

**Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review**

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UPDES No. UT 0025305

Receiving water: Utah and Salt Lake Canal (2B, 3E, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

001 Utah & Salt Lake Canal 0.6 MGD

Receiving Water

Discharge from Hexcel's facility may be discharged to the Utah and Salt Lake Canal. As per R317-2-13.9, the designated beneficial uses of irrigation canals and ditches statewide, except as otherwise designated are 2B, 3E, 4.

- *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 3E - Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for

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seven consecutive days with a ten year return frequency (7Q10). Flow values for the Utah and Salt Lake Canal were not available. An estimated low flow of 50 cfs during the irrigation season was determined in consultation with the irrigation company. No flow was assumed in the canal during the non-irrigation season. Ambient water quality for the Utah and Salt Lake Canal was characterized using data from DWQ monitoring station #4994790, JORDAN R AT UTAH L OUTLET U121 XING (the Jordan River is the source of the canal water).

The critical low flow conditions for Discharge 001 are:

Table 1. Critical low flow conditions (cfs)

	Summer	Fall	Winter	Spring
Utah & Salt Lake Canal	50	0	0	50

TMDL

The Utah and Salt Lake Canal is not listed as impaired on Utah's 2016 303(d) Water Quality Assessment Report (canals are not typically assessed for the report). However, the Jordan River source water is listed as impaired for TDS, as are several downstream river segments. In order to protect against causing or contribution to these existing impairments, TDS effluent limit should not exceed the Class 4 standard of 1,200 mg/l.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. For the discharge to the Utah and Salt Lake Canal, complete mixing was assumed for the chronic condition. Acute limits were calculated using 50% of the seasonal critical low flow for both discharge points.

Parameters of Concern

TDS was identified as a potential parameter of concern for the discharge.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

IC25 WET limits for Outfall 001 should be based on 1.8% effluent in the spring and summer and 100% in the fall and winter.

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ 2012). The mass balance analysis is summarized in the Wasteload

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Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is not required for this facility. The proposed permit is a simple renewal of an existing UPDES permit. No increase in flow or concentration of pollutants over those authorized in the existing permit is being requested.

Documents:

WLA Document: *Hexcel_WLADoc_3-28-18.docx*

Wasteload Analysis and Addendums: *Hexcel_WLA_3-28-18.xlsm*

References:

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0.*