STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0024759**

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the *"Act"*),

SUNNYSIDE COGENERATION ASSOCIATES

is hereby authorized to discharge from the

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

to receiving waters named **ICELANDER CREEK AND GRASSY TRAIL CREEK**,

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on March 1, 2024.

This permit expires at midnight on February 28, 2029.

Signed this Twenty-sixth day of December, 2023.

John K. Mackey, P.E.
Director

DWQ-2023-006860

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Points. The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number	Location of Discharge Outfall
002	Water Supply Pipeline, Latitude 39° 35' 50", Longitude 110° 22' 42". Water from the deep water well is conveyed via the water supply pipeline discharged into Grassy Trail Creek.
003	Water Supply Pipeline, Latitude 39° 32' 58", Longitude 110° 23' 32". Outfall for pipe line just before entrance to clean water pond. Outfall is to Grassy Trail Creek.
007	Rail Cut Pond, Latitude 39° 32' 52", Longitude 110° 23' 48". Surface runoff discharged from sedimentation pond to Icelander Creek.
008	Old Coarse Refuse Pond, Latitude 39° 32' 20", Longitude 110° 23' 03". Surface runoff discharged from sedimentation pond to Icelander Creek.
009	Pasture Pond, Latitude 39° 32" 36", Longitude 110° 23' 29". Surface runoff discharged from sedimentation pond to Icelander Creek.
012	Coarse Refuse Toe Pond, Latitude 39° 32' 28", Longitude 110° 23' 58". Surface runoff discharged from sedimentation pond to Icelander Creek.
013	Facility Sedimentation Pond, Latitude 39° 32' 46", Longitude 110° 23' 49". Sedimentation pond to contain runoff from the Cogeneration facility. Discharge to Icelander Creek.
014	Coal Pile Sedimentation Pond, Latitude 39° 32' 45", Longitude 110° 23' 36". Sedimentation Pond to contain runoff from the coal pile. Discharge to Icelander Creek.
016	Borrow Area Pond, Latitude 39° 32' 25", Longitude 110° 23' 45". Sedimentation pond containing runoff from soil borrow area. Discharge to Icelander Creek.

017	Phase II Landfill Sedimentation Pond, Latitude 39º 32' 50", Longitude 110º 23' 45". Sedimentation pond to contain runoff from the Phase II ash landfill area. Discharge is to Icelander Creek.
018	The #2 Ash Landfill Sedimentation Pond, Latitude 39° 32' 18.3" N, Longitude 110° 23' 10" W. Sedimentation pond to contain runoff from the #2 Ash Landfill area. Discharge is to Icelander Creek.

B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately and lasting through the life of this permit, there shall be no acute or chronic toxicity as defined in *Part VII* of this permit.

2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 002, 003, 007, 008, 009, 012, 013, 014, 016, 017, and 018. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter, Units a*	Effluent Limitations a*				Monitoring Requirements a*	
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, MGD *b						
Outfall 002	Report	--	--	Report	Monthly	Measured
Outfall 003	Report	--	--	Report	Monthly	Measured
Outfall 007	0.12	--	--	Report	Monthly	Measured
Outfall 008	0.13	--	--	Report	Monthly	Measured
Outfall 009	0.14	--	--	Report	Monthly	Measured
Outfall 012	0.29	--	--	Report	Monthly	Measured
Outfall 013	0.21	--	--	Report	Monthly	Measured
Outfall 014	0.09	--	--	Report	Monthly	Measured
Outfall 016	0.45	--	--	Report	Monthly	Measured
Outfall 017	0.15	--	--	Report	Monthly	Measured
Outfall 018	0.17	--	--	Report	Monthly	Measured
Oil & Grease, mg/L *c						
Outfall 002	--	--	--	10	Monthly	Grab
Outfall 003	--	--	--	10	Monthly	Grab
Outfall 007	--	--	--	10	Monthly	Visual/Grab
Outfall 008	--	--	--	10	Monthly	Visual/Grab

Outfall 009	--	--	--	10	Monthly	Visual/Grab
Outfall 012	--	--	--	10	Monthly	Visual/Grab
Outfall 013	15	--	--	20	Monthly	Grab
Outfall 014	15	--	--	20	Monthly	Grab
Outfall 016	--	--	--	10	Monthly	Visual/Grab
Outfall 017	15	--	--	20	Monthly	Grab
Outfall 018	15	--	--	20	Monthly	Grab
TSS, mg/L						
Outfall 002	25	35	--	--	Monthly	Grab
Outfall 003	25	35	--	--	Monthly	Grab
Outfall 007	25	35	--	70	Monthly	Grab
Outfall 008	25	35	--	70	Monthly	Grab
Outfall 009	25	35	--	70	Monthly	Grab
Outfall 012	25	35	--	70	Monthly	Grab
Outfall 013	25	35	--	100	Monthly	Grab
Outfall 014 *d	25	35	--	50	Monthly	Grab
Outfall 016	25	35	--	70	Monthly	Grab
Outfall 017	25	35	--	100	Monthly	Grab
Outfall 018	25	35	--	100	Monthly	Grab
TDS, mg/L *e	--	--	--	1650	Monthly	Grab
TDS, tons/day *e	--	--	--	1.0	Monthly	Grab
pH, standard units	--	--	6.5	9.0	Monthly	Grab
DO, mg/L	--	--	5.0	--	Monthly	Grab
Total Iron, mg/L						
Outfall 002	--	--	--	1.00	Monthly	Grab
Outfall 003	--	--	--	1.00	Monthly	Grab
Outfall 007	--	--	--	1.00	Monthly	Grab
Outfall 008	--	--	--	1.00	Monthly	Grab
Outfall 009	--	--	--	1.00	Monthly	Grab
Outfall 012	--	--	--	1.00	Monthly	Grab
Outfall 016	--	--	--	1.00	Monthly	Grab
Total Chromium, mg/L						
Outfall 017	0.03	--	--	0.03	Monthly	Grab
Outfall 018	0.03	--	--	0.03	Monthly	Grab
Total Zinc, mg/L						
Outfall 017	0.3	--	--	0.3	Monthly	Grab
Outfall 018	0.3	--	--	0.3	Monthly	Grab
Sanitary Waste *f	--	--	--	None	Monthly	Visual

*a See Definitions, *Part VII*, for definition of terms.

*b Flow measurements of the effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. If the rate of discharge is controlled, the rate and duration of discharge shall be reported. The only

discharge from outfalls 002 and 003 would be for essential maintenance from the deep-water wells.

*c With the exception of Outfalls 002, 003, 013, 014, 017, and 018 monitoring for Oil & Grease shall be a visual test performed at least once per month. If any oil and/or grease sheens are observed visually, then a sample of the effluent shall be taken immediately and that sample shall not exceed 10 mg/L. In addition to the monthly sampling requirement for Oil & Grease at Outfalls 002, 003, 013, 014, 017 and 018, a sample for Oil & Grease shall also be immediately taken whenever sheen is observed on the effluent or there is another reason to believe oil and grease is present.

*d Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10-year 24-hour precipitation event shall not be subject to a TSS daily maximum of 50 mg/L.

*e In addition to the TDS concentration limitation, the total amount of TDS shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.

*f There shall be no visible sheen or floating solids or visible foam in other than trace amounts as observed in the effluent discharge and there shall be no discharge of any sanitary wastes.

3. Samples collected in compliance with the monitoring requirements specified above shall be collected at the outfalls identified in Part I.A.1 prior to mixing with the receiving water.

4. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 007, 008, 009, 012 and 016 substitute the following limitation for the TSS limitations contained in *Part I.C.1,* provided the facility has been designed, constructed and operated to adequately treat up to the 10-year, 24 hour precipitation event:

Effluent Characteristics	Daily Minimum	Daily Maximum
Settleable solids (SS), milliliter/liter	--	0.5

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.C.1*. (excepting TSS). Such analyses shall be conducted on either grab or composite samples.

Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 007, 008, 009, 012 and 016, comply with the following limitation instead of the otherwise applicable limitations contained in *Part I.D.1*:

Effluent Characteristics	Daily Minimum	Daily Maximum
pH, SU	6.5	9.0

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for settleable solids and for all permitted parameters specified under *Part I.C.1*. Such analyses shall be conducted on either grab or composite samples.

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.C.3*.

5. Based on 40 CFR 423.15 (New Source Performance Standards for Steam Electric Power Generating Point Source Category) there shall be no discharge of polychlorinated biphenyl compounds (PCBs), such as those commonly used in transformer fluid, at any of the discharge points directly associated with the steam electric power generation facility (Outfalls 013, 014, 017, and 018).

6. At Outfalls 017 and 018, based upon 40 CFR 423.15(j)(1), there shall be no detectable amounts of the 126 priority pollutants in the effluent. Also, based on 40 CFR 423.15(j)(3), instead of monitoring for these pollutants directly, SCA may use engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR 136.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports if required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G*), and submitted by NetDMR, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

* Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. INDUSTRIAL PRETREATMENT REQUIREMENTS

A. Discharge to POTW. Any wastewaters discharged to a Publicly Owned Treatment Works (POTW), as an Indirect Discharge, which includes hauled waste, are subject to Federal, State and local Pretreatment Standards and Pretreatment Requirement. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply 40 CFR Section 403, the *Utah Administrative Code R317-8-8*, and any Pretreatment Standards and Pretreatment Requirement developed by the POTW accepting the wastewater. At a minimum the discharge, into a POTW, must met the requirements of Part II of the permit.

B. Hazardous Waste Notification. 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).

C. General and Specific Prohibitions.

1. General Prohibitions. The permittee may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph 2. of this section apply to the introducing pollutants into a POTW whether or not the permittee is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Standard and Pretreatment Requirement.

2. Specific Prohibitions. The following pollutants shall not be introduced into a POTW:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140˚F (60˚C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104˚F (40˚C));

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   g. Pollutants, which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;

   h. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or

   i. Any pollutant that causes pass through or interference at the POTW.

   j. Any specific pollutant which exceeds any local limitation established by the POTW.

D. Definitions. For this section the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.

2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

   a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

   b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

3. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

4. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

5. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:

   a. Has a process wastewater flow of 25,000 gallons or more per average work day;

   b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

   c. Is subject to Categorical Pretreatment Standards, or

   d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

6. *User or Industrial User (IU)* means a source of Indirect Discharge.

III. STORM WATER REQUIREMENTS

A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

IV. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under Utah Administrative Code ("UAC") *R317-2-10*, *UAC R317-8-4.1(10)(d)*, and/or *40 CFR 503* utilizing sufficiently sensitive test methods unless other test procedures have been specified in this permit. Monitoring must be conducted according to the test procedures listed above unless another method is required under 40 CFR subchapters N or O. Sufficiently sensitive test method means: (1) The method minimum level (ML) is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or (2) The method has the lowest ML of the analytical methods approved under *40 CFR part 136* or required under *40 CFR chapter I, subchapter N or O* for the measured pollutant or pollutant parameter as per *40 CFR 122.44(i)(1)(iv)(A).*

C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* and *40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 during business hours, or via the 24-hour answering service (801) 536-4123 as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part V.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part V.H*, *Upset Conditions*.); or,

   d. Violation of a daily discharge limitation for any of the pollutants listed in the permit. For other permit violations which will not endanger health or the environment, DWQ may otherwise be notified during business hours at (801) 536-4300.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected;

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part I.D*, *Reporting of Monitoring Results*.

I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part IV.H.3.*

J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

V. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part V.G*, *Bypass of Treatment Facilities* and *Part V.H*, *Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

      (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

      (3) The permittee submitted notices as required under *section V.G.3*.

   b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections V.G.2.a (1), (2) and (3)*.

3. Notice.

   a. *Anticipated bypass*. Except as provided above in *section V.G.2* and below in *section V.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

      (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

      (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

      (3) Description of specific measures to be taken to minimize environmental and public health impacts;

      (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

      (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

      (6) Any additional information requested by the Director.

   b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section V.G.3.a.(1) through (6)* to the extent practicable.

c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part V.H*, Twenty-Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under *Part IV.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part V.D*, *Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

VI. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 122.29(b); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit nor to notification requirements under Subsection R317-8-4.1(15).

3. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. The permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Director, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VI.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VI.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph *2* above.

N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.

P. Toxicity Limitation - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

VII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act*.

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC_{50}").

5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

6. "Chronic toxicity" occurs when the IC_{25}< the applicable percent effluent. The percent effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as percent effluent.

7. "IC_{25}" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

8. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous sample volume, with sample collection rate proportional to flow rate.

9. "CWA" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

11. "EPA," means the United States Environmental Protection Agency.

12. "Director," means Director of the Division of Water Quality.

13. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

14. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

15. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

16. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

FACT SHEET AND STATEMENT OF BASIS
SUNNYSIDE COGENERATION ASSOCIATES
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
DISCHARGE RENEWAL PERMIT
UPDES PERMIT NUMBER: UT0024759
MINOR INDUSTRIAL FACILITY

FACILITY CONTACT INFORMATION

Person Name:	Rusty Netz
Position:	Environmental Engineer
Phone Number:	(435) 888-4476
Person Name:	Gerald Hascall
Position:	Plant Manager
Phone Number:	(435) 888-4476
Facility Location:	One Power Plant Road Sunnyside, UT 84539
Mailing Address:	Sunnyside Cogeneration Associates PO Box 10 East Carbon, UT 84520

DESCRIPTION OF FACILITY

Sunnyside Cogeneration Associates (SCA) is a steam electric power generating facility, with approximately 51 net megawatts in generating capacity. SCA has a Standard Industrial Classification (SIC) code 4911, for electric power generation. The facility is located just south of State Highway 123 near the town of Sunnyside in Carbon County, Utah. SCA utilizes coal as a fuel source, which is transported from former coal mining refuse piles, and utilizes nearby water supply sources for cooling water.

Cooling water is primarily obtained by SCA from nearby ground water wells, but could also be obtained from surface waters like Grassy Trail Creek if it flowed consistently. Water is pumped from the wells and stored in two large reservoirs near the plant; one 20 million gallons in size and the other 40 million gallons in size. Cooling water from the reservoirs is treated with acid for pH control before use in the cooling system. The cooling water is recycled a number of times, which requires the addition of a phosphate based anti-scaling chemical, an oxygen scavenger, acid for pH control, and sodium hypochlorite to prevent biological growth. Neither of the two on-site reservoirs discharge off-site to any surface waters.

Cooling tower blow-down water is continually recirculated to a clarifier for solids removal. These solids are pumped at a rate of 30 gallons per minute (gpm) to the water thickener. From the water thickener the solids are pumped to the ash silo and used for ash conditioning. All of the ash, such as the fly ash and bottom ash are transported to the ash silo. Material is then trucked from the ash silo to the ash landfill site for permanent on-site disposal.

SCA is considered a zero-discharge facility because there are no direct discharges of industrial wastewater, including water from the cooling tower or boiler blow-down, to any on-site sedimentation ponds or to any off-site surface water conveyances. SCA maintains this UPDES Permit for the potential discharges associated with the sedimentation ponds and other permitted outfalls as appropriate.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The only change proposed with this renewal permit is the removal of the previous Stormwater permit provisions, which are now being managed through separate UPDES Stormwater permit coverage as described further in the **STORMWATER** section of this Fact Sheet. All other permit provisions and limitations remain unchanged.

DISCHARGE INFORMATION

DESCRIPTION OF DISCHARGE OUTFALL

SCA has a total of eleven permitted discharge outfalls. There were no discharges from any outfalls over the last permit cycle and there have only been a total of four discharges from this facility in the last 25 years due to storms greater than a 10-year/24-hour storm event. A description of the permitted discharging outfalls are as follows:

Outfall Number	Location of Discharge Outfall
002	Water Supply Pipeline, Latitude 39° 35' 50", Longitude 110° 22' 42". Water from the deep water well is conveyed via the water supply pipeline discharged into Grassy Trail Creek.
003	Water Supply Pipeline, Latitude 39° 32' 58", Longitude 110° 23' 32". Outfall for pipe line just before entrance to clean water pond. Outfall is to Grassy Trail Creek.
007	Rail Cut Pond, Latitude 39° 32' 52", Longitude 110° 23' 48". Surface runoff discharged from sedimentation pond to Icelander Creek.
008	Old Coarse Refuse Pond, Latitude 39° 32' 20", Longitude 110° 23' 03". Surface runoff discharged from sedimentation pond to Icelander Creek.
009	Pasture Pond, Latitude 39° 32" 36", Longitude 110° 23' 29". Surface runoff discharged from sedimentation pond to Icelander Creek.
012	Coarse Refuse Toe Pond, Latitude 39° 32' 28", Longitude 110° 23' 58". Surface runoff discharged from sedimentation pond to Icelander Creek.
013	Facility Sedimentation Pond, Latitude 39° 32' 46", Longitude 110° 23' 49". Sedimentation pond to contain runoff from the Cogeneration facility. Discharge to Icelander Creek.

014	Coal Pile Sedimentation Pond, Latitude 39° 32' 45", Longitude 110° 23' 36". Sedimentation Pond to contain runoff from the coal pile. Discharge to Icelander Creek.
016	Borrow Area Pond, Latitude 39° 32' 25", Longitude 110° 23' 45". Sedimentation pond containing runoff from soil borrow area. Discharge to Icelander Creek.
017	Phase II Landfill Sedimentation Pond, Latitude 39° 32' 50", Longitude 110° 23' 45". Sedimentation pond to contain runoff from the Phase II ash landfill area. Discharge is to Icelander Creek.
018	The #2 Ash Landfill Sedimentation Pond, Latitude 39° 32' 18.3" N, Longitude 110° 23' 10" W. Sedimentation pond to contain runoff from the #2 Ash Landfill area. Discharge is to Icelander Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION
The outfalls from SCA flow directly into Grassy Trail Creek and Icelander Creek, which are classified as 2B, 3C and 4 according to *Utah Administrative Code (UAC) R317-2-13* as follows:

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 3C -- Protected for non-game fish and other aquatic life, 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
In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *Utah Administrative Code* (*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*) as applicable. In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits or multiple limits have been developed, Best Professional Judgment (BPJ) of the permitting authority may be used where applicable. Best Professional Judgment or BPJ, refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the Wasteload Analysis (WLA), which incorporates Secondary Treatment Standards, Water Quality Standards (WQS), including Total Maximum Daily Load (TMDL)

impairments as appropriate, Antidegradation Review (ADR) 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 completed as appropriate. An ADR Level I review was performed and concluded that an ADR Level II review was not required this time since there are no proposed increases in flow or concentrations from the existing discharge operations. The WLA indicates that the effluent limitations will be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The WLA and ADR are attached as an addendum to this Fact Sheet.

The following list is the basis of the effluent limitations for the applicable permit parameters:

1) Daily minimum and daily maximum limitations for pH are derived from Utah Water Quality Standards found in *UAC R317-2-14*.

2) Based on *UAC R317-1-3.2*, Utah Secondary Treatment Standards, TSS shall continue to be limited to 25 mg/L as a thirty-day average and to 35 mg/L as a seven-day average at all discharge points. Although Utah Secondary Treatment Standards no longer apply to non-POTW facilities, as part of a 2020 rule change in *UAC R317-1-3*, all TSS limitations have remained in the permit in lieu of their removal and subsequent replacement based upon BPJ of the permitting authority to be consistent with past permits. In the future, if SCA wants to have only the TSS Secondary Treatment Standards removed and replaced with an applicable Turbidity Standard found in *UAC R317-2-14*, they may petition the Director with a request to do so.

   Based on *40 CFR 434, Subpart D (Alkaline Mine Drainage)*, total suspended solids (TSS) shall have a daily maximum effluent limitation of 70 mg/L at discharge points 007, 008, 009, 012 and 016, which are associated with the use of coal at the facility. TSS shall be limited to a daily maximum effluent limitation of 100 mg/L at outfalls 013, 017 and 018 based on *40 CFR 423.15(c).* TSS shall be limited to a daily maximum effluent limitation of 50 mg/L at outfall 014 based on *40 CFR 423.15(k)*. Based on *40 CFR 423.15(l),* any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 Year, 24-hour rainfall event shall not be subject to the limitations in *40 CFR 423.15(k).*

3) The Dissolved oxygen (DO) concentration effluent limit of 5.0 mg/L as a thirty-day minimum average remains unchanged and is based on the previous and current WLAs.

4) The effluent limitation for total iron is based upon the WQS of 1.0 mg/L for dissolved iron found in *UAC R317-2-14* and is a more protective limitation since dissolved iron is a component of total iron. Based on the WQS and BPJ of the permitting authority, this limitation will be retained in the renewal permit for all applicable outfalls as appropriate.

5) Based on *40 CFR 423.15(j) (1)* total chromium and total zinc effluent limits need to be included in the permit at Outfalls 017 and 018 because any discharges from these ponds collect runoff from the ash landfills, which are recipients of solids latent with clarified cooling tower blow-down water. Since there is not a WQS for total chromium, and since the previous permit had an effluent limit of 0.03 mg/L, which is more stringent than the categorical limit contained in *40 CFR 423.15(j)(1*), the effluent limit from the previous permit will be retained in this permit. Therefore, based upon BPJ of the permitting authority, total chromium will once again be limited to 0.03 mg/L. Additionally, since there is a WQS for total zinc, which is more stringent than the categorical limit contained in *40 CFR 423.15(j)(1*), the effluent limit from the WQS and previous permit will also be retained in

this permit. Therefore, based upon BPJ of the permitting authority, total zinc will once again be limited to 0.3 mg/L.

6) The concentration limitation for Total Dissolved Solids (TDS) is unchanged as derived from the previous 2019 permit & WLA, which is a more protective limitation than was derived from the current 2023 WLA. The existing TDS mass loading limit remains unchanged as well and is based upon the Colorado River Basin Salinity Control Forum Policies as authorized in UAC R317-2-4 to further control salinity within the Colorado River Basin of Utah.

7) Based on *40 CFR 423.15,* discharge points 013, 014, 017, and 018 shall be limited to an oil and grease concentration of 15.0 mg/L as an average of daily values for 30 consecutive days. The maximum value for any one day shall not exceed 20 mg/L. Based on BPJ of the permitting authority to be consistent with the limits and monitoring requirements from the previous permit, an oil and grease limitation of 10 mg/L will be retained in the permit for the remaining outfalls 002, 003, 007, 008, 009, 012, and 016. Also based on BPJ, oil and grease shall initially be limited visually at Outfalls 007, 008, 009 and 016. If an oil sheen or grease sheen is observed, then a sample must be taken and the concentration of oil and grease shall not exceed 10 mg/L.

8) The flow limitations for each of the outfalls remain unchanged and are based upon the total design flow of all discharge outfalls as provided previously by SCA.

9) Also based on *40 CFR 434, Subpart D,* special provisions are applicable to the coal related discharge points (Outfalls 007, 008, 009, 012 and 016). Any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitation instead of the otherwise applicable limitations for TSS:

Parameter	Effluent Limitation
Settleable Solids	0.5 ml/L

Any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply only with the following limitations instead of the otherwise applicable limitations:

Parameter	Effluent Limitation
pH	6.5 to 9.0 S.U.

The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event.

The SCA permit parameters of concern (POCs) remain consistent with previous permits. Therefore, as listed above and included in the permit; TDS, TSS, Iron, Chromium, Zinc, and pH are once again the primary POCs for this renewal permit. Other potential POCs evaluated are chlorine and other priority pollutants as described further below.

Based on *40 CFR 423.15(j)(2),* neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Director

that the units in a particular location cannot operate at or below this level of chlorination. Outfalls 013 and 014 are from storm water run-off sedimentation ponds, which do not have a source of chlorine and have never discharged to date. Since no chlorine is directly discharged to any of the outfall locations, the only possibility of discharging trace amounts of chlorine is from the ash landfills (Outfalls 017and 018). Cooling tower blow down is first mixed with a water clarifier, for solids removal, and the water is reused in the cooling tower. The solids are transported to the ash landfills. It is highly unlikely that any chlorine will leach from the ash landfill during a runoff event, fill the sedimentation pond and be discharged via Outfalls 017 or 018. Therefore, based upon BPJ of the permitting authority and to be consistent with previous permits, chlorine limitations have not been included for Outfalls 013, 014, 017 or 018.

Based on *40 CFR 423.15 (New Source Performance Standards for Steam Electric Power Generating Point Source Category)* there shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used in transformer fluid at any of the discharge points directly associated with the steam electric power generation facility (Outfalls 013, 014, 017, and 018). PCBs have not been included previously as a potential POC as there are no known uses at the SCA facility and there have been no changes in applicable facility operations since the last permit renewal. Therefore, based upon BPJ of the permitting authority, PCBs have once again not been included in the permit.

At Outfalls 017 and 018, based upon *40 CFR 423.15(j)(1)*, there shall be no detectable amounts of the 126 priority pollutants in the effluent. Also, based on *40 CFR 423.15(j)(3)*, instead of monitoring for these 126 priority pollutants directly, SCA may use engineering calculations to demonstrate that the regulated pollutants are not detectable in any final effluent discharges by utilizing the appropriate analytical calculation methods described therein.

Total Maximum Daily Load (TMDL Requirements)
According to the Utah 2022 303(d) Water Quality Assessment Report, "Final 2022 Integrated Report on Water Quality", the receiving water for the discharge, "*Price River and tributaries from confluence with Green River to confluence with Soldier Creek* (*Grassy Trail Creek Lower*: *UT14060007-012_00*)" was listed as "Insufficient Data" for determining impairments. However, a TMDL was previously completed for the West Colorado Watershed and approved by EPA in 2004 (*Price River, San Rafael River and Muddy Creek TMDLs for Dissolved Solids – West Colorado Watershed Management Unit, Utah, April 2004*), which established a TDS site specific standard of 3000 mg/L for the Price River and associated tributaries in the area where Grassy Trail Creek enters the Price River. For more information, the TMDL can be found at https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-daily-loads/DWQ-2015-006611.pdf. TDS effluent discharge requirements remain unchanged in the permit and also remain consistent with EPA's Anti-backsliding policy requirement as appropriate.

Reasonable Potential Analysis
Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required. Because the SCA facility rarely discharges there is inadequate data for use in a RP. Additionally, SCA "has limited to no industrial contributions" to their waste stream and is considered a "zero discharge" facility as mentioned previously.

Therefore, no RP currently exists at the facility for the existing permit parameters and/or the identified POCs and a more quantitative RP analysis was not applicable at this time. Following the RP Guidance, the result for this permit renewal evaluation is *RP Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit*.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit requires that the self-monitoring reports are to be submitted monthly as appropriate, and on Discharge Monitoring Report (DMR) forms due 28 days after the end of each monitoring period. Effective January 1, 2017, monitoring results must be submitted electronically using NetDMR unless the permittee has successfully petitioned for an exception. Lab reports for biomonitoring, as well as lab reports for metals and toxic organics, if required in the future must be submitted with the applicable DMRs. A review of the past 5 years of DMR data reveals that the SCA facility has had no discharges and no permit violations and therefore, should be able to continue complying with the permit provisions as included herein.

The permit effluent limitations and self-monitoring and reporting requirements are as follows:

Parameter, Units a*	Effluent Limitations a*				Monitoring Requirements a*	
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, MGD *b						
Outfall 002	Report	--	--	Report	Monthly	Measured
Outfall 003	Report	--	--	Report	Monthly	Measured
Outfall 007	0.12	--	--	Report	Monthly	Measured
Outfall 008	0.13	--	--	Report	Monthly	Measured
Outfall 009	0.14	--	--	Report	Monthly	Measured
Outfall 012	0.29	--	--	Report	Monthly	Measured
Outfall 013	0.21	--	--	Report	Monthly	Measured
Outfall 014	0.09	--	--	Report	Monthly	Measured
Outfall 016	0.45	--	--	Report	Monthly	Measured
Outfall 017	0.15	--	--	Report	Monthly	Measured
Outfall 018	0.17	--	--	Report	Monthly	Measured
Oil & Grease, mg/L *c						
Outfall 002	--	--	--	10	Monthly	Grab
Outfall 003	--	--	--	10	Monthly	Grab
Outfall 007	--	--	--	10	Monthly	Visual/Grab
Outfall 008	--	--	--	10	Monthly	Visual/Grab
Outfall 009	--	--	--	10	Monthly	Visual/Grab
Outfall 012	--	--	--	10	Monthly	Visual/Grab
Outfall 013	15	--	--	20	Monthly	Grab
Outfall 014	15	--	--	20	Monthly	Grab
Outfall 016	--	--	--	10	Monthly	Visual/Grab
Outfall 017	15	--	--	20	Monthly	Grab
Outfall 018	15	--	--	20	Monthly	Grab
TSS, mg/L						
Outfall 002	25	35	--	--	Monthly	Grab
Outfall 003	25	35	--	--	Monthly	Grab
Outfall 007	25	35	--	70	Monthly	Grab
Outfall 008	25	35	--	70	Monthly	Grab
Outfall 009	25	35	--	70	Monthly	Grab
Outfall 012	25	35	--	70	Monthly	Grab
Outfall 013	25	35	--	100	Monthly	Grab

Outfall 014 *d	25	35	--	50	Monthly	Grab
Outfall 016	25	35	--	70	Monthly	Grab
Outfall 017	25	35	--	100	Monthly	Grab
Outfall 018	25	35	--	100	Monthly	Grab
TDS, mg/L *e	--	--	--	1650	Monthly	Grab
TDS, tons/day *e	--	--	--	1.0	Monthly	Grab
pH, standard units	--	--	6.5	9.0	Monthly	Grab
DO, mg/L	--	--	5.0	--	Monthly	Grab
Total Iron, mg/L						
Outfall 002	--	--	--	1.00	Monthly	Grab
Outfall 003	--	--	--	1.00	Monthly	Grab
Outfall 007	--	--	--	1.00	Monthly	Grab
Outfall 008	--	--	--	1.00	Monthly	Grab
Outfall 009	--	--	--	1.00	Monthly	Grab
Outfall 012	--	--	--	1.00	Monthly	Grab
Outfall 016	--	--	--	1.00	Monthly	Grab
Total Chromium, mg/L						
Outfall 017	0.03	--	--	0.03	Monthly	Grab
Outfall 018	0.03	--	--	0.03	Monthly	Grab
Total Zinc, mg/L						
Outfall 017	0.3	--	--	0.3	Monthly	Grab
Outfall 018	0.3	--	--	0.3	Monthly	Grab
Sanitary Waste *f	--	--	--	None	Monthly	Visual

*a See Definitions, *Part VII*, for definition of terms.

*b Flow measurements of the effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. If the rate of discharge is controlled, the rate and duration of discharge shall be reported. The only discharge from outfalls 002 and 003 would be for essential maintenance from the deep-water wells.

*c With the exception of Outfalls 002, 003, 013, 014, 017, and 018 monitoring for Oil & Grease shall be a visual test performed at least once per month. If any oil and/or grease sheens are observed visually, then a sample of the effluent shall be taken immediately and that sample shall not exceed 10 mg/L. In addition to the monthly sampling requirement for Oil & Grease at Outfalls 002, 003, 013, 014, 017 and 018, a sample for Oil & Grease shall also be immediately taken whenever sheen is observed on the effluent or there is another reason to believe oil and grease is present.

*d Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10-year 24-hour precipitation event shall not be subject to the TSS daily maximum of 50 mg/L.

*e In addition to the TDS concentration limitation, the total amount of TDS shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.

*f There shall be no visible sheen or floating solids or visible foam in other than trace amounts as observed in the effluent discharge and there shall be no discharge of any sanitary wastes.

STORM WATER

As mentioned previously, the Storm Water provisions have been omitted from this UPDES permit as part of a programmatic separation of UPDES permit requirements. However, based on the Standard Industrial Classification (SIC) code and the type of industrial activities at the facility, the permittee may be required to maintain separate permit coverage, or an appropriate exclusion, under the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000).

If the SCA facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and permit coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Additionally, permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction. Information on storm water permit requirements can be found at http://stormwater.utah.gov.

PRETREATMENT REQUIREMENTS

Any process wastewater that the facility may discharge to a Publicly Owned Treatment Works (POTW), as an Indirect Discharge, which includes hauled waste, the permittee will be subject to federal, state and local pretreatment regulations. Based on section 307 of the Clean Water Act, the permittee shall comply with all applicable Federal Pretreatment Standards and Pretreatment Requirements promulgated in 40 CFR Section 403, the State Pretreatment Standards and Pretreatment Requirements found in UAC R317-8-8, and any Pretreatment Standards and Pretreatment Requirements developed by the POTW accepting the waste.

In addition, per *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 a discharge of 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 Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018 (DWQ WET policy). 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.

SCA is a minor industrial facility that historically only rarely discharges storm water on an intermittent basis as a result of large storm events. As stated previously, SCA is considered a zero-discharge facility because there are no direct discharges of industrial wastewater, including water from the cooling tower or boiler blow-down, to any on-site sedimentation ponds or to any off-site surface water conveyances. Based on these considerations, there is no reasonable potential for toxicity in the permittee's discharge as per DWQ WET Policy. As such, there will be no numerical WET limitations or WET monitoring requirements in this renewal permit. However, the permit will once again contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge at any time in the future.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years as authorized in UAC R317-8-5.1(1).

PERMIT DRAFTED & REVIEWED BY:

Drafted and reviewed by
Jeff Studenka, Discharge
Lonnie Shull, Biomonitoring
Jennifer Robinson, Pretreatment
Jordan Bryant, Storm Water
Amy Dickey, TMDL/Watershed Protection
Chris Shope, Wasteload Analysis & ADR
Utah Division of Water Quality, (801) 536-4300
June 21, 2023

PUBLIC NOTICE INFORMATION (updated October 5, 2023)

Began: August 31, 2023
Ended: September 29, 2023

The Public Notice of the draft permit and the draft permit documents were published on the DWQ website for at least 30 days as required per UAC R317-8-6.5. During the public comment period provided under UAC R317-8-6.5, any interested person may submit written comments on the draft permit and/or 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 UAC R317-8-6.12. No comments were received during the public notice period. Staff recommends re-issuance of the permit as drafted.

ADDENDUM TO FSSOB

ATTACHMENT: I. Wasteload Analysis and Antidegradation Review

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ATTACHMENT 1

Wasteload Analysis & Antidegradation Review

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

Date: **June 1, 2023**

Prepared by: **Christopher L. Shope**
Standards and Technical Services

Facility: **Sunnyside Cogeneration Associates (SCA)**
UPDES Permit No. UT-0024759

Receiving water: **Grassy Trail Creek > Icelander Creek > Price River (2B, 3C, 4)**

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

Discharge

There are eleven UPDES discharge outfalls with nine design flow effluent discharges to Icelander Creek. However, no effluent discharge is expected during this permit cycle.

Table 1. UPDES Sunnyside Cogeneration Discharge Points

UPDES Discharge	Description	Receiving Water	Maximum Design Flow (MGD)
002	Water Supply Pipeline	Grassy Trail Creek	0.0
003	Water Supply Pipeline	Grassy Trail Creek	0.0
007	Rail Cut Sedimentation Pond	Icelander Creek	0.12
008	Old Coarse Refuse Road Sedimentation Pond	Icelander Creek	0.13
009	Pasture Sedimentation Pond	Icelander Creek	0.14
012	Coarse Refuse Toe Sedimentation Pond	Icelander Creek	0.29
013	Cogeneration Facility Sedimentation Pond	Icelander Creek	0.21
014	Coal Pile Sedimentation Pond	Icelander Creek	0.09
016	Borrow Area Sedimentation Pond	Icelander Creek	0.45
017	SCA #1 Ash Landfill Sedimentation Pond	Icelander Creek	0.15
018	SCA #2 Ash Landfill Sedimentation Pond	Icelander Creek	0.17
		Total	**1.76**

The design flow effluent discharge, presumably, the mean monthly design discharge, is 1.76 MGD for the facility.

Receiving Water

Icelander and Grassy Trail Creeks are tributary to the Price River. Per UAC R317-2-13.1(b), the designated beneficial use of the affected assessment unit in the immediate area is: "*Price River and tributaries from confluence with Green River to confluence with Soldier Creek*" and are classified as 2B, 3C, 4.

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*

- *Class 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.*

- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Because the receiving water, both Icelander and Grassy Trail Creeks, are intermittent drainages or ephemeral washes at the point of discharge and there are limited monitoring locations upstream, the 7Q10 critical flow is assumed to be zero. Effluent discharge limits revert to end of pipe water quality standards.

Very limited receiving water quality data is available as Icelander Creek is intermittent. Discharge data is also very limited. Facility only discharges rarely in response to very large storm events. Only discharge in the recent permit cycles was in response to a greater than 100-year return interval storm. Ambient, upstream, background receiving water quality was interrogated using several DWQ monitoring locations throughout the area. Monitoring location DWQ 4932020 SUNNYSIDE COAL CO 015 was used for background in-situ parameters, monitoring location DWQ 4932150 SUNNYSIDE COGENERATION UPPER SEEP was used for metals water quality analysis, and monitoring location DWQ 4932050 SUNNYSIDE COGENERATION ASSOC 004 was used to estimate upstream boron concentrations and nutrients. The average seasonal value was calculated for each constituent, where data was available, in the receiving water. If seasonal information was not available, the average annual value of the parameter was used.

Effluent water quality parameters are typically characterized using the discharge monitoring report (DMR) provided by the facility or monitoring location data collected from the effluent. There is no data available for effluent water temperature, BOD, total ammonia, total residual chlorine, or TDS and therefore, the previous wasteload assessment was utilized.

As per R317-2-14, Table 2.14.1 (Footnote 4), the Price River and tributaries from confluence with Green River to the confluence with Soldier Creek, has a site-specific standard for total dissolved solids of 3,000 mg/l. This value was the basis for the TDS limit contained in the wasteload analysis.

Total Maximum Daily Load (TMDL)

According to the Utah's Final 2022 Integrated Report on Water Quality dated December 9, 2022, the receiving water for the discharge, "*Price River and tributaries from confluence with Green River to confluence with Soldier Creek* (*Grassy Trail Creek Lower*: *UT14060007-012_00*)" was listed as "Insufficient Data".

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions is 2500 ft, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone.

Since the receiving water is an ephemeral or intermittent creek, the critical low flow is considered zero, no mixing zone analysis was considered. Effluent limits revert to end of pipe standards.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were determined in consultation with the UPDES Permit Writer, the Utah Water Quality Assessment Reports, and the industry SIC codes from https://www.osha.gov/data/sic-search. The potential parameters of concern for this facility include: Temperature, Total Dissolved Solids, metals, and major ions.

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

Table 2: WET Limits for IC_{25}

Outfall	Percent Effluent
Outfall 001	100%

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ, 2021). Therefore, no mixing zone is applied and end of pipe effluent limits are required. The mass balance analysis is summarized in the Wasteload Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. However, temperature and ammonia concentration of the effluent were not provided. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al., 2002). The analysis is summarized in the Wasteload Addendum.

Water quality models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is NOT required for this facility as the UPDES permit is being renewed and there is no increase in load or concentration over that which was approved in the previous permit, per UAC R317-2-3.

Documents:

Wasteload Document*: Sunnyside_Cogen_WLA_2023.docx*
Wasteload Analysis and Addendums: *Sunnyside_Cogen_WLA_2023.xlsm*

References:

Lewis, B., J. Saunders, and M. Murphy. 2002. Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits. University of Colorado, Center for Limnology.

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0.* *https://documents.deq.utah.gov/water-quality/standards-technical-services/DWQ-2021-000684.pdf*

Utah Division of Water Quality. 2022. *Final 2022 Integrated Report on Water Quality.* *https://documents.deq.utah.gov/water-quality/monitoring-reporting/integrated-report/DWQ-2022-002386.pdf*

USEPA, 1986. Quality Criteria for Water ("Gold Book"): Office of Water Regulations and Standards, EPA-440/5-86-001, USEPA, Washington DC. https://www.epa.gov/sites/default/files/2018-10/documents/quality-criteria-water-1986.pdf

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA] = not included in the WLA
Addendum: Statement of Basis

25-May-23
4:00 PM

Facilities: **Sunnyside Cogeneration** **UPDES No: UT-0024759**
Discharging to: **Icelander and Grassy Trail Creeks -> Price River**

I. Introduction

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 [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Icelander and Grassy Trail Creeks -> Price	2B,3C,4
Antidegradation Review:	Level I review completed. Level II review is not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards		
Chronic Total Residual Chlorine (TRC)	0.011	mg/l (4 Day Average)	
	0.019	mg/l (1 Hour Average)	
Chronic Dissolved Oxygen (DO)	5.0	mg/l (30 Day Average)	
	N/A	mg/l (7Day Average)	
	3.0	mg/l (1 Day Average)	
Maximum Total Dissolved Solids	3000.0	mg/l	Background

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration		Load*		1 Hour Average (Acute) Standard Concentration		Load*	
Aluminum	87.00	ug/l**	1.277	lbs/day	750.00	ug/l	11.008	lbs/day
Arsenic	150.00	ug/l	2.202	lbs/day	340.00	ug/l	4.990	lbs/day
Cadmium	2.74	ug/l	0.040	lbs/day	8.73	ug/l	0.128	lbs/day
Chromium III	308.71	ug/l	4.531	lbs/day	6458.76	ug/l	94.798	lbs/day
ChromiumVI	11.00	ug/l	0.161	lbs/day	16.00	ug/l	0.235	lbs/day
Copper	35.32	ug/l	0.518	lbs/day	60.76	ug/l	0.892	lbs/day
Iron					1000.00	ug/l	14.677	lbs/day
Lead	23.12	ug/l	0.339	lbs/day	593.27	ug/l	8.708	lbs/day
Mercury	0.0120	ug/l	0.000	lbs/day	2.40	ug/l	0.035	lbs/day
Nickel	194.88	ug/l	2.860	lbs/day	1752.85	ug/l	25.727	lbs/day
Selenium	4.60	ug/l	0.068	lbs/day	20.00	ug/l	0.294	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	55.18	ug/l	0.810	lbs/day
Zinc	448.55	ug/l	6.583	lbs/day	448.55	ug/l	6.583	lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 474.91 mg/l as CaCO3

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	**Load***	**Concentration**	**Load***
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.07 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			3000.0 mg/l	22.02 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	63.13 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	3229.79 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	67.53 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.09 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and

QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.0	16.0	8.4	0.10	0.50	10.39	0.00	1968.0
Fall	0.0	14.4	8.2	0.10	0.50	---	0.00	1471.7
Winter	0.0	10.7	8.2	0.10	0.50	---	0.00	1471.7
Spring	0.0	13.6	8.4	0.10	0.50	---	0.00	1471.7

Dissolved Metals	Al ug/l	As ug/l	Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l
All Seasons	15.00	2.50	0.50	2.50	2.65*	19.40	6940.0	1.50

Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l	
All Seasons	0.0000	0.53*	26.00	1.00	62.20	10.0	* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day

Summer	1.76000	17.0	1174.00	8.61450
Fall	1.76000	12.0		
Winter	1.76000	8.0		
Spring	1.76000	13.0		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	1.760 MGD	2.723 cfs
Fall	1.760 MGD	2.723 cfs
Winter	1.760 MGD	2.723 cfs
Spring	1.760 MGD	2.723 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1.76 MGD. If the discharger is allowed to have a flow greater than 1.76 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements LC50 > EOP Effluent [Acute]
IC25 > 100.0% Effluent [Chronic]

Season	Receiving Water Flow (cfs)	Effluent Flow (MGD)	Effluent Flow (cfs)	Combined Flow (cfs)	Totally Mixed	Chronic IC25 % Effluent	Acute LC50 % Effluent
Summer	0.00	1.8	2.7	2.7	YES	100.0%	EOP
Fall	0.00	1.8	2.7	2.7	YES	100.0%	EOP
Winter	0.00	1.8	2.7	2.7	YES	100.0%	EOP
Spring	0.00	1.8	2.7	2.7	YES	100.0%	EOP

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	366.9 lbs/day
Fall	25.0 mg/l as BOD5	366.9 lbs/day
Winter	25.0 mg/l as BOD5	366.9 lbs/day
Spring	25.0 mg/l as BOD5	366.9 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	1.2	mg/l as N	18.0	lbs/day
	1 Hour Avg. - Acute	5.1	mg/l as N	75.5	lbs/day
Fall	4 Day Avg. - Chronic	7.3	mg/l as N	107.0	lbs/day
	1 Hour Avg. - Acute	41.7	mg/l as N	611.8	lbs/day
Winter	4 Day Avg. - Chronic	2.2	mg/l as N	33.0	lbs/day
	1 Hour Avg. - Acute	7.0	mg/l as N	102.8	lbs/day
Spring	4 Day Avg. - Chronic	7.3	mg/l as N	107.0	lbs/day
	1 Hour Avg. - Acute	41.7	mg/l as N	611.8	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.011	mg/l	0.16	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.28	lbs/day
Fall	4 Day Avg. - Chronic	0.011	mg/l	0.16	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.28	lbs/day
Winter	4 Day Avg. - Chronic	0.011	mg/l	0.16	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.28	lbs/day
Spring	4 Day Avg. - Chronic	0.011	mg/l	0.16	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.28	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	3000.4	mg/l	22.02	tons/day
Fall	Maximum, Acute	3000.6	mg/l	22.02	tons/day
Winter	Maximum, Acute	3000.5	mg/l	22.02	tons/day
Spring	4 Day Avg. - Chronic	3000.6	mg/l	22.02	tons/day

Colorado Salinity Forum Limits Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

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Salt Lake City, Utah

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 474.91 mg/l):

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aluminum	N/A		N/A		750.3	ug/l	11.0	lbs/day
Arsenic	150.05	ug/l	1.4	lbs/day	340.1	ug/l	5.0	lbs/day
Cadmium	2.74	ug/l	0.0	lbs/day	8.7	ug/l	0.1	lbs/day
Chromium III	308.82	ug/l	2.9	lbs/day	6,461.1	ug/l	94.8	lbs/day
Chromium VI	11.00	ug/l	0.1	lbs/day	16.0	ug/l	0.2	lbs/day
Copper	35.32	ug/l	0.3	lbs/day	60.8	ug/l	0.9	lbs/day
Iron	N/A		N/A		997.8	ug/l	14.6	lbs/day
Lead	23.13	ug/l	0.2	lbs/day	593.5	ug/l	8.7	lbs/day
Mercury	0.01	ug/l	0.0	lbs/day	2.4	ug/l	0.0	lbs/day
Nickel	194.95	ug/l	1.8	lbs/day	1,753.5	ug/l	25.7	lbs/day
Selenium	4.59	ug/l	0.0	lbs/day	20.0	ug/l	0.3	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	55.2	ug/l	0.8	lbs/day
Zinc	448.69	ug/l	4.3	lbs/day	448.7	ug/l	6.6	lbs/day
Cyanide (free)	5.20	ug/l	0.0	lbs/day	22.0	ug/l	0.3	lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	20.0	Deg. C.	68.1	Deg. F
Fall	18.4	Deg. C.	65.1	Deg. F
Winter	14.7	Deg. C.	58.4	Deg. F
Spring	17.6	Deg. C.	63.6	Deg. F

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration			
	Concentration		Load	
Metals				
Antimony		ug/l		lbs/day
Arsenic		ug/l		lbs/day
Asbestos		ug/l		lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper		ug/l		lbs/day
Cyanide		ug/l		lbs/day
Lead				
Mercury		ug/l		lbs/day
Nickel		ug/l		lbs/day
Selenium				
Silver				
Thallium		ug/l		lbs/day
Zinc				

Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule

Class 4 Acute Agricultural	Class 3 Acute Aquatic Wildlife	Acute Toxics Drinking Water Source	Acute Toxics Wildlife	1C Acute Health Criteria	Acute Most Stringent	Class 3 Chronic Aquatic Wildlife

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Salt Lake City, Utah

	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Aluminum		750.3				750.3	N/A
Antimony				4301.6		4301.6	
Arsenic	100.0	340.1			0.0	100.0	150.1
Asbestos						0.00E+00	
Barium						0.0	
Beryllium						0.0	
Cadmium	10.0	8.7			0.0	8.7	2.7
Chromium (III)		6461.1			0.0	6461.1	308.8
Chromium (VI)	100.0	16.0			0.0	16.00	11.00
Copper	200.1	60.8				60.8	35.3
Cyanide		22.0	220080.8			22.0	5.2
Iron		997.8				997.8	
Lead	100.0	593.5			0.0	100.0	23.1
Mercury		2.40		0.15	0.0	0.15	0.012
Nickel		1753.5		4601.7		1753.5	195.0
Selenium	50.0	20.0			0.0	20.0	4.6
Silver		55.2			0.0	55.2	
Thallium				6.3		6.3	
Zinc		448.7				448.7	448.7
Boron	750.3					750.3	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	750.3	N/A	
Antimony	4301.58		
Arsenic	100.0	150.1	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	8.7	2.7	
Chromium (III)	6461.1	309	
Chromium (VI)	16.0	11.0	
Copper	60.8	35.3	
Cyanide	22.0	5.2	
Iron	997.8		
Lead	100.0	23.1	
Mercury	0.150	0.012	
Nickel	1753.5	195	
Selenium	20.0	4.6	
Silver	55.2	N/A	
Thallium	6.3		
Zinc	448.7	448.7	
Boron	750.28		

Other Effluent Limitations are based upon R317-1.
E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water.

Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is NOT required because the UPDES permit is being renewed and there is no increase in load or concentration over that which was approved in the previous permit.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.
This doesn't apply to facilities that do not discharge to the Colorado River Basin.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

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APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	0.804	10779.494	0.000	6733.652	0.400	0.087

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	1.608	0.000	0.000	32.000	10.071

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	0.287

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Antidegredation Review

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II antidegradation Review is NOT required because the UPDES permit is being renewed and there is no increase in load or concentration over that which was approved in the previous permit.