination with Director approval.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the required reporting period (e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with Appendix C of "Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity, Utah Division of Water Quality, February, 2018.

b. *Accelerated Testing*. When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.

c. *Pattern of Toxicity*. A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

If two (2) consecutive tests (not including the scheduled test which triggered the search for a pattern of toxicity) do not result in an exceedance of the acute or chronic toxicity criteria, no further accelerated testing will be required and no pattern of toxicity will be found to exist. The permittee will provide written verification to the Director within 5 days of determining no pattern of toxicity exists, and resume routine monitoring.

A pattern of toxicity may or may not be established based on the following:

WET tests should be run at least weekly (acute) or every two weeks (chronic) (note that only one test should be run at a time), for up to 5 tests, until either:

1) 2 consecutive tests fail, or 3 out of 5 tests fail, at which point a pattern of toxicity will have been identified, or

2) 2 consecutive tests pass, or 3 out of 5 tests pass, in which case no pattern of toxicity is identified.

d. *Preliminary Toxicity Investigation*.

(1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.

(2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the Director, will be

incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit. With adequate justification, the Director may extend these deadlines.

(3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (see Part ___ Toxicity Reduction Evaluation

(4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.

e. *Toxicity Reduction Evaluation (TRE)*. If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

(1) Phase I – Toxicity Characterization

(2) Phase II – Toxicity Identification Procedures

(3) Phase III – Toxicity Control Procedures

(4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If toxicity spontaneously disappears during the TIE/TRE, the permittee shall submit written notification to that effect to the Director.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee shall submit the following:

(a) An alternative control program for compliance with the numerical requirements.

(b) If necessary, as determined by the Director, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

This permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or modified WET testing requirements without public notice.

Failure to conduct an adequate TIE/TRE plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be

considered a violation of this permit. After implementation of TIE/TRE plan, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on November 28, 2023. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G*), and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

II. PRETREATMENT REQUIREMENTS

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

1. *Indirect Discharge* means the introduction of pollutants into a Publicly Owned Treatment Works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.

2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

   a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

   b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

3. *Local Limit* is defined as a limit designed to prevent Pass Through or Interference. And is developed in accordance with *40 CFR 403.5(c).*

4. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

5. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

6. *Significant Industrial User (SIU)* is defined as an Industrial User discharging to a POTW that satisfies any of the following:

   a. Has a process wastewater flow of 25,000 gallons or more per average work day;

   b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

   c. Is subject to Categorical Pretreatment Standards, or

d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standard or Requirement.

7. *User or Industrial User (IU)* means a source of Indirect Discharge

B. Pretreatment Monitoring and Reporting Requirements.

1. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop an Approved POTW Pretreatment Program (Program). However, to determine if the development of a Program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.C.1* and submit it to the Division of Water Quality when changes occur as required in *Part II.C*.

2. Monitoring will be required of the permittee for the pretreatment requirements. If changes occur, monitoring may be required for parameters not currently listed in the permit. Current monitoring requirements may be required to be increased to determine the impact of an Industrial User or to investigate sources of pollutant loading. This could include but is not limited to sampling of the influent and effluent of the wastewater treatment plant and within the collection system.

3. Influent and Effluent Monitoring and Reporting Requirements. The permittee shall sample and analyze the influent and effluent for the parameters listed in the Pretreatment Monitoring Table.

Pretreatment Monitoring Table				
Parameter	MDL	Sample Type	Frequency	Units
Total Arsenic	0.465	Composite	Quarterly	mg/L
Total Cadmium	0.0019			
Total Chromium	0.0286			
Total Copper	0.0849			
Total Lead	0.0465			
Total Molybdenum	NA			
Total Nickel	0.337			
Total Selenium	0.0101			
Total Silver	0.0716			
Total Zinc	1.16			
Total Cyanide	0.0089	Composite/Grab		
Total Mercury	0.000020			
Organic Toxic Pollutants	NA		Yearly	

a. The minimum detection limit (MDL) of the test method used for analysis must be below the concentration stated in the Pretreatment Monitoring Table. If a test method is not available, the permittee must submit documentation to the Director regarding the method that will be used

b. In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in *40 CFR 122* Appendix D Table II. If expected to be present surfactants and *40 CFR 122* Appendix D Table V must be sampled yearly. The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present.

4. The results of the analyses of metals, cyanide and Organic Toxic Pollutants shall be submitted along with the Discharge Monitoring Report (DMR) at the end of the earliest possible reporting period. Also, the permittee must submit a copy of the Organic Toxic Pollutants data to the Pretreatment Coordinator for the Division of Water Quality via email.

5. For Local Limit parameters it is recommended that the most sensitive method be used for analysis. This will determine if the parameter is present and provide removal efficiencies based on actual data rather than literature values. If a parameter load is greater than the allowable head works load, for any pollutant listed in Part II.B.3. or a pollutant of concern listed in the Local Limit development document or determined by the Director, the permittee must report this information to the Pretreatment Coordinator for the Division of Water Quality. If the loading exceeds the allowable headworks load, increase sampling must occur based on the requirements given by the Pretreatment Coordinator for the Division of Water Quality. If needed sampling may need to occur to find the source(s) of the increase. This may include sampling of the collection system. Notification regarding the exceedances of the allowable headworks loading can be provided via email.

C. Industrial Dischargers.

1. The "Industrial Waste Survey" or “IWS” as required by *Part II.B.1*. consists of;

   a. Identifying each Industrial User (IU) and determining if the IU is a Significant Industrial User (SIU),

   b. Determination of the qualitative and quantitative characteristics of each discharge, and

   c. Appropriate production data.

2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.

3. Notify all Significant Industrial Users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource* Conservation and Recovery Act (RCRA).

4. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.

D. General and Specific Prohibitions. The permittee must ensure that no IU violates any of the general or specific standards. If an IU is found violating a general or specific standard the permittee must notify the Director within 24 hours of the event. The general prohibitions and the specific prohibitions apply to each User introducing pollutants into a POTW whether or not the User is subject to other Pretreatment Standards or any national, State or local Pretreatment Requirements.

1. General prohibition Standards. A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference.

2. Specific Prohibited Standards. Developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any User (*40 CFR 403.5*):

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140˚F (60˚C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in Interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause Interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in Interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104˚F (40˚C);

   f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,

   h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

   i. Any pollutant that causes Pass Through or Interference at the POTW.

   j. Any prohibited standard which the permittee has adopted in an ordinance or rule to control IU discharge to the POTW.

3. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307* of *the Water Quality Act of 1987 as amended (WQA). (See 40 CFR, Subchapter N, Parts 400* through *500*, for specific information).

E. Significant Industrial Users Discharging to the POTW. The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;

1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., Industrial User) which would be subject to *Sections 301* or *306* of the *WQA* if it were directly discharging those pollutants;

2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and

3. For the purposes of this section, adequate notice shall include information on:

a. The quality and quantity of effluent to be introduced into such treatment works; and,

b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

4. Any IU that must comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA).

F. Change of Conditions. At such time as a specific pretreatment limitation becomes applicable to an Industrial User of the permittee, the Director may, as appropriate, do the following:

1. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;

2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the Program development requirements of the *General Pretreatment Regulations* at *40 CFR 403*;

3. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the Industrial User fail to properly pretreat its waste; or

4. Require the permittee to develop a Program.

G. Legal Action. The Director retains, at all times, the right to take legal action against the Industrial User or the treatment works, in those cases where a permit violation has occurred because of the failure of an Industrial User to discharge at an acceptable level. If the permittee has failed to properly delineate maximum acceptable industrial contributor levels, the Director will look primarily to the permittee as the responsible party.

H. Local Limits. If Local Limits are developed per R317-8-8.5(4)(b) to protect the POTW from Pass Through or Interference, then the POTW must submit limits to DWQ for review and public notice, as required by R317-8-8.5(4)(c). Local Limits should be developed in accordance with the latest revision of the EPA Local Limits Development Guidance and per R317-8-8.5.

III. BIOSOLIDS REQUIREMENTS

A. Biosolids Treatment and Disposal. The authorization to dispose of biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee. The treatment methods and disposal practices are designated below.

1. Treatment

a. Composting (Windrow Method) – Using the windrow method of composting, the temperature needs to be maintained at 55 º C (131 º F) or higher for fifteen days, with a minimum of five turnings during those fifteen days. (40 CFR 503.32(a)(8)(ii))

2. Description of Biosolids Disposal Method

a. Class A biosolids may be sold or given away to the public for lawn and garden use or land application.

b. Class B biosolids may be land applied for agriculture use or at reclamation sites at agronomic rates.

c. Biosolids may be disposed of in a landfill or transferred to another facility for treatment and/or disposal.

3. Changes in Treatment Systems and Disposal Practices.

a. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 30 days in advance if the process/method is specified in *40 CFR Part 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.

b. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 180 days in advance if the process/method is not specified in *40 CFR Part 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.

For any biosolids that are land filled, the requirements in *Section 2.12* of the latest version of the *EPA Region VIII Biosolids Management Handbook* must be followed

B. Specific Limitations and Monitoring Requirements. All biosolids generated by this facility to be sold or given away to the public shall meet the requirements of *Part III.B.1, 2, 3* and *4* listed below.

1. Metals Limitations. All biosolids sold or given away in a bag or similar container for application to lawns and home gardens must meet the metals limitations as described below. If these metals limitations are not met, the biosolids must be landfilled.

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0
Total Zinc	7500	2800	2800	140
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

2. Pathogen Limitations. All biosolids sold or given away in a bag or a similar container for application to lawns and home gardens must meet the pathogen limitations for Class A. Land applied biosolids must meet the pathogen limitations for Class B as described below. If the pathogen limitations are not met, the biosolids must be landfilled.

   a. Class A biosolids shall meet one of the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to Further Reduce Pathogens as defined in *40 CFR Part 503.32(a) Sewage Sludge – Class A.*

      (1) At this time **Pitman Family Farms, Inc.** does not intend to distribute biosolids to the public for use on the lawn and garden and thus is not required meet Class A Biosolids requirements. **Pitman Family Farms, Inc.** currently transferrers the Biosolids to **Nutri-Mulch** for further processing. **Nutri-Mulch** uses the following practices to meet Class A Pathogen requirements found under *(40 CFR 503.32(a)(7)(ii)), (Appendix B, B.1.):*

         (a) Composting - Windrow Method - Using the windrow method of composting, the temperature needs to be maintained at 55°C (131°F) or higher for fifteen days, with a minimum of five turnings during those fifteen days,

   b. Class B biosolids shall meet the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to

Significantly Reduce Pathogens as defined in *40 CFR Part 503.32(b) Sewage Sludge – Class B*.

(1) At this time **Pitman Family Farms, Inc.** does not intend to distribute biosolids to the public for land application and thus is not required meet Class B Biosolids requirements. **Pitman Family Farms, Inc.** currently transferrers the Biosolids to **Nutri-Mulch** for further processing of the Biosolids. **Nutri-Mulch** processes the Biosolids using a Class A PFRP, but only Distributes them as Class B Biosolids for land application. **Nutri-Mulch** uses the following practices to meet Class A Pathogen requirements found under *(40 CFR 503.32(a)(7)(ii)), (Appendix B, B.1.):*

(a) Composting - Windrow Method - Using the windrow method of composting, the temperature needs to be maintained at 55°C (131°F) or higher for fifteen days, with a minimum of five turnings during those fifteen days,

c. In addition, the permittee shall comply with all applicable site restrictions listed below *(40 CFR 503.32,(b),(5)):*

(1) Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application.

(2) Food crops with harvested parts below the land surface shall not be harvested for 20 months after application if the biosolids remains on the land surface for four months or more prior to incorporation into the soil.

(3) Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.

(4) Food crops, feed crops, and fiber crops shall not be harvested from the land for 30 days after application.

(5) Animals shall not be allowed to graze on the land for 30 days after application.

(6) Turf grown on land where biosolids is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.

(7) Public access to land with a high potential for public exposure shall be restricted for one year after application.

(8) Public access to land with a low potential for public exposure shall be restricted for 30 days after application.

(9) The sludge or the application of the sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application.

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN[1] per four (4) grams total solids (DWB)[2] or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU[3] per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	

3. Vector Attraction Reduction Requirements.

   a. The **Moroni City Water Treatment Plant** will meet vector attraction reduction through use of one of the methods listed in *40 CFR Part 503.33*. Facility is meeting the requirements though the following methods.

      (1) Moroni City Water Treatment Plant is meeting vector attraction reduction through Composting. Under *40 CFR 503.33(b)(5)* the solids need to be treated through composting with a temperature of 40° C (104° F) or higher for at least 14 days with an average temperature of over 45° C (113° F).

   If the permittee intends to use another one of the alternatives, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public comment.

4. Self-Monitoring Requirements.

   a. At a minimum, upon the effective date of this permit, all chemical pollutants, pathogens and applicable vector attraction reduction requirements shall be monitored according to *40 CFR Part 503.16(1)(a)*.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times
Moroni City Water Treatment Plant produced 140 Dry Metric Tons in 2020. Accordingly, they will sample at least one time per year		

   b. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CRF 503* and/or other criteria specific to this permit. A metals analysis is to be performed using *Method SW 846* with *Method 3050* used for

digestion. For the digestion procedure, an amount of biosolids equivalent to a dry weight of one gram shall be used. The methods are also described in the latest version of the *Region VIII Biosolids Management Handbook.*

c. The Director may request additional monitoring for specific pollutants derived from biosolids if the data shows a potential for concern.

d. After two (2) years of monitoring at the frequency specified, the permittee may request that the Director reduce the sampling frequency for the heavy metals. The frequency cannot be reduced to less than once per year for biosolids that are sold or given away to the public for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

C. Management Practices of Biosolids.

1. Biosolids Distribution Information

a. For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:

(1) The name and address of the person who prepared the biosolids for a sale or to be given away.

(2) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.

2. Biosolids Application Site Storage

a. For biosolids or material derived from biosolids that are stored in piles for one year or longer, measures shall be taken to ensure that erosion (whether by wind or water) does not occur. However, best management practices should also be used for piles used for biosolids treatment. If a treatment pile is considered to have caused a problem, best management practices could be added as a requirement in the next permit renewal

3. Land Application Practices

a. The permittee shall operate and maintain the land application site operations in accordance with the following requirements:

(1) The permittee shall provide to the Director and the EPA within 90 days of the effective date of this permit a land application plan.

(2) Application of biosolids shall be conducted in a manner that will not contaminate the groundwater or impair the use classification for that water underlying the sites.

(3) Application of biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Biosolids shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR 122.2).

(4) No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:

(a) there is 80 percent vegetative ground cover; or,

(b) approval has been obtained based upon a plan demonstrating adequate runoff containment measures.

(5) Application of biosolids is prohibited to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent.

(6) Agronomic Rate

(a) Application of biosolids shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the latest version of the *Region VIII Biosolids Management Handbook* (other methods may be approved by the Director). The treatment plant shall provide written notification to the applier of the biosolids of the concentration of total nitrogen (as N on a dry weight basis) in the biosolids. Written permission from the Director is required to exceed the agronomic rate.

(b) The permittee may request the limits of *Part III, C, 6* be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.

(c) Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites

(7) Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in *Part III.C.(6),(c).* is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.

(8) The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.

(9) When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.

(10) For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:

(a) The name and address of the person who prepared the biosolids for sale or give away for application to the land.

(b) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.

(c) The annual whole biosolids application rate for the biosolids that do not cause the metals loading rates in Tables 1, 2, and 3 (*Part III.B.1.*) to be exceeded.

(11) Biosolids subject to the cumulative pollutant loading rates in Table 2 (*Part III.B.1.*) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.

(12) If the treatment plant applies the biosolids, it shall provide the owner or leaseholder of the land on which the biosolids are applied notice and necessary information to comply with the requirements in this permit.

(13) The permittee shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges, which may cause or lead to the release of biosolids to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

D. Special Conditions on Biosolids Storage. Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two (2) years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.

E. Representative Sampling. Biosolids samples used to measure compliance with *Part III* of this Permit shall be collected at locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

F. Reporting of Monitoring Results.

1. Biosolids. The permittee shall provide the results of all monitoring performed in accordance with Part III.B, and information on management practices, biosolids treatment,

site restrictions and certifications shall be provided no later than February 19 of each year. Each report is for the previous calendar year. If no biosolids were sold or given away during the reporting period, "no biosolids were sold or given away" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part VII.G), and submitted to the Utah Division of Water Quality and the EPA by the NeT-Biosolids system through the EPA Central Data Exchange (CDX) System.

G. Additional Record Keeping Requirements Specific to Biosolids.

1. Unless otherwise required by the Director, **the permittee is not required to keep records** on compost products if the permittee prepared them from biosolids that meet the limits in Table 3 (*Part III.B.1*), the Class A pathogen requirements in *Part III.B.2* and the vector attraction reduction requirements in *Part III.B.3*. The Director may notify the permittee that additional record keeping is required if it is determined to be significant to protecting public health and the environment.

2. **The permittee is required** to keep the following information for at least 5 years:

   a. Concentration of each heavy metal in Table 3 (*Part III.B.1*).

   b. A description of how the pathogen reduction requirements in *Part III.B.2* were met.

   c. A description of how the vector attraction reduction requirements in *Part III.B.3* were met.

   d. A description of how the management practices in *Part III.C* were met (if necessary).

   e. The following certification statement:

      "I certify under the penalty of law, that the heavy metals requirements in *Part III.B.1*, the pathogen requirements in *Part III.B.2*, the vector attraction requirements in *Part III.B.3*, the management practices in *Part III.C*. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements and the management practices have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

3. 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 the life of the permit. Data collected on site, copies of Biosolids Report forms, and a copy of this UPDES biosolids-only permit must be maintained on site during the duration of activity at the permitted location.

IV. STORM WATER REQUIREMENTS.

A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, utilizing sufficiently sensitive test methods 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 Part* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.)*;

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

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

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

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

   a. A description of the noncompliance and its cause;

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

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

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

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

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

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

I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*

J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of *the Act* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or *the Act* is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *The Act Section 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part VI.G*, *Bypass of Treatment Facilities* and *Part VI.H*, *Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

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

2. Prohibition of Bypass.

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

(1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

(2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

(3) The permittee submitted notices as required under *Part VI.G.3*.

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

3. Notice.

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

(1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

(6) Any additional information requested by the Director.

b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *Part VI.G.3.a.(1) through (6)* to the extent practicable.

c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H*, Twenty-Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under *Part V.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part VI.D*, *Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

VII. GENERAL REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

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 *Sections 19-5-117* and *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. Use the following paragraph if WET testing is required at the facility:

This permit may be reopened and modified (following proper administrative procedures) to include, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;

1. Toxicity is detected, as per *Part I.C.4.a* and/or *b* of this permit, during the duration of this permit.

2. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits, and the Director concludes that numerical controls are appropriate.

3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.

4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.

Use the following paragraph if there is no WET testing is required at the facility:

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.

VIII. DEFINITIONS

A. Wastewater.

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

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

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

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC_{50}").

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

6. "Chronic toxicity" occurs when the IC_{25}< XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.

7. "IC_{25}" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

8. "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.

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

10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

11. "EPA," means the United States Environmental Protection Agency.

12. "Director," means Director of the Division of Water Quality.

13. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

14. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

15. "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.

16. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

B. Biosolids.

1. "Biosolids," means any material or material derived from sewage solids that have been biologically treated.

2. "Dry Weight-Basis," means 100 percent solids (i.e. zero percent moisture).

3. "Land Application" is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so that the biosolids can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the biosolids).

4. "Pathogen," means an organism that is capable of producing an infection or disease in a susceptible host.

5. "Pollutant" for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

6. "Runoff" is rainwater, leachate, or other liquid that drains over any part of a land surface and runs off the land surface.

7. "Similar Container" is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

8. "Total Solids" are the materials in the biosolids that remain as a residue if the biosolids are dried at 103^{o} or 105^{o} Celsius.

9. "Treatment Works" are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste or liquid manure.

10. "Vector Attraction" is the characteristic of biosolids that attracts rodents, flies mosquito's or other organisms capable of transporting infectious agents.

11. "Animals" for the purpose of this permit are domestic livestock.

12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.

13. "Agronomic Rate is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

14. "Annual Pollutant Loading Rate" is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

15. "Application Site or Land Application Site" means all contiguous areas of a users' property intended for sludge application.

16. "Cumulative Pollutant Loading Rate" is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

17. "Grit and Screenings" are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to *40 CFR 258*.

18. "High Potential for Public Contact Site" is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

19. "Low Potential for Public Contact Site" is the land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.

20. "Monthly Average" is the arithmetic mean of all measurements taken during the month.

21. "Volatile Solids" is the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

FACT SHEET AND STATEMENT OF BASIS
PITMAN FAMILY FARMS, INC.
RENEWAL PERMIT: DISCHARGE, & BIOSOLIDS
UPDES PERMIT NUMBER: UT0020222
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020222
MAJOR MUNICIPAL

FACILITY CONTACTS

Person Name: Mike Vance
Position: Vice President of Turkey Operations and Sales
Phone Number: (435) 436-8211

Person Name: Jay Jackson
Position: Operator
Phone Number: (435) 436-8211

Facility Name:	Moroni City Waste Water Treatment Plant
Operator:	Pitman Family Farms, Inc
Mailing and Facility Address:	PO Box 308 Moroni, Utah 84646
Telephone:	(435) 436-8211
Actual Address:	350 South 300 West, Moroni, Utah 84646

DESCRIPTION OF FACILITY

The Moroni City Wastewater Treatment Plant (WWTP), which is operated by Pitman Family Farm, Inc (Pitman) consists of the following unit process: mechanical screen, primary clarifier, pre-aeration basin then to the membrane bioreactor system with UV disinfection. The sludge is pumped to two aerobic digesters and then to the solids handling facility for dewatering. The facility has been in service since 1974 with a design capacity of 1.1 MGD. Although the WWTP is owned by Moroni City, Pitman operates the plant, and contributes most of the plant's influent. Since Pitman is the Operator of the WWTP the Permit has been issued to Pitman. The facility is located at 350 West 300 South in Moroni, Sanpete County, Utah.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Water quality based effluent limits have been implemented from a waste load analysis developed for this permit renewal. A Qual2Kw model was run for the 2023 waste load analysis. Changes include stricter daily maximum effluent limits and less stringent maximum monthly averages for total ammonia. These changes are due to the development of an updated Waste Load Analysis for Pitman. A reasonable potential for the discharge to exceed applicable water quality standards was determined to exist for cadmium and zinc, and therefore, effluent limitations were added to this permit.

Storm Water permit provisions have been removed as part of a programmatic separation of the previously combined UPDES Industrial Storm Water permit. Pitman will now be required to apply for and obtain separate UPDES Industrial Storm Water Permit coverage under the MSGP No. UTR000000, or an applicable exemption, as described further in the Storm Water Requirements section of this Fact Sheet.

Pitman conducted quarterly acute biomonitoring during the previous permit cycle utilizing both *Ceriodaphnia* and *Pimephales* each biomonitoring event. Current Utah Division of Water Quality (UDWQ) WET guidance indicates chronic toxicity testing should be implemented when effluent makes up more than 5% of receiving water flows. Previously depending on the season, the facility was both above and below the 5% flow threshold. However, the facility now makes up more than 5% effluent in all seasons. As a result, acute WET testing will no longer be required and the facility will only conduct chronic toxicity testing.

Total residual chlorine (TRC) has been removed from the permit effluent limitations as a result of the facility switching from chlorine disinfection to ultraviolet (UV) disinfection.

Metals data must be reported as "maximum monthly values." Additionally, a more sensitive mercury method must be used to report mercury values accurately. Effluent limitations for arsenic and nickel were removed from this permit, as a reasonable potential for nickel to impact Waters of the State was not determined to exist and information was not available as to why they were added in the previous permit cycle.

DISCHARGE

DESCRIPTION OF DISCHARGE

Pitman has reported self-monitoring results on Discharge Monitoring Reports (DMRs) on a monthly basis.

Outfall	Description of Discharge Point
001	An 18" underground pipe runs southeast from the treatment plant and discharges through a diffuser into the San Pitch River at latitude 39°30'52" and longitude 111°35'10".

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge from Outfall 001 flows into the San Pitch River and thence into the Sevier River. The irrigation canal is Class 4; the San Pitch River is Class 2B, 3C, 3D, and 4, according to Utah Administrative Code (UAC) R317-2-12.7

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.

TOTAL MAXIMUM DAILY LOAD

According to the Utah's 2021 303(d) Water Quality Assessment Report "Combined 2018/2020 Integrated Report Version 1.0", the receiving water for the discharge is *San Pitch River and tributaries from Gunnison Reservoir to U132 crossing and below USFS boundary (San Pitch-3-1:UT16030004-005_01).* The reach was not supporting for total ammonia as N, E. Coli, pH, minimum DO with a low priority for TMDL. There is an approved TMDL for TDS.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal regulations (CFR) Park 122.44* and in *Utah Administrative Code (UAC) R317-8-4.2,* effluent limitations are derived from Federal technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2)* or Utah Water Quality Standards (*UAC R317-2*). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits or multiple limits have been developed, Best Professional Judgement (BPJ) of the permitting authority may be used where applicable. 'Best Professional Judgement' refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the WLA, which incorporates Secondary Treatment Standards, Water Quality Standards, including Total Maximum Daily Load (TMDL) impairments as appropriate, Antidegradation Review (ADR), 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 was completed as appropriate.

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5), *E. coli*, pH and percent removal for BOD5 and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The Phosphorus limits are based on UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) which requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will produce effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. The oil and grease are based on best professional judgment (BPJ). The permit limit for total dissolved solids is based on the state-wide standard for all class 4 waters, which are protective of agricultural uses, UAC R317-2-14.

Permit limits for ammonia, dissolved oxygen and the chronic WET effluent limit are based upon water quality standards obtained from the waste load analysis (WLA). The WLA indicates that these limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. An Antidegradation Level II review was not required since the Level I review shows no change in plant operation or flow.

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.

A quantitative RP analysis was performed on arsenic, cadmium, copper, lead, mercury, nickel, selenium, and zinc to determine if there was reasonable potential for the discharge to exceed the applicable water

quality standards. The analytical method for mercury used by the facility was not sensitive enough to determine mercury levels to a low enough level that a reasonable protentional for mercury limits to impact waters of the state could not accurately be determined. Due to the lack of information, mercury may be eliminated from the next permit cycle if mercury is determined to not have a reasonable potential. Based on the RP analysis, a reasonable potential for effluent exceedances exists for cadmium, copper, mercury, and zinc. All metals effluent data was run through the EPAs ProUCL program to determine if any outliers existed. An outlier was determined to exist for the cadmium data, and as a result, the data point was removed. Following the removal of the outlier data, no reasonable potential for effluent exceedances was found for cadmium. Effluent limitations were established for mercury, and continued monitoring was established for copper, mercury, and zinc. A copy of the RP analysis is included at the end of this Fact Sheet.

The permit limitations are:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	1.1	--	--	--	--
BOD_5, mg/L	25	35	--	--	--
BOD_5 Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L					
Summer (Jul-Sep)	--	5.5	--	5.5	--
Fall (Oct-Dec)		5.5		5.5	
Winter (Jan-Mar)		5.5		5.5	
Spring (Apr-Jun)		5.5		5.5	
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	5.3	--	--	--	21.4
Fall (Oct-Dec)	38.5	--	--	--	24.1
Winter (Jan-Mar)	38.5	--	--	--	49.5
Spring (Apr-Jun)	5.3	--	--	--	13.7
E. coli, No./100mL	126	157	--	--	--
WET, Chronic Biomonitoring					
Summer (Jul-Sep)	--	--	--	--	IC25> 32% effluent
Fall (Oct-Dec)	--	--	--	--	IC25> 16% effluent
Winter (Jan-Mar)	--	--	--	--	IC25> 6% effluent
Spring (Apr-Jun)	--	--	--	--	IC25> 19% effluent
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9
Mercury *h	.000020				.0049
TDS, mg/L	--	--	--	--	1200
Total Phosphorous, mg/L	--	--	1.0	--	--

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 and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent *d	2 X weekly	Composite	mg/L
Effluent	2 X weekly	Composite	mg/L
TSS, Influent *d	2 X weekly	Composite	mg/L
Effluent	2 X weekly	Composite	mg/L
E. coli	2 X weekly	Grab	No./100mL
pH	2 X weekly	Grab	SU
Total Ammonia (as N)	2 X weekly	Composite	mg/L
DO	2 X weekly	Grab	mg/L
WET – Biomonitoring *f			
Ceriodaphnia - Chronic	Quarterly	Composite	Pass/Fail
Fathead Minnows - Chronic	Quarterly	Composite	Pass/Fail
Oil & Grease *e	Monthly	Grab	mg/L
Orthophosphate (as P),			
Effluent	Monthly	Composite	mg/L
Total Phosphorus (as P),			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen			
TKN (as N),			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO3	Monthly	Composite	mg/L
Nitrite, NO2	Monthly	Composite	mg/L
TDS, mg/L	Monthly	Composite	mg/L
Temperature, mg/L	Monthly	Composite	mg/L
Metals *g,			
Influent	Quarterly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Mercury			
Effluent	Monthly	Composite	mg/L

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

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

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

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

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

*f WET testing shall occur four times a year, two times during the irrigation season, and two times during the non-irrigation season. WET tests shall be at least 45 days apart. The chronic Ceriodaphnia will be tested during the 1st and 3rd quarters and the chronic fathead minnows will be tested during the 2nd and 4th quarters.

*g All effluent metals must be sampled monthly. Metals results were reviewed for the last 36 months. A reasonable potential analysis was run on arsenic, cadmium, copper, lead, nickel, selenium, and zinc. Effluent limitations were established for mercury.

*h EPA Method 1631 (or a more sensitive method than EPA Method 245.1) must be used for mercury analysis.

BIOSOLIDS

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

DESCRIPTION OF TREATMENT AND DISPOSAL

After the influent is screened, the wastewater is treated in the membrane bioreactor plant, and solids are settled out in a clarifier, where they are sent to aerobic digesters. From here the solids are dewater in a belt press and hauled to Nutri-Mulch for further processing.

The last inspection conducted at the facility was January 31, 2023. The inspection showed that Moroni was in compliance with the biosolids management program.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1),* the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

The facility has yet to produce more than 200 DMT of biosolids per year, therefore they need to sample at least once a year.

Landfill Monitoring
Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use
The intent of the heavy metals regulations of Table 3, *40 CFR 503.13* is to ensure the heavy metals do not build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C*. of the permit) to made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements with Regards to Heavy Metals
If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 3 below. If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites
The intent of the heavy metals regulations of Tables 1, 2 and 3, of *40 CFR 503.13* is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C*. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of *40 CFR 503.13*, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.
Class B Requirements with Regards to Heavy Metals
If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

> The maximum heavy metals listed in *40 CFR Part 503.13(b) Table 1* and the heavy metals loading rates in *40 CFR Part 503.13(b) Table 2*; or
>
> The maximum heavy metals in *40 CFR Part 503.13(b) Table 1* and the monthly heavy metals concentrations in *40 CFR Part 503.13(b) Table 3*.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0
Total Zinc	7500	2800	2800	140
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit. If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN[1] per four (4) grams total solids (DWB)[2] or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU[3] per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids. Pitman Family Farms, Inc. transfers the biosolids to Nutri-Mulch for processing and does not intend to handle the biosolids processing under the Pitman Family Farms, Inc. permit and has no chosen method to meet PFRP.

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). Pitman transfers the biosolids to Nutri-Mulch for processing and does not intend to handle the biosolids processing under the Pitman permit and has no chosen method to meet PSRP.

Vector Attraction Reduction (VAR)

If the biosolids are land applied Pitman will be required to meet VAR through the use of a method of listed under *40 CFR 503.33.* Pitman transfers the biosolids to Nutri-Mulch for processing and does not intend to handle the biosolids processing under the Pitman permit, and has no chosen method to meet VAR.

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Landfill Monitoring

Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G*. of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

Reporting
Pitman must report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

MONITORING DATA

Pitman transfers all biosolids produced at the facility to Nutri-Mulch for composting and distribution. They will submit monitoring results under their separate permit.

STORM WATER

STORMWATER REQUIREMENTS

Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate permit coverage, or an appropriate exclusion, under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility has not already done so, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP, or exclusion documentation. This can be accomplished online at: https://deq.utah.gov/water-quality/general-multi-sector-industrial-storm-water-permit-updes-permits.

In addition, separate permit coverage under the Construction General Storm Water Permit (CGP) may be required for any construction at the facility which disturbs an acre or more of land, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction. This can also be accomplished online: https://deq.utah.gov/water-quality/general-construction-storm-water-updes-permits.

PRETREATMENT REQUIREMENTS

The permittee is not required to develop an Approved POTW Pretreatment Program (Program). This is due to the Division of Water Quality overseeing Industrial Users discharging to the Publicly Owned Treatment Works (POTW). Also, the flow through the plant is less than five (5) MGD.

Although the permittee does not have to develop a Program, any industrial wastewater discharged to the POTW is 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. If an Industrial User begins to discharge or an existing Industrial User changes its discharge, the permittee must resubmit the IWS within sixty days following the introduction or change, as stated in Part II of the permit.

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

BIOMONITORING REQUIREMENTS

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

Since the Permittee is a major municipal discharger, and has had a pattern of sporadic WET failures, this renewal permit will contain WET limits and require chronic whole effluent (WET) testing. The permit will contain standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

PERMIT DURATION

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

Drafted by Jennifer Berjikian
Jennifer Berjikian, Discharge
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Jennifer Berjikian, Reasonable Potential Analysis
Chris Shope, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: August 16, 2023
Ended: September 18, 2023

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

The Public Noticed of the draft permit was published on the Division's webpage.

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

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

ATTACHMENT 1

Industrial Waste Survey

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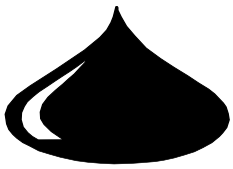
Industrial Pretreatment Wastewater Survey



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

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

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

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

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

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

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

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

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

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

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

1. A discharge which creates a fire or explosion hazard in the collection system.

2. A discharge which creates toxic gases, vapor or fumes in the collection system.

3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.

4. An acidic discharge (low pH) which causes corrosive damage to the collection system.

5. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment facility.

6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

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

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

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

Sources for the list:

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

Split the list into two groups:

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

Step 2: Preliminary Inspection

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

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

Step 3: Informing the State

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

Jennifer Robinson

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

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

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ____ /

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

_____

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

_____

Production process is: [ ] Batch [ ] Continuous [ ] Both

Is production subject to seasonal variation? [ ] yes [ ] no
If yes, briefly describe seasonal production cycle.

_____

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

1. [ ] Domestic wastes (Restrooms, employee showers, etc.)
2. [ ] Cooling water, non-contact
3. [ ] Boiler/Tower blowdown
4. [ ] Cooling water, contact
5. [ ] Process
6. [ ] Equipment/Facility washdown
7. [ ] Air Pollution Control Unit
8. [ ] Storm water runoff to sewer
9. [ ] Other describe

Wastes are discharged to (check all that apply):

[ ] Sanitary sewer **[ ] Storm sewer**
[ ] Surface water **[ ] Ground water**
[ ] Waste haulers **[ ] Evaporation**
[ ] Other (describe)
Name of waste hauler(s), if used

_____

Is a grease trap installed? Yes No
Is it operational? Yes No

Does the business discharge a lot of process wastewater?

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

Does the business do any of the following:

[ ] Adhesives
[ ] Aluminum Forming
[ ] Battery Manufacturing
[ ] Copper Forming
[ ] Electric & Electronic Components
[ ] Explosives Manufacturing
[ ] Foundries
[ ] Inorganic Chemicals Mfg. or Packaging
[ ] Industrial Porcelain Ceramic Manufacturing
[ ] Iron & Steel
[ ] Metal Finishing, Coating or Cleaning
[ ] Mining
[ ] Nonferrous Metals Manufacturing
[ ] Organic Chemicals Manufacturing or Packaging
[ ] Paint & Ink Manufacturing
[ ] Pesticides Formulating or Packaging
[ ] Petroleum Refining
[ ] Pharmaceuticals Manufacturing or Packaging
[ ] Plastics Manufacturing
[ ] Rubber Manufacturing
[ ] Soaps & Detergents Manufacturing
[ ] Steam Electric Generation
[ ] Tanning Animal Skins
[ ] Textile Mills

[ ] Car Wash
[ ] Carpet Cleaner
[ ] Dairy
[ ] Food Processor
[ ] Hospital
[ ] Laundries
[ ] Photo Lab
[ ] Restaurant & Food Service
[ ] Septage Hauler
[ ] Slaughter House

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

_____
Inspector

_____
Waste Treatment Facility

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

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

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

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

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ATTACHMENT 2

Effluent Monitoring Data

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Effluent Monitoring Data

Month	Flow -Ave	Flow - Max	pH - Min	pH - Max	O&G	E.coli - 30 Day
4/30/2020	0.49		7.2	7.32	6	6.6
5/31/2020	0.55		7.14	7.3	0	1
6/30/2020	0.55		6.91	7.28	5	1
7/31/2020	0.49		6.95	7.19	5	1.3
8/31/2020	0.51		6.87	7.16	9	1.3
9/30/2020	0.49		6.89	7.6	5	1
10/31/2020	0.57		7.2	7.85	5	1
11/30/2020	0.49		6.5	7.6	5	1
12/31/2020	0.53		7.1	7.8	5	1.4
1/31/2021	0.54		7.2	8	5	1
2/28/2021	0.55		7.1	7.7		1
3/31/2021	0.58		6.69	8.1	5	1.2
4/30/2021	0.58		6.35	7.3	8	1
5/31/2021	0.59		6.75	7.15	5	1
6/30/2021	0.631		6.85	7.45	5	1.1
7/31/2021	0.674		6.86	7.22	5	1
8/31/2021	0.47		7.04	7.4	5	1
9/30/2021	0.404312		6.81	7.63	5	1
10/31/2021	0.51		7.55	7.71	5	1.63
11/30/2021	0.496		7.5	7.68	7	4.67
12/31/2021	0.389		7.72	7.34	5	33.67
1/31/2022	0.497		7.74	7.23	7	1.75
2/28/2022	0.387		7.07	7.44	5	1
3/31/2022	0.368		6.99	7.42	5	1
4/30/2022	0.495		7.2	7.78	5	7.38
5/31/2022	0.586		7.25	7.69	5	45.78
6/30/2022	0.683		7.37	7.55	5	268
7/31/2022	0.482		7.24	7.56	6	1
8/31/2022	0.403		7.42	7.59	5	1
9/30/2022	0.44		7.44	7.6	5	1
10/31/2022	0.447		7.48	7.69	5	1
11/30/2022	0.331		7.56	7.83	5	1
12/31/2022	0.417		7.66	7.86	5	1
1/31/2023	0.515		7.84	7.63	5	1.33
2/28/2023	0.491		7.6	7.79	5	1
3/31/2023	0.36		7.23	7.77	5	1
4/30/2023	0.325		7.71	7.98	5	1
5/31/2023	0.638		7.25	7.76	5	1

E.coli - Weekly	BOD5 - Max Monthly	BOD5 - Max Weekly	BOD5 - % Removal	TRC	Nitrogen - NH3 Max Monthly
34	13.29	30	95		2.53
1	5.75	5	97	0	0.2
1	5	5	97	0	0.2
1.7	5	5	97	0	0.2
1	5.13	5	99	0	0.2
1	5.13	5.5	98	0	0.2
1	5	5	98	0	0.2
1	5	5	98	0	2.63
1	5.1	5	99	0	28.95
1	6	8.5	98	0	44.84
1	5	5	99	0	17.84
1	5	5	99	0	0.2
1	5	5	99	0	1.2
1	5	5	99	0	1
2	5	6.5	99.08	0	0.2
1	5	5	99	0	0.2
1	5	5	99.39	0	0.2
1	5.11	5.5	98.82	0	0.38
2.5	5.88	8.5	97.96	0	0.2
16.5	6	9	97.6	0	1.88
78	7.44	10.5	98.1	0	6.17
3.5	5	5	97.7	0	1.2
1	5.13	5.5	98.5	0	0.39
1	5.1	5.5	97.8	0	2.92
25	5.13	5.5	97.8	0	0.21
122.5	6.22	8	97.5	0	0.21
898	5.89	9	97.5	0	0.2
1	5.75	8	97.6	0	0.2
1	5.78	8.5	97.9	0	0.2
1	5.22	6	97.7	0	0.2
1	5.38	6.5	97.79	0	0.21
1	7.89	13	97.3	0	0.2
1	5.33	6.5	98.1	0	4.4
2	7.89	13.5	97.8	0	0.89
1	6	9	97.9	0	1.11
1	5.11	5.5	98	0	1.38
1	5.88	8.5	98.1	0	6.23
1	5.67	8	97.6	0	0.21

Nitrogen - NH3 Daily Max	Nitrogen - NH3 30D Average	NO3 - 30D Avg	NO2 - 30D Avg	DO	TDS
9.3	9.8	18.5	0.3	8.13	764
0.2	1	45.5	0.1	8.23	992
0.2	1	36	0.1	8.12	936
0.2	1	63.7	0.1	9.08	1080
0.2	1	56.3	0.1	10.3	1000
0.2	1	62.7	0.1	7.4	960
0.2	1	65.5	0.1	7.83	928
8.8	1	67	0.1	8.36	924
43	1	52	0.1	9.69	888
61.8	41.2	7.9	1	9.51	752
54.7				8.76	
0.2	1	62.4	0.1	8.31	1080
0.2	1	73.1	0.1	8.02	1060
0.2	1	66.1	0.1	7.09	1190
0.2	1	73.2	0.1	7.1	1190
0.2	1	71.4	0.1	6.73	1140
0.2	1	56.9	1	7.02	1140
1.8	1	51.8	0.1	6.81	1200
0.2	1	47.4	0.1	8.33	1130
15.3	1	36.9	0.1	8.62	880
23.1	1	46.5	0.1	9.03	1080
8.2	1	31.5	1.3	9.335	780
2.1	1	15.8	0.1	8.56	756
15.2	1	10.6	0.1	7.39	716
0.3	1	14	0.1	6.85	716
0.3	1.2	20	0.1	7.69	776
0.2	1	19.9	0.1	6.91	792
0.2	1	17.1	0.1	6.09	784
0.2	1	17.3	0.1	6.72	740
0.2	1	19.6	0.1	6.97	784
0.29	1	18	0.1	7.54	824
0.2	1	15.1	0.1	8.04	756
17.3	16.9	8.74	1.5	8.45	712
3.59	1	2.36	9.1	10	704
2.86	1.9	2	6.7	9.75	796
6.3	1	7.86	0.9	7.77	660
21.8	12.7	9.18	1.2	7.76	850
0.32	1	30.1	0.1	7.26	836

WET Results

Month	WET Test	Pass / Fail
Mar-17	48Hr Acute Ceriodaphnia	Fail
Mar-17	96Hr Acute Pimephales Promelas	Fail
Jun-17	48Hr Acute Ceriodaphnia	N/A
Jun-17	96Hr Acute Pimephales Promelas	N/A
Sep-17	48Hr Acute Ceriodaphnia	N/A
Sep-17	96Hr Acute Pimephales Promelas	N/A
Dec-17	48Hr Acute Ceriodaphnia	N/A
Dec-17	96Hr Acute Pimephales Promelas	N/A
Mar-18	48Hr Acute Ceriodaphnia	Pass
Mar-18	96Hr Acute Pimephales Promelas	Pass
Jun-18	48Hr Acute Ceriodaphnia	Fail
Jun-18	96Hr Acute Pimephales Promelas	Pass
Sep-18	48Hr Acute Ceriodaphnia	Fail
Sep-18	96Hr Acute Pimephales Promelas	Fail
Dec-18	48Hr Acute Ceriodaphnia	Fail
Dec-18	96Hr Acute Pimephales Promelas	Fail
Mar-19	48Hr Acute Ceriodaphnia	N/A
Mar-19	96Hr Acute Pimephales Promelas	N/A
Jun-19	48Hr Acute Ceriodaphnia	Pass
Jun-19	96Hr Acute Pimephales Promelas	Pass
Sep-19	48Hr Acute Ceriodaphnia	Pass
Sep-19	96Hr Acute Pimephales Promelas	Pass
Dec-19	48Hr Acute Ceriodaphnia	Pass
Dec-19	96Hr Acute Pimephales Promelas	Pass
Mar-20	48Hr Acute Ceriodaphnia	Pass
Mar-20	96Hr Acute Pimephales Promelas	Pass
Jun-20	48Hr Acute Ceriodaphnia	Pass
Jun-20	96Hr Acute Pimephales Promelas	Pass
Sep-20	48Hr Acute Ceriodaphnia	Pass
Sep-20	96Hr Acute Pimephales Promelas	Pass
Dec-20	48Hr Acute Ceriodaphnia	Pass
Dec-20	96Hr Acute Pimephales Promelas	Pass
Mar-21	48Hr Acute Ceriodaphnia	Pass
Mar-21	96Hr Acute Pimephales Promelas	Pass
Jun-21	48Hr Acute Ceriodaphnia	Pass
Jun-21	96Hr Acute Pimephales Promelas	Pass
Sep-21	48Hr Acute Ceriodaphnia	Pass
Sep-21	96Hr Acute Pimephales Promelas	Pass
Dec-21	48Hr Acute Ceriodaphnia	N/A
Dec-21	96Hr Acute Pimephales Promelas	N/A

ATTACHMENT 3

Wasteload Analysis

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ATTACHMENT 4

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

Outcome A: A new effluent limitation will be placed in the permit.
Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D: No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is needed. A copy of the initial screening is included in the "Effluent Metals and RP Screening Results" table in this attachment. The initial screening check for metals showed that the full model needed to be run on arsenic, copper, and nickel.

The RP model was run on arsenic using the most recent data back through 2017. This resulted in 56 data points and that there is no Reasonable Potential to exceed an acute limit for arsenic at both 95% and 99%. This result indicates that the inclusion of an effluent limit for (metal) is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on copper using the most recent data back through 2017. This resulted in 76 data points and that there is no Reasonable Potential to exceed an acute limit for copper at both 95% and 99%. This result indicates that the inclusion of an effluent limit for nickel is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on nickel using the most recent data back through 2017. This resulted in 76 data points and that there is no Reasonable Potential to exceed an acute limit for nickel at both 95% and 99%. This result indicates that the inclusion of an effluent limit for nickel is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on cadmium using the most recent data back through 2017. This resulted in 20 data points, one being an outlier, and that there is no Reasonable Potential to exceed an acute limit for cadmium at both 95% and 99%. This result indicates that the inclusion of an effluent limit for cadmium is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on lead using the most recent data back through 2017. This resulted in 20 data points and that there is no Reasonable Potential to exceed an acute limit for lead at both 95% and 99%. This result indicates that the inclusion of an effluent limit for lead is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on mercury using the most recent data back through 2017. This resulted in 20 data points and that there is a Reasonable Potential to exceed a chronic limit for mercury at both 95% and 99%. This result indicates that the inclusion of an effluent limit for mercury is required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome B from Reasonable Potential Guide)

The RP model was run on selenium using the most recent data back through 2017. This resulted in 20 data points and that there is no Reasonable Potential to exceed an acute limit for selenium at both 95% and 99%.

[1] See Reasonable Potential Analysis Guidance for definitions of terms

This result indicates that the inclusion of an effluent limit for selenium is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

The RP model was run on zinc using the most recent data back through 2017. This resulted in 20 data points and that there is no Reasonable Potential to exceed an acute limit for zinc at both 95% and 99%. This result indicates that the inclusion of an effluent limit for selenium is not required at this time, and that routine monitoring requirements can be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

A Summary of the RP Model inputs and outputs are included in the table below.

The Metals Initial Screening Table and RP Outputs Table are included in this attachment.

RP input/output summary

RP Procedure Output	Outfall Number: 001	
Parameter	Arsenic	
Distribution	Lognormal	
Reporting Limit	(0.0005)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.062	
Coefficient of Variation (CV)	1.9	
Acute Criterion	0.699 mg/L	
Chronic Criterion	0.465 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.37 mg/L	1.2 mg/L
RP Multiplier	1.9	5.8
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001	
Parameter	Cadmium	
Distribution	Lognormal	
Reporting Limit	(0.002)	
Significant Figures	2	
Maximum Reported Effluent Conc.	323	
Coefficient of Variation (CV)	0.6	
Acute Criterion	.016 mg/L	
Chronic Criterion	.002 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	.0002 mg/L	.0002 mg/L
RP Multiplier	1.0	1.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number:	
Parameter	Copper	
Distribution	Lognormal	
Reporting Limit	(0.001)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0301 mg/L	
Coefficient of Variation (CV)	1.0	
Acute Criterion	0.099	
Chronic Criterion	0.085	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0240 mg/L	0.0510 mg/L
RP Multiplier	.9	1.9
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number:	
Parameter	Lead	
Distribution	Delta-Lognormal	
Reporting Limit	(0.0005)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0301 mg/L	
Coefficient of Variation (CV)	0.6	
Acute Criterion	.578	
Chronic Criterion	0.034	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	.0005 mg/L	0.0005 mg/L
RP Multiplier	1.0	1.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001	
Parameter	Mercury	
Distribution	Normal	
Reporting Limit	(0.00002)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0002 mg/L	
Coefficient of Variation (CV)	0.16	
Acute Criterion	.0049 mg/L	
Chronic Criterion	0.00002 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0002	0.0003
RP Multiplier	1.1	1.3
RP for Acute?	NO	NO
RP for Chronic?	YES	YES
Outcome	B	

RP Procedure Output	Outfall Number: 001	
Parameter	Nickel	
Distribution	Normal	
Reporting Limit	(0.0005)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0076 mg/L	
Coefficient of Variation (CV)	0.61	
Acute Criterion	3.108 mg/L	
Chronic Criterion	0.514 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0073	0.0094
RP Multiplier	0.96	1.2
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001	
Parameter	Selenium	
Distribution	Lognormal	
Reporting Limit	(0.0005)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0051 mg/L	
Coefficient of Variation (CV)	0.35	
Acute Criterion	.036 mg/L	
Chronic Criterion	0.010 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0018	0.0025
RP Multiplier	1.2	1.7
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001	
Parameter	Zinc	
Distribution	Delta-Lognormal	
Reporting Limit	(0.01)	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.36 mg/L	
Coefficient of Variation (CV)	0.42	
Acute Criterion	0.766 mg/L	
Chronic Criterion	1.162 mg/L	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0380	0.0550
RP Multiplier	1.3	1.8
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	

Metals Monitoring and RP Check

	Effluent							
Metal	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc	Selenium
ARP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ND Value	0	0	0	0	0	0	0	0
Max	.0062	323	.0301	.0058	.0002	.0076	0.36	.0051
ARP	NO	NO	YES	NO	NO	NO	NO	NO
CRP	NO	NO	YES	NO	YES	NO	YES	NO
Metals	0.0025	0.0002	0.0018	0.0005	0.0002	0.0023	0.01	0.0015
	0.0022	0.0002	0.0022	0.0005	0.0002	0.0027	0.01	0.0012
	0.002	0.0002	0.002	0.0005	0.0002	0.0027	0.01	0.0011
	0.0038	0.0002	0.0013	0.0005	0.0002	0.0025	0.01	0.0011
	0.0029	0.0002	0.001	0.0005	0.0002	0.0035	0.01	0.001
	0.0022	0.0002	0.0011	0.0005	0.0001	0.0027	0.01	0.001
	0.0055	0.0002	0.001	0.0005	0.0002	0.0037	0.02	0.0013
	0.0029	0.0002	0.0026	0.0005	0.0002	0.0035	0.02	0.0009
	0.0021	0.0002	0.0027	0.0005	0.0002	0.0041	0.03	0.0005
	0.0037	0.0002	0.0098	0.0005	0.0002	0.0041	0.03	0.0005
	0.0036	0.0002	0.0046	0.0005	0.0002	0.0059	0.01	0.0007
	0.0006	0.0002	0.0046	0.0005	0.0002	0.0059	0.01	0.001
	0.0014	0.0002	0.0063	0.0005	0.0002	0.0075	0.02	0.0008
	0.0027	0.0002	0.0014	0.0005	0.0002	0.0031	0.01	0.0006
	0.0029	0.0002	0.002	0.0005	0.0002	0.0034	0.01	0.0009
	0.0017	0.0002	0.0035	0.0005	0.0002	0.0041	0.01	0.0009
	0.0025	0.0002	0.0037	0.0005	0.0002	0.0038	0.01	0.0009
	0.0006	0.0002	0.0033	0.0005	0.0002	0.0058	0.01	0.0005
	0.0008	0.0002	0.001	0.0005	0.0002	0.002	0.008	0.0006
		0.0002	0.001	0.0005	0.0002	0.002	0.01	0.0005
			0.0032			0.0076		
			0.0051			0.003		
			0.007			0.0031		
			0.0051			0.003		
			0.0034			0.0034		
			0.009			0.0034		
			0.0125			0.003		
			0.009			0.0034		
			0.0072			0.0018		
			0.0027			0.0011		
			0.0054			0.0018		
			0.0072			0.0009		
			0.0096			0.0053		
			0.0016			0.001		

	Effluent							
Metal	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc	Selenium
ARP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ND Value	0	0	0	0	0	0	0	0
Max	.0062	323	.0301	.0058	.0002	.0076	0.36	.0051
ARP	NO	NO	YES	NO	NO	NO	NO	NO
CRP	NO	NO	YES	NO	YES	NO	YES	NO
			0.0072			0.0011		
			0.0135			0.0018		
			0.0271			0.0011		
			0.0033			0.0015		
			0.0045			0.0011		
			0.0045			0.0011		
			0.0057			0.0018		
			0.0086			0.0028		
			0.0057			0.0018		
			0.0114			0.0027		
			0.0128			0.0019		
			0.0093			0.0011		
			0.0021			0.0019		
			0.0128			0.0001		
			0.0011			0.0011		
			0.0017			0.0011		
			0.0017			0.0011		
			0.0026			0.0013		
			0.0054			0.0017		
			0.0078			0.0029		
			0.0078			0.0029		
			0.0069			0.0044		
			0.0039			0.0042		
			0.0139			0.0044		
			0.0069			0.0034		
			0.0114			0.0019		
			0.0046			0.0015		
			0.0044			0.001		
			0.0114			0.0019		
			0.0031			0.0011		
			0.001			0.0012		
			0.0026			0.0012		
			0.0031			0.0011		
			0.0024			0.0014		
			0.0013			0.0011		
			0.001			0.0014		
			0.0024			0.0014		

	Effluent							
Metal	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc	Selenium
ARP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ND Value	0	0	0	0	0	0	0	0
Max	.0062	323	.0301	.0058	.0002	.0076	0.36	.0051
ARP	NO	NO	YES	NO	NO	NO	NO	NO
CRP	NO	NO	YES	NO	YES	NO	YES	NO
			0.0014			0.0013		
			0.0012			0.0017		
			0.002			0.0019		
			0.0014			0.0013		
			0.001			0.0021		

	Effluent							
Metal	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc	Selenium
ARP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ND Value	0	0	0	0	0	0	0	0
Max	.0062	323	.0301	.0058	.0002	.0076	0.36	.0051
ARP	NO	NO	YES	NO	NO	NO	NO	NO
CRP	NO	NO	YES	NO	YES	NO	YES	NO

	Effluent							
Metal	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc	Selenium
ARP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRP Val	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ND Value	0	0	0	0	0	0	0	0
Max	.0062	323	.0301	.0058	.0002	.0076	0.36	.0051
ARP	NO	NO	YES	NO	NO	NO	NO	NO
CRP	NO	NO	YES	NO	YES	NO	YES	NO

Mercury RP Results

RP Procedure Output			Effluent Data					
Facility Name:	Moroni City Public Owned Treatment Works		#		#		#	
Permit Number:	UT0020222		1	0.0002	41		81	
Outfall Number:	001		2	0.0002	42		82	
Parameter	Mercury		3	0.0002	43		83	
Distribution	Delta-Lognormal		4	0.0002	44		84	
Data Units	mg/L		5	0.0002	45		85	
Reporting Limit	0.002		6	0.0002	46		86	
Significant Figures	2		7	0.0002	47		87	
Confidence Interval	95		8	0.0002	48		88	
			9	0.0002	49		89	
Maximum Reported Effluent Conc.	.0002	mg/L	10	0.0002	50		90	
Coefficient of Variation (CV)	0.11		11	0.0001	51		91	
RP Multiplier	1.0		12	0.0002	52		92	
Projected Maximum Effluent Conc. (MEC)	.0002	mg/L	13	0.0002	53		93	
			14	0.0002	54		94	
Acute Criterion	.005	mg/L	15	0.0002	55		95	
Chronic Criterion	0.00002	mg/L	16	0.0002	56		96	
Human Health Criterion	NA	0	17	0.0002	57		97	
			18	0.0002	58		98	
RP for Acute?	NO		19	0.0002	59		99	
RP for Chronic?	YES		20	0.0002	60		100	
RP for Human Health?	N/A		21	0.0002	61		101	
			22	0.0002	62		102	
Confidence Interval	99		23	0.0002	63		103	
			24	0.0002	64		104	
Maximum Reported Effluent Conc.	.0002		25	0.0002	65		105	
Coefficient of Variation (CV)	0.11		26	0.0002	66		106	
RP Multiplier	1.1		27	0.0002	67		107	
Projected Maximum Effluent Conc. (MEC)	.0002	mg/L	28	0.0002	68		108	
			29	0.0002	69		109	
Acute Criterion	0.005	mg/L	30	0.0002	70		110	
Chronic Criterion	0.0002	mg/L	31	0.0002	71		111	
Human Health Criterion	NA		32	0.0002	72		112	
			33	0.0002	73		113	
RP for Acute?	NO		34	0.0002	74		114	
RP for Chronic?	YES		35	0.0002	75		115	
RP for Human Health?	N/A		36	0.0002	76		116	
			37	0.0002	77		117	
			38	0.0002	78		118	
			39		79		119	
			40		80		120	

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

Date: **May 18, 2023**

Prepared by: **Christopher L. Shope**
Standards and Technical Services

Facility: **Moroni Wastewater Treament Plant**
Moroni, Utah
UPDES Permit No. UT-0020222

Receiving water: **San Pitch River (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 (DWQ).

Discharge

Treated effluent is discharged to the San Pitch River via outfall number 001, which is an 18" underground pipe running southeast from the WWTP through a diffuser into the river.

Outfall 001 - The design flow for the system is 1.10 MGD. The annual average flow is 0.50 MGD. The maximum daily flow is 0.72 MGD.

Receiving Water
Moroni Wastewater Treatment Plant effluent of approximately 10 percent and Pitman Farms Moroni Turkey Processing facility effluent of approximately 90 percent discharge to the San Pitch River. The Publicly Operated Treatment Works (POTW) is operated by Pitman Farms.

Per UAC R317-2-13.3(a), the designated beneficial use of the assessment unit in the immediate downstream area is: *San Pitch River and tributaries, from confluence with Sevier River to Highway U-132 crossing except As listed below: 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 averaged over seven consecutive days with a ten year return frequency (7Q10). The USGS 10210500 SAN PITCH RIVER NEAR MT PLEASANT, UTAH stream gauge located approximately 5.7 miles upgradient was used to evaluate ambient or background flow conditions. One year of continuous daily discharge data in 1988 to 1989 to statistically analyze flow conditions. This long-term daily flow record used to calculate the 7Q10 critical flow resulted in similar seasonal 20th percentile flow conditions to DWQ 4946960 San Pitch R Ab Moroni WWTP. Therefore, the USGS 10210500 results are used to estimate the seasonal critical flow (Table 1). The average annual critical low flow condition is 3.60 ft3/s.

Table 1: Seasonal Critical Flow at USGS 10210500 San Pitch River Near Mt Pleasant, Utah.

Season	Critical flow (ft3/s)
Summer	3.60
Fall	9.23
Winter	26.0
Spring	7.09
Annual Overall	**3.60**

Ambient, upstream, background receiving water quality was characterized using data from DWQ 4946960 San Pitch R Ab Moroni WWTP. The 20th percentile concentration value was calculated for each constituent with available monitoring and sampling data in the upstream receiving water. Seasonal average effluent discharge parameter concentrations were determined from the Discharge Monitoring Report (DMR) between 2000 and 2022. Additional parameter concentrations not provided in the DMR were determined from DWQ 4946970 Moroni WWTP.

Total Maximum Daily Load (TMDL)

According to the Utah's 2021 303(d) Water Quality Assessment Report "Combined 2018/2020 Integrated Report Version 1.0", the receiving water for the discharge is *San Pitch River and tributaries from Gunnison Reservoir to U132 crossing and below USFS boundary (San Pitch-3-1: UT16030004-005_01*). The reach was not supporting for total ammonia as N, E. Coli, pH, minimum dissolved oxygen (DO) with a low priority for a TMDL. There is an approved TMDL for total dissolved solids (TDS).

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 is 2500 ft, per UAC R317-2-5. Water

quality standards must be met at the end of the mixing zone. . Individual mixing zones may be further limited or disallowed in consideration of the following factors in the area affected by the discharge: Zone of passage for migrating fish or other species (including access to tributaries).

The EPA Region 8 stream mixing zone analysis (STREAMIX1, 1994), was used to determine the plume width and mixed flow rate for both acute and chronic conditions.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total dissolved solids (TDS), biochemical oxygen demand (BOD), dissolved oxygen (DO), pH, ammonia, and E. coli, as determined in consultation with the UPDES Permit Writer and the Watershed Protection Specialist.

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.

According to the permit application, WET testing has failed four quarters during the past five years. For two quarters, no sample results were provided.

Table 2: WET Limits for IC_{25}

Season	IC_{25} (%)
Summer	32
Fall	16
Winter	6
Spring	19

Wasteload Allocation Methods

Effluent limits were determined for all constituents using the QUAL2Kw Model (UDWQ, 2021). The analysis is summarized in the Wasteload Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. However, temperature, pH, and ammonia concentration of the effluent were not provided. Background temperature and pH values were used in the analysis. 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*: Q2Kw_Pitman_wla_2023.docx*
Wasteload Analysis and Addendums: *Q2Kw_Pitman_wla_2023.xlsm*

References:
Utah Division of Water Quality. 2014, *TMDL for Selenium in the Colorado River Watershed*

Utah Division of Water Quality. 2022. *Final 2022 Integrated Report on Water Quality*

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0*.

WASTELOAD ANALYSIS [WLA] Date: 5/18/2023
Appendix A: QUAL2Kw Analysis Results

DiscRarging Facility:	Moroni Wastewater Treament Plant		
UPDES No:	UT-0020222		
Permit Flow [MGD]:	1.10	Maximum Daily Flow	
	1.10	Maximum Monthly Flow	
Receiving Water:	San Pitch River		
Stream Classification:	2B,3C,3D,4		
Stream Flows [cfs]:	3.60	Summer (July-Sept)	Critical Low Flow
	9.23	Fall (Oct-Dec)	
	26.00	Winter (Jan-Mar)	
	7.09	Spring (Apr-June)	
Acute River Width:	50%		
Chronic River Width:	100%		

Modeling Information

A QUAL2Kw model was used to determine these effluent limits.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis.

Headwater/Upstream Information	Summer	Fall	Winter	Spring
Flow (cfs)	3.6	9.2	26.0	7.1
Temperature (deg C)	18.2	6.5	4.1	12.7
Specific Conductance (µmhos)	1031	796	744	755
Inorganic Suspended Solids (mg/L)	12.3	27.6	103.5	114.4
Dissolved Oxygen (mg/L)	8.8	10.3	10.1	10.4
$CBOD_5$ (mg/L)	1.4	1.2	1.4	1.6
Organic Nitrogen (mg/L)	0.450	0.578	0.169	0.004
NH4-Nitrogen (mg/L)	0.024	0.027	0.026	0.022
NO3-Nitrogen (mg/L)	0.612	0.838	1.220	0.570
Organic Phosphorus (mg/L)	0.220	0.031	0.027	-0.062
Inorganic Ortho-Phosphorus (mg/L)	0.010	0.026	0.071	0.188
Phytoplankton (µg/L)	9.050	9.050	9.050	9.050
Detritus [POM] (mg/L)	0.6	1.5	5.4	6.0
Alkalinity (mg/L)	327	318	323	344
pH	8.0	8.2	8.2	8.3

Discharge Information - Chronic	Summer	Fall	Winter	Spring
Flow (mgd)	1.1	1.1	1.1	1.1
Temperature (deg C)	20.9	15.7	10.4	17.3
Specific Conductance (µmhos)	1298	1172	1301	1240
Inorganic Suspended Solids (mg/L)	10.5	11.9	10.9	9.4
Dissolved Oxygen (mg/L)	5.5	5.5	5.5	5.5
$CBOD_5$ (mg/L)	35.0	35.0	35.0	35.0
Organic Nitrogen (mg/L)	39.444	0.119	10.344	43.632
NH4-Nitrogen (mg/L)	5.300	38.500	38.500	5.300
NO3-Nitrogen (mg/L)	60.458	34.887	15.700	42.033
Organic Phosphorus (mg/L)	-9.645	-5.679	-5.176	-8.680
Inorganic Ortho-Phosphorus (mg/L)	10.645	6.679	6.176	9.680
Phytoplankton (µg/L)	9.050	9.050	9.050	9.050
Detritus [POM] (mg/L)	0.0	0.0	0.0	0.0
Alkalinity (mg/L)	413	413	413	413
pH	7.5	7.4	7.4	7.5

Discharge Information - Acute	Summer	Fall	Winter	Spring
Flow (mgd)	1.1	1.1	1.1	1.1
Temperature (deg C)	23.5	21.3	17.0	25.2
Specific Conductance (µmhos)	1762	1920	2085	1709
Inorganic Suspended Solids (mg/L)	40.6	25.0	30.2	31.4
Dissolved Oxygen (mg/L)	5.5	5.5	5.5	5.5
$CBOD_5$ (mg/L)	35.0	35.0	35.0	35.0
Organic Nitrogen (mg/L)	-16.180	3.300	-47.185	5.040
NH4-Nitrogen (mg/L)	21.400	24.100	49.500	13.700
NO3-Nitrogen (mg/L)	60.458	34.887	15.700	42.033
Organic Phosphorus (mg/L)	-9.645	-5.679	-5.176	-8.680
Inorganic Ortho-Phosphorus (mg/L)	10.645	6.679	6.176	9.680
Phytoplankton (µg/L)	9.050	9.050	9.050	9.050
Detritus [POM] (mg/L)	0.0	0.0	0.0	0.0
Alkalinity (mg/L)	413	413	413	413
pH	7.9	8.0	7.9	8.0

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

Effluent Limitations

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

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

Effluent Limitations based upon Water Quality Standards for DO and Ammonia Toxicity

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

Chronic	Standard	Summer	Fall	Winter	Spring
Flow (MGD)	N/A	1.1	1.1	1.1	1.1
NH4-Nitrogen (mg/L)	Varies	5.3	38.5	38.5	5.3
$CBOD_5$ (mg/L)	N/A	35.0	35.0	35.0	35.0
Dissolved Oxygen [30-day Ave] (mg/L)	5.0	5.5	5.5	5.5	5.5

Acute	Standard	Summer	Fall	Winter	Spring
Flow (cfs)	N/A	1.1	1.1	1.1	1.1
NH4-Nitrogen (mg/L)	Varies	21.4	24.1	49.5	13.7
$CBOD_5$ (mg/L)	N/A	35.0	35.0	35.0	35.0
Dissolved Oxygen [Minimum] (mg/L)	3.0	5.5	5.5	5.5	5.5

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.

Coefficients and Other Model Information

Parameter	*Value*	*Units*
Stoichiometry:		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
Inorganic suspended solids:		
Settling velocity	1.5	m/d
Oxygen:		
Reaeration model	Tsivoglou-Neal	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
Slow CBOD:		
Hydrolysis rate	0	/d
Temp correction	1.047	
Oxidation rate	0.103	/d
Temp correction	1.047	
Fast CBOD:		
Oxidation rate	5	/d
Temp correction	1.047	
Organic N:		
Hydrolysis	0.84504511	/d
Temp correction	1.07	
Settling velocity	0.055176	m/d
Ammonium:		
Nitrification	1.444564	/d
Temp correction	1.07	
Nitrate:		
Denitrification	1.6632371	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.38965	m/d
Temp correction	1.07	
Organic P:		
Hydrolysis	0.28013059	/d
Temp correction	1.07	
Settling velocity	0.043724	m/d
Inorganic P:		
Settling velocity	0.45041	m/d
Sed P oxygen attenuation half sat constant	0.71711	mgO2/L

Phytoplankton:		
Max Growth rate	2.8862	/d
Temp correction	1.07	
Respiration rate	0.1045676	/d
Temp correction	1.07	
Death rate	0.325185	/d
Temp correction	1	
Nitrogen half sat constant	15	ugN/L
Phosphorus half sat constant	11	ugP/L
Inorganic carbon half sat constant	1.30E-05	moles/L
Phytoplankton use HCO3- as substrate	Yes	
Light model	Smith	
Light constant	57.6	langleys/d
Ammonia preference	7.35575	ugN/L
Settling velocity	0.11142	m/d
Bottom Plants:		
Growth model	Zero-order	
Max Growth rate	22.21241	gD/m2/d or /d
Temp correction	1.07	
First-order model carrying capacity	100	gD/m2
Basal respiration rate	0.6899654	/d
Photo-respiration rate parameter	0.01	unitless
Temp correction	1.07	
Excretion rate	0.11302	/d
Temp correction	1.07	
Death rate	0.021304	/d
Temp correction	1.07	
External nitrogen half sat constant	694.537	ugN/L
External phosphorus half sat constant	122.1963	ugP/L
Inorganic carbon half sat constant	3.31E-05	moles/L
Bottom algae use HCO3- as substrate	Yes	
Light model	Smith	
Light constant	66.948	mgO^2/L
Ammonia preference	21.34475	ugN/L
Subsistence quota for nitrogen	35.4263	mgN/gD
Subsistence quota for phosphorus	3.569585	mgP/gD
Maximum uptake rate for nitrogen	886	mgN/gD/d
Maximum uptake rate for phosphorus	29.3088	mgP/gD/d
Internal nitrogen half sat ratio	3.404516	
Internal phosphorus half sat ratio	1.081363	
Nitrogen uptake water column fraction	1	
Phosphorus uptake water column fraction	1	
Detritus (POM):		
Dissolution rate	1.5255605	/d
Temp correction	1.07	
Settling velocity	0.89958	m/d
pH:		
Partial pressure of carbon dioxide	380	ppm

Atmospheric Inputs:	Spring	Fall	Winter	Spring
Max. Air Temperature, F	89.2	66.4	51.7	81.8
Min. Air Temperature, F	41.0	13.7	11.7	29.8
Dew Point, Temp., F	52.7	30.4	26.7	43.4
Wind, ft./sec. @ 21 ft.	6.8	5.9	6.3	8.4
Cloud Cover, %	0.0	0.0	0.0	0.0

Other Inputs:	
Bottom Algae Coverage	100.0%
Bottom SOD Coverage	100.0%
Prescribed SOD (mg O_2/m^2/day)	0.0

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Appendix B: Mass Balance Mixing Analysis Results

Discharging Facility:	Moroni Wastewater Treament Plant		
UPDES No:	UT-0020222		
Permit Flow [MGD]:	1.10	Maximum Daily Flow	
	1.10	Maximum Monthly Flow	
Receiving Water:	San Pitch River		
Stream Classification:	2B,3C,3D,4		
Stream Flows [cfs]:	3.60	Annual	Critical Low Flow
Acute River Width:	50%		
Acute Combined Flow [cfs]	3.50		
Chronic River Width:	100%		
Chronic Combined Flow [cfs]	5.30		

Modeling Information

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

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

Effluent Limitations

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

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

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

Parameter		
pH	**Limit**	
Minimum	6.5	
Maximum	9.0	
Bacteriological		
E. coli (30 Day Geometric Mean)	206	(#/100 mL)
E. coli (Maximum)	668	(#/100 mL)

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

Parameter		
Temperature (deg C)	**Limit**	
Maximum	27.0	
Maximum Change	4.0	
pH	**Limit**	
Minimum	6.5	
Maximum	9.0	

Inorganics	Chronic Standard (4 Day Average)			Acute Standard (1 Hour Average)		
	Standard	Limit	Unit	Standard	Limit	Unit
Phenol				0.010	0.014	mg/L
Hydrogen Sulfide (Undissociated)				0.002	0.003	mg/L

Dissolved Metals [µg/L]

	Chronic Standard (4 Day Average)			Acute Standard (1 Hour Average)		
Parameter	**Standard[1]**	**Background**	**Limit**	**Standard**	**Background**	**Limit**
Aluminum	NA[3]	NA	NONE	750	13.0	1,530
Arsenic	150	1.1	465	340	1.1	699
Cadmium	0.6	0.06	1.9	7.7	0.06	15.9
Chromium VI	11.0	2.7	28.6	16.0	2.7	30.1
Chromium III	231	2.7	713	1,773	2.7	3,646
Copper	29.3	3.0	84.9	49.6	3.0	99.0
Cyanide[2]	5.2	3.5	8.9	22.0	3.5	41.6
Iron				1,000	28.65	2,027
Lead	10.9	0.19	33.7	281	0.19	578
Mercury[2]	0.012	0.008	0.020	2.4	0.008	4.9
Nickel	168	4.7	514	1,513	4.7	3,108
Selenium	4.6	2.0	10.1	18.4	2.0	35.7
Silver				34.9	0.25	71.6
Tributylin[2]	0.072	0.048	0.123	0.46	0.048	0.90
Zinc	382	14.1	1,162	379	14.1	766

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

2: Ambient concentration assumed 2/3 of water quality standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as $CaC0_3$ in the receiving water after mixing, the 87 ug/L chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/L acute aluminum criterion (expressed as total recoverable).

Organics [Pesticides] [µg/L]

	Chronic Standard (4 Day Average)			Acute Standard (1 Hour Average)		
Parameter	**Standard**	**Background[1]**	**Limit**	**Standard**	**Background**	**Limit**
Aldrin				1.5	1.0	2.0
Chlordane	0.0043	0.0029	0.0073	1.2	0.0029	2.5
DDT, DDE	0.001	0.0007	0.0017	0.55	0.0007	1.13
Diazinon	0.17	0.11	0.29	0.17	0.11	0.23
Dieldrin	0.0056	0.0037	0.0095	0.24	0.0037	0.49
Endosulfan, a & b	0.056	0.037	0.095	0.11	0.037	0.19
Endrin	0.036	0.024	0.061	0.086	0.024	0.152
Heptachlor & H. epoxide	0.0038	0.0025	0.0065	0.26	0.0025	0.53
Lindane	0.08	0.05	0.14	1.0	0.05	2.0
Methoxychlor				0.03	0.02	0.04
Mirex				0.001	0.0007	0.001
Nonylphenol	6.6	4.4	11.3	28.0	4.4	53.0
Parathion	0.013	0.009	0.022	0.066	0.009	0.127
PCB's	0.014	0.009	0.024			
Pentachlorophenol	15.0	10.0	25.6	19.0	10.0	28.5
Toxephene	0.0002	0.0001	0.0003	0.73	0.0001	1.50

1: Ambient concentration assumed 2/3 of water quality standard

Radiological

Parameter	**Maximum Concentration**
Gross Alpha	15 pCi/L

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Parameter	**Maximum Concentration**			
	Standard	**Background**	**Limit**	
Total Dissolved Solids (mg/L)	1,700		1,700	Site specific standard
Arsenic (µg/L)	100	1.1	309	
Boron (µg/L)	750	201	1,912	
Cadmium (µg/L)	10	0.06	31	
Chromium (µg/L)	100	2.7	306	
Copper (µg/L)	200	3.0	617	
Lead (µg/L)	100	0.19	311	
Selenium (µg/L)	50	2.0	152	
Gross Alpha (pCi/L)	15		15	

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Appendix C: Total Residual Chlorine

Discharging Facility: Moroni Wastewater Treament Plant
UPDES No: UT-0020222

CHRONIC

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day) @ 20 deg C	Decay Rate (/day) @ T deg C	Travel Time (min)	Decay Coefficient	Effluent Limit
Discharge (cfs)	Summer	3.6		1.7	5.3							
	Fall	9.2		1.7	10.9							
	Winter	26.0		1.7	27.7							
	Spring	7.1		1.7	8.8							
TRC (mg/L)	Summer	0.000	0.011			0.034	20.9	20	20.8	10	0.8653	0.040
	Fall	0.000	0.011			0.071	15.7	20	16.4	10	0.8925	0.079
	Winter	0.000	0.011			0.179	10.4	20	12.8	10	0.9146	0.196
	Spring	0.000	0.011			0.057	17.3	20	17.7	10	0.8844	0.064

ACUTE

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day) @ 20 °C	Decay Rate (/day) @ T °C	Travel Time (min)	Decay Coefficient	Effluent Limit
Discharge (cfs)	Summer	1.8		1.7	3.5							
	Fall	4.6		1.7	6.3							
	Winter	13.0		1.7	14.7							
	Spring	3.5		1.7	5.2							
TRC (mg/L)	Summer	0.000	0.019			0.039	23.5	20	23.5	10	0.8494	0.046
	Fall	0.000	0.019			0.071	21.3	20	21.2	10	0.8630	0.082
	Winter	0.000	0.019			0.164	17.0	20	17.4	10	0.8859	0.185
	Spring	0.000	0.019			0.059	25.2	20	25.4	10	0.8383	0.070