

**FACT SHEET AND STATEMENT OF BASIS  
LOGAN CITY CORPORATION  
WASTEWATER TREATMENT PLANT  
UPDES PERMIT NO. UT0021920  
PERMIT RENEWAL  
MAJOR MUNICIPAL**

**FACILITY CONTACT:**

Person Name: Issa Hamud  
Position: Environmental Director  
Telephone: (435) 716-9752  
Facility Name: Logan City Wastewater Treatment Plant  
Organization Mailing Address: 290 North 100 West  
Logan City, UT 84321

**FACILITY DESCRIPTION:**

Location: The sewage treatment lagoons are located west-northwest of Logan City. The main discharge point is outfall 002, located on the easterly right-of-way off Benson Road and Swift Slough.

Coordinates: 41° 44' 37.20" latitude, -111° 52' 42.45" longitude.

The Facility has 3 outfalls:

Outfall Number

Location of Discharge Point

001A

Discharge from the lagoon system, located approximately 100 yards downstream of the chlorination basin. The discharge is initially conveyed by means of an open ditch to Benson Road. During the irrigation season it is used as irrigation water on fields to the west of the facility. If not used as irrigation water, it is piped north along the east side of the road until it reaches the wetland polishing system. Latitude: 41°44'23 Longitude: -111°53'59

001B

Discharge from the lagoon system, located approximately 20 yards downstream of the chlorination basin. The discharge is initially conveyed by means of an open ditch to a ditch that runs to the west, parallel to 200 N. From there it is used as irrigation water on fields to the west of the facility. Latitude: 41°44'20 Longitude: -111°53'53"

002

Discharge from wetlands polishing treatment system to Swift Slough, which flows approximately 2.5 miles to wetlands associated with the Cutler Reservoir. The discharge is piped through a 36" HDPE pipe into Swift Slough. Latitude: 41°46'15.3" Longitude: -111°54'41.80"

**DESIGN CAPACITY:** 30 MGD Discharge from 002 is limited by the permit to 22 MGD during irrigation season and 16 MGD during non-irrigation season.

**RECEIVING WATERS:** Outfall 001A and Outfall 001B discharge to irrigation ditches that are classified as 2B, 3E, 4 according to *Utah Administrative Code (UAC) R317-2-13.9*.

- 2B - Protected for secondary contact recreation such as boating, wading or similar uses.
- 3E - Severely habitat-limited waters. Narrative Standards will be applied to protect these waters for aquatic wildlife.
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

Outfall 002 discharges to Swift Slough, which discharges to the Cutler Reservoir. Swift Slough is classified as 2B, 3C, 4 according to *Utah Administrative Code (UAC) R317-2-13*.

- 2B - Protected for secondary contact recreation such as boating, wading or similar uses.
- 3C - Protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

Process: 7-cell facultative lagoon system: primary cells A1 and B1 run in parallel. A1 flows to A2, B1 flows to B2. A2 and B2 flow to cell C, then D, then E. From cell E water is used for either irrigation (seasonal) from outfall 001A and/or outfall 001B, or it flows to the 5-cell wetland polishing system outfall 001a. After flowing through the wetland polishing system, it is discharged from outfall 002 to Swift Sough

**BASIS FOR EFFLUENT LIMITATIONS:**

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from 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 water quality standards for a particular parameter have been developed, Best Professional Judgment (BPJ) may be used where applicable.

Effluent limitations are also derived using a WLA (Addendum I). The WLA incorporates Secondary Treatment Standards, Water Quality Standards, 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 Utah Water Quality Standards in the receiving waters. The permit effluent limitations and information are as follows and set forth below and in Table 1:

1. Since outfalls 001A and 001B discharge to waters of the State as defined in *UAC R317-1-1.30* and are protected for beneficial use classes 2B, 3E and 4, no wasteloads were developed for these outfalls. Effluent limitations for these outfalls are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. These effluent limitations will be enforced only during the irrigation season since during the remaining months the effluent will be conveyed to the treatment wetlands for further treatment and access to the ditch will be controlled and limited to authorized personnel only.
2. Flow is limited based on facility operational requirements and was used to develop the WLA.
3. Limitations on metals, total ammonia, and WET testing are derived in the WLA.
4. Since percent removal requirement will have already been met for outfall 001A, percent removal requirements are not being required for outfall 002.
5. Since Total Residual Chlorine (TRC) is not required to be tested at outfalls 001A and 001B, and should be dissipated long before the effluent reaches outfall 002, TRC testing is not being required.

<b>Table 1. Effluent Limitations Outfall 001A and Outfall 001B a/b/</b>				
<b>Effluent Characteristics</b>	<b>30-day Average</b>	<b>7-day Average</b>	<b>Daily Minimum</b>	<b>Daily Maximum</b>
BOD <sub>5</sub> , mg/L	25	35	NA	NA
BOD <sub>5</sub> Minimum % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Minimum % Removal	85	NA	NA	NA
E. coli, no./100mL	126	157	NA	NA
pH, Standard Units	NA	NA	6.5	9.0
<b>Effluent Limitations Outfall 002</b>				
Flow, MGD c/ d/				
Summer	NA	NA	NA	22.0
Fall	NA	NA	NA	21.0
Winter	NA	NA	NA	16.0
Spring	NA	NA	NA	21.0
BOD <sub>5</sub> , mg/L	25	35	NA	NA
TSS, mg/L	25	35	NA	NA
Ammonia, mg/L				
Summer	NA	NA	NA	9.1
Fall	NA	NA	NA	11.2
Winter	NA	NA	NA	14.4
Spring	NA	NA	NA	11.9
Total Phosphorous, mg/L /e	NA	NA	NA	Report
Oil & Grease, mg/L /f	NA	NA	NA	10
Total Copper, µg/L	30.5	NA	NA	51.7
Total Lead, µg/L	18.6	NA	NA	100
pH, Standard Units	NA	NA	6.5	9.0
Dissolved Oxygen, mg/L	≥ 4.0	NA	NA	NA
WET, Chronic Biomonitoring				
Summer	NA	NA	NA	Pass, 100% effluent
Fall	NA	NA	NA	Pass, 67% effluent
Winter	NA	NA	NA	Pass, 58% effluent
Spring	NA	NA	NA	Pass, 75% effluent

NA – Not Applicable

- a/ See Definitions, *Part I.A*, for definition of terms.
- b/ If a discharge occurs from Outfall 001B, at least one effluent sample must be taken during the time that outfall is discharging.
- c/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- d/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- e/ Phosphorous monitoring and reporting is being required the Cutler Reservoir TMDL.
- f/ A sample for oil & grease shall be taken if a visual sheen is observed. If a sample is taken because a sheen is observed, it shall not exceed a daily maximum concentration of 10 mg/L.

**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. The WLA incorporates as appropriate secondary treatment standards, water quality standards, antidegradation reviews (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 the development of this UPDES permit renewal, a WLA and ADR were performed. The WLA is attached and the ADR Level I Review determined that an ADR Level II Review was not required. The potential discharge was evaluated and determined not to cause a violation of State Water Quality Standards in downstream receiving waters.

**SELF-MONITORING AND REPORTING REQUIREMENTS:**

The following self-monitoring and reporting requirements, as shown in Table 2, are based primarily on the “Utah Monitoring, Recording and Reporting Frequency Guidelines” as effective December 1, 1991. 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. Complete lab reports for biomonitoring must be attached to the biomonitoring DMR.

<b>Table 2. Self-Monitoring and Reporting Requirements</b>			
<b>Parameter</b>	<b>Frequency</b>	<b>Sample Type</b>	<b>Units</b>
<b>Outfall 001A and 001B</b>			
(When being used as Type II reuse during the irrigation season, April 1-October 31) a/ b/			
Flow c/	Continuous	Recorder	MGD
BOD <sub>5</sub> d/	Monthly	Grab	mg/L
TSS d/	Weekly	Grab	mg/L
E. coli d/	Weekly	Grab	Col/100 ml
pH d/	Weekly	Grab	S.U.
<b>Outfall 002</b>			
Flow	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L
Ammonia	Weekly	Grab	mg/L
Total Phosphorous	Weekly	Grab	mg/L
Oil & Grease	Monthly	Visual/Grab	mg/L
Total Copper	Monthly	Composite	µg/L
Total Lead	Monthly	Composite	µg/L
pH	Weekly	Grab	SU
Dissolved Oxygen	Weekly	Grab	mg/L
WET, Chronic Biomonitoring	Quarterly	Grab	Pass/Fail
Metals, Influent e/ Effluent e/	Quarterly Quarterly	Composite Composite	µg/L µg/L
Organic Toxics	Yearly	Grab	mg/L

- a/ Discharge from Outfall 001A and Outfall 001B must meet all requirements of Type II reuse as found in *UAC R-317-3-11.5* when being used for irrigation purposes.
- b/ If discharge from Outfall 001A is conveyed from the lagoons to the treatment wetlands and is not used for Type II reuse purposes then sampling of the effluent is not required.
- c/ Total flow shall be taken in the junction box before the flow is split to Outfall 001A and 001B. A second flow measurement shall be taken at the flow meter just after outfall 001A. The flow for 001B shall be reported as the total flow at the junction box minus the flow from Outfall 001A.
- d/ Effluent samples for Outfall 001A and Outfall 001B shall be taken at a point after the chlorination basin and before the junction box where the flow is split to the two outfalls. If both outfalls are discharging simultaneously, one sample will suffice and can be reported for both outfalls. If a discharge occurs from Outfall 001B, at least one effluent sample must be taken during the time that outfall is discharging.
- e/ Refer to Section IV ***Industrial Pretreatment Program*** of the Permit for metals sampling requirements.

#### **STORM WATER 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:**

Pretreatment provisions are included in this combined UPDES permit.

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 quarterly influent and effluent monitoring for metals and yearly testing for organic toxics listed in *R317-8-7.5* and sludge monitoring (if sludge is generated) for potential pollutants listed in *40 CFR 503.*

### **BIOMONITORING REQUIREMENTS:**

As part of a nationwide effort to control toxics, biomonitoring requirements are being included in all major permits and in minor permits for facilities where effluent toxicity is an existing or potential concern. Authorization for requiring effluent biomonitoring is provided for in *UAC R317-8-4.2* and *R317-8-5.3*. *The Whole Effluent Toxicity (WET) Control Guidance Document*, February 15, 1991, outlines guidance to be used by Utah Division of Water Quality staff and by permittees for implementation of WET control through the UPDES discharge permit program. Since the facility is considered a major municipal facility and has a pretreatment program, biomonitoring is required and the renewal permit will once again include chronic WET testing and reporting requirements.

### **BIOSOLIDS (SLUDGE) DISPOSAL REQUIREMENTS:**

The State has become the sludge permitting authority under 40 CFR Part 503. However, since the City of Logan presently has a lagoon system, there is no sludge production as there would be at a mechanical plant. Therefore the requirements of 503 do not apply unless sludge is removed from the lagoons or the vegetative wetlands.

### **TMDL REQUIREMENTS:**

This facility ultimately discharges to Cutler Reservoir which is listed on Utah's 2006 303(d) list of impaired waterbodies as defined in the Clean Water Act. As required under federal regulations, a total maximum daily load (TMDL) will be developed for all 303(d) listed waters. Specifically, Cutler Reservoir has been identified as impaired for total phosphorous (TP) and dissolved oxygen. Currently, a TMDL evaluation is underway for the reservoir. The TMDL process may result in pollutant load reductions and wasteload allocations for either of these constituents. Wasteload allocations would then be translated to effluent limits in UPDES permits. It is therefore strongly recommended that the facilities' staff participate in the TMDL process. It is also being required that the facility self-monitor TP on a monthly basis in order to better quantify the phosphorus loading to the reservoir. The TMDL staff at the Division of Water Quality will be responsible for scheduling and notifying appropriate facilities personnel regarding TMDL meetings. In addition, please contact your UPDES permit writer for information on scheduled TMDL meetings.

### **PERMIT CHANGES:**

On December 2, 2010 the Utah Water Quality Board approved the Cutler Reservoir TMDL. As a result, there are now load allocations in place for the Logan City Wastewater Treatment Plant. In 2010 the permit was reopened and a compliance schedule for Phosphorus limits was added to the permit.

A rule change required by EPA and adopted by the Water Quality Board in October 2008 extended the chronic ammonia criteria from 3A and 3B waters to include 3C and 3D waters. Since this facility discharges to Swift Slough which is classified as 2B, 3C, 4 according to *Utah Administrative Code (UAC) R317-2-13*, these new ammonia limits have been applied to this permit.

Additionally since the facility cannot meet the new stricter ammonia and phosphorus requirements given its current technology, the facility has started the planning process to bring it into facility into compliance. The compliance schedule listed in Part I.D.2 of the permit. This compliance schedule will allow the facility to operate under its current conditions until a time when it can comply with the new limits set forth by the Cutler Reservoir TMDL and new EPA ammonia rules.

**PERMIT DURATION:** It is recommended that this permit be effective for a period of five years.

Permit Drafted by Lonnie Shull  
Environmental Scientist  
Utah Division of Water Quality  
4/2/2015

PND Draft

