

**FACT SHEET STATEMENT OF BASIS
SALT LAKE CITY
INTERNATIONAL AIRPORT
UPDES PERMIT No. UT0024988
PERMIT RENEWAL/STORM WATER INDIVIDUAL**

FACILITY CONTACT

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DESCRIPTION OF FACILITY AND DISCHARGE POINTS

Salt Lake City International Airport (SLCIA), is owned, operated, and maintained by the Salt Lake City Corporation through a managing body called the Salt Lake City Department of Airports (SLCDA). It is a public transportation terminal that leases space and provides services to airline companies and other support services. The SLCIA also provides facilities for general aviation. The area leased to the Utah Air National Guard (UANG) is not included in this permit. The SIC code for SLCIA is 4581. The site is located at 776 North Terminal Drive, Salt Lake City, Utah with outfalls located at:

Outfall #001 - Latitude: 40° 47' 27.61", Longitude: 111° 57' 34.38".
Outfall #002 - Latitude: 40° 46' 20.44", Longitude: 111° 58' 43.18".
Outfall #003 - Latitude: 40° 47' 27.40", Longitude: 112° 00' 04.14".
Outfall #004 - Latitude: 40° 46' 07.16", Longitude: 111° 58' 13.79".
Outfall #005 - Latitude: 40° 46' 22.30", Longitude: 111° 59' 21.64".

Discharge outfall #001 drains east to the City Drain Canal and is located at the discharge from the pump station on the east side of the airport. The drainage comes from north, south and west of the discharge point. The drainage area includes Runway 17/35 and Runway 14/32, general aviation, and Utah Air National Guard (UANG).

Discharge outfall #002 drains south to the Surplus Canal south of the main terminal area, encompassing the south cargo terminal area.

Discharge outfall #003 drains west on the west side of the airport. It drains the west runway and areas north of the main terminal. The west runway has secondary deicing pads at each end in the drainage area. The receiving water is the Surplus Canal.

Discharge outfall #004 drains to the east by gravity where it discharges to the City Drain Canal at the point where outfall #001 enters the City Drain. During high flows, the water is pumped south and discharges to the Surplus Canal. The detention basin has a storage capacity of sixty (60) acre-feet. The location of the outfall is on the airport boundary on the south side, east of discharge #002. The area drained includes the terminal fronts, passenger loading and unloading, concourses, taxiways and the center runway.

Discharge outfall #005 drains south to the Surplus Canal from just west of the smaller eastern runway to the terminal area. It drains the middle large runway and most of the main terminal area, including passenger parking and the car rental facilities.

GENERAL DESCRIPTION OF DISCHARGE

The general nature of the discharges is storm water runoff that flows to the City Drain Canal (outfall #001) and the Surplus Canal (outfalls, #002, #003, #004, and #005). A north end portion of SLCIA property drains northward over a natural shallow gradient through grass and marsh towards the Great Salt Lake.

Activities that occur at the SLCIA include the following:

1. Airplane maintenance and servicing
2. Airplane cleaning
3. Vehicle maintenance
4. Vehicle washing
5. Fire training facilities
6. Storage areas
7. Airplane Deicing/anti-icing
8. Runway and ramp deicing
9. Ramp cleaning
10. Runway cleaning and rubber removal
11. Airplane fueling
12. Vehicle fueling

Airplanes are serviced and washed at maintenance facilities along with normal routine maintenance checks. Airplane washing may contaminate spent water with dirt, detergents, metals, and airplane fluids (fuel, hydraulic fluid, oil, and lavatory waste).

Airport tenants maintain their own vehicles and equipment. Such maintenance facilities typically have the potential for spills and illicit discharges of oils, solvents, lubricants, fuels antifreeze, etc. A potential cause of pollution to storm water is spills and leaks from servicing and fueling of airplanes and vehicles.

SLCIA has an Aircraft Rescue and Fire Fighting (ARFF) Training Center that is used by SLCIA emergency fire fighting teams and other out of state and local fire fighting teams for practice drills. Fire training facilities at the SLCIA have the potential to discharge foaming agents and fire retardants that are diluted with water and used during practice drills. Fire fighting fluids used during training drills will be retained on site by design and management of activities. SLCDA must inform DWQ of the plans for handling these fire fighting fluids in the SWP3 and will contact DWQ whenever there is a question about proper handling and disposal of these fluids. These fluids are not authorized to be discharged to waters of the State without modifications to this permit.

Deicing or anti-icing aircraft occurs during cold weather conditions and often when it is raining, sleeting, or snowing. Deicing is the process of rinsing airplanes with a glycol/water mixture (Type I deicing fluid) that is sometimes warmed for the purpose of removing snow, ice, and frost from the surface of the airplane. Anti-icing is the process of spraying a gel type glycol mixture in a layer (Type IV anti-icing gel) over the skin or surface of an airplane that stays in a thin viscous layer on the surface of the airplane until the next flight, preventing the formation or buildup of snow, ice, or frost. After application, the deicing or anti-icing chemicals drain off or are sheared off during take-off, where it falls to the ground and mixes with precipitation.

SLCIA utilizes a deicing fluid recovery system. The recovery system that is installed is an evaporative separation system that separates the usable glycol fraction of spent deicing fluids from the water fraction. This treatment re-concentrates glycols so that they can be sold and used for other industrial purposes (the FAA will not allow reuse of the glycols for airplane deicing without cost prohibitive processing). Additional wastewater, which is generated at the recycling facility, is discharged to the POTW. Ground Water Discharge Permit UGW35005 authorizes land application of deicing fluid that contains less than one percent glycol. The land application site is located northwest of the Glycol Recovery Plant.

Because of proximity problems, the area encompassing general aviation is not included in the deicing/anti-icing collection system that the SLCIA has developed for the rest of the airport. Comparatively the deicing/anti-icing that occurs at general aviation is very small. Deicing/anti-icing fluids are applied within a deicing pad, collected in an underground storage tank during deicing/anti-icing events and transported periodically by truck to the glycol separator unit for processing.

Runway and ramp deicing is also a practice that presents potential contamination of storm water. SLCIA presently uses potassium acetate, sodium formate and sodium acetate. It is important that runway and ramp deicing be addressed in a best management practice (BMP) plan as part of the pollution prevention plan, required in the permit, to minimize storm water contamination.

RECEIVING STREAMS AND STREAM CLASSIFICATION

The two receiving streams are the City Drain Canal and the Surplus Canal.

The City Drain Canal crosses over the south boundary on the southeast corner of the SLCIA

property. Except for a short open stretch just over the south boundary, City Drain is piped underground through general aviation and then through the UANG area receiving storm water through several collection points on the surface along the way. Leaving the UANG area the City Drain becomes an open ditch and turns east after reaching the discharge from outfall #001.

The City Drain Canal is classified as Class 2B and 3E according to *Utah Administrative Code (UAC) R317-2-13.10*:

Class 2 B - 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.

The City Drain Canal empties into the Sewage Canal, which is also classified as 2B and 3E, which then empties into the Great Salt Lake, which is classified as Class 5A (Gilbert Bay)

The Surplus Canal has been diverted around SLCIA property, coming from the southeast it turns straight west just before reaching the south boundary of SLCIA, then it turns north around the southwest corner of SLCIA following parallel and near to the west boundary of SLCIA until it veers northwesterly away from SLCIA and continues along its original course.

The Surplus Canal is classified as Class 2B, Class 3B, Class 3D, and Class 4 according to *Utah Administrative Code (UAC) R317-2-13.5*:

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

The Surplus Canal empties into the Great Salt Lake which is classified as Class 5A (Gilbert Bay).

SUBSTANTIVE PERMIT CHANGES

The renewal permit has been delayed to allow the SLCIA to address many of DWQ's concerns with

deicing chemical application and handling as well as the introduction of groundwater into the storm water drains due to high groundwater level and piping design.

A flow limit, pending verification, has been added to the permit at outfall #001. A study and time frame for determination of BOD and TDS limits has been included in the permit. Because Outfall 001 goes to the City Drain Canal it will not have potential limits for BOD and TDS, as does Outfalls 002, 003, 004 and 005 which discharge to the Surplus Canal.

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 underlying standards have been developed, Best Professional Judgment (BPJ) may be used where applicable to set effluent limits. "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.

BOD and TSS 30-day and 7-day averages are based on Utah Secondary Treatment Standards. COD may be used in place of BOD if an acceptable ratio can be determined by SLCIA and submitted to DWQ for approval.

The pH is based on Utah Secondary Treatment Standards

Total dissolved solids (TDS) is based on Utah Water Quality Standards for Class 4 waters. This is found in UAC R317-2-14.

Oil and grease is based on Best Professional Judgement which has been applicable for other storm water and wastewater permits throughout the State.

Flow is limited based on federal and state regulations that require not only concentration, but loading to be included in permits UAC R317-8-

Storm water effluent limitations (**Outfalls 001, 002, 003, 004 and 005**) are as shown below:

Storm Water Effluent Limitations

<u>Parameter</u>	<u>30-day Average</u>	<u>7-day Average</u>	<u>Daily Min</u>	<u>Daily Max</u>
Flow MGD b/	N.A.	N.A.	N.A.	2 (verification)
Bio. Oxygen Demand mg/L	a/	a/	N.A.	N.A.
Total Suspended Solids mg/L	a/	a/	N.A.	N.A.
Oil and Grease, mg/L b/	N.A.	N.A.	N.A.	10
pH, standard units b/	N.A.	N.A.	6.5	9.0
Total Dissolved Solids mg/L	N.A.	N.A.	N.A.	c/

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.

Outfall 001 shall have not discernable odor of hydrogen sulfide and there shall be no public complaints for color.

a/ The BOD and TSS shall be limited to 25 mg/L as a thirty day average and 35 mg/L as a seven day average unless the permittee chooses to complete a study on discharges 002 through 005 and the receiving water to determine a more appropriate limit for the thirty day and seven day BOD and TSS average limits. If the permittee decides to complete a study, the effluent limits listed above (25/35) shall be held in abeyance until the study is completed, at which time the appropriate numbers for thirty day and seven day average BOD can be included in the permit. A study plan and time frame shall be submitted to the Director within 120 days of the effective date of this permit for approval. If the study plan is not completed as approved and in the time frame approved or at its conclusion does not present scientifically based results, the limits held in abeyance for BOD (25/35) shall become effective.

b/ These are the only limits applicable to Outfall 001.

c/ TDS is limited to a daily maximum of 1200 mg/L unless the permittee chooses to complete a use attainability analysis study to determine the actual use of the water in the Surplus Canal between the Airport and Great Salt Lake. If the permittee chooses to complete this study the effluent limit of 1200 mg/L will be held in abeyance until the study is completed at which time the 1200 mg/L limit will be retained in the permit or dropped from the permit. A study plan and time frame must be submitted to the Director within 120 days of the effective date of this permit, for approval.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring and reporting requirements are based on Best Professional Judgement. Reports shall be made on Discharge Monitoring Report (DMR) forms or by Net DMR, and are due 28 days after the end of each reporting month.

Self-Monitoring and Reporting Requirements (Outfalls 001, 002, 003, 004 and 005)

<u>Parameter</u>	<u>Frequency</u>	<u>Sample Type</u>	<u>Units</u>	<u>Reporting Frequency</u>
Flow	Monthly	Instantaneous	gpm	Monthly
Oil & Grease	Monthly	Grab	mg/L	Monthly
pH*	Monthly	Grab	Standard Units	Monthly
BOD5	Monthly	Grab	mg/L	Monthly
TSS	Monthly	Grab	mg/L	Monthly
TDS	Monthly	Grab	mg/L	Monthly

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 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.

There is potential for toxicity at all of the discharge points as the result of inclusion of propylene glycol in the effluent. Because of the massive amount of dilution it is highly likely that the potential for toxicity will be ameliorated. Therefore, no routine toxicity testing will be required, but a toxicity re-opener will be included in the permit, and WET testing and limits can be required if found to be appropriate in the future.

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 as ADDENDUM. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate 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 this UPDES renewal permit development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR level II review was not required. The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The discharge was evaluated and determined not to cause a violation of State Water Quality Standards in downstream receiving waters.

PERMIT DURATION

This permit shall be re-issued for a duration of five (5) years.

Drafted by Mike George and Mike Herkimer, Environmental Scientists Utah Division of Water Quality, December 27, 2013.

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