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FACT SHEET STATEMENT OF BASIS

**PACIFICORP - GADSBY PLANT
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0000116
MINOR INDUSTRIAL PERMIT RENEWAL**

FACILITY CONTACTS

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DESCRIPTION OF FACILITY

The Gadsby Plant is a steam electric power generating facility consisting of six generation units rated at 66 megawatts (MW), 75 MW, and 100 MW and three 40 MW Combustion Turbines (CT) yielding a capacity of 361 MW. A CO₂ injection system is used at Outfall 004 to control elevated pH readings that may result from biological growth in the settling ponds. The plant is currently configured for operating all units on natural gas and has a *Standard Industrial Classification (SIC) code 4911*, for electric power generation. The design flow of this facility is 3.7 million gallons per day (MGD). A flow diagram of the system is appended. Based on information obtained from facility representatives, there is no once through cooling water used in this facility (when used, cooling water is recirculated through the cooling tower, until blowdown is required) and there is no discharge of metal cleaning wastes or chemical metal cleaning wastes.

DESCRIPTION OF DISCHARGE

The Gadsby Plant currently consists of two discharge points, Outfalls 004 and 007. Outfall 004 discharges waste water from treatment ponds into the Salt Lake Abatement Canal and Outfall 007 discharges back wash water from the intake screen to the Jordan River. The intake screen (Outfall 007) on the Jordan River is backwashed with an average flow of 170 gallons per minute using Jordan River water for one hour, once per week. The purpose is to clear the screen of river debris. Because Outfall 007 discharges only minimal amounts of Jordan River rinse water from intake screen back washing, monitoring and reporting requirements have not been included in this renewal UPDES permit.

The Gadsby Plant utilizes water from either the Jordan River, or Salt Lake City culinary water. Jordan River water is treated before use in the plant processes. This water is used for a variety of processes and becomes part of the facility waste water. The waste water is directed to the treatment ponds and includes water from cooling tower blowdown, boiler blowdown, yard drains, storm water, excess treated raw water and reverse osmosis reject. All other waste water streams are disposed of in the sanitary sewer system. There are no metal cleaning wastes of any kind discharged. The plant drains and combustion turbine drains pass through an oil water separator before discharge to the waste water ponds which discharge from Outfall 004. Self monitoring data on Discharge Monitoring Report (DMR) forms from the last 3 years for Outfall 004 have been reviewed and indicate that no effluent limits were exceeded.

SUMMARY OF PERMIT CHANGES FOR THIS PERMIT RENEWAL

The use of sodium hypochlorite to control algae in the settling ponds was previously approved by the Division of Water Quality. The use of calcium hypochlorite for the control of algae in the settling ponds was requested in this renewal permit application, and its use has been approved by the Division of Water Quality. So both sodium and calcium hypochlorite can be used for control of algae in the settling ponds. In the previous permit a total chlorine residual effluent limit was included as taken from once through cooling water discharge requirements in 40 CFR 423.13. As indicated in the introduction above, once-through cooling water is not presently discharged. For this reason and because the Abatement Canal has no water quality standard for total residual chlorine, the total chlorine residual limits included in the previous permit will be dropped from this permit renewal at Outfall 004. For a similar reason, total iron will be dropped from this permit. Based on 40CFR 423.12 total iron is required to be limited in the discharge of metal cleaning wastes. Since no metal cleaning wastes are being discharged and there is no water quality standard for iron in the Abatement Canal, total iron will be dropped from the permit at Outfall 004. The settling ponds are included in pictures appended to this fact sheet statement of basis (FSSOB) along with a diagram showing the process water flow at the Gadsby Plant.

Based on 40 CFR 423.23 total chromium and total zinc effluent limits are included in the renewal permit because, when necessary, there would be cooling tower blowdown.. The monitoring location for free available chlorine will change from Outfall 004 to the discharge

from the cooling tower blowdown. The following parameters will be sampled only at the cooling tower blowdown before mixing with any other waste streams: the 126 priority pollutants, total chromium, total lead and free available chlorine. The following parameters will be sampled at Outfall 004: TSS, oil and grease, pH, and flow.

SUMMARY OF PREVIOUS PERMIT CHANGES THAT ARE CONTINUED

Modified chlorine limitation: In the previous permit Gadsby plant personnel requested a waiver from the Federal requirement in *40 CFR 423.12(b)(8)* and *423.13(d)(2)*, which imposes a time limitation on chlorine discharged from their cooling units to 2-hours per day, and not from more than one unit at a time. The cooling tower components are negatively affected by short periods of high doses of chlorine (shock treatment). PacifiCorp believes that the Gadsby Plant units would be better conditioned and avoid significant corrosive activity with continuous low doses of chlorine instead of the current periodic shock treatment, as is the case with other PacifiCorp Plants. The citation in *40 CFR 423* allows for the discretion of the permitting authority to determine the applicability of this requirement because of “*...factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines.*” Because all of the wastewater is sent to settling/ wastewater ponds before being discharged, the affect on the receiving waters should be negligible as the mass load of chlorine through continuous low doses is not significantly different from the high dose treatment at two hour intervals. The Division of Water Quality reviewed the waiver request and agreed to modify the permit accordingly. This chlorine modification will be continued under this renewal permit because there have been no changes in the system and the Gadsby Plant is in compliance with their permit chlorine limitations (no violations over the last five years).

The second change incorporated in the previous permit was the addition of storm water provisions. Even though Gadsby personnel have in this renewal application requested an exemption from storm water discharge requirements, no exemption will be granted. The only way a storm water exception can be granted is if no storm water was discharged from the facility.

RECEIVING WATERS AND STREAM CLASSIFICATION

The Salt Lake Abatement Canal is tributary to the City Drain, which is tributary to the Salt Lake Sewage Canal which leads to the final destination of the Farmington Bay Water Fowl Management Area. The classification of the Farmington Bay Water Fowl Management Area is classified as 2B, 3C and 3D. The Farmington Bay Water Fowl Management Area is several miles downstream of the discharge at PacifiCorp Gadsby and undergoes significant dilution, therefore use of these receiving water classifications is very conservative and protective of the water fowl management area.

The Jordan River is classified as 2B, 3B, and 4.

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

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 limits have been developed, Best Professional Judgment (BPJ) may be used where applicable. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Effluent limitations are also derived using a waste load analysis (WLA). 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 applicable State water quality standards in the receiving waters. Where applicable, effluent limitations from the WLA were incorporated into the renewal permit (see the attached WLA).

The basis for effluent limitations is as follows:

Considering the processes employed at Gadsby, the following parameters are regulated under the effluent limitations guidelines for the Steam Electric Power Generating Point Source Category, *40 CFR Part 423*; total suspended solids (TSS), oil and grease, free available chlorine, pH, polychlorinated biphenyls, total chromium, total zinc and the 126 priority pollutants. However, free available chlorine will be monitored at Outfall 004 instead of from cooling tower blowdown. This is consistent with the previous permit and is more in line with the operational aspects of the power plant. Holding the discharge water in the ponds will allow the chlorine to dissipate and monitoring at 004 will directly show the chlorine concentration going to the receiving waters (Abatement Canal).

The parameters regulated under *Utah Administrative Code (UAC) R317-1-3.2*, are secondary treatment standards for TSS and pH which are more stringent than the categorical requirements (40 CFR Part 423) for these parameters. TSS and pH is a combination of State secondary treatment standards and the federal categorical standards and applicable at Outfall 004.

Oil and grease will not be changed from what is in the previous permit. This limit is based on best professional judgment (BPJ) and is more stringent than the categorical requirements (40 CFR 423) for this parameter and will be applicable at Outfall 004.

EFFLUENT LIMITATIONS

The following effluent limitations for Outfall 004 and cooling tower blowdown are included in this UPDES permit renewal:

<u>Parameter</u>	<u>Effluent Limitations a/</u>		<u>Daily Min</u>	<u>Daily Max</u>
	<u>30-day Average</u>	<u>7-day Average</u>		
Total flow, MGD	Report	N.A.	N.A.	3.7
TSS, mg/L	25	35	N.A.	100
Oil and Grease, mg/L b/	N.A.	N.A.	N.A.	10
pH, standard units	N.A.	N.A.	6.5	9.0
Total Chromium, mg/L c/	0.2	N.A.	N.A.	0.2
Total Zinc, mg/L c/	1.0	N.A.	N.A.	1.0
Free Available Chlorine, mg/L	0.2	N.A.	N.A.	0.5

N.A. - not applicable.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes from any of these discharge points.

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used as transformer fluid.

- a/ See Definitions, Part I.A for definition of terms
- b/ In addition to the monthly sampling requirement for oil and grease, a sample for oil and grease shall immediately be taken whenever a sheen is observed in the effluent or there is another reason to believe oil and grease is present.
- c/ Total chromium and total zinc samples shall be taken from cooling tower blowdown only and shall not include dilution from any other effluent streams. It shall be taken at the same location as the 126 priority pollutants and shall not exceed the limitations in the

effluent table above. Total zinc and total chromium is not required to be sampled at Outfall 004.

The blowdown from the cooling towers shall contain no detectable amounts of the 126 priority pollutants (Appendix A of 40 CFR Part 423) due to chemicals added for cooling tower maintenance. Compliance with this requirement may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the cooling tower blowdowns by the analytical methods in 40 CFR Part 136. These calculations must be based on the cooling tower blowdowns only and shall not include dilution by any other effluent streams. A list of the certified analytical contents of all biofouling and maintenance formulations (Manufacturer's certification as to contents and priority pollutants status) shall be submitted along with the engineering calculations. The engineering calculations shall be updated annually or whenever there is a change in the chemicals used or an increase in the application rate of the chemicals. If chemical usage, both type and quantity has not changed during the year, a letter certifying to that fact is adequate to demonstrate continued compliance with the requirement.

At Outfall 007 there shall be no chemicals added to the intake raw water sump because this water is used for back flushing the intake screens.

There shall be no discharge of metal cleaning wastes or chemical metal cleaning wastes.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following effluent self-monitoring and reporting requirements are based on the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991:

Self-Monitoring and Reporting Requirements

<u>Parameter</u>	<u>Frequency</u>	<u>Sample Type</u>	<u>Units</u>
Total Flow	Continuous	Recorder	MGD
TSS	Monthly	Grab or Composite	mg/L
pH	Monthly	Grab	standard units
Oil&Grease*	Visible Sheen/Monthly	Grab	mg/L
Free Avail. Chlorine	Weekly	Grab	mg/L
Total Chromium	Quarterly	Grab or Composite	mg/L
Total Zinc	Quarterly	Grab or Composite	mg/L

*In addition to the monthly sampling requirement for Oil & Grease, a sample for Oil and Grease shall also be immediately taken whenever a sheen is observed on the effluent or there is another reason to believe oil or grease is present.

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. 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 facility. The Gadsby plant has storm water requirements in their present permit and maintains on site a Storm Water Pollution Prevention Plan as required.

The storm water permit provisions will be continued in this renewal permit.

PRETREATMENT REQUIREMENTS

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

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.

The Gadsby plant is a minor facility and the chances of a toxic discharge are low. An acute WET test using Ceriodaphnia and Fat Head Minnows was completed on the discharge from Outfall 004 in the first week of January 2013. No toxicity was detected in either species. Based upon this test and based on the characterization of the facility's waste stream that showed non detect for organic toxics, best professional judgment (BPJ) supports not requiring whole effluent toxicity limits or monitoring in this renewal permit. However, if the permittee violates effluent limits in the renewal permit (for example showing detectable amounts of any of the 126 priority

pollutants) then the permit may be opened and WET testing and/or WET limits may be included in the permit.

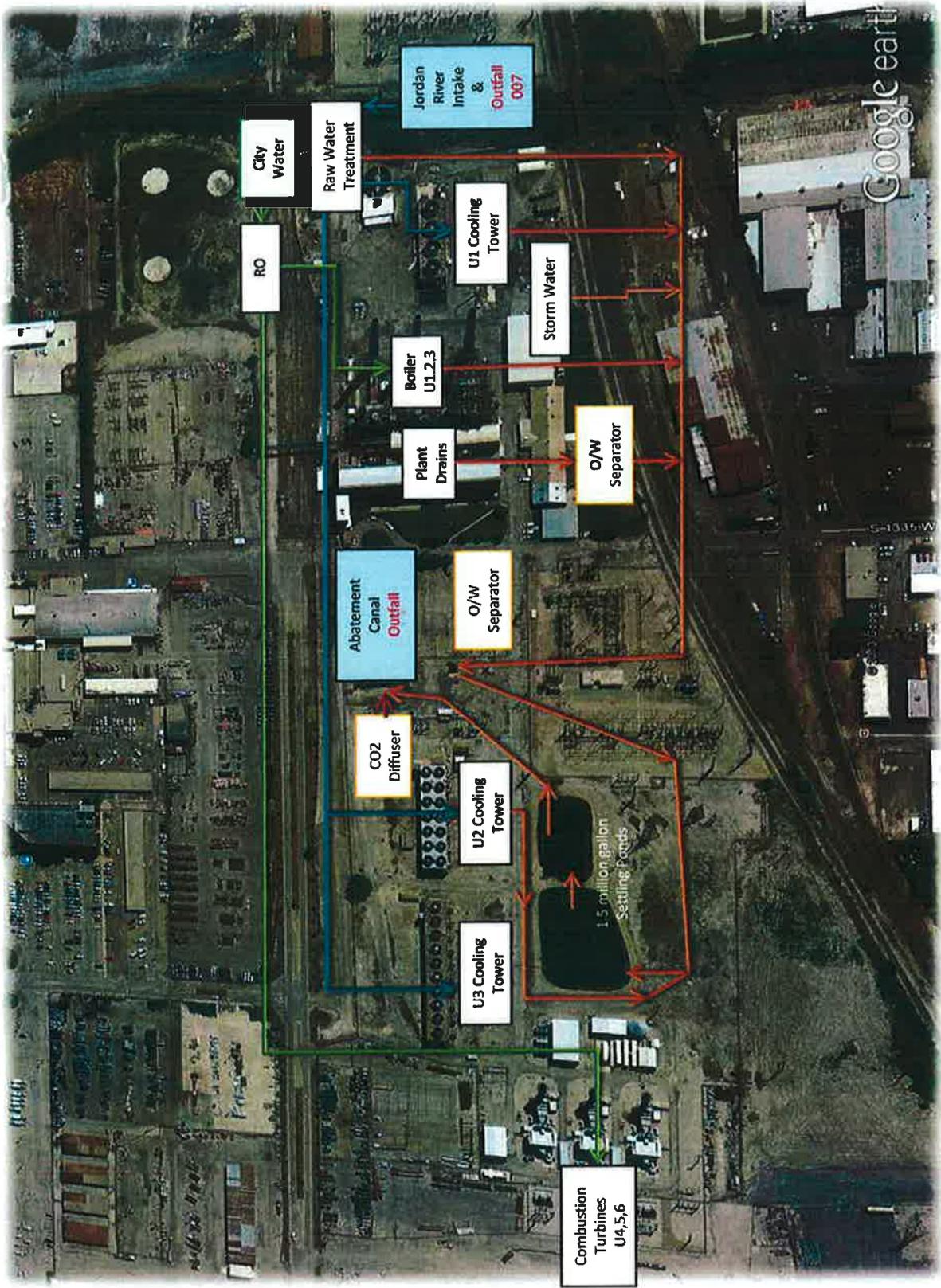
PERMIT DURATION

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

Drafted by Mike Herkimer, Environmental Scientist
Utah Division of Water Quality
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Third draft: November 1, 2012

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