**FACT SHEET STATEMENT OF BASIS**
**PERRY / WILLARD REGIONAL WASTEWATER TREATMENT PLANT**
**RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER**
**UPDES PERMIT NUMBER: UT0025721**
**UPDES BIOSOLIDS PERMIT NUMBER: UTL-025721**
**UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000000**
**MAJOR MUNICIPAL**



## FACILITY CONTACTS

| | |
|---|---|
| Person Name: | Jeff Hollingsworth |
| Position: | Lead Operator |
| Person Name: | Steve Pettingill |
| Position: | Ser Facility Board President |
| Facility Name: | Perry / Willard Regional Wastewater Treatment Plant |
| Mailing Address: | 80 West 50 South<br>Willard, Utah 84340 |
| Facility Address: | 975 North 1000 West<br>Willard, UT 84340 |

## DESCRIPTION OF FACILITY

The Perry/Willard Regional Wastewater Treatment Plant (PWRWWTP) is a new mechanical treatment plant. This plant is replacing the current treatment option, which is a sanitary sewer lagoon system.

The wastewater flows received by the 2.0 MGD PWRWWTP travel through two Parshall Flumes, one for Perry City and one for Willard City, prior to combining and entering the Treatment Plant. The Parshall Flumes measure flow and transmit the data to the treatment plant via a SCADA system. The wastewater enters the treatment plant it passes through a Huber SSL Fine Step Screen to remove debris and various items from the wastewater. As an emergency back-up, the flow can be diverted to a manual bar screen should the Huber Step Screen malfunction or require maintenance. After passing the Screening area, the wastewater flows into a Grit Removal System where sand, grit and fine particles are removed. Once the wastewater flows through the screen and grit removal, it is pumped to the top of the plant where the biological process begins.

The biological process for the WWTP is an STM Aerotor, or more generically, an Integrated Fixed Film and Activated Sludge Bioreactor (IFAS). The IFAS system performs the dual function of an activated sludge tank, as well as a fixed film media bed. From the IFAS the wastewater flows into clarifiers, where the solid biomass settles and is removed, and the clean water is sent to a Trojan UV

Disinfection system and then discharged into an existing drainage ditch and ultimately into the Great Salt Lake Mudflat Wetlands. The solid biomass from the clarifier goes into an aerated digester tank where it is thickened and ultimately sent to a Huber Screw Press Sludge Dewatering system, where an approximate 15% cake solid is placed in a hopper and taken to the landfill and disposed.

## DISCHARGE

### DESCRIPTION OF DISCHARGE

| Outfall | Description of Discharge Point |
|---|---|
| 001 | Located at latitude 41°25'45" and longitude 112°03'58". The discharge is from the UV disinfection system into an existing drainage ditch and ultimately flows to the Great Salt Lake Mudflat Wetlands. |

### RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to an existing drainage ditch and ultimately into the Great Salt Lake Mudflat Wetlands which is classified as 5E, according to the Utah Administrative Code 317-2-13.

Class 5E -Transitional Waters along the Shoreline of the Great Salt Lake Geographical Boundary -- All waters below approximately 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs and streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional waters change corresponding to the fluctuation of open water elevation

### BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand ($BOD_5$), E. Coli., pH and percent removal for $BOD_5$ and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The oil and grease is based on best professional judgment (BPJ). The permit limitations are:

| Parameter | Effluent Limitations | | | |
|---|---|---|---|---|
| | Maximum Monthly Average | Maximum Weekly Average | Daily Minimum | Daily Maximum |
| $BOD_5$, mg/L | 25 | 35 | NA | NA |
| $BOD_5$ Min. % Removal | 85 | NA | NA | NA |
| TSS, mg/L | 25 | 35 | NA | NA |
| TSS Min. % Removal | 85 | NA | NA | NA |
| E. Coli, No./100mL | 126 | 157 | NA | NA |
| Oil & Grease, mg/L | NA | NA | NA | 10 |
| pH, Standard Units | NA | NA | 6.5 | 9 |

NA – Not Applicable.

**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 quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period.

| Self-Monitoring and Reporting Requirements | | | |
|---|---|---|---|
| Parameter | Frequency | Sample Type | Units |
| Total Flow | Continuous | Recorder | MGD |
| $BOD_5$, Influent | Weekly | Composite | mg/L |
| Effluent | | Composite | mg/L |
| TSS, Influent | Weekly | Composite | mg/L |
| Effluent | | Composite | mg/L |
| E. Coli | Weekly | Grab | No./100mL |
| Oil & Grease | Monthly | Grab | mg/L |
| pH | Weekly | Grab | SU |
| Metals, Influent a/ | Yearly | Composite | mg/L |
| Effluent a/ | | Composite | mg/L |
| Organic Toxics b/ | Once Every 2 Years | Grab | mg/L |
| WET, Acute Biomonitoring | Quarterly | Composite | Pass/Fail |

a/ See Metals Monitoring table in part II.A.1 of this permit.
b/ Testing must be performed in the first, third, and fifth year of the permit cycle. A list of the organics to be tested can be found in 40CFR122 appendix D table II. If results of metal analysis are detectable, more frequent sampling of the metals may be required.

## BIOSOLIDS (SEWAGE SLUDGE)

**DESCRIPTION OF TREATMENT AND DISPOSAL**
The PWRWWTP is expected to dispose of approximately fifty to seventy five dry metric tons (DMT) of wastewater solids per year. The wastewater solids will be stabilized during the IFAS process with an average retention time of over 60 days. The wastewater solids from the IFAS process will be de-watered with a screw press to about 15% solids. All sludge from the PWRWWTP will be disposed of in the Box Elder County sanitary landfill.

**SOLIDS MONITORING REQUIREMENTS**
Under *40 CFR 503* solids are not required to be monitored for heavy metals content or pathogen reduction if the solids are disposed in a landfill.

**LANDFILL MONITORING**

Paint Filter Test

Under *40 CFR 258,* landfill monitoring requirements, the solids will need to pass a paint filter test before the solids are disposed of in a landfill. If the solids do not pass a paint filter test, the solids cannot be disposed in a landfill.

Vector Attraction Reduction Monitoring

Under *40 CFR 503.33,* the solids need to meet a method of vector attraction reduction (VAR). Since the solids will be disposed of at the County Landfill, the City will need to insure that the solids are covered daily with soil or another approved material. If the solids are not covered daily, the solids cannot be disposed in the landfill.

| **Minimum Frequency of Monitoring** | |
|---|---|
| **Amount of Solids Disposed Per Year** | **Monitoring Frequency** |
| > 0 to < 290, DMT | Once per year |

Since the PWRWWTP is not expected to produce more than 290 DMT of solids per year, the PWRWWTP will be required to monitor at least once per year for the paint filter tests.

**RECORD KEEPING**

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G*. of the permit. Since the solids are disposed in a landfill the records need to be retained for a minimum of five years.

**REPORTING**

The PWRWWTP needs to submit an annual solids report as required in Part III.E.1 and *40 CFR 503.18*. This report is to include the results of all solids monitoring performed in accordance with *Part III.G*. of the permit, information on management practices, solids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

## WASTE LOAD ANALYSIS AND ANTIDEGRADATION REVIEW

Effluent limitations are also derived using a waste load analysis (WLA), which is appended to this statement of basis as ADDENDUM. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During the UPDES permit development, a WLA and ADR were performed. An ADR Level I review was performed and the conclusion was that an ADR level II

review was not required, since the new treatment process effluent concentration value and pollutant loading is equal or less than the existing effluent concentration value and pollutant loading.

## 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.

## PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

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

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge the permittee must resubmit an

IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended 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. It is recommended that the permittee submit for review any local limits that are developed to the Division of Water Quality for review.

The permit requires biannual influent and effluent monitoring for metals and every other year influent and effluent monitoring for organic toxics monitoring listed in *R317-8-7.5.*

## BIOMONITORING REQUIREMENTS

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

Since the permittee will be a new major municipal discharging facility, with no previous discharge to evaluate, the permit will require whole effluent toxicity (WET) biomonitoring testing. Based upon these facts and Best Professional Judgment of the permitting authority, the permittee will be required to conduct quarterly acute WET testing with alternating species and no acute WET limit requirements. There are no significant industrial users on the system to date, as discharges will continue to be primarily from domestic sources only, in which toxicity is neither an existing concern, nor likely to be present in the discharge. Discharges will contribute a small volume of effluent when compared to the existing receiving water body. Based on these considerations, there is no reasonable potential for toxicity in the permittee's discharge *(per State of Utah Permitting and Enforcement Guidance Document for WET Control).* As such, there will be no numerical acute WET limitations in this permit at this time.

A review of the receiving stream's current water quality status indicates that it is a Class 5 water body as described in a previous section. Therefore, there will be no chronic WET testing required at this time. This rationale is consistent with similar permits, as well as the Biomonitoring document referenced above. The permit will however contain a toxicity limitation re-opener provision. This provision allows for modification of the permit to include WET limitations and/or increased WET monitoring, should additional information indicate the presence of toxicity in the discharge. The permit will contain the standard requirements for accelerated testing upon failure of an acute WET test as well as provisions for a Preliminary Toxicity Investigation and/or a Toxicity Reduction Evaluation as appropriate.

## PERMIT DURATION

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

Drafted by Matthew Garn
Utah Division of Water Quality
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