

SALT LAKE CITY
DEPARTMENT OF PUBLIC UTILITIES
PERMIT BASIS DOCUMENT TEMPLATE

Industrial User Thatcher Company
1905 Fortune Road, Salt Lake City, Utah, 84127
Salt Lake City Permit No. SLC-0001

Industrial User Permit

Pretreatment Program: The City of Salt Lake City
Industrial Pretreatment Program
474 West 900 North Salt Lake City, UT 84103

Treatment Works: Salt Lake City Water Reclamation Plant
2300 North 1365 West, Salt Lake City, UT 84116
NPDES Permit No. UT0021725

Permit Number: No. SLC-0001

Permit Expiration Date: December 31, 2011

Fed Point Source Categories: Aluminum Sulfate Production, 40 CFR 415 Subpart B PSNS
Sodium Bisulfite Production, 40 CFR 415 Subpart BB PSNS
Liquid Detergents Manufacturing, 40 CFR 417 Subpart P PSNS
Pharmaceutical Manufacturing, 40 CFR 439 Subpart C
Pharmaceutical Manufacturing, 40 CFR 439 Subpart D PSES

Permit Basis Document

File Name: ThatcherSaltLake-PermitBasisDocument-012014.doc

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The City of Salt Lake City

Date: January 30, 2014

1.0 Permit Boilerplates Used to Construct Permit

- Generic Sections 10-7-2013.docx
- Categorical SIU 07-06-11.docx

2.0 General Information

- Thatcher Company Wastewater Discharge Permit Application and Baseline Monitoring Report, for 1905 Fortune Road, Salt Lake City, ("Thatcher Salt Lake"), January 31, 2013.
- Salt Lake City, Industrial Pretreatment Program Inspection, July 25, 2013.
- Salt Lake City, Industrial Pretreatment Program Inspection, July 27, 2012.
- Thatcher Lake City schematic drawings dated August 27, 2010.

3.0 Operations Conducted at the Industry and Wastewater Sources

3.1 Process Description

Thatcher Salt Lake is a chemical manufacturing and distribution facility that produces a diversified range of food, dairy, industrial, and pharmaceutical products. These products are primarily inorganic chemical compounds, such as bleach and sodium bisulfite, as well as surfactants, concrete admixtures, disinfecting agents, organic chemical compounds, soaps, and detergents. The Thatcher Salt Lake chemical plant is located at 1905 Fortune Road in Salt Lake City. Raw materials and intermediate products arrive by railcar, tanker truck, tote, or barrel for chemical synthesis, formulation, compounding, blending, or mixing to produce the following list of products in Table 1.

Table 1 – Thatcher Salt Lake Products List

Products list from the Thatcher January 2013 permit application and baseline monitoring report and at tchem.com.

acid cleaners	ferric sulfate	sodium bisulfite	acid sanitizers
aluminum sulfate	ferrous sulfate	sodium chlorate	adhesives non-formaldehyde
aluminum chlorohydrate	hydrochloric acid	sodium chlorite	antifreeze
ammonium bisulfite	hydrofluoric acid	sodium dichloroisocyanurate	aquatic weed killer
ammonium chloride	heptonic acid	sodium diethanolamine	betadine/iodine sanitizers
ammonium lauryl sulfate	hydrofluorosilic acid	Na dimethyldichlorocarbamate	chlorinated cleaners
ammonium nitrate	hydrogen peroxide	sodium hypochlorite	concrete admixtures
NH ₄ nonoxynol-4-sulfate	magnesium oxide	sodium metabisulfite	corrosion inhibitors
ammonium phosphate	magnesium chloride	sodium nitrate	defoamers
ammonium sulfate	magnesium hydroxide	sodium nitrite	fabric softener
ammonium thiosulfate	manganese sulfate	sodium phosphates	flocculants
aqua ammonia	nitric acid	sodium silicate	laundry detergent
calcium fluoride	phosphoric acid	sodium thiosulfate	liquid detergent
calcium hypochlorite	potassium amyl xanthate	sulfuric acid	liquid soap
calcium nitrate	potassium carbonate	thiourea	photo processing solutions
calcium polysulfide	potassium hydroxide	toluene	soap flakes
calcium sulfate	potassium thioisulfate	urea	surfactants
caustic soda	sodium aluminate	xylene	windshield wash

Production and manufacturing occurs in twenty buildings on-site, with the functions segregated by product lines into specific buildings. The site is intersected by three rail lines and a spur line. The production itself involves the use of reaction vessels, some of which are water-jacketed, mixing and holding tanks, piping and transfer equipment, scrubbers, boilers, cooling towers, chillers, dewatering filter presses, water softeners, water preconditioning and purification units, product storage tanks, receiving, packaging, and delivery. The list of buildings and the production lines or functions housed in each building follow below in Table 2.

Table 2 – Thatcher Salt Lake Production Lines by Building

Production lines list from the Salt Lake City July 2013 inspection report and the Thatcher January 2013 BMR.

Bldg 1	warehouse	Bldg 8	thiosulfate compounds
Bldg 2	acid dilution	Bldg 9	solvents, dry goods storage and transfer
Bldg 2A	aluminum sulfate	Bldg 10	aqua ammonia, surfactants
Bldg 2B	ferric and ferrous compounds	Bldg 11	nitrate and nitrite compounds
Bldg 2C	bleach	Bldg 12	sodium bisulfite, chlorohydrates
Bldg 3	urea, cements, acid dilution	Bldg 12A	storage
Bldg 4	dry soap blending	Bldg 16	maintenance shops
Bldg 5	sodium chlorates, container washing station	Bldg 17	laboratory
Bldg 6	packaging, liquid soaps/cleaners, wash station	-	tank farm
Bldg 6A	storage	-	office building
Bldg 7	iodine disinfection products	-	dispatcher building and truck scales

According to information in Thatcher Salt Lake's January 2013 permit application and baseline monitoring report, the chemical plant first began operations in 1967.

3.2 Facility SIC Code

The Thatcher Salt Lake chemical plant would be assigned the following SIC codes for chemical production and refining: alkalines and chlorine (SIC 2812), pharmaceutical preparations (SIC 2834), soap and other detergents (SIC 2841), specialty cleaning, polishing, and sanitation preparation (SIC 2842), surface active agents, finishing agents, and sulfonated oils (SIC 2843), and chemicals and chemical preparations, not elsewhere classified (SIC 2899).

3.3 Facility Wastewater Sources

The Thatcher Salt Lake chemical plant generates the following wastewaters.

Process-related Wastewaters

- wash waters from vessels, tanks, piping, plant and equipment cleaning and wash down
- storm water drainage from production areas
- wash waters from the interior cleaning of railcars, tankers, totes, and drums
- cooling tower blowdown and cooling waters
- steam generation boiler blowdown and condensate
- water preconditioning brines and rejects
- ion exchange acid and caustic regeneration spents

- water softener salt regeneration spents
- wet-fume scrubber blowdown
- sulfur dioxide scrubber quench water

Non-process Wastewaters

- sanitary wastewater from restrooms, eyewash, showers, break rooms and kitchens

The process-related wastewaters would be expected to contain the following:

- Chemical Plant Products and By-Products – caustics, acids, suspended solid particulate material, dissolved inorganics, iodine-based disinfectants, sulfides, sulfates, ammonia, nitrogen compounds, and various other constituent chemicals in the products, intermediates and raw materials listed in Table 1 above.
- Cooling, Boilers, Condensate, and Water Treatment – additives and reagents including bisulfite oxygen and chlorine scavengers, biocides (although Thatcher indicates no biocides), corrosion inhibitors (such as phosphoric acid), cooling water treatment (such as methanol, acrylamide, non-ionic surfactant), and boiler treatment (caustic, amines).
- Cleaning, and Washdown – trace levels of grime, oils, and the cleaning agents used in floor cleaning, including surfactants.

3.4 Facility Wastewater Handling

The Thatcher Salt Lake chemical plant discharges on average approximately 80,000 gpd of non-domestic wastewaters through a single sewer connection that handles both domestic and non-domestic contributions into the Salt Lake City domestic sewers. Some non-domestic wastewaters undergo various levels of pretreatment through industrial wastewater treatment units (IWTUs) prior to discharge. The non-domestic discharges and designated monitoring points follow below in Table 3. Also see Figures 1 and 2 on pages 5 and 6.

Table 3 – Non-domestic Sewer Discharges and Level of Pretreatment

Unit processes and flow rates from the Thatcher January 2013 BMR and Thatcher January 2014 correspondence.

Bldg 5 IWTU	MP-002	PRE-AERATION PONDS, BRINE EQ, pH-ADJUST, FLOC, SETTLE, FILTER PRESS, pH-TEST	32,000 gpd
Bldg 7 IWTU	MP-003	EQ, pH-ADJUST	4,000 gpd
Bldg 8 IWTU	MP-005	pH-ADJUST, pH-TEST	500 gpd
Bldg 10 IWTU	MP-006	pH-ADJUST	1,700 gpd
Bldg 10 cooling water	MP-007	NONE	2,000 gpd
Bldg 12 IWTU	MP-001	pH-ADJUST	35,000 gpd
Bldg 11 brines drainage	MP-008	NONE	3,500 gpd
Bldg 11 boiler blowdown			
Bldg 11 SW drainage			
Bldg 16 ITWU	MP-009	OIL/WATER SEPARATION	50 gpd
Bldg 17 lab drainage	MP-010	pH-TEST	4000 gpd

Figure 1 – Schematic of Wastewater Configuration and Layout

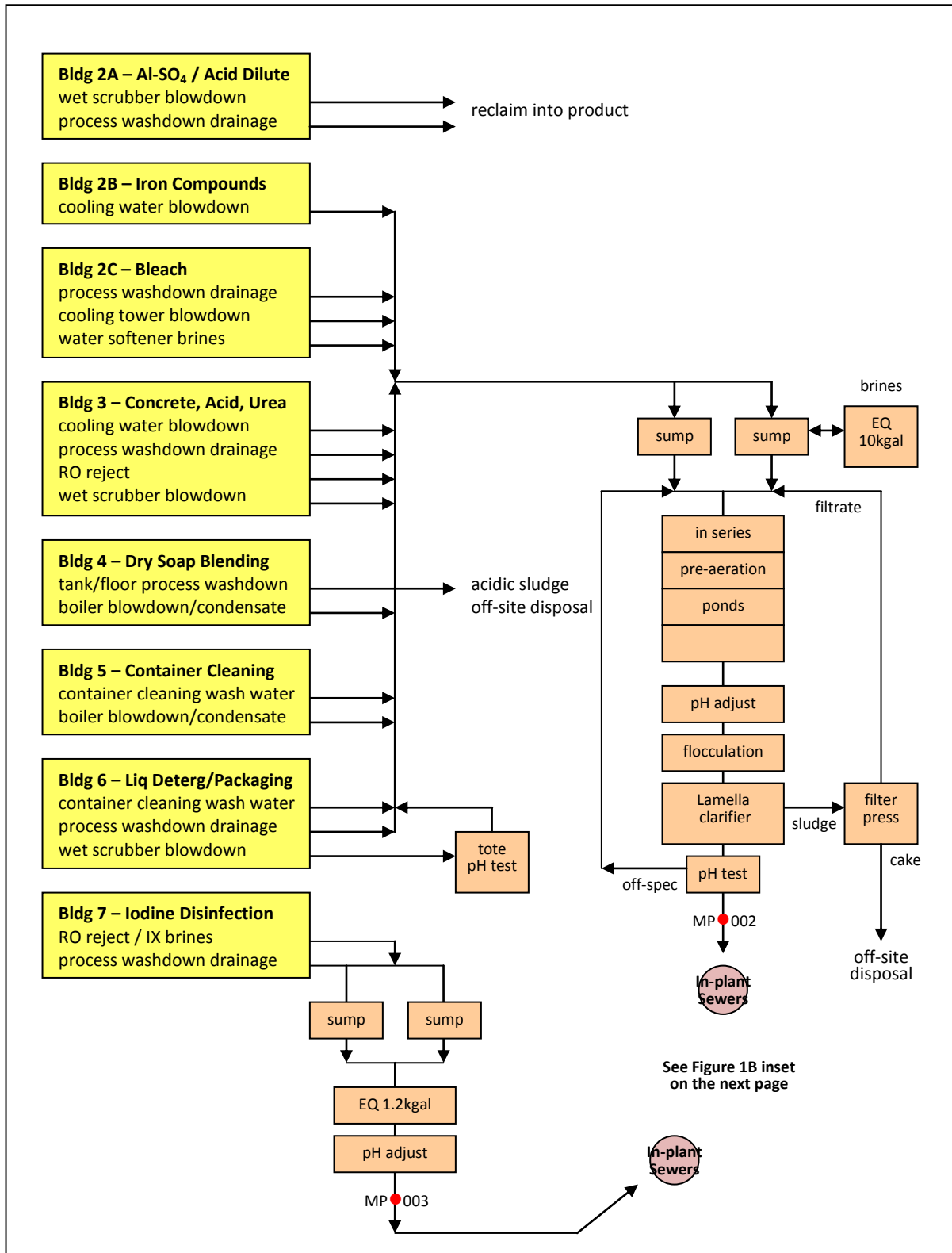
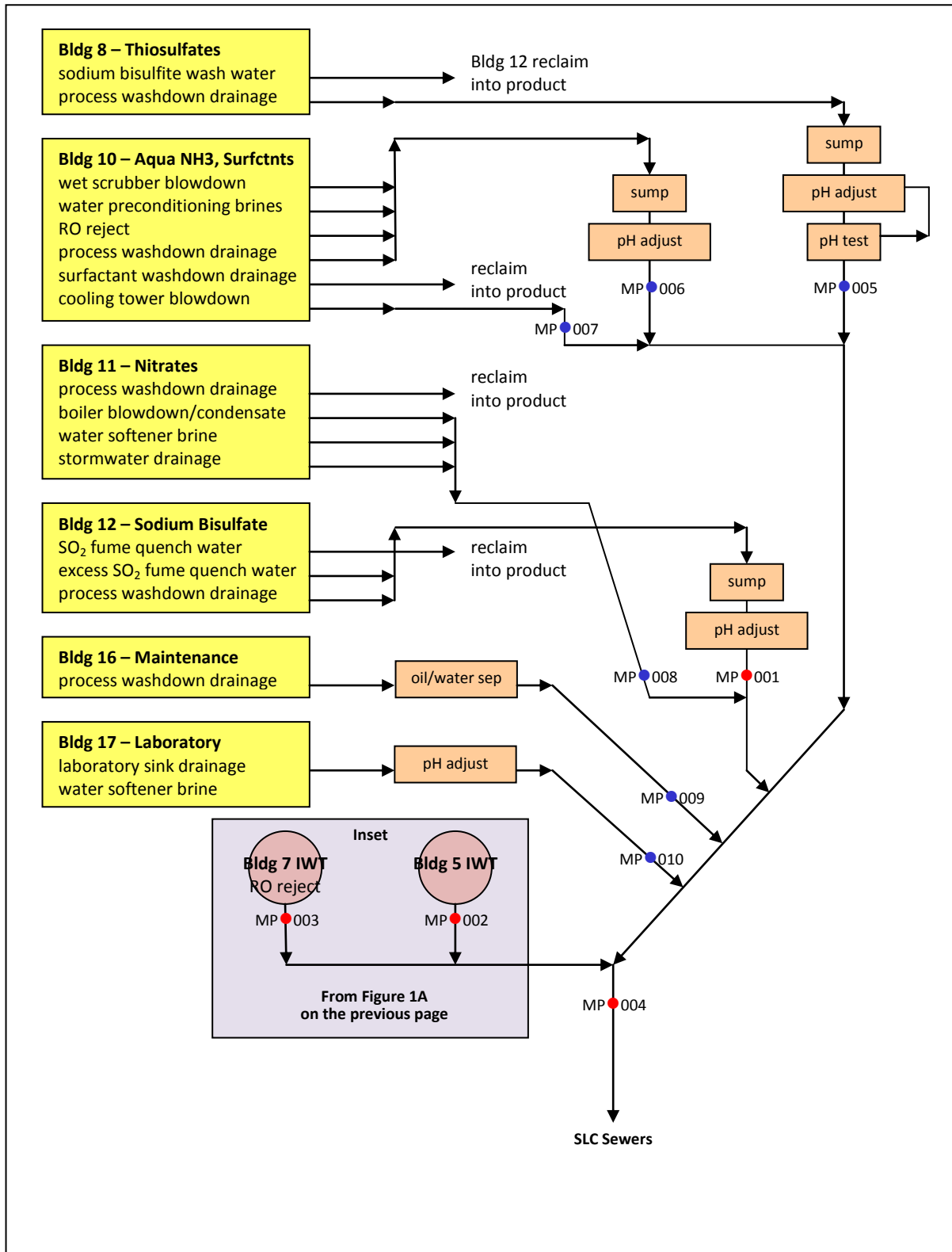


Figure 2 – Schematic of Wastewater Configuration and Layout



4.0 Description and Regulation of Operation

Thatcher Salt Lake qualifies for Federal regulation under the following categorical standards:

- 40 CFR 415 Subpart B for Aluminum Sulfate Production
- 40 CFR 415 Subpart BB for Sodium Bisulfite Production
- 40 CFR 417 Subpart P for Liquid Detergent Manufacturing
- 40 CFR 439 Subpart C for Pharmaceutical Manufacturing
- 40 CFR 439 Subpart D for Pharmaceutical Manufacturing

The identified monitoring points include:

- Monitoring Point 001 – Bldg 12 IWTU pH adjusted effluent
- Monitoring Point 002 – Bldg 5 IWTU treated effluent
- Monitoring Point 003 – Bldg 7 IWTU pH adjusted effluent
- Monitoring Point 004 – Overall discharge from Thatcher Salt Lake into the Salt Lake sewers
- Monitoring Point 005 – Bldg 8 IWTU pH adjusted effluent
- Monitoring Point 006 – Bldg 10 IWTU pH adjusted effluent
- Monitoring Point 007 – Bldg 10 untreated cooling tower blowdown
- Monitoring Point 008 – Bldg 11 untreated softener brines, boiler blowdown, drainage
- Monitoring Point 009 – Bldg 16 IWTU oil water separator effluent
- Monitoring Point 010 – Bldg 17 pH monitored effluent

The local limits apply to all non-domestic discharges from Thatcher Salt Lake into the Salt Lake City sewers. Monitoring Point 004 represents all discharges from Thatcher, both non-domestic and domestic. The other monitoring points together listed above represent all non-domestic discharges from Thatcher, without domestic contributions.

4.1 Classification by Federal Point Source Category

The production of certain products at the Thatcher Salt Lake chemical plant qualifies for regulation under two subparts of 40 CFR 415 for new source inorganic chemicals manufacturing, one subpart of 40 CFR 417 for new source soap and detergent manufacturing, and two subparts of 40 CFR 439 for existing source pharmaceutical manufacturing.

Thatcher Salt Lake does not qualify for regulation under 40 CFR 442 for transportation equipment cleaning because the tankers and railcars cleaned on-site contained raw materials, by-products, or finished products associated with on-site process, and the rule excluded regulation of the cleaning of totes and drums, 40 CFR 442.1(b). Thatcher Salt Lake does not qualify for regulation under 40 CFR 417 Subpart F for soap flakes and powders, 40 CFR 417 Subpart L for sulfamic acid sulfation, and 40 CFR 417 Subpart H for liquid soap manufacturing because none of these subparts set pretreatment standards. Thatcher Salt Lake does not qualify for regulation under 40 CFR 418 Subpart C for urea production, 40 CFR 418 Subpart E for nitric acid production, 40 CFR 418 Subpart F for ammonium sulfate production, 40 CFR 415 Subpart F for chloro-alkali production, 40 CFR 415 Subpart H hydrofluoric acid production, or 40 CFR 415 Subpart BN for sodium chlorate production,

because although Thatcher produces and distributes these products through blending, mixing, and packaging on-site, Thatcher does not manufacture any of these products on-site.

Facility Definition – The Thatcher Salt Lake chemical plant performs chemical manufacturing in multiple buildings that, because they are contiguous, are considered as one facility. The definition of "facility" comes from the Federal Clean Water Act regulations which define a "source" as not just a building under a single command, but as a building, structure, facility, or installation from which there is or may be a discharge of pollutants, 40 CFR 122.2. Other Federal regulations further refer to the regulated entity as a plant, user, industrial facility, or source, 40 CFR 433. Taken together a "facility" is defined by common function (chemical manufacturing) on a contiguous piece of property (excepting right-of-ways).

4.2 Federal Aluminum Sulfate Standards

Aluminum sulfate is one of the Thatcher Salt Lake products listed in the Thatcher Salt Lake January 2013 permit application and baseline monitoring report, as well as at tchem.com. See Table 1 on page 3 of this document.

Table 4 – 40 CFR 415 Subpart B Categorical Pretreatment Standards

40 CFR 415.26 PSNS	Narrative Standards
No discharge unless it is storm water from an impoundment designed and operated to contain the precipitation from a 25-year 24-hour rainfall event.	

Applicability - Under 40 CFR 415 Subpart B, the Inorganic Chemicals Manufacturing standards for the production of aluminum sulfate apply to “the introduction of pollutants into treatment works which are publicly owned resulting from the production of aluminum sulfate”, 40 CFR 415.20. Thatcher Salt Lake performs aluminum sulfate production in Bldg 2. These standards do not apply to water preconditioning brines and tail waters, cooling waters, boiler blowdown or domestic sewage according to the *Development Document for Effluent Limitations Guidelines and Standards for the Inorganic Chemicals Manufacturing Point Source Category* (EPA 440/1-79/007).

Basis of Standards - The new source standards were based on a model zero-discharge impoundment designed and operated to capture the 25-year 24-hour rainfall event.

New or Existing Sources – Thatcher Salt Lake qualifies as a new source because it began production of aluminum sulfate after the July 24, 1980 publication of the proposed rule for aluminum sulfate production. New source aluminum sulfate producers were required to comply upon commencement of discharge.

4.3 Federal Sodium Bisulfite Standards

Sodium bisulfite is one of the Thatcher Salt Lake products listed in the Thatcher Salt Lake January 2013 permit application and baseline monitoring report, as well as at tchem.com. See Table 1 on page 3 of this document.

Table 5 – 40 CFR 415 Subpart BB Categorical Pretreatment Standards

40 CFR 415.86 PSNS	Daily-maximum	Monthly-average
Chromium (mg/l)	1.3	0.42

Applicability - Under 40 CFR 415 Subpart BB, the Inorganic Chemicals Manufacturing standards for the production of sodium bisulfite apply to “the introduction of pollutants into publicly owned treatment works resulting from the production of sodium bisulfite”, 40 CFR 415.540. Thatcher Salt Lake performs sodium bisulfite production in Bldg 12 and washes containers associated with sodium bisulfate production in Bldg 5. These standards do not apply to water preconditioning brines and tail waters, cooling waters, boiler blowdown or domestic sewage according to the *Development Document for Effluent Limitations Guidelines and Standards for the Inorganic Chemicals Manufacturing Point Source Category* (EPA 440/1-79/007).

Basis of Standards - New source standards were based on a model pretreatment unit involving hydroxide precipitation, aeration, and settling. Best-available-technology (BAT) treatment standards were established through a study of sodium bisulfite producers with the model treatment, at levels that the facilities taken together were able to consistently achieve a compliance rate of 99% (1 in 100 chance of violation). Pretreatment standards for new sources (PSNS) are equivalent to the BAT standards.

New or Existing Sources – Thatcher Salt Lake qualifies as a new source because it began the sodium bisulfite after the July 24, 1980 publication of the proposed rule for sodium bisulfite production. New source sodium bisulfite producers were required to comply upon commencement of discharge.

4.4 Federal Liquid Detergents Standards

Liquid detergents are one of the Thatcher Salt Lake products listed in the Thatcher Salt Lake January 2013 permit application and baseline monitoring report, as well as at tchem.com. See Table 1 on page 3 of this document.

Table 6 – 40 CFR 417 Subpart P Categorical Pretreatment Standards

40 CFR 417.166 PSNS	Maximum
COD/BOD7 ratio	10.0
COD (kg/kg of anhydrous product)	1.10

Applicability - Under 40 CFR 417 Subpart P, the Soap and Detergent Manufacturing standards for the production of liquid detergents apply to “discharges resulting from all operations associated with the manufacture of liquid detergents, commencing with the blending of ingredients, to and including bottling or packaging finished products”, 40 CFR 418.160. Thatcher Salt Lake performs liquid detergent manufacturing in Bldg 6 and washes containers associated with liquid detergent manufacturing in Bldg 6. These standards do not apply to water preconditioning brines and tail waters, cooling waters, boiler blowdown or domestic sewage.

Basis of Standards - New source standards were based on secondary treatment. Best-practicable-technology (BPT) treatment standards were established through a study of liquid detergent manufacturers, at levels that the facilities taken together were able to consistently achieve a compliance rate of 99% (1 in 100 chance of violation). Pretreatment standards for new sources (PSNS) are equivalent to the BPT standards.

New or Existing Sources – Thatcher Salt Lake qualifies as a new source because it began the liquid detergent manufacturing after the April 12, 1974 publication of the proposed rule for liquid detergent manufacturing. New source liquid detergent manufacturers were required to comply upon commencement of discharge.

4.5 Federal Pharmaceutical Standards

Iodine disinfectants and surgical chemicals are one of the Thatcher Salt Lake product lines listed in the Thatcher Salt Lake January 2013 permit application and baseline monitoring report, as well as at tchem.com. See Table 1 on page 3 of this document.

Table 7 – 40 CFR 439 Subpart C Categorical Pretreatment Standards

40 CFR 439.36 PSES	Daily-maximum	Monthly-avg
Cyanide (mg/l)	33.5	9.4
Ammonia (as N) (mg/l)	84.1	29.4
Acetone (mg/l)	20.7	8.2
4-Methyl-2-Pentanone (mg/l)	20.7	8.2
Isobutyraldehyde (mg/l)	20.7	8.2
n-Amyl Acetate (mg/l)	20.7	8.2
n-Butyl Acetate (mg/l)	20.7	8.2
Ethyl Acetate (mg/l)	20.7	8.2
Isopropyl Acetate (mg/l)	20.7	8.2
Methyl Formate (mg/l)	20.7	8.2
Isopropyl Ether (mg/l)	20.7	8.2
Tetrahydrofuran (mg/l)	9.2	3.4
Benzene (mg/l)	3.0	0.7
Toluene (mg/l)	0.3	0.2
Xylenes (mg/l)	3.0	0.7
n-Heptane (mg/l)	3.0	0.7
n-Hexane (mg/l)	3.0	0.7
Methylene Chloride (mg/l)	3.0	0.7
Chloroform (mg/l)	0.1	0.03
1,2-Dichloroethane (mg/l)	20.7	8.2
Chlorobenzene (mg/l)	3.0	0.7
o-Dichlorobenzene (mg/l)	20.7	8.2
Diethyl Amine (mg/l)	255.0	100.0
Triethyl Amine (mg/l)	255.0	100.0

Table 8 – 40 CFR 439 Subpart D Categorical Pretreatment Standards

40 CFR 439.46 PSES	Daily-maximum	Monthly-avg
Acetone (mg/l)	20.7	8.2
Ethyl Acetate (mg/l)	20.7	8.2
Isopropyl Acetate (mg/l)	20.7	8.2
Methylene Chloride (mg/l)	3.0	0.7

Applicability - Under 40 CFR 439, the Pharmaceutical Manufacturing standards apply to “process wastewater discharges resulting from the research and manufacture of pharmaceutical products, which are generally ... reported under SIC 2833, SIC 2834 and SIC 2836”, 40 CFR 439.0. Under 40 CFR 439 Subpart C, the Pharmaceutical Manufacturing standards for chemical synthesis products apply to “discharges of process wastewater resulting from the manufacture of pharmaceutical products by chemical synthesis”, 40 CFR 439.30. Under 40 CFR 439 Subpart D, the Pharmaceutical Manufacturing standards for mixing, compounding, and formulation apply to “discharges of process wastewater resulting from the manufacture of pharmaceutical products by mixing, compounding and formulating operations”, 40 CFR 439.40. Thatcher Salt Lake performs iodine disinfectant manufacturing in Bldg 7 and washes containers associated with iodine disinfectant production in Bldg 5. These standards do not apply to water preconditioning brines and tail waters, cooling waters, boiler blowdown or domestic sewage.

Basis of Standards - New source standards were based on a model pretreatment unit involving steam stripping for ammonia and organics. Pretreatment standards existing sources (PSES) treatment standards were established through a study of pharmaceutical manufacturers with the model treatment, at levels that the facilities taken together were able to consistently achieve a compliance rate of 99% (1 in 100 chance of violation).

New or Existing Sources – Thatcher Salt Lake qualifies as an existing source because it began the iodine disinfectant product line before the May 2, 1995 publication of the proposed rule for pharmaceutical manufacturing. Existing source pharmaceutical manufacturers were required to comply by September 21, 2001.

4.6 Combined Federal Standards and Adjustments

Multiple Categories - The Federal categorical pretreatment standards must be adjusted to account for multiple Federal categories, if more than one applies.

Dilution - The Federal categorical pretreatment standards must be adjusted to account for dilution, if it exists, from non-contact waters and domestic sewage using the combined wastestream formula in 40 CFR 403.6 (d,e). This provision has the intent of ensuring best available technology treatment used in originally setting the technology-based Federal standards (or equivalent) is fully applied to the regulated waste streams.

Table 9 – Wastestreams Discharged Through MP-001

Bldg 12 process washdown drainage	40 CFR 415 Subpart B	35,000 gpd
Bldg 12 excess SO2 fume quench water	40 CFR 415 Subpart B	
Total Discharge Through MP-001		35,000 gpd
$C_{MP001} = \left(\frac{C_{415B} \cdot Q_{415B}}{Q_{415B}} \right) \left(\frac{Q_{MP001} - Q_{\text{dilution}}}{Q_{415B}} \right) = C_{415B} \left(100\% \right)$ <p style="text-align: right;"><i>Combined Wastestream Formula 40 CFR 403.6(e)</i></p>		

Table 10 – Wastestreams Discharged Through MP-002

Bldg 2B cooling tower blowdown	Dilution	2,500 gpd
Bldg 2C process washdown drainage	Unregulated	2,000 gpd
Bldg 2C cooling tower blowdown	Dilution	0 gpd
Bldg 2C water softener brines	Dilution	800 gpd
Bldg 3 cooling tower blowdown	Dilution	2,500 gpd
Bldg 3 process washdown drainage	Unregulated	3,000 gpd
Bldg 3 wet scrubber blowdown		
Bldg 3 RO reject	Dilution	3,700 gpd
Bldg 4 boiler blowdown	Dilution	1,300 gpd
Bldg 5 boiler blowdown	Dilution	1,700 gpd
Bldg 5 drum and tanker cleaning wash water	40 CFR 415BB, 40 CFR 417P,	6,000 gpd
Bldg 6 process washdown drainage	40 CFR 439CD, unregulated	6,000 gpd
Bldg 6 wet scrubber blowdown	40 CFR 417 Subpart P	2,500 gpd
Total Discharge Through MP-002		32,000 gpd
$C_{MP002} = \left(\frac{C_{415BB} \cdot Q_{415BB} + C_{417P} \cdot Q_{417P} + C_{439CD} \cdot Q_{439CD}}{Q_{415BB} + Q_{417P} + Q_{439CD}} \right) \left(\frac{Q_{MP002} - Q_{\text{dilution}}}{Q_{415BB} + Q_{417P} + Q_{439CD}} \right)$ $C_{MP002} = \left(\frac{C_{415BB} \cdot Q_{415BB} + C_{417P} \cdot Q_{417P} + C_{439CD} \cdot Q_{439CD}}{Q_{415BB} + Q_{417P} + Q_{439CD}} \right) \left(60.9\% \right)$ <p style="text-align: right;"><i>Combined Wastestream Formula 40 CFR 403.6(e)</i></p>		

Table 11 – Wastestreams Discharged Through MP-003

Bldg 7 process washdown drainage	40 CFR 439 Subpart CD	1,500 gpd
Bldg 7 water precondition IX brines	Dilution	2,500 gpd
Bldg 7 RO reject	Dilution	
Total Discharge Through MP-003		4,000 gpd
$C_{MP003} = \left(\frac{C_{439} \cdot Q_{439}}{Q_{439}} \right) \left(\frac{Q_{MP003} - Q_{\text{dilution}}}{Q_{439}} \right) = C_{439} \left(37.5\% \right)$ <p style="text-align: right;"><i>Combined Wastestream Formula 40 CFR 403.6(e)</i></p>		

Table 12 – Wastestreams Discharged Through MP-005

Bldg 8 Thiosulfate process washdown drainage	unregulated	500 gpd
Total Discharge Through MP-008		500 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

Table 13 – Wastestreams Discharged Through MP-006

Bldg 10 water preconditioning brines	dilution	1,200 gpd
Bldg 10 RO reject	dilution	
Bldg 10 process washdown drainage	unregulated	500 gpd
Bldg 10 wet scrubber blowdown	unregulated	
Total Discharge Through MP-006		1,700 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

Table 14 – Wastestreams Discharged Through MP-007

Bldg 10 cooling tower blowdown	dilution	2,000 gpd
Total Discharge Through MP-010B		2,000 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

Table 15 – Wastestreams Discharged Through MP-008

Bldg 11 boiler blowdown	dilution	3,500 gpd
Bldg 11 water softener brines	dilution	
Bldg 11 storm water run-off drainage	unregulated	
Total Discharge Through MP-011		3,500 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

Table 16 – Wastestreams Discharged Through MP-009

Bldg 16 process washdown drainage	unregulated	50 gpd
Total Discharge Through MP-016		50 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

Table 17 – Wastestreams Discharged Through MP-010

Bldg 17 laboratory sink drainage	unregulated	4,000 gpd
Bldg 17 water softener brines	dilution	
Total Discharge Through MP-017		4,000 gpd
N/A		Combined Wastestream Formula 40 CFR 403.6(e)

4.7 Federal Prohibitions

Dilution as a Substitute for Treatment - The Federal standards in 40 CFR 403.6 (d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute wastestreams. Compliance with this provision was not assessed in the January 2013 BMR or the July 2013 Salt Lake City inspection. The new 2014 permit will include this provision.

Bypass Provisions - The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State. The previous 2011 permit established the bypass provision against bypassing treatment necessary to comply, and the new 2014 permit will include this provision.

4.14 Local Limits and National Prohibitions

Local limits and the national prohibitions in 40 CFR 403.5 (a,b) are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers.

The national prohibitions apply nationwide to all non-domestic sewer discharges. The national prohibitions are instantaneous-maximums comparable to samples of any length. The Salt Lake City local limits apply to non-domestic discharges in the Salt Lake City service areas of the Salt Lake City Water Reclamation Plant. The local limits for all parameters except pH are daily-maximums also comparable to the average of any samples collected over a 24-hour period.

The pollutants regulated under the Salt Lake City local limits expected to be present in the final outfall discharges at levels with either an unknown or a reasonable potential to exceed the limits include pH, Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), petroleum non-biodegradable oil and grease, arsenic, lead, mercury, and molybdenum, based on the 2013 permit application and BMR for Thatcher Salt Lake.

5.0 Description of the Outfall(s) and Monitoring Point(s)

5.1 Federal Standards

The Federally regulated discharges to the sewers will require four compliance sampling points, designated as Monitoring Points 001, 002, and 003:

- Monitoring Point 001 – Treated discharge from the Bldg 12 industrial wastewater pH adjustment unit at the grated sump at the southeastern end of Bldg 11.
- Monitoring Point 002 – Treated effluent discharge from the Bldg 5 industrial wastewater treatment unit at the square concrete grated sump on the southwest side of Bldg 5.
- Monitoring Point 003 – Treated discharge from the Bldg 7 industrial wastewater pH adjustment unit at a spigot located on the final discharge pipe downstream of the tank and automated pH meter shutoff valve.

Federal standards apply end-of-process to all Federally-regulated discharges. The Federal standards are daily-maximums comparable to 24-hour composites, which can be replaced with grabs or manually-composited grabs representative of the sampling day's discharge. Monitoring Points 001, 002, and 003 are suitable end-of-process-after-treatment sample points representative of the day-to-day discharge.

5.2 Local Limits and National Prohibitions

The overall discharge of non-domestic wastewaters to the sewers will require either one overall compliance sampling point for local limits and national prohibitions, designated as Monitoring Point 004, or nine separate upstream sample points, designated as Monitoring Points 001, 002, 003, 008, 010A, 010B, 011, 016, and 017:

Overall Combined Discharge

- Monitoring Point 004 – Overall combined domestic and non-domestic discharges from Thatcher Salt Lake at the manhole on California Avenue.

Constituent Discharges

- Monitoring Point 001 – Treated discharge from the Bldg 12 industrial wastewater pH adjustment unit at the grated sump at the southeastern end of Bldg 11.
- Monitoring Point 002 – Treated effluent discharge from the Bldg 5 industrial wastewater treatment unit at the square concrete grated sump on the southwest side of Bldg 5.
- Monitoring Point 003 – Treated discharge from the Bldg 7 industrial wastewater pH adjustment unit at a spigot located on the final discharge pipe downstream of the tank and automated pH meter shutoff valve.
- Monitoring Point 005 – Treated discharge from the Bldg 8 industrial wastewater pH adjustment unit at a location to be determined.
- Monitoring Point 006 – Treated discharge from the Bldg 10 industrial wastewater pH adjustment unit at a location to be determined.

- Monitoring Point 007 – Untreated cooling tower blowdown from Bldg 10 at a location to be determined.
- Monitoring Point 008 – Untreated water softener brines, boiler blowdown, and drainage from Bldg 11 at a location to be determined.
- Monitoring Point 009 – Treated discharge from the Bldg 16 industrial wastewater treatment unit at a location to be determined.
- Monitoring Point 010 – Untreated laboratory sink drainage and water softener brine discharges from Bldg 17 at a location to be determined.

Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. Monitoring Point 004 is suitable as a monitoring location representative of the day-to-day overall non-domestic wastewater discharges for application of local limits although this monitoring point includes domestic wastewater contributions and would thus include the variabilities of flow and quality inherent in domestic sources. If instead, the monitoring points are to represent all non-domestic discharges without domestic contributions, then the local limits would need to be applied to the ten locations listed above as Monitoring Points 001-003 and 005-010. Monitoring Points 001-003 have been identified previously in the past permit as end-of-pipe sample points.

6.0 Effluent Limits

Federal categorical pretreatment standards from various categories apply to Monitoring Points 001, 002, and 003. The Salt Lake City local limits and national prohibitions for also apply to the pollutants of concern (BOD, TSS, COD, arsenic, chromium, molybdenum, pH, and the narrative prohibitions against causing interference or pass-through) at Monitoring Point 004.

Table 18 – Permit Effluent Limits for Monitoring Point 001

Bldg 12 IWPA Effluent Discharge @ Monitoring Point 001	Local Limits		Nat'l Prob	Federal Standards	
	Daily-Max	Inst-Max	Inst-Max	Daily-Max	Mo-Avg
Chromium (mg/l) ⁽¹⁾	-	-	-	1.3	0.42

Note: (1) 40 CFR 415 Subpart BB standards apply without adjustment.

Table 19 – Permit Effluent Limits for Monitoring Point 002

Bldg 5 IWTU Effluent Discharge @ Monitoring Point 002	Local Limits		Nat'l Prob	Federal Standards	
	Daily-Max	Inst-Max	Inst-Max	Daily-Max	Mo-Avg
BOD (mg/l)	-	-	-	10.0 ⁽²⁾	-
COD (mg/l) (kg/kg anhydrous product)	-	-	-	1.10 ⁽³⁾	-
Chromium (mg/l) ⁽¹⁾	-	-	-	0.79	0.26
Cyanide (mg/l) ⁽¹⁾	-	-	-	20.4	5.7
Ammonia (as N) (mg/l) ⁽¹⁾	-	-	-	51.2	17.9
Acetone (mg/l) ⁽¹⁾	-	-	-	12.6	5.0

4-Methyl-2-Pentanone (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Isobutyraldehyde (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
n-Amyl Acetate (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
n-Butyl Acetate (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Ethyl Acetate (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Isopropyl Acetate (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Methyl Formate (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Isopropyl Ether (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Tetrahydrofuran (mg/l) ⁽¹⁾	-	-	-	5.6	2.1
Benzene (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
Toluene (mg/l) ⁽¹⁾	-	-	-	0.18	0.12
Xylenes (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
n-Heptane (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
n-Hexane (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
Methylene Chloride (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
Chloroform (mg/l) ⁽¹⁾	-	-	-	0.061	0.018
1,2-Dichloroethane (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Chlorobenzene (mg/l) ⁽¹⁾	-	-	-	1.83	0.43
o-Dichlorobenzene (mg/l) ⁽¹⁾	-	-	-	12.6	5.0
Diethyl Amine (mg/l) ⁽¹⁾	-	-	-	155.3	60.9
Triethyl Amine (mg/l) ⁽¹⁾	-	-	-	155.3	60.9
Narrative Prohibitions	-	-	-	⁽⁴⁾	

Note: (1) The Federal standards for 40 CFR 415 Subpart BB, 40 CFR 417 Subpart P, and 40 CFR 439 Subparts C and D apply as adjusted using the combined wastestream formula to account for multiple categories and dilution waters.

(2) Ratio of COD/BOD₇.

(3) Production-based effluent limit that requires calculation of COD kg based on discharge flow rate and the reporting of urea production in kkg.

(4) The Federal standards for 40 CFR 415 Subpart B prohibit any process-related discharge from aluminum sulfate production, unless it is storm water from an impoundment designed and operated to contain the precipitation from a 25-year 24-hour rainfall event.

Table 20 – Permit Effluent Limits for Monitoring Point 003

Bldg 7 IWPA Effluent Discharge @ Monitoring Point 003	Local Limits		Nat'l Prob	Federal Standards	
	Daily-Max	Inst-Max	Inst-Max	Daily-Max	Mo-Avg
Cyanide (mg/l) ⁽¹⁾	-	-	-	12.6	3.53
Ammonia (as N) (mg/l) ⁽¹⁾	-	-	-	31.5	11.0
Acetone (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
4-Methyl-2-Pentanone (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Isobutyraldehyde (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
n-Amyl Acetate (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
n-Butyl Acetate (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Ethyl Acetate (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Isopropyl Acetate (mg/l) ⁽¹⁾	-	-	-	7.76	3.08

Methyl Formate (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Isopropyl Ether (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Tetrahydrofuran (mg/l) ⁽¹⁾	-	-	-	3.45	1.28
Benzene (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
Toluene (mg/l) ⁽¹⁾	-	-	-	0.11	0.075
Xylenes (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
n-Heptane (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
n-Hexane (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
Methylene Chloride (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
Chloroform (mg/l) ⁽¹⁾	-	-	-	0.038	0.011
1,2-Dichloroethane (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Chlorobenzene (mg/l) ⁽¹⁾	-	-	-	1.13	0.26
o-Dichlorobenzene (mg/l) ⁽¹⁾	-	-	-	7.76	3.08
Diethyl Amine (mg/l) ⁽¹⁾	-	-	-	95.6	37.5
Triethyl Amine (mg/l) ⁽¹⁾	-	-	-	37.5	37.5

Note: (1) The Federal standards for 40 CFR 439 Subpart C and Subpart D apply as adjusted using the combined wastestream formula to account for dilution waters.

Table 21 – Permit Effluent Limits for Monitoring Point 004

Overall Facility Discharge @ Monitoring Point 004	Local Limits		Nat'l Prob	Federal Standards	
	Daily-Max	Inst-Max	Inst-Max	Daily-Max	Mo-Avg
BOD (mg/l)	10000	-	-	-	-
TSS (mg/l)	3000	-	-	-	-
COD (mg/l)	20000	-	-	-	-
Arsenic (mg/l)	0.2	-	-	-	-
Cadmium (mg/l)	0.7	-	-	-	-
Chromium (mg/l)	5.0	-	-	-	-
Copper (mg/l)	13.6	-	-	-	-
Lead (mg/l)	2.0	-	-	-	-
Mercury (mg/l)	0.2	-	-	-	-
Molybdenum (lbs/day @ WWTP)	16.0	-	-	-	-
Nickel (mg/l)	1.9	-	-	-	-
Selenium (mg/l)	1.0	-	-	-	-
Silver (mg/l)	5.0	-	-	-	-
Zinc (mg/l)	39.9	-	-	-	-
Biodegradable Oil & Grease (mg/l)	500	-	-	-	-
Petro Non-biodeg Oil & Grease (mg/l) ⁽¹⁾	100	-	-	-	-
Temperature	<104°F	-	-	-	-
Closed Cup Flashpoint (°F)	-	-	<140°F	-	-
Lower Explosive Level (%) ⁽²⁾	-	5% - 10%	-	-	-
pH (s.u.)	-	6.0-10.5	<5.0	-	-

Note: (1) Petroleum Non-biodegradable Oil & Grease shall be measured using silica gel treated hexane extraction methodology (SGT-HEM)

(2) Lower Explosive Limit is 5% for two successive readings and 10% for any reading

In addition, the Salt Lake sewer use ordinance establishes a number of narrative prohibitions including the following against (1) toxic pollutants that will cause interference with the POTW, §17.36.060(6a); (2) noxious substances that create hazards for humans or the environment, or interfere detrimentally with sewage treatment, or prevent entry into the sewers, among other hazardous conditions, §17.36.060(7); (3) untreatable substances, §17.36.060(9); and (4) detergents, surface-active agents, or other substances that might cause excessive foaming in the POTW, §17.36.060(20).

7.0 Monitoring Requirements

Under the 40 CFR 403.12, significant industrial users are required to monitor at least twice per year, with more frequent monitoring if necessary in order to ensure the sampling is representative of the discharge, the sampling day's operations, and the reporting period.

7.1 *Local Limits and National Prohibitions*

Monitoring Point 004 – The overall contributions of non-domestic and domestic wastewaters from Thatcher Salt Lake discharge into the Salt Lake City sewers through the final Monitoring Point 004. The various sources impart distinctive wastewaters of varying strengths, flow rates, and intervals, over a range of pollutants, many of which are strongly reactive. Therefore, the final discharge at Monitoring Point 004 requires frequent monitoring to result in a sampling record that is representative of the discharge, the sampling day's operations, and the reporting period. The variability in sampling at Monitoring Point 004 reflects the unquantifiable sources of variability in wastewater strength, and flow, over a range of pollutants, and from a variable list of chemical processing steps including container cleaning and process plant washdown. Therefore, the unquantifiable nature of the variability supports (1) continuous monitoring for flow, pH, and ORP as measures of reactivity, (2) monthly monitoring for all other local limit regulated parameters, and (3) monthly monitoring for MBAS and TDS as indicator measurements of surfactants and contaminant source control. This permit will establish a compliance schedule not to exceed six months in duration for the installation of a continuous monitoring station at Monitoring Point 004.

Monitoring Points 001-003 and 005-010 – The other nine monitoring points together are also representative of all non-domestic wastewater discharges into the Salt Lake City sewers but without domestic contributions. This permit will utilize Monitoring Point 004 for the overall discharge of both non-domestic and domestic contributions. However, if the continuous monitoring for pH and ORP establishes wide variability in strength and reactivity in the overall discharge resulting in violations of the pH local limit or the potential to cause interference, then the individual monitoring points for the non-domestic discharges without domestic contributions would instead need to be established together as the points of compliance for local limits. In the meantime, this permit also establishes internal monthly monitoring of the contributing discharges for flow, pH, ORP, BOD, COD, TSS, TDS, and MBAS at Monitoring Points 001-003 and once-per-permit-cycle for the same parameters at the other Monitoring Points 005-010, in order to characterize the wastewaters and indicate the effectiveness of treatment where it is applied.

7.2 Federal Categorical Standards at Internal Outfalls

Monitoring Point 001 - The Bldg 12 IWTU receives wastewaters of varying strengths and at varying flows and durations from two sources. In particular, the IWTP handles variability from the intermittent discharge of excess fume quench waters, as well as the intermittent discharges from process plant and equipment washdown. The unquantifiable nature of the variability in both strength and flow, supports monthly monitoring for chromium as the lone parameter of concern, as well as for flow, pH, ORP, BOD, COD, TSS, TDS, and MBAS as indicator parameters of treatment and source control efficiency.

Monitoring Point 002 - The Bldg 5 IWTU receives wastewaters of varying strengths and at varying flows and durations from multiple buildings. In particular, the IWTP handles variability from the two container washing operations in Bldg 5 and Bldg 6, as well as numerous cooling tower bleeds, boiler blowdowns, water preconditioning brines and tail waters, and the intermittent discharges from process plant and equipment washdown. The unquantifiable nature of the variability in both strength, flow, range of pollutants, and treatment unit efficiency supports (1) monthly monitoring for chromium, and ammonia, as parameters of concern, (2) monthly monitoring for flow, pH, ORP, BOD, COD, TSS, TDS, and MBAS as indicator parameters of treatment and source control efficiency, and (3) twice-per-year monitoring for cyanide, arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, and petroleum non-biodegradable oil and grease, and (4) twice-per-year monitoring for the organic pollutants of concern regulated under 40 CFR 439 Subparts C and D.

Monitoring Point 003 - The Bldg 7 IWTU receives wastewaters of varying strengths and at varying flows and durations from two sources, the process wash down from iodine disinfectant production, and water preconditioning brines and reject. The unquantifiable nature of the variability in both strength and flow, supports (1) monthly monitoring for flow, pH, ORP, BOD, COD, TSS, TDS, and MBAS as indicator parameters of treatment and source control efficiency, and (2) twice-per-year monitoring for ammonia, cyanide, and the organic pollutants of concern regulated under 40 CFR 439 Subparts C and D.

8.0 Self-Monitoring

The 2014 permit will establish the following self-monitoring requirements. The permit will establish a compliance schedule to require the installation of a continuous monitoring station for Monitoring Point 004. The permit will also require the identification all of the other internal monitoring points.

Table 22 – Permit Self-Monitoring Requirements for Monitoring Point 001

Internal Outfall Monitoring Point 001	Monitoring Point	Self-Monitoring Frequency	Sample Type
Flow Rate (gal/day)	001	Once/Month	Metering or Estimates
pH (s.u.)	001	Once/Month	Field Measurement
Oxidation Reduction Potential (mV)	001	Once/month	Field Measurement

Chromium (mg/l)	001	Once/Month	24-hour Composite
Biochemical Oxygen Demand (mg/l)	001	Once/month	24-hour Composite
Chemical Oxygen Demand (mg/l)	001	Once/month	24-hour Composite
Total Suspended Solids (mg/l)	001	Once/month	24-hour Composite
Total Dissolved Solids (mg/l)	001	Once/month	24-hour Composite
MBAS (mg/l)	001	Once/month	24-hour Composite

Table 23 – Permit Self-Monitoring Requirements for Monitoring Point 002

Internal Outfall Monitoring Point 002	Monitoring Point	Self-Monitoring Frequency	Sample Type
Flow Rate (gal/day)	002	Once/Month	Metering or Estimates
pH (s.u.)	002	Once/Month	Field Measurement
Oxidation Reduction Potential (mV)	002	Once/month	Field Measurement
Chromium (mg/l)	002	Once/Month	24-hour Composite
Biochemical Oxygen Demand (mg/l)	002	Once/month	24-hour Composite
Ammonia (as N) (mg/l)	002	Once/Month	24-hour Composite
Chemical Oxygen Demand (mg/l)	002	Once/month	24-hour Composite
Total Suspended Solids (mg/l)	002	Once/month	24-hour Composite
Total Dissolved Solids (mg/l)	002	Once/month	24-hour Composite
MBAS (mg/l)	002	Once/month	24-hour Composite
Arsenic (mg/l)	002	Once/6-mos	24-hour Composite
Cadmium (mg/l)	002	Once/6-mos	24-hour Composite
Copper (mg/l)	002	Once/6-mos	24-hour Composite
Lead (mg/l)	002	Once/6-mos	24-hour Composite
Mercury (mg/l)	002	Once/6-mos	24-hour Composite
Molybdenum (mg/l)	002	Once/6-mos	24-hour Composite
Nickel (mg/l)	002	Once/6-mos	24-hour Composite
Selenium (mg/l)	002	Once/6-mos	24-hour Composite
Silver (mg/l)	002	Once/6-mos	24-hour Composite
Zinc (mg/l)	002	Once/6-mos	24-hour Composite
Petroleum Oil & Grease (mg/l) ⁽¹⁾	002	Once/6-mos	Grab
Cyanide (mg/l)	002	Once/6-mos	Grab
Acetone (mg/l)	002	Once/6-mos	Grab
4-Methyl-2-Pentanone (mg/l)	002	Once/6-mos	Grab
Isobutyraldehyde (mg/l)	002	Once/6-mos	Grab
n-Amyl Acetate (mg/l)	002	Once/6-mos	Grab
n-Butyl Acetate (mg/l)	002	Once/6-mos	Grab
Ethyl Acetate (mg/l)	002	Once/6-mos	Grab
Isopropyl Acetate (mg/l)	002	Once/6-mos	Grab
Methyl Formate (mg/l)	002	Once/6-mos	Grab
Isopropyl Ether (mg/l)	002	Once/6-mos	Grab
Tetrahydrofuran (mg/l)	002	Once/6-mos	Grab
Benzene (mg/l)	002	Once/6-mos	Grab

Toluene (mg/l)	002	Once/6-mos	Grab
Xylenes (mg/l)	002	Once/6-mos	Grab
n-Heptane (mg/l)	002	Once/6-mos	Grab
n-Hexane (mg/l)	002	Once/6-mos	Grab
Methylene Chloride (mg/l)	002	Once/6-mos	Grab
Chloroform (mg/l)	002	Once/6-mos	Grab
1,2-Dichloroethane (mg/l)	002	Once/6-mos	Grab
Chlorobenzene (mg/l)	002	Once/6-mos	Grab
o-Dichlorobenzene (mg/l)	002	Once/6-mos	Grab
Diethyl Amine (mg/l)	002	Once/6-mos	Grab
Triethyl Amine (mg/l)	002	Once/6-mos	Grab

Note: (1) Petroleum Non-biodegradable Oil & Grease shall be measured using silica gel treated hexane extraction methodology (SGT-HEM)

Table 24 – Permit Self-Monitoring Requirements for Monitoring Point 003

Internal Outfall Monitoring Point 003	Monitoring Point	Self-Monitoring Frequency	Sample Type
Flow Rate (gal/day)	003	Once/Month	Metering or Estimates
pH (s.u.)	003	Once/Month	Field Measurement
Oxidation Reduction Potential (mV)	003	Once/month	Field Measurement
Biochemical Oxygen Demand (mg/l)	003	Once/month	24-hour Composite
Chemical Oxygen Demand (mg/l)	003	Once/month	24-hour Composite
Total Suspended Solids (mg/l)	003	Once/month	24-hour Composite
Total Dissolved Solids (mg/l)	003	Once/month	24-hour Composite
MBAS (mg/l)	003	Once/month	24-hour Composite
Cyanide (mg/l)	003	Once/6-mos	Grab
Acetone (mg/l)	003	Once/6-mos	Grab
4-Methyl-2-Pentanone (mg/l)	003	Once/6-mos	Grab
Isobutyraldehyde (mg/l)	003	Once/6-mos	Grab
n-Amyl Acetate (mg/l)	003	Once/6-mos	Grab
n-Butyl Acetate (mg/l)	003	Once/6-mos	Grab
Ethyl Acetate (mg/l)	003	Once/6-mos	Grab
Isopropyl Acetate (mg/l)	003	Once/6-mos	Grab
Methyl Formate (mg/l)	003	Once/6-mos	Grab
Isopropyl Ether (mg/l)	003	Once/6-mos	Grab
Tetrahydrofuran (mg/l)	003	Once/6-mos	Grab
Benzene (mg/l)	003	Once/6-mos	Grab
Toluene (mg/l)	003	Once/6-mos	Grab
Xylenes (mg/l)	003	Once/6-mos	Grab
n-Heptane (mg/l)	003	Once/6-mos	Grab
n-Hexane (mg/l)	003	Once/6-mos	Grab
Methylene Chloride (mg/l)	003	Once/6-mos	Grab
Chloroform (mg/l)	003	Once/6-mos	Grab

1,2-Dichloroethane (mg/l)	003	Once/6-mos	Grab
Chlorobenzene (mg/l)	003	Once/6-mos	Grab
o-Dichlorobenzene (mg/l)	003	Once/6-mos	Grab
Diethyl Amine (mg/l)	003	Once/6-mos	Grab
Triethyl Amine (mg/l)	003	Once/6-mos	Grab

Table 25 – Permit Self-Monitoring Requirements for Monitoring Point 004

Final Overall Outfall Monitoring Point 004	Monitoring Point	Self-Monitoring Frequency	Sample Type
Flow Rate (gal/day)	004	Continuous	Continuous Meter
pH (s.u.)	004	Continuous	Continuous Meter
Oxidation Reduction Potential (mV)	004	Continuous	Continuous Meter
Biochemical Oxygen Demand (mg/l)	004	Once/month	24-hour Composite
Chemical Oxygen Demand (mg/l)	004	Once/month	24-hour Composite
Total Suspended Solids (mg/l)	004	Once/month	24-hour Composite
Total Dissolved Solids (mg/l)	004	Once/month	24-hour Composite
MBAS (mg/l)	004	Once/month	24-hour Composite
Arsenic (mg/l)	004	Once/month	24-hour Composite
Cadmium (mg/l)	004	Once/month	24-hour Composite
Chromium (mg/l)	004	Once/month	24-hour Composite
Copper (mg/l)	004	Once/month	24-hour Composite
Lead (mg/l)	004	Once/month	24-hour Composite
Mercury (mg/l)	004	Once/month	24-hour Composite
Molybdenum (mg/l)	004	Once/month	24-hour Composite
Nickel (mg/l)	004	Once/month	24-hour Composite
Selenium (mg/l)	004	Once/month	24-hour Composite
Silver (mg/l)	004	Once/month	24-hour Composite
Zinc (mg/l)	004	Once/month	24-hour Composite
Biodegradable Oil & Grease (mg/l)	004	Once/month	Grab
Petroleum Oil & Grease (mg/l) ⁽¹⁾	004	Once/month	Grab
Temperature	004	Once/month	Grab

Note: (1) Petroleum Non-biodegradable Oil & Grease shall be measured using silica gel treated hexane extraction methodology (SGT-HEM)

Table 26 – Permit Self-Monitoring Requirements for Monitoring Points 005-010

Internal Outfalls Monitoring Points 005-010	Monitoring Points	Self-Monitoring Frequency	Sample Type
Flow Rate (gal/day)	005-010	Once/5-years	Metering or Estimates
pH (s.u.)	005-010	Once/5-years	Field Measurement
Oxidation Reduction Potential (mV)	005-010	Once/5-years	Field Measurement
Biochemical Oxygen Demand (mg/l)	005-010	Once/5-years	Grab
Chemical Oxygen Demand (mg/l)	005-010	Once/5-years	Grab

Total Suspended Solids (mg/l)	005-010	Once/5-years	Grab
Total Dissolved Solids (mg/l)	005-010	Once/5-years	Grab
MBAS (mg/l)	005-010	Once/5-years	Grab

9.0 TTO Monitoring

There are no total toxic organics standards or limits that apply to the Thatcher Salt Lake discharge to the sewers.

10.0 Continuous Monitoring Requirements

Continuous measurement of the flow, pH, and ORP will be required by a permit compliance schedule for the overall facility discharge through Monitoring Point 004.


11.0 Reporting Requirements

Quarterly reports with the self-monitoring results for monitored parameters are the responsibility of Thatcher Salt Lake.

12.0 Special Reports Required

A slug control plan still is required as large quantities of chemicals are stored on-site.

13.0 Signatures

Permit Writer  _____

Date ^{January 31, 2014} _____

Pretreatment Compliance Coordinator _____

Date _____