FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: TONOPAH SOLAR ENERGY, LLC

11 GABBS POLE LINE RD PO BOX 1071
TONOPAH, NV 89049

Permit Number: NS2015505

Permit Type: GROUNDWATER DISCHARGE

Designation: GROUNDWATER

New/Existing: EXISTING

Location: CRESCENT DUNES SOLAR ENERGY PROJECT, NYE
GABBS/POLE-LINE ROAD (STATE ROUTE 89), TONOPAH, NV 89049
LATITUDE: 38.238889, LONGITUDE: -117.363583
TOWNSHIP: 4N, RANGE: 41E, SECTION: 4

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Latitude	Longitude	Receiving Water
001	POND A	External Outfall		38.228426	-117.370665	GROUNDWATER
002	POND B	External Outfall		38.229789	-117.373950	GROUNDWATER
003	POND C	External Outfall		38.231874	-117.376751	GROUNDWATER
004	POND A LEAK DETECTION	Internal Outfall		38.228426	-117.370665	GROUNDWATER
005	POND B LEAK DETECTION	Internal Outfall		38.229789	-117.373950	GROUNDWATER
006	POND C LEAK DETECTION	Internal Outfall		38.231874	-117.376751	GROUNDWATER
007	DISCHARGE TO PONDS A, B, & C	Sum		38.229789	-117.373950	GROUNDWATER
008	HELIOSTAT WASHING	External Outfall		38.238889	-117.363583	GROUNDWATER
009	DUST CONTROL	Land Application Site		38.238889	-117.363583	GROUNDWATER

Permit History/Description of Proposed Action

The Permittee, Tonopah Solar Energy, LLC, operates the Crescent Dunes Solar Energy Project (CDSEP), has applied for a permit renewal of the existing process water reuse permit NS2015505. The CDSEP is located approximately 13.5 miles northwest of Tonopah in Nye County, Nevada. The permit authorizes the CDSEP to discharge up to 0.2 million gallons per day (MGD) of demineralized water for heliostat washing, up to 0.2 MGD of untreated water for dust control, and up to 0.5 MGD of industrial process wastewater to three double-lined evaporation ponds.

This permit was first issued on July 1, 2015, and expired on June 30, 2020; the permit has been administratively continued since.

Facility Overview

The Permittee is authorized to pump a maximum of 1.5 MGD from the three source wells located on site that water is used in dust control and industrial processes. The CDSEP preprocesses the water through a parallel sand filter then demineralized by electo-deionization and reverse osmosis (RO) filtration to be used in steam generation, boiler blowdown, and for washing the heliostat mirrors. The wastewater is pumped into

one of the three double-lined evaporation ponds, that are designed to have an average evaporation rate of 106.18 inches per year. Each of the 10-acre ponds are double-lined with the base layer being a 60-mil high density polyethene (HDPE) liner with a layer of synthetic clay GeoNet layer topped by a 40-mil HDPE liner. The ponds have a leak detection sump that can collect and measure any water that has leaked through the liner, then is pumped back into the primary liner.

The daily maximum flow rate of water used for dust control is limited to 0.2 MGD. The daily maximum flow rate of water used for heliostat washing is also limited to 0.2 MGD, and the daily maximum flow rate of water discharged to the evaporation ponds is limited to 0.5 MGD.

The last Operation and Maintenance (O&M) Manual was received on January 20, 2016, the Permittee is required to provide an updated O&M Manual every 10 years. An O&M Manual will be required within 90 days or three months from the reissuance of this permit.

Outfall Summary
Outfall 001: External Outfall, Pond A freeboard is measured and reported quarterly. A minimum freeboard depth of 3 feet is required.

Outfall 002: External Outfall, Pond B freeboard is measured and reported quarterly. A minimum freeboard depth of 3 feet is required.

Outfall 003: External Outfall, Pond C freeboard is measured and reported quarterly. A minimum freeboard depth of 3 feet is required.

Outfall 004: Pond A Leak Detection is an internal outfall is monitored for gallons per acre per day, and reported quarterly.

Outfall 005: Pond B Leak Detection is an internal outfall is monitored for gallons per acre per day, and reported quarterly.

Outfall 006: Pond C Leak Detection is an internal outfall is monitored for gallons per acre per day, and reported quarterly.

Outfall 007: The sum of discharge to Ponds A, B, & C, is monitored monthly for flow and monitored quarterly for Oil and Grease, potential hydrogen (pH), and Total Dissolved Solids (TDS). The Outfall is also monitored yearly for Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickle (Ni), Selenium (Se), Silver (Ag), Thallium (Tl), and Zinc (Zn).

Outfall 008: Heliostat Washing, the flow rate is monitored and reported monthly.

Outfall 009: Dust Control, is monitored monthly for flow and monitored yearly for Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, and Zn.

Effluent Characterization
The 5 year averages of the reported data for the time period of 2020-2025 are listed below:

Outfall 001: Pond A
Freeboard: 8.37 feet

Outfall 002: Pond B
Freeboard: 8.50 feet

Outfall 003: Pond C
Freeboard: 8.19 feet

Outfall 004: Pond A Leak Detection

0.6 Gallons per Acre per Day

Outfall 005: Pond B Leak Detection
0.92 Gallons per Acre per Day

Outfall 006: Pond C Leak Detection
0.15 Gallons per Acre per Day

Outfall 007: Total Discharge to Ponds A, B, & C
Flow Rate: 0.24 MGD
Average pH: 9.3 Standard Units
TDS: 4,144 mg/L
Oil and Grease: 8.88 mg/L

Outfall 008: Heliostat Washing
Flow Rate: 0.008 MGD

Outfall 009: Dust Control
Flow Rate: 0.018 MGD

Pollutants of Concern
Pollutants of concern are any pollutants or parameters that are believed to be present in the discharge and could affect the physical, chemical, or biological condition of the receiving water. Common pollutants of concern are Oil and Grease that might be introduces to the groundwater, and Arsenic which is naturally occurring in the source water.

Receiving Water
In the event of a catastrophic failure of the evaporation pond liners, the receiving water would be groundwater of the State. The water used for cooling is discharged to three evaporation ponds, where some of the water is used for dust control. The receiving ponds are monitored by a pond interstitial leak detection sump in each pond and monitored for the depth of water in the pond. The State of Nevada Division of Water Resources Well Log Database reports the average static water level is approximately 110.5 feet below ground surface for Crescent Dunes' Well #2.

Compliance History
The Permittee is currently in compliance with the permit.

Proposed Effluent Limitations
The discharge shall be limited, sampled, and monitored by the Permittee as specified below:

NS OTHER - Discharge Limitations Table for Sample Location 008 (Heliostat Washing) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	008	Daily	CALCTD
Flow rate	Daily Maximum	<= 0.2 Million Gallons per Day (Mgal/d)		Prior to Reuse	008	Daily	CALCTD

NS OTHER - Discharge Limitations Table for Sample Location 009 (Dust Control) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	009	Daily	CALCTD[1]
Flow rate	Daily Maximum	<= 0.2 Million Gallons per Day (Mgal/d)		Prior to Reuse	009	Daily	CALCTD[1]

Notes (NS OTHER - Discharge Limitations Table):

1. Flow calculated by truck load.

NS OTHER - Discharge Limitations Table for Sample Location 009 (Dust Control) To Be Reported Annually[1]

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Silver, dissolved (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Nickel, total (as Ni)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Copper, dissolved (as Cu)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
			M&R				

NS OTHER - Discharge Limitations Table for Sample Location 009 (Dust Control) To Be Reported Annually[1]

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Arsenic, dissolved (as As)	Daily Maximum		Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	009	Annual	DISCRT

Notes (NS OTHER - Discharge Limitations Table):

1. The analysis results for the listed NDEP Profile I metals shall be reported in the fourth quarter annual report.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Pond A) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Freeboard	Minimum		>= 3 Feet (ft)	See Footnote[1]	001	Quarterly	VISUAL

Notes (Ponds / Rapid Infiltration Basins):

1. Freeboard shall be monitored at the Pond A staff gauge.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Pond B) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Freeboard	Minimum		>= 3 Feet (ft)	See Footnote[1]	002	Quarterly	VISUAL

Notes (Ponds / Rapid Infiltration Basins):

1. Freeboard shall be monitored at the Pond B staff gauge.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Pond C) To Be Reported Quarterly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Freeboard	Minimum		>= 3 Feet (ft)	See Footnote[1]	003	Quarterly	VISUAL

Notes (Ponds / Rapid Infiltration Basins):

1. Freeboard shall be monitored at the Pond C staff gauge.

Ponds / Rapid Infiltration Basins for Sample Location 004 (Pond A Leak Detection) To Be Reported Quarterly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Internal Monitoring Point[1]	004	Continuous	METER

Notes (Ponds / Rapid Infiltration Basins):

1. The primary liner leakage rate shall be monitored at the Pond A leak detection sump.

Ponds / Rapid Infiltration Basins for Sample Location 005 (Pond B Leak Detection) To Be Reported Quarterly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Internal Monitoring Point[1]	005	Continuous	METER

Notes (Ponds / Rapid Infiltration Basins):

1. The primary liner leakage rate shall be monitored at the Pond B leak detection sump.

Ponds / Rapid Infiltration Basins for Sample Location 006 (Pond C Leak Detection) To Be Reported Quarterly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Internal Monitoring Point[1]	006	Continuous	METER

Notes (Ponds / Rapid Infiltration Basins):

1. The primary liner leakage rate shall be monitored at the Pond C leak detection sump.

Ponds / Rapid Infiltration Basins for Sample Location 007 (Discharge To Ponds A, B, & C) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	007	Continuous	CALCTD
Flow rate	Daily Maximum	<= 0.5 Million Gallons per Day (Mgal/d)		Effluent Gross	007	Continuous	CALCTD

Ponds / Rapid Infiltration Basins for Sample Location 007 (Discharge To Ponds A, B, & C) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
pH, maximum	Daily Maximum		<= 10 Standard Units (SU)	Effluent Gross	007	Quarterly	DISCRT
pH, minimum	Daily Minimum		>= 6 Standard Units (SU)	Effluent Gross	007	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Quarterly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 007 (Discharge To Ponds A, B, & C) To Be Reported Annually[1]

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Silver, dissolved (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Nickel, total (as Ni)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Copper, dissolved (as Cu)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 007 (Discharge To Ponds A, B, & C) To Be Reported Annually[1]

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Arsenic, dissolved (as As)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	007	Annual	COMPOS [2]

Notes (Ponds / Rapid Infiltration Basins):

1. The analysis results for the listed NDEP Profile 1 metals shall be reported in the fourth quarter annual report.
2. A composite sample shall be obtained by combining equal volumes of liquid taken from each evaporation pond.

Summary of Changes From Previous Permit
There are no changes from previous permit.

Technology Based Effluent Limitations
Technology base effluent limitations are not applicable on this permit.

Water Quality Based Effluent Limitations
Water quality-based effluent limitations are not applicable to this permit.

Proposed Water Quality Based Effluent Limits (monthly/weekly/daily)
Water quality-based limitations are not applicable to this permit.

Basis for Effluent Limitations
Flow rate – The flow rate is limited and monitored to ensure appropriate water levels in the evaporation ponds and that the water used for dust control and heliostat washing is not over-applied.

Freeboard – A minimum freeboard depth of 3 feet is required for ponds greater than 1 acre in size to reduce the potential for overflow.

Oil & Grease – Oil & grease are monitored to protect the quality of the local groundwater.

pH – pH is monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur. The limits are set to greater than or equal to 6 and less than or equal to 10 due to the chemicals used in the descaling cleaning cycle.

Liner Leakage Rate – Liner leakage rate is limited to 500 gallons per acre per day to determine if excess leakage is present and ensure that appropriate liner repairs are made on a timely basis to reduce the potential for degradation of the underlying groundwater.

Metals – Metals are monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur.

Total Dissolved Solids – Total dissolved solids are monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur.

Anti-backsliding
None of the proposed permit limits were changed to a less restrictive limit compared to those in the previous permit.

Antidegradation
The Division has developed an antidegradation regulation that is applied on a statewide basis, and which meets the statutory requirements of Nevada's water pollution control law found at Nevada Revised Statute (NRS) 445A.520 and NRS 445A.565 and is consistent with the federal antidegradation policy found at Title 40 in the Code of Federal Regulations (CFR) § 131.12. The objective of the Division's antidegradation regulation is to prevent degradation of Nevada's surface waters and maintain the unique attributes and special characteristics and water quality associated with high-quality waters.

As this permit is for discharges to groundwater, and not surface water, the new antidegradation rule is not applicable.

Special Conditions
For Special Conditions see table below:

SA – Special Approvals / Conditions Table

There are no Special Approval / Condition items

Discharges From Future Outfalls/ Planned Facility Changes
This Permittee does not anticipate changes to the outfalls or to the facilities.

Corrective Action Sites
There are no active Bureau of Corrective Actions (BCA) remediation sites within a one-mile radius of the facility.

Wellhead Protection Program
The outfalls are not located within a Wellhead Protection Area, which represents an approximate 10-year capture zone of a well, or within a Drinking Water Protection Area, which is defined by a 3,000-foot radius around a PWS well.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee is required to submit 2 copies (one hard copy and one electronic copy) of an updated Operations and Maintenance (O&M) Manual to the Division. The O&M shall be prepared and stamped by a Nevada Registered Professional Engineer or other Qualified Person.	5/27/2026

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	4/28/2026
2	Annual Report	Annually	1/28/2027

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being mailed to interested persons on our mailing list and will be posted on our website at https://ndep.nv.gov/posts. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **3/16/2026,** a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue/re-issue the proposed 5-year permit.

Prepared by: **Jason Reichelt**
Date: **2/9/2026**
Title: **Environmental Scientist 3**