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**FACT SHEET STATEMENT OF BASIS
CEDAR CITY WASTEWATER RECLAMATION FACILITY
RENEWAL PERMIT: PRETREATMENT, BIOSOLIDS & STORM WATER
MAJOR MUNICIPAL**

FACILITY CONTACTS

Operator-in-charge: Darrell Olmsted
Wastewater Superintendent

Biosolids: Eric Bonzo
Senior Plant Operator

Facility Name: Cedar City Wastewater Reclamation Facility

Mailing Address: 10 N. Main
Cedar City, UT 84720
(435) 867-9426

Actual Address: 7218 N. 2300 W.
Cedar City, UT 84720

DESCRIPTION OF FACILITY

The Cedar City Wastewater Reclamation Facility (CCWRF) consists of one mechanical rotomat, one manual barscreen, two aerated grit chambers, two primary clarifiers, two trickling filters, two final clarifiers. Two anaerobic digesters, two chlorine contact basins, and sixteen drying beds. The facility has an influent design flow of 4.4 MGD. CCWRF services Cedar City, Enoch City, and Iron County. The CCWRF is located at latitude 37° 48' 36" and longitude 113° 05' 25"

DISCHARGE

DESCRIPTION OF DISCHARGE

The CCWRF does not discharge to waters of the State. The CCWRF discharges to a permitted land application site partially owned by Cedar City and by private individuals with whom there is an agreement to discharge onto their property. Ground water quality associated with the effluent

disposal site (land application) is regulated by a ground water permit issued by the Division of Water Quality (DWQ).

RECEIVING WATERS AND STREAM CLASSIFICATION

The CCWRF does not discharge to waters of the State.

BASIS FOR EFFLUENT LIMITATIONS

Although the CCWRF does not discharge to surface waters of the State, a UPDES permit was issued at the request of Cedar City in order to allow them to administer the Utah Model Industrial Pretreatment Program. This permit is a continuation of that authorization. The permittee is required to monitor the plant flow continually and report quarterly. BOD₅, TSS, and oil & grease will be reported quarterly and the metals and cyanide will be reported quarterly. The reporting requirements will be submitted on 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 permittee will be required to sample and analyze the influent and effluent for the following parameters.

Self Monitoring and Reporting Requirements for the Influent and Effluent			
Parameter	Frequency	Sample Type	Units
Flow	Continuous	Recorder	MGD
BOD ₅	Quarterly	Composite	mg/L
TSS	Quarterly	Composite	mg/L
Oil & Grease	Quarterly	Composite	mg/L
Total Arsenic	Quarterly	Composite	mg/L
Total Cadmium	Quarterly	Composite	mg/L
Total Chromium	Quarterly	Composite	mg/L
Total Copper	Quarterly	Composite	mg/L
Total Cyanide	Quarterly	Grab	mg/L
Total Lead	Quarterly	Composite	mg/L
Total Mercury	Quarterly	Grab / Composite	mg/L
Total Molybdenum	Quarterly	Composite	mg/L
Total Nickel	Quarterly	Composite	mg/L
Total Selenium	Quarterly	Composite	mg/L
Total Silver	Quarterly	Composite	mg/L
Total Zinc	Quarterly	Composite	mg/L

In addition, the permit will require the permittee to analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D Table II (Organic Toxic Pollutants) at least once per year. The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present. The results of the analyses of metals,

cyanide, and organic toxics shall be submitted along with the DMR at the end of the earliest possible reporting period.

In accordance with the requirements of 40 CFR 403.5(c), the permittee must determine if there is a need to develop or revise its local limits in order to implement the general and specific prohibitions of 40 CFR 403.5(a) and (b). A technical evaluation of the need to develop or revise local limits shall be submitted to DWQ within 12 months of the effective date of this permit. This evaluation should be conducted in accordance with the latest revision of the Utah Model Industrial Pretreatment Program, Section 4 (Local Limits). If a technical evaluation reveals that development or revision of local limits is necessary, the permittee shall submit the proposed local limits revision to DWQ in an approvable form, within 12 months of DWQ's determination that a revision is necessary.

The permit will prohibit a discharge from the permittee's wastewater treatment plant or land application site to any waters of the State, except to ground water as authorized in the permittees ground water discharge permit, and therefore there are no effluent limitations.

BIOSOLIDS

DESCRIPTION OF TREATMENT AND DISPOSAL

Solids (sewage sludge) at the CCWRF are anaerobically digested through primary and secondary digesters. The digesters have a solids retention time of at least 30 days and are operated at a temperature of 98⁰F (36.6⁰C). In 2011 the CCWRF produced 279 dry metric tons (DMT) of Class A biosolids. Of that, 139 DMT were sold or given away to the public.

Under *40 CFR 503 (C)(6), Class A, Alternative 4(i)* the CCWRF is allowed to do additional testing of pathogens in lieu of a process to further reduce pathogens (PFRP) to meet Class A standards. This additional testing requires the CCWRF to monitor for viable helminth ova (tape worms and round worm eggs that are capable of reproduction), enteric viruses (viruses of the intestinal tract), as well as *fecal coliform* or *salmonella* bacteria.

FUTURE DISPOSAL OPTIONS

In the future, the CCWRF may decide to do land application of Class B biosolids for agriculture use, or land fill Class A biosolids and Class B biosolids, or solids that do not meet Class A or Class B standards.

BIOSOLIDS LIMITATIONS AND MONITORING REQUIREMENTS

Since the CCWRF sold or gave away less than 290 DMT in 2011 they were only required to sample once for pathogens and heavy metals under *40 CFR 503.16*. Those sampling results are in the tables below.

Minimum Frequency of Monitoring	
Amount of Biosolids Disposed Per Year	Monitoring Frequency
> 0 to < 290, DMT	Once per year
> 290 to < 1,500, DMT	Four times per year

MONITORING DATA

The data below shows that the CCWRF met the requirements of their last permit with regards to heavy metals and pathogens.

HEAVY METALS MONITORING

CCWRF Metals Monitoring Data, 2011			
Parameter	Table 3, (Exceptional Quality) mg/kg	Average, mg/kg	Maximum, mg/kg
Arsenic	41.0	2.2	3.0
Cadmium	39.0	1.9	2.19
Copper	1,500.0	481.0	576.0
Lead	300.0	44.7	57.0
Mercury	17.0	2.1	1.6
Molybdenum	75.0	7.1	8.1
Nickel	400.0	14.5	16.0
Selenium	36.0	4.9	6.1
Zinc	2,800.0	595.0	735.0

PATHOGEN MONITORING DATA

CCWRF Pathogen Monitoring Data, 2010	
Salmonella, mpn/4g/total solids	<3.0 MPN/4g
Plaque forming unit per 4 grams of enteric virus	< 1.0 pfu/4g
Viable Helminth Ova/4g/total solids	<1 Ovum/4g

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 II.D.12. of the permit) to be handed out 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 meet the maximum heavy metals in Table 1 and the monthly average pollutant concentrations in Table 3 (see the Table 1 and 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 I. D. 11.** 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 the biosolids are land applied according to the regulations of *40 CFR 501.13*, 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 the biosolids must meet:

The maximum heavy metals listed in Table 1 and the heavy metals loading rates in Table 2; or

The maximum heavy metals in Table 1 and the monthly heavy metals concentrations in Table 3.

If the biosolids do not meet these requirements the biosolids cannot be land applied.

Tables 1, 2, and 3 of Heavy Metal Limitations

Heavy Metals	Table 1	Table 2	Table 3
All heavy metals concentrations shall be measured and reported	Daily Maximum mg/Kg <u>a/b/c/d/</u>	Cumulative Loading Rate Kg/Ha <u>a/</u>	Monthly Average Concentration mg/Kg <u>a/b/c/d/</u>
Total Arsenic	75	41	41
Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A
Total Nickel	420	420	420
Total Selenium	100	100	100
Total Zinc	7500	2800	2800

- a/ See Part V. of the permit for definition of terms.
- b/ The limitations represent the maximum allowable levels of heavy metals in any biosolids intended for land application.
- c/ Any violation of these limitations shall be reported in accordance with the requirements of Part **II.G.1.** of the permit.
- d/ These limitations represent the maximum allowable levels of heavy metals based on an average of all samples taken during a 30-day period.

Pathogens

Class A Requirements for Home Lawn and Garden Use

Under *40 CFR 503.32(6), Class A, Alternative 4(i)*, the CCWRF is allowed to do additional testing of pathogens in lieu of a process to further reduce pathogens (PFRP) to meet Class A standards. This additional testing requires the CCWRF to monitor for viable helminth ova (tape worms and round worm eggs that could hatch), enteric viruses (viruses of the intestinal tract), and either *fecal* coliform or *salmonella* bacteria.

Class B Requirements for Agriculture and Reclamation Sites

The CCWRF intends to achieve Class B biosolids in one of two different ways with regards to pathogens:

1. Under *40 CFR 503.32 (b)(3)* the Process to Significantly Reduce Pathogens PSRP may be accomplished through anaerobic digesters that have a minimum retention time of 15 days at 95° F (35° C) or 60 days at 68° F (20° C).
2. Under *40 CFR 503.32 (b)(2) Appendix B*, CCWRF may test the biosolids and must meet a microbiological limit of less than 2,000,000 MPN of fecal coliform per gram for the biosolids to be considered Class B biosolids with respect to pathogens.

Vector Attraction Reduction Requirements

Prior to land application, all biosolids must meet a method of vector attraction reduction (*503.33(b)(1)*) to be considered Class A or Class B biosolids. The total solids will meet the vector attraction reduction requirements by reducing the volatile solids (organic matter) by at least 38% through anaerobic digestion. VAR will be accomplished by a 38% reduction in volatile solids through anaerobic digesters (*40 CFR 503.33(b)(1), the solids need to be treated for at least 15 days at a temperature of at least 35°C (95°F)*). 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 these vector attraction reduction requirements. If the biosolids do not meet vector attraction requirements through anaerobic digestion the CCWRF will need to meet another method of vector attraction reduction. This may include, drying the biosolids to ninety percent solids or greater, or incorporating the biosolids into the soil, within 8 hours after land application.

Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under Part II.H. of the permit. The amount of time the records need to be retained is dependent upon the quality of the biosolids with regard to the metals concentrations. If the biosolids exceed Table 3 values for any parameter that are land applied to a site, that site thereafter is subject to the heavy metals loading rates in Table 2. Records for those sites are to be retained in perpetuity.

Reporting

The CCWRF will be required to report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with Part II.G. of the permit, information on management practices, land application sites, and certifications will be due no later than February 19 of each year. Each report is for the previous calendar year.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include: 1. The development of a pollution prevention team: 2. Development of drainage maps and materials stockpiles: 3. An inventory of exposed materials: 4. Spill reporting and response procedures: 5. A preventative maintenance program: 6. Employee training: 7. Certification that storm water discharges are not mixed with non-storm water discharges: 8. Compliance site evaluations and potential pollutant source identification, and: 9. Visual examinations of storm water discharges.

CCWRF is currently covered under the UPDES Multi Sector General Permit for Industrial Activities.

PRETREATMENT REQUIREMENTS

The pretreatment requirements remain the same as in the current permit with the permittee administering an approved pretreatment program. Any substantial changes to the program must be submitted for approval to the Division of Water Quality. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

The permittee will be required to perform an annual evaluation of the need to revise or develop technically based local limits to implement the general and specific prohibitions of *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised.

As part of this evaluation, the permit requires influent and effluent monitoring for metals and for the organic toxics listed in *R317-8-7.5* and sludge monitoring for potential pollutants listed in *40 CFR 503*.

BIOMONITORING REQUIREMENTS

Since the facility does not discharge to waters of the state, no biomonitoring is required.

PERMIT DURATION

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

Drafted by
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