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The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

**STATEMENT OF BASIS AND FACT SHEET**  
**MCWANE DUCTILE – UTAH**  
(Formerly Pacific States Cast Iron Pipe Company)  
**PERMIT: DISCHARGE & STORM WATER**  
**UPDES RENEWAL PERMIT NUMBER: UT0000612**  
**UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000612**  
**MINOR RENEWAL INDUSTRIAL**

**FACILITY CONTACTS**

Person Name:	Kent Brown
Position:	Vice-President and General Manager
Person Name:	Scott Jarvis
Position:	Plant Manager
Person Name:	David Georgeson,
Position:	Environmental Manager
Person Name:	Holly Guerrero, P.E.
Position:	Environmental Engineer
Facility Name:	McWane Ductile - Utah
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Actual Address:	2550 South Industrial Parkway, in Provo

**DESCRIPTION OF FACILITY**

McWane Ductile - Utah (McWane) operates a ductile iron foundry; there is a landfill also located on site for disposal of non-hazardous solid waste. McWane operations are located at 2550 South Industrial Parkway, in Provo, Utah at latitude 40°N11'54" and longitude 111°W38'00". McWane Standard Industrial Classification (SIC) code is 3321 for cast iron foundries.

McWane produces cement lined ductile iron pipes used in the drinking water industry. Scrap iron is melted in a cupola furnace, poured into molding machines, cooled, then cement coated. Wastewater, contained on site, is generated from hydrostatic testing of the pipe and during the process of cement lining the pipe

Monitoring of copper, lead, and zinc was eliminated during a previous permit cycle based on data demonstrating that these metal concentrations were below the corresponding waste load analysis. To confirm that monitoring is still not required (and at Division of Water Quality's request), McWane provided recent representative samples of effluent from Outfall 001, all of which exhibited concentrations below detection for these metals.

When Reilly Industries did not renew its authorization to discharge to the Ironton Canal, the thermal load calculations were revised to reflect conditions. The thermal loading was, therefore, recalculated reflecting existing UPDES permit contributions and resulting in a revision to McWane authorized load allocation.

In an effort to better address the needs of the watershed and increase efficiency, the DWQ began consolidating permits. Therefore, in addition to the discharge provisions, the renewal permits for McWane have included provisions for storm water discharge. Accordingly, the storm water permit requirements (along with all monitoring obligations) for McWane (including the co-located landfill) are incorporated into this UPDES permit (and the required storm water pollution prevention plan).

### CHANGES FROM THE PREVIOUS PERMIT

McWane collects groundwater for their use from springs in a reservoir on site that is referred to as the million gallon reservoir. The water flows over a weir and out of the reservoir to the Ironton Canal through there outfall structure. They take water from the reservoir and/or directly from the Ironton for use in the facility. They can blend both sources of water and manage the incoming temperature to prevent a system failure as a result of temperature shock from Ironton water during the winter. The process cooling water from the plant is also discharged to the reservoir.

The biggest control over how much water is discharged through the outfall is the natural groundwater flow rate into the reservoir. While McWane works to control the algae that grows in the reservoir, it is the source of the majority of total suspended solids (TSS) in the discharge. They have mentioned that during high spring runoff they have a hard time managing the flow rate and the algae that is discharged. McWane has requested that the TSS limit be expressed as (lbs/day). When calculating this out from the standard and McWane flow it comes to 729 lbs/day on average with a maximum of 1021 lbs/day.

Average	$25 \text{ mg/L}(3.5 \text{ MGD})(3.78 \text{ L/gal})(11\text{bs}/453592 \text{ mg})= 729 \text{ lbs/day}$
Maximum	$35 \text{ mg/L}(3.5 \text{ MGD})(3.78 \text{ L/gal})(11\text{bs}/453592 \text{ mg})= 1021 \text{ lbs/day}$

Based upon the 40 CFR 122 allowance for load based limits the request has been granted

McWane worked to improve the storm water treatment for the facility. They built a storm water basin on the west side of the yard where the pipe is stored after production and prior to shipping. This basin allows for collection of the storm water and runoff to be collected and sampled before discharge. It also allows for evaporation and infiltration of the water. This basin should reduce the overall storm water discharges from the facility. They also plan to acquire a portable treatment system to treat storm water and other spilled water onsite. The treated water will be collected and used for dust control on site. The acquisition and use of this system does not require design review or approval by DWQ.

During this permit cycle, McWane will be replacing casting equipment and other systems at the facility. In order to properly operate the machines they will be adding closed loop, non-contact cooling water systems for the equipment. This will require them to install cooling towers to maintain the system temperature. As they replace the old machines with new ones, more cooling tower units will be installed. The water for the towers will be drawn from the culinary water supply. It is anticipated that the overall discharge flow from Outfall 001 will be reduced from the system when the changes are complete.

Total dissolved solids (TDS) concentration is commonly increased as a result of use of cooling towers. The waste load allocation (WLA) for McWane has been generated with an expected TDS loading of 800 mg/L from the facility. This is above the current (550 mg/L) and expected (600 mg/L) TDS loading rate for the discharge. Both are also below the in stream concentration of 740 mg/L for TDS used to develop the WLA. Accordingly, issuance of this revised permit is not expected to cause or contribute to violation of water quality standards downstream.

The total residual chlorine limit (TRC) is based on the acute TRC water quality standard at end-of-pipe, and is added to this permit with the addition of the cooling towers. This effluent limit is below the minimum quantification level (MQL) of the most common and practical EPA approved TRC methods. The Division has determined the current acceptable MQL to be 0.06 mg/L and the method detection limit (MDL) to be 0.02 mg/L when using the DPD colorimetric Method #4500 – CL G. Measured values greater than or equal to the MQL of 0.06 mg/l will be considered violations of the permit, and values less than the MQL of 0.06 mg/l will be considered to be in compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:

- 1) Analytical values less than 0.02 mg/L shall be considered zero; and
- 2) Analytical values less than 0.06 mg/L and equal to or greater than 0.02 mg/L will be recorded as measured.

McWane has completed a Level II anti-degradation review (ADR) in anticipation of the system changes. The ADR addressed the changes in TDS and TRC loading. The determination from the ADR is that the investments in the cooling towers and improvements with the discharge will not negatively impact the designated uses of the Ironton Canal and later Provo Bay.

## DISCHARGE

### **DESCRIPTION OF DISCHARGE**

McWane has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. A summary of 3 years of data is included at the end of the Fact Sheet and there were no discharge violations.

McWane' authorized discharges of process water are generated from the non-contact cooling of the cupola and casting machines, i.e., the "cooling water," which is discharged into an on-site holding pond. The cooling water is mixed in the holding pond with water from the Boardman spring, and discharges from the pond to the Ironton Canal are permitted as Outfall 001.

The cooling water is conditioned to prevent corrosion in the system. They currently use a product known as Inhibitor ISI 8220. The dosing concentrations of the additive were not to exceed 5.0 parts per million (ppm) in the plant effluent discharge to the Ironton Canal, and there has been no evidence of any impact from the use. DWQ staff examined the product's chemical properties and environmental data. The resultant concentration of product in the Ironton Canal was determined to have minimal ecological impact.

While using the corrosion inhibitor, DWQ requested that McWane increase the effluent pH monitoring frequency for pH levels to weekly this change has been carried over and incorporated into the new permit.

If the concentration of the additive exceeds 5.0 ppm in the discharge during any 24-hour period, this approval will be void. McWane will take measures to prevent over-application of the inhibitor. If applicable, McWane could be subject to enforcement for any violation of the Narrative Water Quality standards or other regulations pertaining to this or other discharge of pollutants to the receiving water. The permittee is liable for any adverse water quality impacts from use of treatment chemicals pursuant to the Narrative Standard. If the inhibitor use needs to be adjusted or changed during the new permit cycle, the changes will follow the same process as they did for the current product, and approval will be granted or denied in writing.

McWane currently operates a closed system for all other process water generated from its operations. This process water, referred to as “basement water,” originates underneath the pipe mold casting machines in a basement or cellar to cool “over-iron” during production. This water is circulated through on-site holding ponds (distinct from the holding pond associated with the UPDES discharge of the noncontact cooling and spring water) and reintroduced to the basement. There are no outfalls associated with “basement water.” McWane is currently working with the Division of Water Quality to evaluate alternative process water management systems that may include active treatment and discharge to a publicly owned treatment works (POTW) or to receiving water. These projects, along with potential permit changes associated with other possible operational changes, could result in permit modifications or additions during this permit term.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 40°11'59" and longitude 111°37'52". The discharge flows into Ironton Canal thence into the Utah Lake. The Ironton Canal is classified 2B, 3C and 4 at this location according to <i>Utah Administrative Code (UAC) R317-2-13..</i>

**RECEIVING WATERS AND STREAM CLASSIFICATION**

The final discharge flows into Ironton Canal thence into the Utah Lake. The Ironton Canal is classified 2B, 3C and 4 at this location according to *Utah Administrative Code (UAC) R317-2-13....*

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

**BASIS FOR EFFLUENT LIMITATIONS**

The total suspended solids (TSS) and pH limits are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. Based on Best Professional Judgment (BPJ), oil and grease shall not be monitored unless sheen on the effluent is visible. If an oil and grease sample is taken, it shall not exceed 10 mg/L as a daily maximum.

DWQ has evaluated the temperature of the noncontact cooling water discharge from Outfall 001. Utah water quality standards for the receiving waters, i.e., *UAC R317-2-14, Table 2.14.2*, limit temperature to the maximum in the stream of 27°C and no more than a 4°C temperature change. The permittee will monitor Temperature ( $T_{eff}$ , °F) and flow ( $Q_{eff}$ , MGD) and will calculate the thermal discharge according to the following equations:

Summer	$T_{eff} \leq 109.56 * (Q_{eff}^{-0.229})$
Fall	$T_{eff} \leq 112.46 * (Q_{eff}^{-0.291})$
Spring	$T_{eff} \leq 99.18 * (Q_{eff}^{-0.336})$
Winter	$T_{eff} \leq 103.43 * (Q_{eff}^{-0.228})$

Based on effluent monitoring data and the existing treatment facility, the permittee is expected to be able to comply with these limitations. The Wasteload Analysis indicates that these limitations should be sufficiently protective of water quality, in order to meet State standards in the receiving waters.

Parameter	Effluent Limitations			
	Monthly Average	Weekly Maximum	Daily Min.	Daily Max.
Flow, MGD	3.5	NA	NA	NA
TSS, lb/day	729	1021	NA	NA
TDS <sup>6,7</sup> , mg/l	NA	NA	NA	1200
TRC, mg/l				
Summer	0.026	0.047	NA	NA
Fall	0.031	0.054	NA	NA
Winter	0.03	0.054	NA	NA
Spring	0.026	0.045	NA	NA
pH, Standard Units	NA	NA	6.5	9.0
Oil & Grease <sup>5</sup> , mg/L	NA	NA	NA	10
Thermal <sup>4</sup> , °F				
Summer, $T_{eff} / (Q_{eff}^{-0.229})$	NA	NA	NA	109.6
Fall, $T_{eff} / (Q_{eff}^{-0.291})$	NA	NA	NA	112.5
Winter, $T_{eff} / (Q_{eff}^{-0.336})$	NA	NA	NA	99.2
Spring, $T_{eff} / (Q_{eff}^{-0.228})$	NA	NA	NA	103.4

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. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Self-Monitoring and Reporting Requirements <sup>1</sup>			
Parameter	Frequency	Sample Type	Units
Flow	Weekly	Reading	MGD
TRC, Effluent <sup>6,7</sup>	Weekly	Grab	mg/L
TSS, Effluent	Monthly	Grab	mg/L
TDS, Effluent	Monthly	Grab	mg/L
Temperature <sup>4</sup>	Weekly	Grab	°F
Oil & Grease <sup>5</sup>	Monthly	Grab	mg/L
pH	Weekly	Grab	SU

<sup>1</sup>See Definitions in Part VI of the permit.

<sup>4</sup>

#### Thermal Loading

The thermal discharge shall be calculated using the following equations where effluent temperature,  $T_{eff}$ , and flow,  $Q_{eff}$ , are variable:

$$\text{Summer} \quad T_{eff} \leq 109.56 * (Q_{eff}^{-0.229}) \Rightarrow \frac{T_{eff}}{Q_{eff}^{-0.229}} \leq 109.56$$

$$\text{Fall} \quad T_{eff} \leq 112.46 * (Q_{eff}^{-0.291}) \Rightarrow \frac{T_{eff}}{Q_{eff}^{-0.291}} \leq 112.46$$

$$\text{Spring} \quad T_{eff} \leq 99.18 * (Q_{eff}^{-0.336}) \Rightarrow \frac{T_{eff}}{Q_{eff}^{-0.336}} \leq 99.18$$

$$\text{Winter} \quad T_{eff} \leq 103.43 * (Q_{eff}^{-0.228}) \Rightarrow \frac{T_{eff}}{Q_{eff}^{-0.228}} \leq 103.43$$

5 Sample only if sheen is observed. If no sheen observed, report 0

6 Sample only if Chlorine has been used, otherwise report 0.

7 Analytical results less than 0.06 mg/l will not be considered out of compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:

- 1) Analytical values less than 0.02 mg/L shall be considered zero; and
- 2) Analytical values less than 0.06 mg/L and equal to or greater than 0.02 mg/L will be recorded as measured.

### **TMDL REQUIREMENTS**

McWane discharges process water into Utah Lake through the Ironton Canal, which has been identified as impaired for total dissolved solids (TDS) and total phosphorus (TP) based on the 1998, 303(d) assessment process as defined in the Clean Water Act. As required under federal regulation a total maximum daily load (TMDL) will be developed for all impaired waters. The TMDL will focus on developing limitations for those parameters of concern (POC) that were identified during the 305(b) and 303(d) assessment processes. POC's are parameters that are in violation of water quality standards or that contribute to impairment of a beneficial use (a major component of the water quality standards). As noted in the "Changes from Previous Permit" section above, the TDS values discharged are expected to be below ambient values in the receiving stream thus not causing or contributing to a violation of downstream water quality standards.

Currently, a TMDL evaluation is underway for the Utah Lake. If the results of the TMDL process establish effluent limits for any of the POC's, then it would be required by (40 CFR Part 130) to include these effluent limits in the UPDES permit. Therefore, it is strongly recommended that the facility staff participate in the TMDL development process. The staff at the Division of Water Quality will be responsible for scheduling and notifying appropriate facility personnel regarding TMDL meetings. Please contact your UPDES permit writer for information on scheduled TMDL meetings.

### **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.

Analytical sampling is required during the second and fourth year of the permit as list in Part II. E.1.f. of the permit.

#### **PRETREATMENT REQUIREMENTS**

Any process wastewater that the facility may discharge to the sanitary sewer, either as direct discharge or as a hauled waste, is 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 *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

#### **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 (WET) Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in *UAC R317-8, Utah Pollutant Discharge Elimination System* and *UAC R317-2, Water Quality Standards*.

McWane is a minor industrial facility that discharges non-contact cooling water, in which toxicity is not likely to be present. Based on these considerations, there is no reasonable potential for toxicity in McWane' discharge (per *State of Utah Permitting and Enforcement Guidance Document for WET Control*). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

#### **PERMIT DURATION**

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

Drafted by  
Daniel Griffin, Discharge  
Mike George, Storm Water  
Utah Division of Water Quality

**ADDENDUM TO STATEMENT OF BASIS AND FACT SHEET**

A public notice for the draft permit was published in The Provo Daily Herald August 11, 2014. The comment period ended on September 10, 2014. The bulk of the comments were minor spelling or date corrections which were made and are summarized in the section below. One major comment was submitted regarding issues with the TRC limit. This comment and response resulted in changes that require that the permit and FSSOB being re-public noticed.

**Responsiveness Summary**

During the process of responding to comments, Pacific States submitted notice that the company will be changing their name, effective January 25<sup>th</sup>, 2015, and requested the permit and records be updated accordingly. The new name for the Permittee is McWane Ductile – Utah. It will frequently be referred to as McWane or McWane Utah in documents and correspondence from here on.

During finalization of the Permit, certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they are not considered Major and the permit is not required to be re Public Noticed as a result of these changes.

However, one substantial comment was received during the Public Notice period. This comment refers to the TRC limit for the permit being so low that it is at or below the sensitivity of the approved analytical test used. Similar comments were received on this item during the PN period for other permits this past year. As a result, the Division of Water Quality determined there is a need for a policy dealing with the discrepancy between TRC Limits, method detection limits (MDL), and minimum quantification levels (MQL).

The TRC limit is based on the acute TRC water quality standard at end-of-pipe, and is retained from the previous permit. This effluent limit is below the MQL of the most common and practical EPA approved TRC methods. The Division has determined the current acceptable MQL to be 0.06 mg/L and the MDL to be 0.02 mg/L when using the DPD colorimetric Method #4500 – CL G. Measured values greater than or equal to the MQL of 0.06 mg/l will be considered violations of the permit, and values less than the MQL of 0.06 mg/l will be considered to be in compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:

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