

FACT SHEET - STATEMENT OF BASIS

PACIFICORP - CARBON PLANT

UPDES PERMIT NO. UT0000094

PERMIT RENEWAL MAJOR INDUSTRIAL

FACILITY CONTACT

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DESCRIPTION OF FACILITY

This is a coal fired Steam Electric Power Generating facility consisting of two units; Unit No. 1, built in 1954, rated at 66 MW; and Unit No. 2, built in 1957, rated at 100 MW. It is located about three miles north of Helper, Utah, at the junction of Highways 6 and 191. Outfall 001 is located at latitude 39° 43' 40" and longitude 110° 51' 52" and discharges to Willow Creek, and Outfall 003 is located at latitude 39° 43' 29" and longitude 110° 51' 50" and discharges to the Price River. The standard industrial classification (SIC) code for the facility is 4911, (Electric Power Generation). This power plant will discontinue operation on April 15, 2015. It is anticipated that within two months after shut down all water discharges will cease.

The process water source is the Price River. Process water from the Price River, goes through a settling pond, then to a clarifier, then to a clear well before use in the plant. Aluminum sulfate is used as a coagulant in the clarifier. Boiler makeup water is filtered and deionized by fixed bed demineralizer. Tri-sodium phosphate is added to the boiler water for pH control. Drinking water is delivered from the City of Helper. Sanitary waste water is sent to the sanitary sewer system that ends up at the Price River Water Improvement District's treatment plant.

DESCRIPTION OF DISCHARGES

There are two discharge points from this facility, Outfalls 001 and 003. Discharge 001 did not discharge in the life of the two previous permits. However, PacifiCorp has decided to keep 001 as an option to discharge, if needed. In the past, the discharge from Outfall 001 included blow down from

the two cooling towers, seal water and surface drainage from the active coal pile. These waste streams were filtered through a sand filter and discharged to Willow Creek approximately 100 yards upstream from the confluence with the Price River. An oil absorbent material was used on the surface of the sand filters to absorb and remove oil in the discharge. The discharge flow rate was measured with a weir and effluent samples were collected where the effluent came out of the sand filter building. This wastewater can also be routed to settling ponds and discharged through Outfall 003, which is what PacifiCorp has done for the last five years. Outfall 001 has been plugged and it is probable that it will not discharge again.

The discharge from Outfall 003 includes the following sources: underflow from the water treatment clarifier, backwash water and other wastewater from the sand filters (for Outfall 001), wastewater from the vacuum pumps, neutralized regenerant from cation and anion (ion exchange bed) regeneration, blowdown from the evaporators, and boiler blowdown water. These wastewaters are routed through settling ponds, and before discharge, treated with carbon dioxide for pH control. Booms in the settling ponds and a baffle at the outlet are used to control the discharge of oil. A weir is used to measure the effluent flow rate and effluent samples are taken at the discharge from the settling ponds, before discharging to the Price River.

Chemical metal cleaning waste (see *40 Code of Federal Regulations "CFR" 423.11(c)*) is contained and evaporated. Bottom ash is collected wet and fly ash is collected dry and hauled away for disposal. Problems in the past with pH have caused the plant to reduce the contact of wastewater with ash. They have done this by using dry methods to clean the loading area, but there is still some exposure because afterward it is washed down with water that goes to the wastewater system. Another possibility of wastewater exposure to ash is when a hole develops in a bag in the bag house. This is not normal operation, and is an infrequent occurrence. Very little ash is exposed to wastewater and the pH problem that the permittee has had in the past has not been a problem for a few years.

As a dust control measure and an effort to reduce the total dissolved solids (TDS) loading in Outfall 003, water from the settling ponds discharged to Outfall 003 is pumped (via a 4-inch pipeline) and dispersed over the ash disposal area for wetting. The soluble solids in the water serve to form a crust on the ash, when dried, that helps prevent wind-born dust off the ash. The 4-inch pipeline is about one mile long. During the winter the pipeline is drained to prevent freezing. The drained water, about 6000 gallons, goes to a depressed area about midway along the pipeline, that does not flow to other surface waters.

VIOLATIONS

During the past five years the facility reported the following effluent limitation exceedances on their discharge monitoring reports:

Discharge Serial No.	Parameter Description	Monitoring Period End Date	Reported Value	Effluent Limitation Type	Limit Value
003A	Total Suspended Solids	06/30/2013	45.0 mg/l	Weekly Average	35.0
003A	Total Suspended Solids	07/31/2012	26.0 mg/l	Monthly Average	25.0
003A	Total Dissolved Solids	10/31/2013	1.006 ton	Daily Maximum Loading	1.0
003A	Total Suspended Solids	12/31/2013	40.0 mg/l	Monthly Average	25.0
003A	Total Suspended Solids	12/31/2013	40.0 mg/l	Weekly Average	35.0

RECEIVING WATERS AND STREAM CLASSIFICATION

The receiving waters are Willow Creek and the Price River. The Carbon Power Plant discharges flow to the Price River below the City of Price Water Treatment Plants Intake structure. This portion of Price River and tributaries are classified 2B, 3A, and 4, according to *Utah Administrative Code "UAC" R317-2-13*:

- 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 3A -protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 -protected for agricultural uses including irrigation of crops and stock watering.

In addition, the Colorado River and its tributaries are protected by the Colorado River Basin Salinity Control Forum, in which the State of Utah is a participant.

SUBSTANTIVE PERMIT CHANGES

Changes made during the permit renewal include removal of the acute biomonitoring and addition of chronic biomonitoring. Also daily maximum limits of 1.0 mgd and 1,200 mg/L for total flow and TDS limits were added, respectively. Lastly, the pH limit for Outfall 003 was changed from 9.5 to 9.0 in accordance with the designated use numeric criteria.

BASIS FOR EFFLUENT LIMITATIONS

Technology Based Limitations

40 CFR 423 – Steam Electric Power Generating point Source Category

Proposed new language

EPA currently has new “Proposed Effluent Guidelines for the Steam Electric Power Generating Category” published June 7, 2013 for public comment. These proposed rules do not apply to this permit renewal as they have not yet been incorporated into the CWA. Language in the proposed rule states more stringent regulations will begin within the next permit cycle beginning July 1, 2017.

40 CFR 423.13 – Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT)

The requirements found at 40 CFR 423.13(d)(1) prohibits the discharge of any of the 126 priority pollutants contained in cooling tower chemical in detectable amounts, except for chromium and zinc and includes effluent limitations for chromium and zinc. Effluent limitation for any of the 126 priority pollutants are not included as Part I.D.7 of the Carbon Plant prohibits discharge of any detectable amount of the 126 priority pollutants or submission of engineering calculations demonstrating these 126 priority pollutants are not present. The Carbon plant has historically submitted by the fact it uses Nalco 3DT189 for cooling tower maintenance that contains none of the 126 priority pollutants.

Section 316(b) of Clean Water Act - Cooling Water Intakes

The PacifiCorp Carbon Plant has a river inlet upstream of a settling pond. A diversion dam spans the river diverting water into a concrete box through a gate and grate. The water is then gravity fed at a 2% slope into a settling pond. On the effluent side of the pond, prior to settled water being gravity fed to the plant, is where the traveling screen is located.

Requirement for regulation under CWA Section 316(b) was considered as the plant withdraws water from the Price River for use in the cooling towers. On May 19, 2014 EPA signed final language to amend 40 CFR Part 125.9. Part 125.93 states that the facility must comply with the applicable BTA standards within 8 years after the effective date of the final rule. Due to this statement proposed language will be evaluated during the next permit cycle. The Carbon Plant does not meet the 50 mgd intake rate to trigger additional monitoring requirements under Part 125.9. Thus detailed analyses of aquatic organism surveys and assessments are not required for the intake system.

PacifiCorp Carbon Plant - Cooling Water Intake Rates by Year

	Flow (mgd)	
	2012	2013
January	2.7	2.8
February	2.7	2.5
March	2.7	2.9
April	2.6	2.8
May	2.6	2.8
June	2.9	3.1
July	3	2.9
August	2.9	2.4
September	3.1	2.3
October	2.8	2.5
November	2.5	2.5
December	2.6	2.5

Water Quality Based Effluent Limitations

Limitations on TSS and pH are based on current Utah Secondary Treatment Standards, *Utah Administrative Code R317-1-3.2*. The total dissolved solids (TDS) limitation is based on the wasteload analysis (WLA) dated March 13, 2014. The Total Residual Chlorine (TRC) and temperature limitations are also based on the WLA as well. The dissolved oxygen limitation is based on the WLA, and the Oil and Grease (O&G) limitation is based on Best Professional Judgment. The flow, monitoring and reporting requirements are based on the Utah Division of Water Quality guidelines of December 1991. Based on self-monitoring data during the last permit period, the PacifiCorp Carbon facility should not have any difficulty meeting the permit limitations indicated below.

Utah Administrative Code R317-1-3.2.4 requires waters of the Colorado River and its tributaries shall be protected by the requirements of the “Proposed Water Quality Standards for the Salinity including Numeric Criteria and Plan Implementation for Salinity Control, Colorado River System, June 1975” and revisions. The TDS limitation of 1.0 ton per day is a net limit is taken from the 2011 Review *NPDES Permit Program Policy for implementation of Colorado River Salinity Standards I.B.4.a*. Calculation of TDS loading for this permit is made using the difference of monthly TDS influent concentration data and monthly (same day sampled) TDS effluent concentration data. TDS loading is for the entire facility and is a sum of the loading of each discharge outfall. Since Outfall 001 does not discharge the loading comes only from Outfall 003.

Pacificorp–Carbon, Discharge 001, Effluent Limitations¹				
Parameter	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow, mgd	NA	NA	NA	1.0
Temperature, Winter ² , °C	NA	NA	NA	10.1
Temperature, Spring ² , °C	NA	NA	NA	20.0
Temperature, Summer ² , °C	NA	NA	NA	20.0
Temperature, Fall ² , °C	NA	NA	NA	11.9
TRC, mg/L	NA	NA	NA	0.011
pH, Standard Units	NA	NA	6.5	9.0
D.O. mg/L	NA	NA	5.0	NA
Oil & Grease ³ , mg/L	NA	NA	NA	10.0
TSS ⁴ , mg/L	25	35	NA	50.0
TDS, mg/L	NA	NA	NA	1200

Pacificorp–Carbon, Discharge 001, Self-Monitoring and Reporting Requirements⁵			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
Temperature	Weekly	Grab	Degrees C
TRC	Weekly	Grab	SU
pH	Weekly	Grab	mg/L
D.O.	Weekly	Grab	mg/L
Oil & Grease/Visual Sheen (Sample if sheen is present)	Monthly	Grab	mg/L
TSS	Monthly	Grab	mg/L
TDS, Influent	Monthly	Grab	mg/L
TDS, Effluent	Monthly	Grab	mg/L

1 See Definitions, *Part VI* for definition of terms.

2 For compliance with this permit the seasonal limits will be defined as: Winter (January 1 – March 31), Spring (April 1-June 30), Summer (July 1 – September 30), and Fall (October 1 – December 31)

3 The analytical sample for oil & grease is only required when a sheen is observed or there is another reason to believe oil & grease may be present.

4 The permittee must meet the TSS maximum limit of 50 mg/L except where a rainfall event causes the overflow of facilities designed, constructed, and operated to contain the runoff from a ten year, 24-hour rainfall event. The permittee must maintain a precipitation gage at the plant that will be used for determining the amount of precipitation unless the Director approves of the use of a precipitation gage at another weather station.

5 Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: at the Outfalls 001 and/or 003 prior to mixing with the receiving stream.

Pacificorp–Carbon, Discharge 003, Effluent Limitations¹				
Parameter	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow, mgd	NA	NA	NA	1.0
Temperature, Winter ² , °C	NA	NA	NA	10.1
Temperature, Spring ² , °C	NA	NA	NA	43.2
Temperature, Summer ² , °C	NA	NA	NA	28.5
Temperature, Fall ² , °C	NA	NA	NA	11.9
TRC, Winter ² , mg/L	NA	NA	NA	0.05
TRC, Spring ² , mg/L	NA	NA	NA	0.19
TRC, Summer ² , mg/L	NA	NA	NA	0.08
TRC, Fall ² , mg/L	NA	NA	NA	0.05
pH, S.U. mg/L	NA	NA	6.0	9.0
D.O.	NA	NA	5.0	NA
Oil & Grease ³ , mg/L	NA	NA	NA	10.0
TSS ⁴ , mg/L	25	35	NA	50.0
TDS, mg/L	NA	NA	NA	3200
Whole Effluent Toxicity, Chronic	NA	NA	NA	Pass, IC ₂₅ > 26% effluent

Pacificorp–Carbon, Discharge 003, Self-Monitoring and Reporting Requirements⁵			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
Temperature	Weekly	Grab	Degrees C
TRC	Weekly	Grab	mg/L
pH	Weekly	Grab	SU
D.O.	Weekly	Grab	mg/L
Oil & Grease/Visual Sheen (Sample if sheen is present)	Monthly	Grab	mg/L
TSS	Monthly	Grab	mg/L
TDS, Influent	Monthly	Grab	mg/L
TDS, Effluent	Monthly	Grab	mg/L
Whole Effluent Toxicity, Chronic	Quarterly	Composite	Pass/Fail

Pacificorp-Carbon, Sum of Discharges 001 & 003, Effluent Limitations¹				
Parameter	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
TDS (net contribution loading⁶) tons/day	NA	NA	NA	1.0

NA - Not Applicable

An analysis of the process water system shows there is no opportunity for organic or carbonaceous oxygen depleting materials or ammonia to be introduced into the wastewater system. The process water comes from the Price River, is clarified, caustic phosphates are added (a possible nutrient), but no other nutrients are added. If there are nutrients in the Price River water it is possible that they are removed in the clarification process. Much of the system is open (open trench conveyances, settling ponds, etc.) allowing an infusion of oxygen and a large fraction of flow goes through a counter-current cooling tower, providing oxygen entrainment for the wastewater, and providing an opportunity for ammonia (if any) to escape. The lack of wastewater exposure to organic pollutants or ammonia, the open system, and overall opportunity for wastewater to interface with air in the system based on BPJ eliminates the need for ammonia limits. Final settling should help remove some of the forms of phosphorous that were introduced.

In accordance with the Federal requirements in the Steam Electric Power Generating Point Source Category (SEPGPSC) found in *40 CFR 423* there will be no discharge of polychlorinated biphenyl compounds; there will be time limits (two hours per unit per day) on the duration of the discharge of chlorine; and a prohibition on the discharge of detectable amounts of the 126 priority pollutants in the cooling tower blowdown due to chemicals added for cooling tower maintenance. There will be no discharge of chemical metal cleaning wastes as defined in *40 CFR 423*. Chemical metal cleaning wastes presently are contained and evaporated.

SEPGPSC requires that a discharge from a coal pile from rainfall must be treated and meet the TSS maximum limit of 50 mg/L except as the result of the overflow of facilities designed, constructed, and operated to contain the runoff from a ten year, 24-hour rainfall event. The permittee must maintain a precipitation gage at the plant that will be used for determining the amount of precipitation unless the Division of Water Quality Director approves of the use of a precipitation gage at another weather station.

⁶ The TDS limitation of 1.0 ton per day is the net limit of both outfalls. Use the difference of monthly TDS influent concentration data and monthly (same day sampled) TDS effluent concentration data in calculation of TDS loading

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxics, biomonitoring requirements are being included in all major and significant 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.

PacifiCorp-Carbon has been required to perform acute toxicity (LC_{50}) testing and has not failed an acute toxicity test during the last ten years. The process for the wastewater at this facility is fairly stable and not subject to change or fluctuations. Because of the positive history of not showing any acute toxicity, the WET testing will be changed to chronic toxicity test in this permit to be done quarterly. The chronic toxicity tests will be allowed to alternate *Ceriodaphnia* and fathead minnows as the test species. The permit will contain the standard requirements for accelerated testing upon failure of a WET test, a preliminary toxicity investigation (PTI), and toxicity reduction evaluation (TRE) as necessary. A reopener provision is included in order to incorporate WET limits if they are determined to be necessary.

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 power 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 Carbon 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

At present, PacifiCorp-Carbon does not discharge any process wastewater to the sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer at any future time, 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 Clean Water Act, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in 40 CFR section 403, the State Pretreatment Requirements found in Utah Administrative Code R317-8-8, and any

specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

PERMIT DURATION

The renewal permit was drafted on April 17, 2014, by Ken Hoffman, Environmental Scientist, Utah Division of Water Quality.

PUBLIC NOTICE

Began:

Ended:

Public Noticed in

Comments:

Signed this day of 2014.

Ken Hoffman, P.E.