FACT SHEET AND STATEMENT OF BASIS
SARATOGA SPRINGS
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0025321
MINOR INDUSTRIAL

FACILITY CONTACTS

Person Name:	Davis Hale		
Position:	Pool Manager		
Phone Number:	(801) 558-2085	Alternate:	(801) 776-0261

Person Name:	Becki Wheeler
Position:	SSOA Property Management Consultant
Phone Number:	(801) 955-5123

Facility Name:	Saratoga Springs Pool
Facility Address:	625 South Saratoga Drive Saratoga Springs, Utah 84043

Mailing Address:	C/O Community Solutions 12371 South 900 East Suite #2 Draper, UT 84020625 South Saratoga Drive Saratoga Springs, Utah 84043

DESCRIPTION OF FACILITY

This facility utilizes the naturally surfacing geothermal spring water for a swimming pool and spas. While all of the geothermal water is captured at the spring source, only a portion of the water is chlorinated and used for the pool and spa. Pool water is intermittently pumped to the head of a man made earthen and rock water course through the immediate park area. Spa water naturally will overflow out of the spa to the head of the manmade earthen and rock water course. After running down through the park area, the water commingles with the unused portion of the surfacing spring water, and continues to flow south-east through an earthen and rock ditch to Utah Lake. The facility has a Standard Industrial Classification (SIC) code of 7999, for Amusement and Recreation Services.

This discharge is located west of Lehi City in Utah County on the northwest shore of Utah Lake at latitude 40^{o} 20' 56" and longitude 111^{o} 54' 12", and with a STORET number of 4994800. During the renewal of the permit in 2015, a flow limit was added to the permit.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The facility has been reporting the flow of filter backwash water that is directed to the local Sewer Improvement District (District). During the previous permit cycle the District added a new connection to the backwash system which includes a much better flow meter than the pool was using. As a result, this flow will no longer be reported in NetDMR.

DISCHARGE

DESCRIPTION OF DISCHARGE

The combined pool and spa discharge flows at an average of 43 GPM (0.062 MGD). The discharge flows down the man made course and combines with the unused flows from the hot spring. The combined flow continues down a man-made water course on their property to dissipate chlorine and introduce oxygen. The water course continues under a paved trail around Utah Lake and discharges down a cascade to the harbor, into Utah Lake at a flow up to 0.504 MGD.

The only additive to the water prior to the discharge will be chlorine for disinfection purposes as mandated by the Utah County Health Department.

Outfall	Description of Discharge Point
001	The outfall is located south-east of the Saratoga Springs swimming pool, on the north shore if Utah Lake, west of Lehi City, in Utah County, Utah at latitude 40° 20' 56" and longitude 110° 54' 12". The discharge is from an earthen and rock ditch which runs through the park area, under a walkway and into the harbor, thence to Utah Lake.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into Utah Lake, which has a use classification of 2B, 3B, 3D, and 4, according to *Utah Administrative Code (UAC) R317-2-13*:

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 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.

BASIS FOR EFFLUENT LIMITATIONS

Saratoga Springs is a naturally occurring geothermal springs which historically surfaced and drained to Utah Lake. The springs are naturally high in total dissolved solids (TDS) and have elevated temperature. By the 1890's the springs had been fully developed, and a resort was well established on the site. As per *UAC R317-1-3.4 - Pollutants In Diverted Water Returned To Stream* - a user of surface water diverted from waters of the State will not be required to remove any pollutants which such user has not added before returning the diverted flow to the original watercourse. As a result, no effluent limits for TDS or temperature will be added to the permit.

There are no technology-based effluent limits associated with the facility's SIC code.

The total residual chlorine limit (TRC) 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 minimum quantification level (ML) of the most common and practical EPA approved TRC methods. The Division has determined the current acceptable ML 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 ML of 0.06 mg/L will be considered violations of the permit, and values less than the ML 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.

A dissolved oxygen (DO) effluent limit of 4.0 mg/L is based on professional judgment to meet State water quality standards at the compliance point below the discharge.

The permit limitations are

Parameter	Effluent Limitations [1]			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Total Flow	0.504	-	-	-
Dissolved Oxygen, mg/L	-	-	4.0	-
Total Residual Chlorine, mg/L	-	-	-	0.019

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 annually, as applicable, using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements [1]			
Parameter	Frequency	Sample Type	Units
Total Flow [2], [3]	Monthly	Grab	MGD
Dissolved Oxygen	Monthly	Grab	mg/L
Total Residual Chlorine	Monthly	Grab	mg/L

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

STORM WATER

With a Standard Industrial Classification code of 7999 (Amusement and Recreation Services), this permittee does not fall within the categories of industrial dischargers that are regulated under *UAC R317-8-3.9*. Therefore, there are no storm water monitoring or reporting requirements.

PRETREATMENT REQUIREMENTS

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality*

[1] See Definitions, Part VIII, for definition of terms.

[2] Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

[3] If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch)

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3* and *Water Quality Standards, UAC R317-2-5* and *R317 -2-7.2*.

The permittee is a minor industrial discharger that will be contributing effluent unlikely to exhibit toxicity given that stated effluent limits are met. The source of the water being utilized for recreation purposes is from a naturally occurring thermal spring controlled by the permittee. Based upon these considerations and the permitting authority's BPJ, there is no reasonable potential for toxicity in the permittee's discharge *(per State of Utah's UPDES 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 at any time in the future 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, Reasonable Potential Analysis
Nick von Stackelberg, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: August 20, 2020
Ended: September 20, 2020

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published in the Provo Daily Herald.

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be

raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

No Comments were received during the public notice period.

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data.

Month	Effluent		
Param	Flow	DO	TRC
Stat	Chronic	Min	Max
Limit	0.504	4	0.06
Units	MGD	mg/L	mg/L
Mar-17	0.09792	5.5	0.05
Apr-17	0.0864	5.4	0.06
May-17	0.288	6	0.06
Jun-17			
Jul-17			
Aug-17	0.0288	5.2	0.05
Sep-17	0.0216	5.5	0.04
Oct-17	0.06048	5.2	0.05
Nov-17	0.12096	5.3	0
Dec-17	0.03672	6.3	0.01
Jan-18	0.03672	5.5	0.05
Feb-18	0.0216	6.3	0.06
Mar-18			
Apr-18	0.0936	5.4	0.06
May-18	0.0576	5.2	0.06
Jun-18	0.0504	5.2	0.06
Jul-18	0.0216	6.4	0.04
Aug-18	0.12096	5.8	0.03
Sep-18	0.1368	6.4	0.05
Oct-18	0.144	5.4	0.06
Nov-18	0.1584	5.6	0.05
Dec-18	0.1584	5.5	0.05
Jan-19	0.1584	5.2	0.05
Feb-19	0.1656	6.1	0.06
Mar-19	0.1656	4.9	0.05
Apr-19	0.1008	5.9	0.06
May-19	0.0864	4.9	0.04
Jun-19	0.0792	4.9	0.06
Jul-19	0.08064	4.8	0.05
Aug-19	0.072	6	0.04
Sep-19	0.07488	5.5	0.05
Oct-19	0.07056	5.3	0.05
Nov-19	0.0936	6.1	0.04
Dec-19	0.09792	5.2	0.06
Jan-20	0.108	4.9	0.06
Feb-20	0.0864	6.1	0.06
Mar-20	0.09936	4.9	0.06
Apr-20			
May-20			

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ATTACHMENT 2

Wasteload Analysis

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

Date: **August 7, 2020**

Prepared by: **Nicholas von Stackelberg, P.E.**
Watershed Protection Section

Facility: **Saratoga Springs Pool**
UPDES No. UT0025321

Receiving water: **Utah Lake**

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

Outfall 001: The pool discharge flows at an average of 0.43 GPM or 0.062 MGD. The combined flow at the point of compliance before entering Utah Lake is 0.5 MGD. The combined flow enters a man-made water course on their property to dissipate chlorine and introduce oxygen. The water course terminates into a grated sump and enters a 6 inch green PVC pipe that discharges directly into Utah Lake.

Receiving Water

Per UAC R317-2-13.12, the beneficial uses for Utah Lake are 2A, 3B, 3D and 4:

- *Class 2A: Protected for frequent primary contact recreation where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water. Examples include, but are not limited to, swimming, rafting, kayaking, diving, and water skiing.*
- *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, or 3C, including the necessary aquatic organisms in their food chain.*
- *Class 4 -- Protected for agricultural use including irrigation of crops and stock watering.*

Protection of Downstream Uses

Per UAC R317-2-8, all actions to control waste discharges under these rules shall be modified as necessary to protect downstream designated uses. The effluent limits derived to support the uses in Utah Lake are considered protective of downstream uses.

Parameters of Concern

The only additive to the water prior to the discharge will be chlorine for disinfection purposes as mandated by the Utah County Health Department. Saratoga Springs is a naturally occurring geothermal springs which historically surfaced and drained to Utah Lake. The springs are naturally high in total dissolved solids (TDS) and have elevated temperature. As per UAC R317-1-3.4 - Pollutants In Diverted Water Returned To Stream - a user of surface water diverted from waters of the State will not be required to remove any pollutants which such user has not added before returning the diverted flow to the original watercourse. As a result, no effluent limits were calculated for TDS or temperature.

Impaired Waters and TMDL

Per the 303(d) list of impaired waters in *Utah's 2016 Intergrated Report* (UDWQ 2017), Utah Lake other than Provo Bay was listed as impaired for harmful algal blooms (HAB), PCBs in fish tissue, total dissolved solids, and total phosphorus. No TMDLs have been approved for Utah Lake.

Mixing Zone

Per UAC R317-2-5, the maximum allowable mixing zone in lakes and reservoirs shall not exceed 200 feet for chronic conditions and shall not exceed 35 feet for acute conditions. Water quality standards must be met at the end of the mixing zone.

The previous permit and WLA included an end-of-pipe total residual chlorine (TRC) limit of 0.019 mg/L (acute criterion). Consistent with this approach, and because TRC is the only identified parameter of concern, no mixing zone was allowed.

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 LC_{50} (lethal concentration, 50%) percent effluent for acute toxicity and the IC_{25} (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. In this case, there is no dilution, and the percent effluent is assumed as 100%.

The WET limit for LC_{50} is typically 100% effluent and does not need to be determined by the WLA.

Wasteload Allocation Methods

The total residual chlorine (TRC) limit is based on the acute TRC water quality criterion at end-of-pipe and is retained from the previous permit. The dissolved oxygen (DO) limit is based on

the minimum DO water quality criterion at end-of-pipe and is retained from the previous permit.

Effluent Limits

WQBELs are summarized in Table 1. For parameters without a WQBEL, permit limits should be set according to rules found in R317-1-3 and categorical UPDES discharge requirements.

Table 1: Water Quality Based Effluent Limits

Effluent Constituent	Standard	Limit	Averaging Period
Flow (MGD)		0.504	30 days
Total Residual Chlorine (mg/L)	0.019	0.019	1 hour
Dissolved Oxygen (mg/L)	4.0	4.0	Minimum

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 because it is a simple renewal with no increase in load or concentration from the previous permit.

Documents

WLA Document: *SaratogaSpringsPoolWLA_2020-08-07.docx*
Analysis: *None*

References:

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0*. State of Utah, Department of Environmental Quality.

Utah Division of Water Quality. 2016. *Utah's 2016 Integrated Report*. State of Utah, Department of Environmental Quality.