

Industry Specific Inspections

SALT LAKE CITY PRETREATMENT PROGRAM





Salt Lake City Plant

56 MGD Design

30 MGD Average Flow

9.8 MGD Industrial Flow

13 MGD Commercial Flow

Treatment Processes

- Clarifiers
- Trickling Filters
- Aeration Basins
- Secondary Clarification
- Chlorine Disinfection



Salt Lake City Pretreatment

~100 Permittees

- SIU
- CIU

Categories:

- 413 – Electroplating
- 415 – Organic Chemicals, Plastics, and synthetic Fibers
- 417 – Soap and Detergent Manufacturing
- 419 – Petroleum Refining
- 423 – Steam Electric Power Generating
- 428 – Rubber Manufacturing
- 433 – Metal Finishing
- 437 – Centralized Waste Treatment
- 439 – Pharmaceutical
- 442 – Transportation
- 464 – Metal Molding and Casting
- 469 – Electrical and Electronic Components

Safety First

Physical Hazards

- General Housekeeping

Chemicals

Atmospheric Hazards

- Oxygen Deficient Atmosphere
- Explosive Atmosphere
- Toxic Atmosphere

PPE

- Steel toed boots
- Safety Glasses
- Gloves
- Safety vest
- Hard hat



Salt Lake International Airport



Salt Lake International Airport

7,700 acres

4 runways

24,198,697 passengers in 2017

327,292 takeoffs and landings in 2017

900 takeoffs and landings per day

An average day there are over 343 scheduled nonstop flights to 93 cities

Wintertime Operations: Deicing



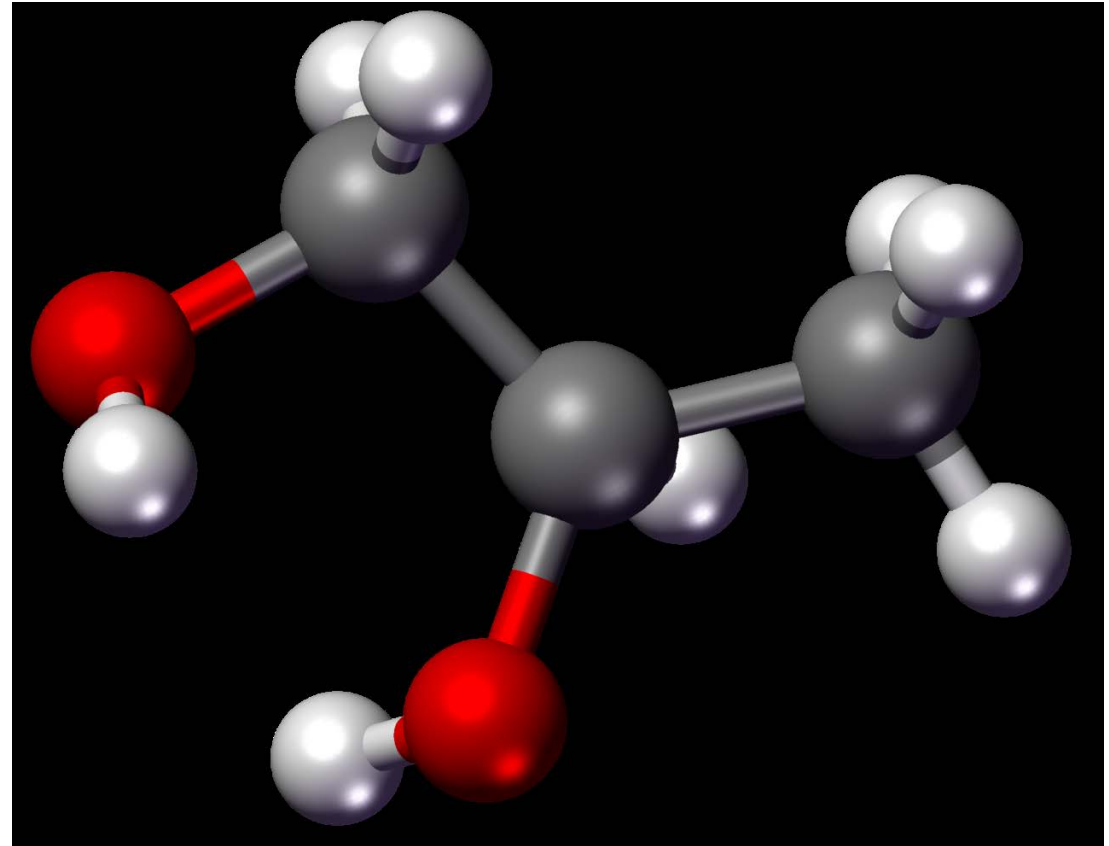
Deicing Fluid Reclamation Facility



Propylene Glycol

- BOD ~500,000 – 1,000,000 mg/L
- DO demand
- Aquatic toxicity
- Phosphorous

49-80% of Deicing Fluid is runoff



Deicing

Processed Deicing Fluid

Amount of Deicing Fluid Processed Annually (Gallons)



Treatment/Pretreatment - Wastewater

Plate Clarifier

Water Softener System

Ultra-filtration

Ion Exchange

Reverse Osmosis

Activated Carbon Canisters

Mechanical Vapor Recovery Unit

Land Apply 2-5 Million Gallons Annually

TABLE 3

Table of Maximum Allowable 24-hour Flow Rates at Different COD Concentrations for a 7,000 lb/day Discharge		
COD	Maximum Allowable Flow Rate	
Concentration (mg/L)	Gallons/Day	Gallons/Minute
1,000	839,328	583
2,000	419,664	291
3,000	279,776	194
4,000	209,832	146
5,000	167,866	117
6,000	139,888	97
7,000	119,904	83
8,000	104,916	73
9,000	93,259	65
10,000	83,933	58
11,000	76,303	53
12,000	69,944	49
13,000	64,563	45
14,000	59,952	42
15,000	55,955	39
16,000	52,458	36
17,000	49,372	34
18,000	46,630	32
19,000	44,175	31
20,000	41,967	29

Questions to Ask

What is the COD/BOD loading of the effluent being discharged?

At what rate will wastewater be discharged?

Is there a bypass?

What are the possibilities of a spill or slug load reaching the sewer?

What happens with an off-spec or bad batch?

SEWER
THE FORCE MAIN AWAKENS
WARS

Chemical Manufacture



“

Quality is not an act, it is a habit.
-Aristotle

”

Industry Facts

- 37 acres of process areas
- Over 1000 different chemicals produced
- Four monitoring points
- ~90,000 gpd discharge
- Categorical under:
 - 40 CFR 415 Subpart B – Aluminum Sulfate Production
 - 40 CFR 415 Subpart BB – Sodium Bisulfite Production
 - 40 CFR 417 Subpart P – Liquid Detergent Manufacturing
 - 40 CFR 417 Subpart Q – Dry Detergent Blending
 - 40 CFR 439 Subpart D – Pharmaceutical Manufacturing
- Two Zero-Discharge Buildings



Pretreatment Standards:

Regulation	Pollutants
40 CFR 415 Subpart B	Zero-discharge
40 CFR 415 Subpart BB	Chromium
40 CFR 417 Subpart P	COD to BOD ₇ Production Ratio
40 CFR 417 Subpart Q	COD to BOD ₇ Production Ratio
40 CFR 439 Subpart D	Acetone n-Amyl acetate Ethyl acetate Isopropyl acetate Methylene chloride

Pretreatment

Non-domestic Sewer Discharges and Level of Pretreatment

Bldg 11 brines drainage	MP-001	pH-ADJUST	38,500 GPD
Bldg 11 boiler blowdown			
Bldg 11 SW drainage			
Bldg 12 IWTU			
Bldg 5 IWTU	MP-002	SETTLING PONDS, BRINE EQ, pH-ADJUST, FLOC, SETTLE, SLUDGE DRY-BED, pH-TEST	32,000 GPD
Bldg 7 IWTU	MP-003	EQ, pH-ADJUST	4,000 GPD
Bldg 8 IWTU	MP-004	pH-ADJUST, pH-TEST	8,000 GPD
Bldg 10 IWTU		pH-ADJUST, DEFOAM	
Bldg 17 lab drainage		pH-TEST	

Questions: Chemical Manufacturing

Are processes batch or continuous?

What are your products and raw materials?

Are laboratories used for research and product testing? How are wastes disposed of?

Are storage areas near drains leading to the sewer?

Any pretreatment units?

Cooling waters? Boiler blowdown?

Is deionized water use? How is it generated? Are columns regenerated onsite?

Corroding Structures



Sulfur on the Run



Fugitive Aluminum Sulfate



Questions: Soap and Detergents

Are only soaps manufactured, detergents, or both?

Is foam a problem at the POTW?

How is cooling water used?

How are liquid material stored?

Are air scrubbers used?

In product purification steps, how are filter backwashed handled?

Foam



Still More Foam



Questions: Pharmaceuticals

What types of processes are used to manufacture products?

What steps in the manufacturing processes produce wastewater?

What types of solvents are used? How are spent solvents disposed of?

Is raw water intake purified?

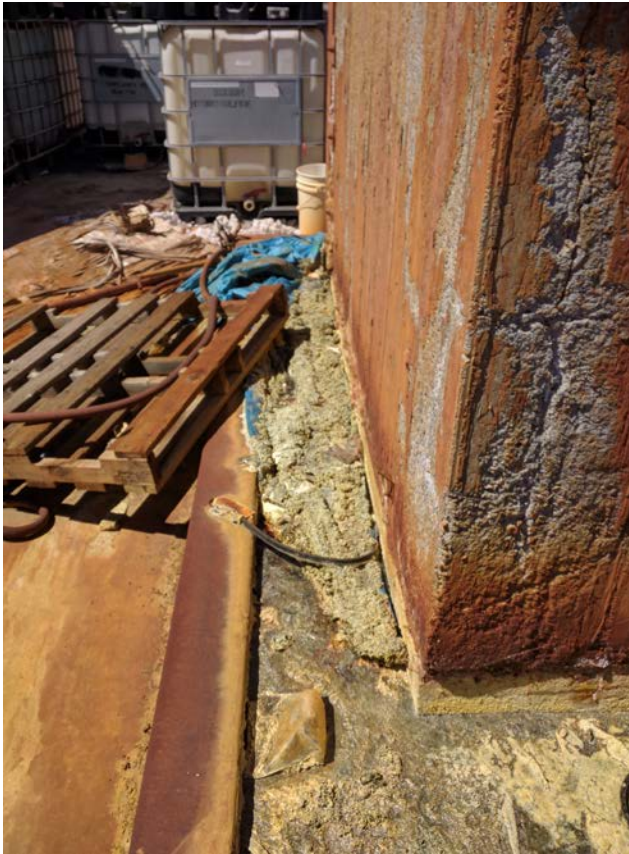
What frequency is equipment washdown performed and what is the volume of wastewater generated?

Is there a research lab in the plant?

Labeling



Housekeeping



Monitoring Points



Inspection Results



Questions?

