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2020 SECOND SEMIANNUAL and ANNUAL GROUNDWATER DETECTION MONITORING REPORT
Genesis Solar Energy Project

Riverside County, California

COC S&W-6

December 28, 2020

Prepared By:

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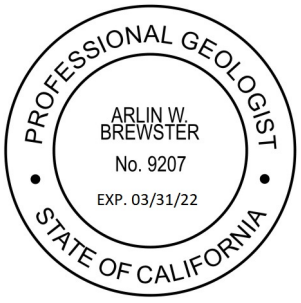
2020 SECOND SEMIANNUAL and ANNUAL GROUNDWATER DETECTION MONITORING REPORT

RIVERSIDE COUNTY, CALIFORNIA

PROFESSIONAL STATEMENT

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

I further certify that this report has been reviewed by the appropriate authority at NextEra Energy Resources and is being submitted with their written consent.



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December 28, 2020

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Northstar Environmental Remediation (Northstar) has prepared this 2020 Second Semiannual and Annual Groundwater Detection Monitoring Report on behalf of Genesis Solar, LLC (Genesis). This report details groundwater detection monitoring performed in the second half of 2020 at the Genesis Solar Energy Project (GSEP) and provides an annual summary.

The GSEP lies roughly 25 miles west of the city of Blythe, California in eastern Riverside County on lands managed by the Bureau of Land Management (BLM) (**Figure 1**). The GSEP consists of two independent concentrated solar electric generating facilities with a nominal net electrical output of 125 megawatts (MW) each (a total net electrical output of 250 MW).

Northstar conducts groundwater detection monitoring in accordance with Condition of Certification Soil & Water 6 (COC S&W-6) as presented in the California Energy Commission (CEC) Final Decision document dated October 12, 2010 (CEC, 2010). The COC S&W-6 requires compliance with Waste Discharge Requirements (WDR) and Monitoring and Reporting Program (MRP) Board Order No. R7-2013-0005, issued by the California Regional Water Quality Control Board, Colorado River Basin Region (CRWQCB).

1.1 Background

Genesis submitted an updated Plan of Development (POD) for the GSEP in September 2010 (Genesis Solar, LLC 2010). In addition, Genesis filed an Application for Certification (AFC) for the GSEP to the CEC in August 2009 (Genesis Solar, LLC 2009). The CEC issued its Final Decision on the GSEP on October 12, 2010 (CEC, 2010). The BLM issued the Final Environmental Impact Statement (FEIS) for the GSEP for public comment on August 27, 2010.

The GSEP uses dry cooling technology and relies on groundwater as a water source during operation. Three groundwater production wells installed at the GSEP between July and October 2011 are permitted to pump groundwater at an average rate of 202 acre-feet per year (afy) (up to 1,348 afy during construction).

The Final Decision and FEIS discuss the potential impacts associated with the proposed groundwater use by the GSEP. Groundwater drawdown impacts are anticipated to be less than significant, but because the prediction of groundwater level effects by computer modeling entails inherent uncertainty, both the Final Decision and the FEIS adopted COC S&W-2 for the GSEP to monitor groundwater level at the vicinity of the GSEP.

Two evaporation ponds (licensed as Class II Surface Impoundments) located between Solar Fields 1 and 2 accept wastewater generated during GSEP operation (**Figure 3**). Three detection monitoring wells (DM-1, DM-2, and DM-3) were installed, per the Final Decision, along the west, east, and south perimeter of the

evaporation ponds in February 2012 (**Figure 4**). Groundwater samples were collected for four quarterly events prior to GSEP operation to establish baseline conditions. Semiannual sampling will be conducted to comply with the requirements of COC S&W-6 and the WDR and MRP documents.

1.2 Geographic Setting

The GSEP lies between the communities of Blythe and Desert Center, California. Land use is predominantly open space and conservation and wilderness areas occupied by a community of low creosote and bursage vegetation. Chuckwalla and Ironwood State Prisons are located approximately 6 miles southeast of the GSEP.

The GSEP lies on broad, relatively flat topography sloping north to south at elevations between 400 and 370 feet above mean sea level (amsl). The surface is underlain by alluvial deposits derived from the Palen Mountains to the north-northwest, and the McCoy Mountains to the northeast (**Figure 1**).

The deposits immediately adjacent to the mountains have formed alluvial fans from multiple identifiable sources, and multiple fan surfaces have coalesced into a single bajada surface that wraps around each of these mountain fronts. Between the bajada surfaces from each mountain chain lies a broad valley-axial drainage that extends southward between the mountains and drains to the Ford Dry Lake playa, located about 1 mile south of the GSEP facility.

Climatic data collected from Weather Station Blythe Riverside Airport (33.61°N, -114.71°W, at an elevation of about 387 feet amsl) indicate the average maximum temperature in the airport vicinity is approximately 87.8°F (31.0°C). Average rainfall is reported to be approximately 3.83 inches (97.3 mm). Northstar obtained this data from the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information 1981-2010 Normals.

1.3 Hydrogeologic Setting

The GSEP lies within the Chuckwalla Valley Groundwater Basin (Chuckwalla Basin) which has a surface area of 940 mi^2 (2,435 km^2) underlying Chuckwalla Valley. It is bounded upgradient by three groundwater basins including the eastern part of the Orocopia Valley and Pinto Valley Groundwater Basins and the southern part of the Cadiz Valley Groundwater Basin, and downgradient by the Palo Verde Mesa Groundwater Basin (Palo Verde Basin) (**Figure 2**). Groundwater occurs at depths of about 80 to 140 feet below ground surface (bgs) and groundwater flow is generally southeast to eastward, from the Chuckwalla Basin to the Palo Verde Basin (**Figure 2**).

Sources of groundwater recharge to the Chuckwalla Basin includes precipitation, inflow from the Orocopia Valley and Pinto Valley Groundwater Basins, and return flows from agricultural sources and treated wastewater effluent. Groundwater is the only available water resource in Chuckwalla Valley, with extraction to meet local demand the primary source of groundwater outflow. Other minor sources of

outflow include underflow to the Palo Verde Basin and evapotranspiration in portions of Palen Dry Lake (where shallow groundwater is present).

Calculations of the Chuckwalla Basin groundwater budget prior to GSEP operations indicate a stable surplus of 2,600 afy (CEC, 2010). Current operational demand, based on calendar year 2019 extraction data, is approximately 103 afy.

The region of the Chuckwalla Basin occupied by the GSEP and associated groundwater monitoring wells is underlain by four geological units. The shallowest unit is the unconsolidated Holocene-aged Alluvium, consisting of geologically recent lake, river, and wind deposits (DWR, 1963). Beneath the Alluvium is the unconsolidated Pleistocene-aged Pinto Formation, consisting of coarse alluvial fan deposits (known as fanglomerate), interspersed with clays and basalt (DWR, 1963). Beneath the Pinto Formation is the unconsolidated to partially consolidated Pliocene-aged Bouse Formation, consisting of coarse alluvium and fanglomerate deposits (Wilson and Owen-Joyce, 1994). Below the Bouse Formation is bedrock consisting of metamorphic rocks and intrusive igneous basalts (DWR, 1963).

Groundwater in the GSEP monitoring region occurs in two aquifers: the shallower Alluvium aquifer (extending to a maximum approximate depth of 250 feet below ground surface); and, the deeper Bouse Formation aquifer (extending between approximately 250 to 6,500 feet below ground surface) (Wilson and Owen-Joyce, 1994). The Pinto Formation exists only on the eastern fringe of the Chuckwalla Basin and is generally not encountered by the GSEP monitoring wells. Monitoring data indicate a downward vertical hydraulic gradient of groundwater flow from the Alluvium to the Bouse Formation aquifer.

Based on recent monitoring data, the depth to groundwater in the Bouse Formation ranges from approximately 87.05 feet bgs (300.35 feet amsl) in TW-1, located upgradient of the site, to 136.80 feet bgs (255.30 feet amsl) in Well 23a, located downgradient of the site. Perched water exists at the Chuckwalla State Prison but is unlikely to occur within the GSEP boundaries as there is no irrigation.

1.4 Monitoring Program Objectives

Northstar performs groundwater detection monitoring in accordance with COC S&W-6 as described in the CEC's Final Decision. The primary objectives for the evaporation pond detection as outlined in the MRP are to:

- Establish baseline conditions by conducting four quarters of monitoring prior to discharge of wastewater to the ponds;
- Collect water level elevation data to characterize groundwater flow conditions in the uppermost water-bearing zone beneath the evaporation pond area;
- Collect and evaluate water quality data using approved statistical and other methods to identify potential changes in the existing water quality of the aquifer immediately underlying the evaporation ponds; and,

- Demonstrate compliance with the discharge requirements contained in COC S&W-6 and the WDR for the GSEP.

2.0 EVAPORATION PONDS

2.1 Evaporation Pond Overview

The North and South Evaporation Ponds (sometimes referred to as the West and East ponds, respectively) were designed by Fluor Corp. and are identified on **Figure 3**. Each pond is constructed with multiple layers of containment that drain to a centralized collection trench. The trench slopes away from the centerline of the ponds to the north and south and is equipped with a set of three leakage detection probes in each side. Each pond is also equipped with a pump to return all leaked water back to the pond surface.

2.2 Monitoring Methods

On a semiannual basis, a sample is collected from each of the evaporation ponds and identified as the North Pond and South Pond. Representative water is collected in a clean, dedicated 5-gallon bucket and processed into sample containers inside the containment area. Laboratory samples are submitted to SunStar Laboratories, Inc. (SunStar) of Lake Forest, California. SunStar subcontracts the heat transfer fluid analysis to Eurofins Calscience Laboratories, Inc. (Eurofins) of Irvine, California. All laboratories are state and federally certified and analyze the samples by the following methods, as detailed in the Final Decision, WDR, and MRP documents:

- Chloride, Sulfate, and Nitrate by EPA Method 300.0;
- Mercury by Standard Method 7470A;
- Total Dissolved Solids by Standard Method 2540C;
- pH by Standard Method 4500H;
- Specific Conductance by Standard Method 2510B;
- Heat Transfer Fluid (HTF) by EPA Method 8015B;
- Heavy Metals by EPA Method 200.7 and 200.8;
- Oil & Grease by EPA Method 1664A; and,

2.3 Evaporation Pond Sample Results

Analytical data for the evaporation ponds is included in **Table 4** and certified laboratory reports are included in **Appendix B**. In summary:

- The laboratory did not detect copper, iron, antimony, cadmium, chromium, cobalt, lead, nickel, mercury, oil & grease, or heat transfer fluid in either pond; and,
- Compound concentrations were generally higher in the South Pond.

3.0 LEAKAGE DETECTION SYSTEM

3.1 Leakage Detection System Overview

A cross-sectional schematic of the leakage detection system is included in **Figure 5**. As shown in the figure, each pond is equipped with a total of six probes (Watermark Model 200SS electrical resistance probes) installed at a distance of 15, 70, and 110 feet from the pond centerline.

The leaked water return pumps are installed on the north side of the North Pond and the south side of the South Pond. Readings from the totalizers on each pump are recorded on a quarterly basis.

3.2 Monitoring Methods

Terminals attached to the probe wire leads are stored in a weatherproof vault at the north and south end of each pond, where resistivity readings can be collected using a Watermark 30-KTCD-NL meter. Values can range from 0-10 centibars (saturated) to 199 centibars (dry). Readings are collected from the probes and the nearby water return pumps on a quarterly basis and summarized in **Table 5**. If the pump totalizers show any signs of increase, or if the probes display values within the saturated range (usually started with probe #1 in the lowest end of the trench), Northstar notifies NextEra operations who then conduct further investigation.

3.3 Monitoring Results

The water return pump totalizers did not increase during the reporting period, and currently read 1,624.77 gallons for the North Pond and 20.34 gallons for the South Pond.

None of the leak detection probes showed signs of water saturation, and only one showed signs of humidity in the collection trench: North Pond #1W. This probe has shown signs of sensor drift and sensitivity in previous events.

4.0 DETECTION MONITORING WELLS

4.1 Detection Monitoring Well Overview

A total of three detection monitoring wells were installed around the perimeter of the evaporation ponds (**Figure 4**). Detection monitoring wells DM-1, DM-2, and DM-3 were installed to a total depth of 120 feet bgs into the shallow Alluvium aquifer with screened intervals between 100 to 120 feet bgs. **Table 1** provides construction details for the wells. Well DM-1 is located upgradient, west of the ponds. Well DM-2 and DM-3 are located downgradient, east and south of the ponds, respectively.

4.2 Monitoring Methods

Northstar measured the depth to groundwater in each well using a Solinst interface probe. Field staff documented depth to water to the nearest hundredth (0.01) foot below a surveyed measuring mark located on the north side of the top of casing (toc) on a groundwater level measurement form (**Appendix A**). **Table 2** includes the groundwater level measurements and calculated water level elevations. **Figure 4** illustrates the groundwater elevation contours and flow direction.

Each detection monitoring well has a dedicated 1.66-inch diameter Geotech® stainless steel submersible bladder pump and dedicated Teflon-lined tubing with water intakes set at the middle of wetted screen at approximately 115 feet btoc. Field staff collect samples from these wells using the low flow purging method in accordance with the most recent EPA guidance document (USEPA, 2017).

Field staff decontaminated reusable/non-dedicated equipment (water level probe and flow-through cell) prior to use at each well. Decontamination of reusable equipment consisted of washing with a laboratory-grade non-phosphate detergent (Liquinox or equivalent) and potable water solution followed by a double rinse with demineralized water.

Field staff measure groundwater parameters with a YSI Pro field instrument. Staff calibrate the YSI Pro at the beginning of each day and decontaminate the instrument prior to use and between wells. Measurements of field parameters (pH, electrical conductivity (EC), temperature, turbidity, and oxidation-reduction potential (ORP)) were taken at 5-minute intervals and at the time of sampling as part of the low flow purge method of sampling.

Wells were purged until water quality parameters stabilized over three successive readings (+/- 0.2 for pH, +/- 10% for EC, ORP and turbidity) and the discharge volume exceeded the drawdown, tubing, and flow-through cell volume. Northstar staff recorded the sampling methods, volume of water purged, pumping rate, field parameter measurements, and observations of water turbidity and odor on the groundwater sampling field form (**Appendix A**).

After purging and parameter stabilization, the flow-through cell was disconnected so samples could be collected from the pump discharge. Field staff wore new nitrile gloves to collect groundwater samples in clean bottles (preserved as appropriate) provided by the laboratory. Where required, samples were field filtered with a new 0.45-micron filter attached to the end of the discharge tubing. Staff labeled sample containers with the well identification, date, time, sampler, analytical method, and placed them in a chilled ice chest. Northstar delivered the samples under proper chain-of-custody protocol to the laboratory.

Groundwater purged from DM-1, DM-2, and DM-3 was temporarily contained in a sealed 5-gallon bucket and then disposed in the evaporation ponds as directed in the MRP. **Table 3** includes the measured field parameters documented at the end of purging activities.

Laboratory samples are submitted to SunStar Laboratories, Inc. (SunStar) of Lake Forest, California. SunStar subcontracts the heat transfer fluid analysis to Eurofins Calscience Laboratories, Inc. (Eurofins) of Irvine, California. They also subcontract the oxygen-18 and deuterium analysis to Isotech Laboratories, Inc. of Champaign, Illinois. All laboratories are state and federally certified and analyze the samples by the following methods, as detailed in the Final Decision, WDR, and MRP documents:

- Chloride, Sulfate, and Nitrate by EPA Method 300.0;
- Mercury by Standard Method 7470A;
- Total Dissolved Solids by Standard Method 2540C;
- pH by Standard Method 4500H;
- Specific Conductance by Standard Method 2510B;
- Heat Transfer Fluid (HTF) by EPA Method 8015B;
- Heavy Metals by EPA Method 200.7 and 200.8;
- Oil & Grease by EPA Method 1664A; and,
- Oxygen-18 and Deuterium by Isotope Geochemistry.

The laboratory conducted standard Quality Assurance/Quality Control (QA/QC) to assure analytical accuracy and precision. This included preparation and analysis of method blanks, surrogate spikes, matrix spike/matrix spike duplicate (MS/MSD) pairs and laboratory control samples (LCS), as required, with each analytical batch.

Northstar collects a duplicate sample once per sampling event that is submitted to the laboratory without identifiers that associate the sample with a well, date, or time. During this event, a duplicate sample from well PW-2 was collected for analysis. **Table 4** of the *Groundwater Quality Monitoring Report* (Northstar, 2020) provides a summary of analytical results for the duplicate sample.

In addition to these methods, a set of quality control blank samples is collected and put on hold at the laboratory pending analysis of the groundwater samples. These samples include a field blank and trip blank. The field blank bottle set is filled with demineralized water and set adjacent to the work area with the lids off during the workday and is intended to screen out constituents in ambient air. The trip blank bottle sets are prepared at the laboratory and are sealed throughout the groundwater sampling event. They are stored inside the sample coolers and are intended to screen out constituents in the coolers. The quality control blank samples are only analyzed if there is anomalous data present for the groundwater sampling results.

4.3 Results of Water Level Measurements

Table 2 provides the wellhead reference elevation (toc elevation), depth-to-groundwater, and water level elevations for each detection monitoring well. Depth to groundwater ranged from 104.80 (well DM-3) to 108.03 (well DM-2) feet bgs, and the calculated groundwater elevations range from 283.29 (well DM-2) to 283.79 (well DM-1) feet amsl.

Northstar used groundwater elevation data to generate a potentiometric surface contour map of the uppermost water-bearing zone beneath the evaporation pond (**Figure 4**). The groundwater flow direction and gradient beneath the site were determined based on linear interpolation between contours of equal elevation. Groundwater flow beneath the evaporation ponds was determined to be predominantly in an east to southeast direction at a gradient of approximately 0.0004 feet/foot. The groundwater flow direction and gradient are consistent with historical monitoring events. Groundwater flow direction has historically ranged between east-northeast and southeast and the gradient has ranged between 0.0004 and 0.0007 feet/foot.

4.4 Groundwater Flow Velocity

The average horizontal groundwater flow velocity beneath the evaporation ponds was estimated using the following equation:

V = (KhI)/ne

Where:

V = average linear groundwater velocity
Kh = aquifer horizontal hydraulic conductivity
I = average hydraulic gradient (vertical change in groundwater elevation/corresponding horizontal distance), and
ne = effective aquifer porosity.

Each monitoring well is screened from 100-120 feet bgs in fine-grained sand, as detailed in the Detection Monitoring Well Installation Report (WorleyParsons, 2012). The reported hydraulic conductivity for fine-grained sand is approximately 0.03 to 60 feet/day, as stated in scientific references (Domenico and Schwartz, 1990). Based on the characteristics of the shallow Alluvium aquifer in which the detection monitoring wells are screened, this calculation assumes an average hydraulic conductivity value of 15 to 30 feet/day, an effective porosity of 25 percent, and an average gradient of 0.0004 feet/foot, as estimated from **Figure 4**.

Based on these calculations, the average groundwater velocity estimated in the uppermost water-bearing zone beneath the evaporation ponds is approximately 0.025 to 0.048 feet laterally per day, or 9.13 to 17.52 lateral feet per year. Historically, estimates of groundwater flow velocity have ranged from 8.76 to 30.66 lateral feet per year.

4.5 General Chemical Analysis

Table 4 provides a summary of the detection monitoring well groundwater sample analytical results. **Appendix C** contains copies of the laboratory analytical reports for the groundwater samples. Groundwater samples from detection monitoring wells DM-1, DM-2, and DM-3 were analyzed for the parameters listed in Section 4.2. The concentration of detected analytes is generally similar between the

detection monitoring wells. Similarity in the concentrations of analytes is expected as the three wells are located within 1,000 feet of each other and are screened at the same depth interval (100-120 feet bgs).

The following is a summary of the groundwater monitoring results for the detection monitoring wells since the beginning of the monitoring program:

- **Chloride** detections have been consistent for all wells and have ranged from 4,400 to 9,760 milligrams per liter (mg/L), averaging 5,408 mg/L.
- **Sulfate** detections have been consistent for all wells and have ranged from 1,600 to 4,350 mg/L, averaging 2,144 mg/L.
- **Nitrate** detections have been consistent for all wells and have ranged from non-detect to 21.2 mg/L, averaging 8.41 mg/L.
- **Total dissolved solid** levels have been consistent for all wells and have ranged from 7,100 to 13,000 mg/L, averaging 10,839 mg/L.
- **pH** levels have been consistent for all wells and have ranged from 7.20 to 7.95 standard units, averaging 7.80 standard units.
- **Specific conductivity** levels have been consistent for all wells and have ranged from 13,000 to 22,000 microsiemens per centimeter (µs/cm), averaging 17,582 µs/cm.
- **Antimony** has not been detected above the reporting limit for all wells.
- **Arsenic** detections have been consistent for all wells and have ranged from non-detect to 20 µg/L, averaging 10.4 µg/L.
- **Barium** detections have been inconsistent between all wells, averaging 36.1 µg/L in upgradient well DM-1, 71.0 µg/L in downgradient well DM-2, and 18.8 µg/L in downgradient well DM-3.
- **Cadmium** has not been detected above the reporting limit for all wells.
- **Calcium** detections have been consistent for all wells and have ranged from 210 to 470 mg/L, averaging 258 mg/L.
- **Chromium (Total)** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 3.1 to 3.7 µg/L, averaging 3.4 µg/L.
- **Cobalt** has not been detected above the reporting limit for all wells.
- **Copper** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 0.006 to 0.027 mg/L, averaging 0.010 mg/L.
- **Lead** has not been detected above the reporting limit for all wells.
- **Mercury** has only been detected once above the reporting limit in upgradient well DM-1 at a concentration of 0.26 µg/L. Mercury has not been detected at or above the reporting limit in wells DM-2 and DM-3.
- **Nickel** has only been detected once above the reporting limit in downgradient well DM-3 at a concentration of 10 µg/L. Nickel has not been detected at or above the reporting limit in wells DM-1 or DM-2.
- **Selenium** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 0.68 to 13 µg/L, averaging 5.1 µg/L.

- **Zinc** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 0.55 to 76 µg/L, averaging 23.5 µg/L.

4.6 Non-Statistical Analysis

In accordance with the MRP Part II.A.5 and Part III.A.2, a non-statistical analysis has been applied to the groundwater analytical results for this sampling event.

The non-statistical analysis requires all detections of the constituents of concern (ie, those defined in Part II.A.4 of the same document) reported above the method detection limit (MDL) in the downgradient wells (DM-2 and DM-3) that do not appear in the upgradient well (DM-1) be identified, and where there are either a) two or more constituents identified in this list from a single downgradient monitoring point, or b) one of the identified constituents in this list exceeds the Practical Quantification Limit (PQL), a release is tentatively indicated.

For the purposes of this report, the PQL is equal to the reporting limit (RL) as identified for each constituent in the laboratory report, which is generally 5 times the MDL. The results of the non-statistical method for this sampling event is as follows:

- Well DM-2: There are no constituents of concern that meet the release detection criteria.
- Well DM-3: Zinc was detected above the PQL of 0.50 µg/L at a concentration of 0.55 µg/L. Zinc has historically been detected at low concentrations in all detection monitoring wells onsite.

4.7 Quality Assurance/Quality Control

As documented in the attached laboratory reports (see **Appendix C**), groundwater samples collected from the evaporation pond detection monitoring wells during this sampling event were received by the laboratory in good condition, within the temperature limits required, and analyzed within the required holding times using the specified methods (with the exception of pH, which has a 15-minute hold time).

None of the analytes were detected in the laboratory method blank samples.

Matrix spike/matrix spike duplicate (MS/MSD) and laboratory control sample (LCS) recoveries for each method and analytical batch were within the laboratory's established control limits for the final report during this monitoring event.

Duplicate sample control: For this event, a duplicate sample (named DUP) was collected from sample point PW-2 (as reported in the *Groundwater Quality Monitoring Report* (Northstar, 2020). The sample was submitted to the laboratory without date or time qualifiers. For this event, all sample results for PW-2 and DUP agreed within 10% except for Sodium by EPA Method 200.7, which was reported at concentrations of 1,200 and 2,000 mg/l, respectively.

5.0 LAND TREATMENT UNIT SUMMARY

The Land Treatment Unit (LTU) is an onsite bioremediation landfarm utilized for the treatment of soil contaminated with the heat transfer fluid (HTF) Therminol. Soil from all HTF spills is excavated within 48 hours and placed in one of four treatment bays, numbered LTU #1 to 4. The soil is then tested to determine whether it can be effectively treated onsite (under 10,000 mg/kg of HTF) or if it is hazardous and must be treated offsite (above 10,000 mg/kg of HTF). Soil in the LTUs is overturned on a weekly basis by onsite staff to aid in the bioremediation of the soil. A representative composite soil sample is collected from each bay on a quarterly basis and analyzed by EPA Method 8260B for benzene to monitor the progress of remediation. Once the concentration is less than 100 mg/kg of HTF, the soil may be removed from the LTU and staged onsite for later use. Treatment is enhanced by the addition of moisture and fertilizers.

Contaminated soil in all LTUs was overturned on a weekly basis during the reporting period. LTU Bay #1 was sampled in September 2020 and concentrations were non-detect. No additional soil was added to the LTU in the 2020 calendar year, and no additional samples were collected.

6.0 ANNUAL SUMMARY

In accordance with WDR R7-2013-0005, this section presents a summary of the monitoring activities conducted during the 2020 monitoring period. Monitoring activities during this period included the following:

- Semiannual groundwater sampling and analysis of the detection monitoring network; and,
- Semiannual groundwater level measurements of the detection monitoring network.

The groundwater level and analytical data are included in **Tables 2** and **4**, respectively.

The data collected during the semiannual detection well monitoring events during the 2020 calendar year represents the seventh year of post-construction normal facility operation. The laboratory analytical data from the 2020 calendar year is consistent with the historical background data collected prior to settlement pond construction and operation.

The non-statistical analysis of the constituents of concern identified two potential releases in downgradient well DM-3 during the 2020 calendar year, both based upon the criteria of one constituent being reported above the Practical Quantification Limit (PQL) in a downgradient well while not detected in the upgradient well.

Arsenic was detected in DM-3 in the second quarter of 2020 at a concentration of 16 µg/L. Arsenic is naturally occurring in all three detection monitoring wells, and has been detected consistently since the beginning of monitoring in DM-3 at an average concentration of 15.1 µg/L. Therefore, a detection of arsenic at this concentration is considered normal for this well.

Zinc was detected in DM-3 in the fourth quarter of 2020 at a concentration of 0.55 µg/L. Zinc is naturally occurring in all three detection monitoring wells, and has been detected consistently when the laboratory has used lower reporting limits. Historically, the laboratory used a PQL of 100 µg/L; recently, the PQL has been reduced to 0.50 µg/L, barely below the detection this quarter. Due to the exceedingly low PQLs used during this event, it appears that this constituent would normally have been non-detect, or at least below the PQL if normal reporting limits had been used, and would not have fit the potential release criteria.

During the 2020 calendar year, the groundwater gradient ranged from 0.0004 to 0.0006 feet per linear foot to the east-southeast; groundwater elevations ranged from 283.29 feet amsl in well DM-2 to 284.39 feet amsl in well DM-1; and groundwater flow velocity ranged between 0.025 to 0.072 feet laterally per day, or 9.13 to 26.28 lateral feet per year.

Each of the settlement ponds is equipped with a leakage detection system consisting of six moisture probes installed in a drain pipe below the pond liners. Northstar monitors the probes quarterly at a minimum. If leaks are detected, the pond is drained and the lining inspected and repaired as necessary. The pond lining was most recently repaired in 2016, and the moisture probes under the north pond were replaced in December of that year after becoming saturated. During the 2020 calendar year, the moisture probes have indicated some residual humidity in the pipe, but no significant leaks. Should a leak occur, each pond is equipped with two recirculation pumps to drain the lining and redeposit the water in the pond until an inspection can be performed.

7.0 CONCLUSIONS

Based on the available data obtained during this sample event:

- A detection of zinc in detection monitoring well DM-3 currently meets the non-statistical analysis criteria for a potential release. However, as noted in Section 4.6 and 6.0, the zinc PQL is significantly lower than historical reporting limits, causing zinc to be detected at the lowest quantifiable concentration ever recorded at the site. Northstar concludes that while it meets the potential release criteria, this does not indicate a release and is instead a function of changes in the laboratory reporting limits.
- Available groundwater quality data is generally stable with minor trend fluctuations.
- Groundwater flow direction, gradient, and velocity is consistent with historical events.

All data currently indicates compliance with the discharge requirements contained in COC S&W-6 and the WDR for the GSEP, with exceptions as noted above.

8.0 REFERENCES

Bureau of Land Management, 2010. *Final Environmental Impact Statement, Genesis Solar Energy Project*. August 27, 2010.

California Department of Water Resources (DWR), 1963. *Data on Water Wells and Springs in the Chuckwalla Valley Area, Riverside County, California*. Bulletin No. 91-7.

California Energy Commission (CEC), 2010. *Genesis Solar Energy Project Commission Decision*. October 12, 2010.

California Regional Water Quality Control Board – Colorado River Basin Region, 2013a. *Monitoring and Reporting Program R7-2013-0005 for Genesis Solar, LLC*. March 21, 2013.

California Regional Water Quality Control Board – Colorado River Basin Region, 2013b. *Board Order R7-2013-0005 Waste Discharge Requirements for Genesis Solar, LLC*. March 21, 2013.

Domenico, P. and Schwartz, F., 1990. *Physical and Chemical Hydrogeology*. J. Wiley & Sons.

Genesis Solar, LLC, 2009. *Application for Certification, Genesis Solar Energy Project, Riverside County, California*. August 31, 2009.

Genesis Solar, LLC, 2010. *Plan of Development CA48880, Genesis Solar Energy Project, Riverside County, California*. October 2010.

Northstar Environmental Remediation, 2020. *2020 Second Semiannual and Annual Groundwater Quality Monitoring Report, Genesis Solar Energy Project, Riverside County, California*. December 28, 2020.

U.S. Bureau of Reclamation, 1972. *Inland Basins Project, California-Nevada, Summary Report: Reconnaissance Investigations*. 1972.

U.S. Environmental Protection Agency (USEPA), 2017. *Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells*. September 19, 2017.

Wilson, R.P., and Owen-Joyce, S.J., 1994. *Method to identify wells that yield water that will be replaced by Colorado River water in Arizona, California, Nevada, and Utah*. U.S. Geological Survey, Water Resources Investigation Report 94-4005.

WorleyParsons, 2012. *Detection Monitoring Well Installation Report*. Genesis Solar Energy Project, March 30, 2012.

FIGURES

GSEP Footprint
Prisons
Wilderness Area

0 1.25 2.5 5 7.5 10 Miles

N
W E
S

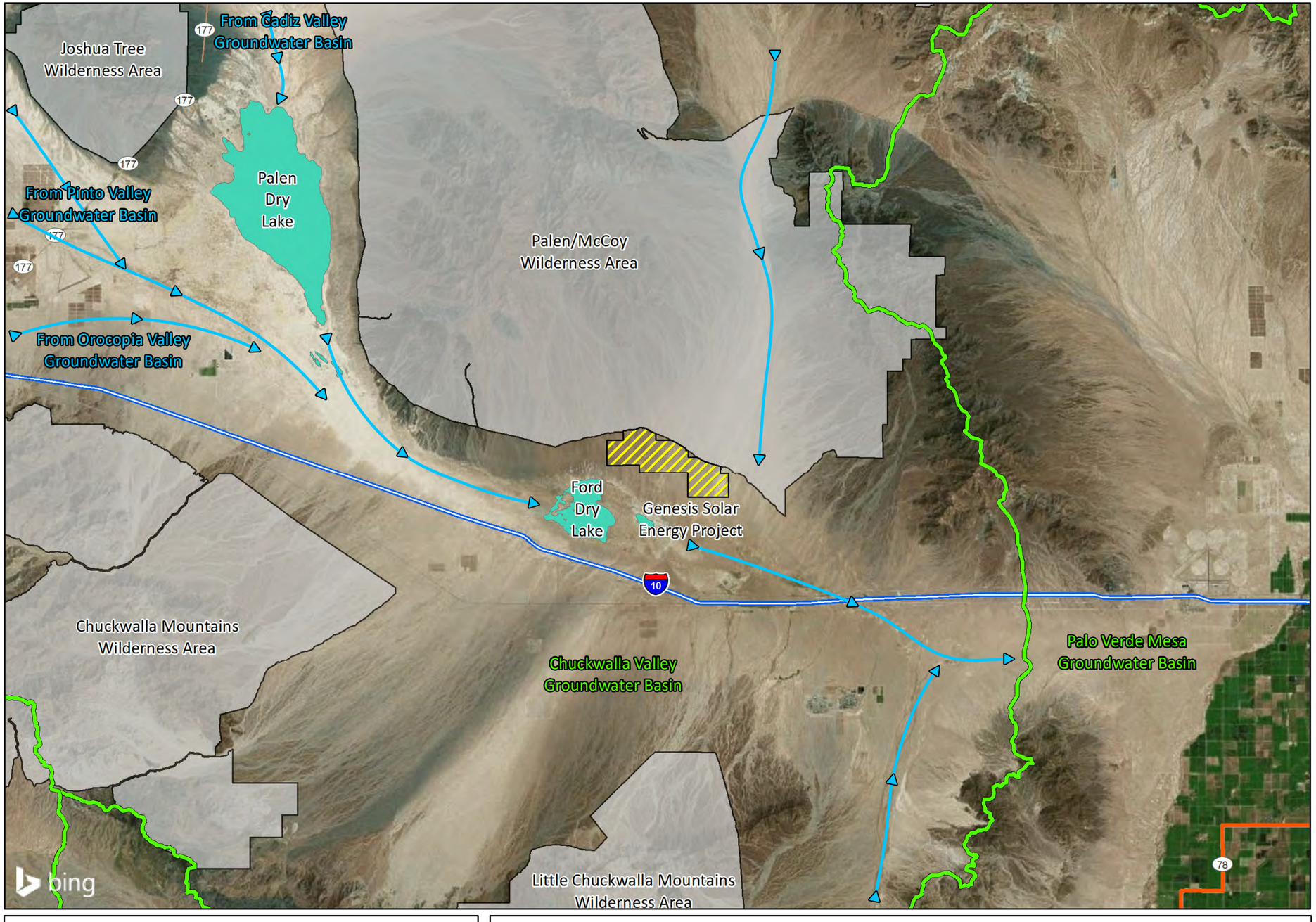
NORTHSTAR
ENVIRONMENTAL REMEDIATION

Northstar Environmental
Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number:
196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 1
Site Vicinity Map



GSEP Footprint
Watershed Boundary
Lake
Wilderness Area
Water Flow Direction

0 1.25 2.5 5 7.5 10 Miles

N
W E
S

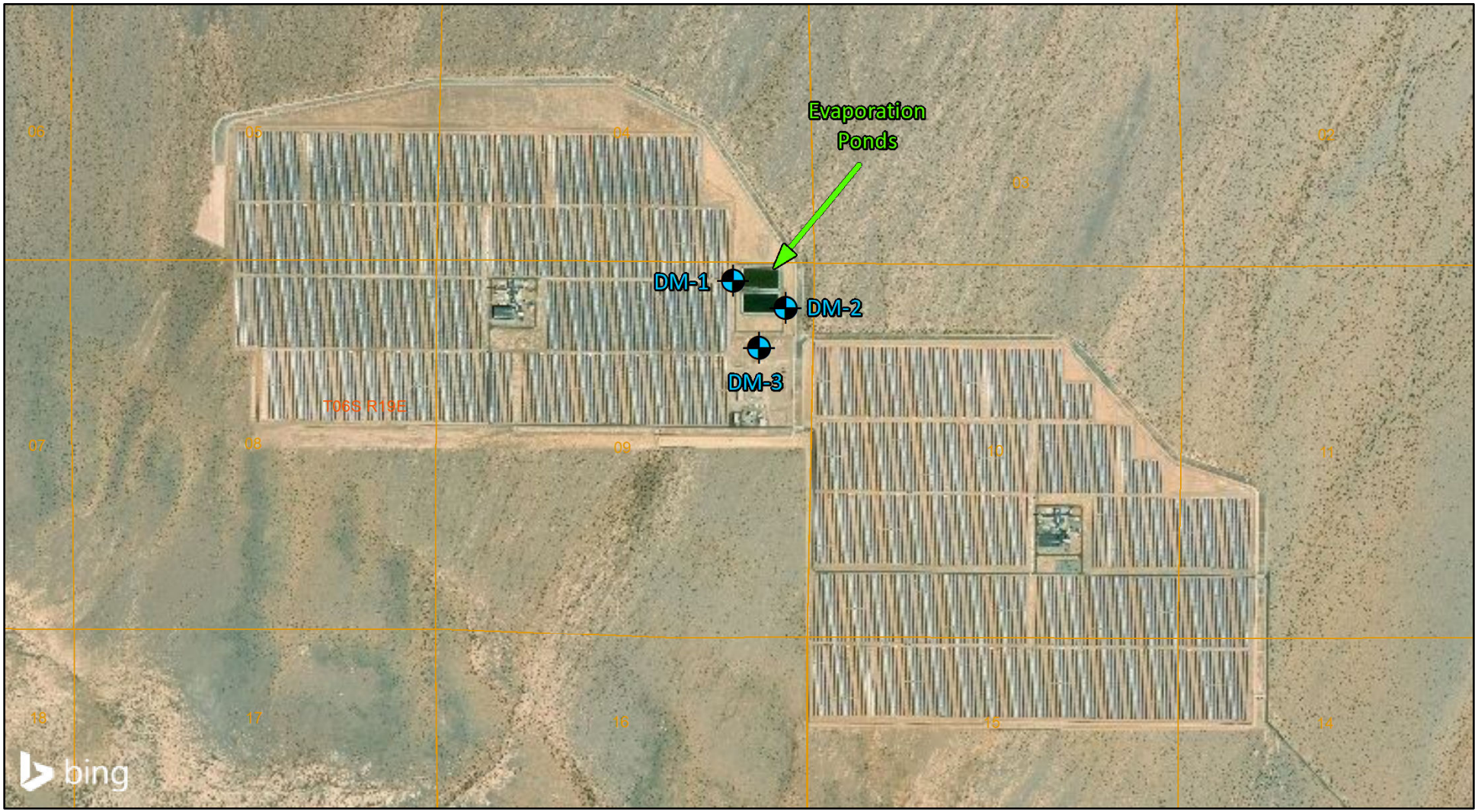
NORTHSTAR
ENVIRONMENTAL REMEDIATION

Northstar Environmental
Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number:
196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 2
Hydrogeologic Setting



Detection Monitoring Well

0 0.25 0.5 1 Miles

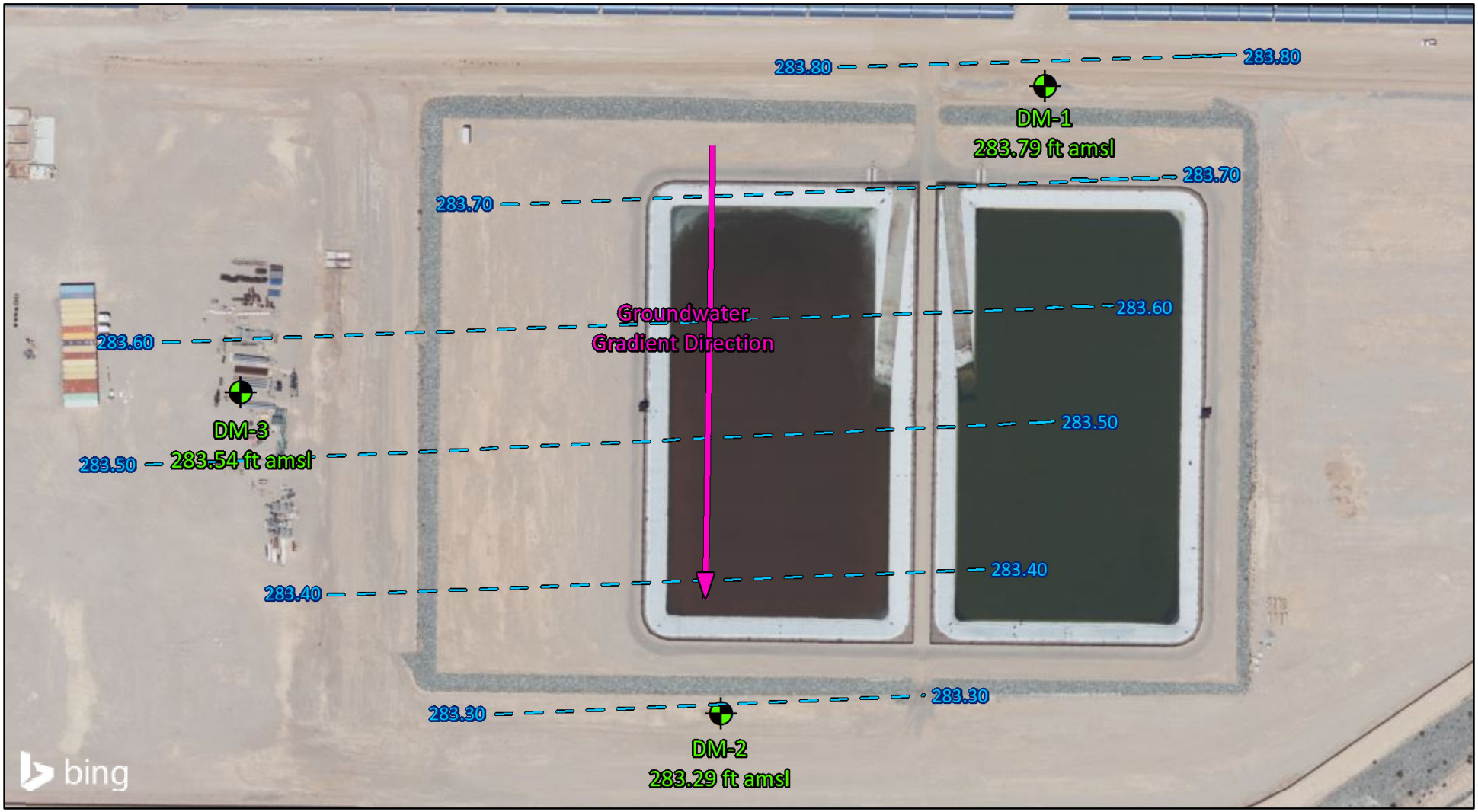
N W E S

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number: 196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 3
Evaporation Pond and Detection Monitoring Well Locations



Detection Monitoring Well

Groundwater Elevation Contour Lines

Groundwater Gradient Direction

(283.80) Groundwater Elevation in Feet Above Mean Sea Level

Approximate Scale:
1 inch = 180 feet

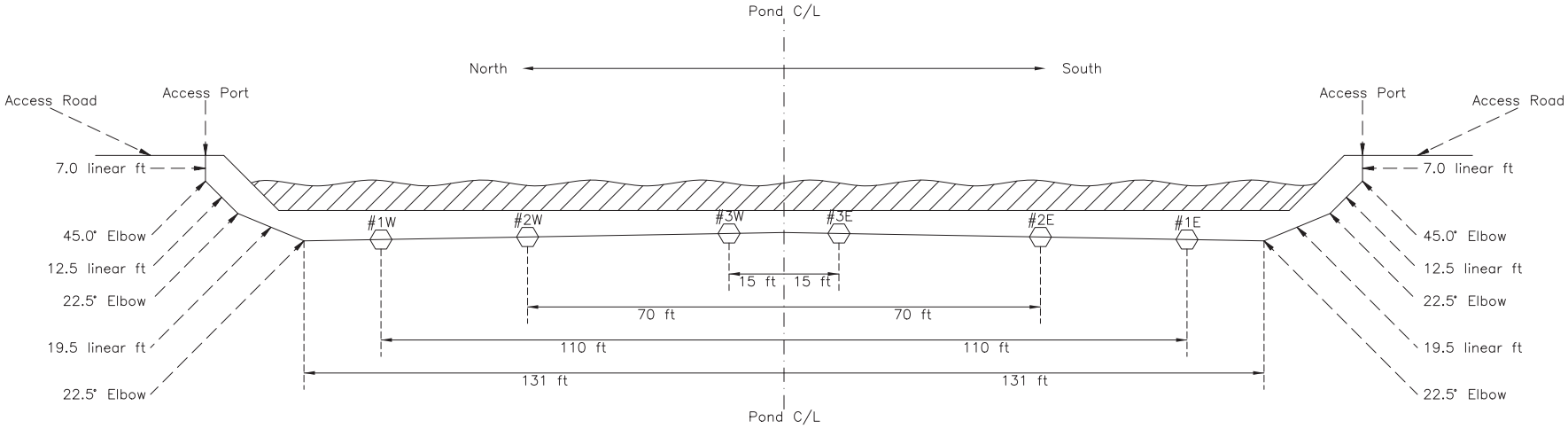
North

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number: 196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 4
Groundwater Elevation
Contour Map



NOTE: ALL DIMENSIONS ARE APPROXIMATE AND ARE BASED UPON FIELD OBSERVATIONS.

Notes:
1. Probes installed at #1W through #1E are Irrometer/Watermark Model 200SS Moisture Probes.
2. Access port is 4-inch diameter HDPE pipe.
3. Moisture probes are tied to 1/4-inch diameter braided steel pull-through cable (total length of approximately 340 feet).
4. Probes installed in 4-inch diameter perforated pipe with approximate 1 degree slope away from C/L.
5. Moisture probes furnished with two leads for direct read by Watermark Model 30 KTCD-NL meter.

0 15 30
SCALE: 1 INCH = 30 FEET

PROJECT NAME: GENESIS SOLAR ENERGY PROJECT	PROJECT NUMBER: 196-004-05
PROJECT ADDRESS: 11995 WILEY'S WELL RD, BLYTHE, CA	DRAWN/CHECKED BY: AWB
CONSULTING FIRM: NORTHSTAR ENVIRONMENTAL REMEDIATION	DATE DRAWN: 12/05/2016
FIGURE DESCRIPTION: LEAK DETECTION SYSTEM DETAIL	FIGURE NUMBER: FIGURE 5

TABLES

TABLE 1

DETECTION MONITORING WELL DETAILS

Genesis Solar Energy Project, Riverside County, California

Well ID	Other Name	Owner	Installation Date	Use/Status	Well Casing Diameter (inches)	Approximate Ground Surface Elevation (feet amsl)	Top Of Casing Elevation (feet amsl)	Well Depth (feet bgs)	Screened Interval (feet bgs)	Geologic Unit
WELLS INCLUDED IN THE GROUNDWATER MONITORING PROGRAM										
DM-1	Detection Monitoring Well 1	Genesis Solar, LLC	2/22/2012	Monitoring / Active	4	--	391.49	120	100 to 120	Alluvium
DM-2	Detection Monitoring Well 2	Genesis Solar, LLC	2/21/2012	Monitoring / Active	4	--	391.32	120	100 to 120	Alluvium
DM-3	Detection Monitoring Well 3	Genesis Solar, LLC	2/20/2012	Monitoring / Active	4	--	388.34	120	100 to 120	Alluvium

Notes:

-- = information is not available or unknown

amsl = above mean sea level

bgs = below ground surface

TABLE 2

GROUNDWATER LEVEL MEASUREMENTS

Genesis Solar Energy Project, Riverside County, California

Well ID	Date	Source	Top of Casing Elevation (feet amsl)	Depth to Water (feet below TOC)	Groundwater Elevation (feet amsl)	Difference from Baseline (feet)	Comments / Use
WELLS INCLUDED IN THE GROUNDWATER DETECTION MONITORING PROGRAM							
DM-1	2/27/2012	WorleyParsons	391.49	106.63	284.86	N/A	Monitoring
DM-1	5/24/2012	WorleyParsons	391.49	107.11	284.38	0.00	Baseline
DM-1	7/26/2012	WorleyParsons	391.49	107.10	284.39	0.01	Monitoring
DM-1	11/14/2012	WorleyParsons	391.49	108.15	283.34	-1.04	Monitoring
DM-1	3/29/2013	WorleyParsons	391.49	107.34	284.15	-0.23	Monitoring
DM-1	6/19/2013	WorleyParsons	391.49	107.19	284.30	-0.08	Monitoring
DM-1	8/13/2013	WorleyParsons	391.49	107.07	284.42	0.04	Monitoring
DM-1	11/12/2013	WorleyParsons	391.49	107.22	284.27	-0.11	Monitoring
DM-1	2/26/2014	WorleyParsons	391.49	107.13	284.36	-0.02	Monitoring
DM-1	5/22/2014	Northstar	391.49	107.05	284.44	0.06	Monitoring
DM-1	8/8/2014	Northstar	391.49	107.11	284.38	0.00	Monitoring
DM-1	12/4/2014	Northstar	391.49	107.03	284.46	0.08	Monitoring
DM-1	3/26/2015	Northstar	391.49	107.22	284.27	-0.11	Monitoring
DM-1	6/11/2015	Northstar	391.49	107.01	284.48	0.10	Monitoring
DM-1	12/10/2015	Northstar	391.49	106.98	284.51	0.13	Monitoring
DM-1	6/2/2016	Northstar	391.49	107.18	284.31	-0.07	Monitoring
DM-1	11/30/2016	Northstar	391.49	107.27	284.22	-0.16	Monitoring
DM-1	6/1/2017	Northstar	391.49	107.12	284.37	-0.01	Monitoring
DM-1	12/5/2017	Northstar	391.49	107.38	284.11	-0.27	Monitoring
DM-1	5/30/2018	Northstar	391.49	107.10	284.39	0.01	Monitoring
DM-1	12/4/2018	Northstar	391.49	107.45	284.04	-0.34	Monitoring
DM-1	6/14/2019	Northstar	391.49	107.18	284.31	-0.07	Monitoring
DM-1	12/5/2019	Northstar	391.49	107.42	284.07	-0.31	Monitoring
DM-1	6/4/2020	Northstar	391.49	107.10	284.39	0.01	Monitoring
DM-1	12/3/2020	Northstar	391.49	107.70	283.79	-0.59	Monitoring
DM-2	2/27/2012	WorleyParsons	391.32	106.92	284.40	N/A	Monitoring
DM-2	5/24/2012	WorleyParsons	391.32	107.37	283.95	0.00	Baseline
DM-2	7/26/2012	WorleyParsons	391.32	107.33	283.99	0.04	Monitoring
DM-2	11/14/2012	WorleyParsons	391.32	108.33	282.99	-0.96	Monitoring
DM-2	3/29/2013	WorleyParsons	391.32	107.59	283.73	-0.22	Monitoring
DM-2	6/19/2013	WorleyParsons	391.32	107.41	283.91	-0.04	Monitoring
DM-2	8/13/2013	WorleyParsons	391.32	107.31	284.01	0.06	Monitoring
DM-2	11/12/2013	WorleyParsons	391.32	107.63	283.69	-0.26	Monitoring
DM-2	2/26/2014	WorleyParsons	391.32	107.40	283.92	-0.03	Monitoring
DM-2	5/22/2014	Northstar	391.32	107.28	284.04	0.09	Monitoring
DM-2	8/8/2014	Northstar	391.32	107.28	284.04	0.09	Monitoring
DM-2	12/4/2014	Northstar	391.32	107.43	283.89	-0.06	Monitoring
DM-2	3/26/2015	Northstar	391.32	107.61	283.71	-0.24	Monitoring
DM-2	6/11/2015	Northstar	391.32	107.40	283.92	-0.03	Monitoring
DM-2	12/10/2015	Northstar	391.32	107.30	284.02	0.07	Monitoring
DM-2	6/2/2016	Northstar	391.32	107.38	283.94	-0.01	Monitoring
DM-2	11/30/2016	Northstar	391.32	107.52	283.80	-0.15	Monitoring
DM-2	6/1/2017	Northstar	391.32	107.47	283.85	-0.10	Monitoring
DM-2	12/5/2017	Northstar	391.32	107.78	283.54	-0.41	Monitoring
DM-2	5/30/2018	Northstar	391.32	107.45	283.87	-0.08	Monitoring
DM-2	12/4/2018	Northstar	391.32	107.80	283.52	-0.43	Monitoring
DM-2	6/14/2019	Northstar	391.32	107.55	283.77	-0.18	Monitoring
DM-2	12/5/2019	Northstar	391.32	107.72	283.60	-0.35	Monitoring
DM-2	6/4/2020	Northstar	391.32	107.45	283.87	-0.08	Monitoring
DM-2	12/3/2020	Northstar	391.32	108.03	283.29	-0.66	Monitoring
DM-3	2/27/2012	WorleyParsons	388.34	103.85	284.49	N/A	Monitoring
DM-3	5/24/2012	WorleyParsons	388.34	104.35	283.99	0.00	Baseline
DM-3	7/26/2012	WorleyParsons	388.34	104.28	284.06	0.07	Monitoring
DM-3	11/14/2012	WorleyParsons	388.34	105.25	283.09	-0.90	Monitoring
DM-3	3/29/2013	WorleyParsons	388.34	104.35	283.99	0.00	Monitoring
DM-3	6/19/2013	WorleyParsons	388.34	104.20	284.14	0.15	Monitoring
DM-3	8/13/2013	WorleyParsons	388.34	104.31	284.03	0.04	Monitoring
DM-3	11/12/2013	WorleyParsons	388.34	104.43	283.91	-0.08	Monitoring
DM-3	2/26/2014	WorleyParsons	388.34	104.31	284.03	0.04	Monitoring
DM-3	5/22/2014	Northstar	388.34	104.20	284.14	0.15	Monitoring
DM-3	8/8/2014	Northstar	388.34	104.21	284.13	0.14	Monitoring
DM-3	12/4/2014	Northstar	388.34	104.39	283.95	-0.04	Monitoring
DM-3	3/26/2015	Northstar	388.34	104.59	283.75	-0.24	Monitoring
DM-3	6/12/2015	Northstar	388.34	104.18	284.16	0.17	Monitoring
DM-3	12/11/2015	Northstar	388.34	103.96	284.38	0.39	Monitoring
DM-3	6/3/2016	Northstar	388.34	104.38	283.96	-0.03	Monitoring
DM-3	12/2/2016	Northstar	388.34	104.28	284.06	0.07	Monitoring
DM-3	6/1/2017	Northstar	388.34	104.25	284.09	0.10	Monitoring
DM-3	12/5/2017	Northstar	388.34	104.62	283.72	-0.27	Monitoring

TABLE 2

GROUNDWATER LEVEL MEASUREMENTS

Genesis Solar Energy Project, Riverside County, California

Well ID	Date	Source	Top of Casing Elevation (feet amsl)	Depth to Water (feet below TOC)	Groundwater Elevation (feet amsl)	Difference from Baseline (feet)	Comments / Use
DM-3	5/30/2018	Northstar	388.34	104.27	284.07	0.08	Monitoring
DM-3	12/4/2018	Northstar	388.34	104.68	283.66	-0.33	Monitoring
DM-3	6/14/2019	Northstar	388.34	104.38	283.96	-0.03	Monitoring
DM-3	12/6/2019	Northstar	388.34	104.66	283.68	-0.31	Monitoring
DM-3	6/5/2020	Northstar	388.34	104.32	284.02	0.03	Monitoring
DM-3	12/3/2020	Northstar	388.34	104.80	283.54	-0.45	Monitoring

Notes:

amsl = above mean sea level

TOC = top of casing

TABLE 3

FIELD DATA COLLECTED DURING THE MOST RECENT GROUNDWATER MONITORING EVENT

Genesis Solar Energy Project, Riverside County, California

Well ID	Date	Groundwater Purging			Field Parameters					
		Rate of Groundwater Discharge (mL/min)	Purging Method	Total Volume Purged (mL)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L)	Temperature (C^0)	ORP (mV)
DM-1	6/4/2020	188	Bladder Pump	3,760	7.43	17.3	10.1	3.98	19.43	+82
DM-2	6/4/2020	120	Bladder Pump	2,400	7.58	18.2	49.1	1.60	21.12	+111
DM-3	6/5/2020	121	Bladder Pump	2,420	7.33	17.0	0.5	4.01	23.23	+109

NOTES:

mL = milliliters

mL/min = milliliters per minute

mS/cm = millisiemens per centermeter

NTU = Nephelometric Turbidity Units

DO = Dissolved Oxygen

mg/L = milligrams per liter

^{0}C = degree Celsius

mV = millivolts

TABLE 4
SUMMARY OF LABORATORY ANALYTICAL RESULTS
Genesis Solar Energy Project, Riverside County, California

Well ID	Date Sampled	Sampling Method	Chloride (mg/L)	Sulfate (SO4) (mg/L)	Nitrate (NO3)-N (mg/L)	Calcium (mg/L)	Copper (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Cadmium (ug/L)	Chromium (Total) (ug/L)	Cobalt (ug/L)	Lead (ug/L)	Manganese (ug/L)	Nickel (ug/L)	Selenium (ug/L)	Zinc (ug/L)	Mercury (ug/L)	Total Dissolved Solids (mg/L)	Specific Conductance (us/cm)	pH (std. Units)	Oil & Grease / HEM (mg/L)	HTF† (mg/L)	Deuterium (‰ relative to VSMOW)	Oxygen-18 (‰ relative to VSMOW)
			EPA Method 300.0			EPA Method 200.7						EPA Method 200.8												SM7470A	SM2540C	SM2510B	SM4500H	SM1664A	8015B	Isotope Geochemistry	
DM-1	5/24/2012	Low Flow	4,600	2,000	3.9	250	<0.10	3,800	23.0	<0.40	56	-	-	-	-	-	-	-	-	-	-	-	-	12,000	16,000	7.84	-	-	-65.1	-8.8
DM-1	10/24/2012	Low Flow	5,400	2,300	<1.1	210	<0.010	3,200	20.0	<0.040	58	-	-	-	-	-	-	-	11	-	-	-	-	11,000	18,000	7.83	-	-	-72.1	-8.6
DM-1	5/22/2014	Low Flow	5,300	2,000	-	240	<0.010	3,700	22	<0.040	54	<10	6.2	52	<5.0	<10	<5.0	<5.0	2.5[J]	4.6[J]	3.0[J]	<100	<0.20	11,000	19,000	7.81	<5.0	-	-68.50	-8.51
DM-1	5/22/2014 [1]	Low Flow	5,200	2,000	-	230	<0.010	3,600	22	<0.040	53	<10	5.6	50	<5.0	<10	<5.0	<5.0	<5.0	3.9[J]	3.1[J]	<100	<0.20	11,000	19,000	7.74	<5.3	-	-69.47	-8.74
DM-1	12/4/2014	Low Flow	4,800	1,700	2.9	230	<0.050	3,600	21	<0.20	57	<10	7.7	50	<5.0	<10	<5.0	<5.0	<5.0	9.2[J]	<10	25[J]	0.15[J]	11,000	19,000	7.92	<4.7	<0.094	N/A[2]	N/A[2]
DM-1	6/11/2015	Low Flow	4,600	2,000	3.7[J]	230	<0.10	3,600	21	<0.40	52	<10	3.8[J]	36	<5.0	2.9[J]	<5.0	<5.0	3.6[J]	6.3[J]	3.6[J]	<100	0.26	10,000	19,000	7.81	<4.7	<0.10	-69.2	-8.47
DM-1	12/10/2015	Low Flow	5,300	2,100	4.9[J]	260	<0.010	3,700	22	<0.040	57	<10	5.6	38	<5.0	<10	<5.0	<5.0	<5.0	<10	5.2[J]	<100	<0.20	12,000	19,000	7.79	<5.0	<0.094	-70.3	-8.57
DM-1	6/2/2016	Low Flow	4,700	1,800	7.8	230	<0.10	3,800	18	<0.40	57	<2.0	5.1	31	<1.0	1.9[J]	<1.0	<1.0	0.99[J]	1.1[J]	3.3	2.5[J]	<0.20	11,000	20,000	7.87	<4.7	<0.094	-69.87	-8.83
DM-1	11/30/2016	Low Flow	5,200	2,000	<5.5	230	<0.010	3,700	23	<0.040	59	<20	6.7[J]	31	<10	<20	<10	<10	<10	<10	13[J]	<200	<0.20	11,000	17,000	7.8	<4.7	<0.093	-70.70	-8.68
DM-1	6/1/2017	Low Flow	4,600	1,900	4.2[J]	250	<0.10	4,100	21	<1.0	62	<10	4.8[J]	28	<5.0	5.9[J]	<5.0	<5.0	<5.0	7.6[J]	6.9[J]	<100	<0.20	11,000	16,000	7.9	<5.1	<0.094	-70.30	-8.57
DM-1	12/5/2017	Low Flow	7,130	2,770	12.8	230	0.025	1,100	30	<1.0	59	<1.0	6.2	28	<2.5	3.1	<2.5	<2.5	-	<2.5	5.1	6.6	<0.50	10,000	17,200	7.8	<5.0	<0.10	-69.14	-8.90
DM-1	5/30/2018	Low Flow	5,190	2,030	14.7	270	0.096[J]	5,200	63	0.78[J]	64	<0.50	5.0	30	<0.50	<5.0	<0.50	<5.0	-	<5.0	5.9	9.5	<0.50	11,000	17,300	7.9	<5.0	<0.10	-71.10	-8.57
DM-1	12/4/2018	Low Flow	8,180	3,280	9.00	260	<0.5	4,800	33	<20	68	<10	10	31	<10	<10	<10	<10	-	<10	<10	<10	<0.50	11,000	17,400	7.7	<5.0	<0.10	-70.10	-8.55
DM-1	6/14/2019	Low Flow	5,040	1,930	8.76	280	0.006	4,800	65	0.35	63	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<0.50	9,600	17,700	7.2	<5.0	<0.10	-70.40	-8.58
DM-1	12/5/2019	Low Flow	7,460	2,150[J]	16.3	250	0.004[J]	4,200	32	<0.20	67	<5.0	0.80[J]	32	<5.0	2.1[J]	<5.0	<5.0	-	<5.0	0.80[J]	47	<0.50	11,000	17,600	7.7	<5.0	<0.10	-70.10	-8.55
DM-1	6/4/2020	Low Flow	5,500	2,090	8.04	220	0.007	4,300	24	<0.20	53	<5.0	<5.0	33	<5.0	<5.0	<5.0	<5.0	-	<5.0	13	16	<0.50	12,000	17,800	7.3	<5.0	<0.096	-70.30	-8.57
DM-1	12/3/2020	Low Flow	5,530	2,150	8.50	230	<0.005	9,500	35	<0.20	49	<5.0	<5.0	35	<5.0	<5.0	<5.0	<5.0	-	<5.0	0.87	<0.50	<0.50	12,000	18,000	7.9	<5.0	<0.11	-70.20	-8.57
DM-2	5/24/2012	Low Flow	4,500	2,000	2.9	290	<0.10	3,500	25.0	<0.40	59	-	-	-	-	-	-	-	-	-	-	-	-	13,000	16,000	7.80	-	-	-71.7	-8.8
DM-2	10/23/2012	Low Flow	4,800	2,000	<1.1	470	<0.010	2,600	27.0	<0.040	54	-	-	-	-	-	-	-	110	-	-	-	-	9,900	16,000	7.72	-	-	-70.9	-8.9
DM-2	5/22/2014	Low Flow	5,100	2,000	-	320	<0.020	3,500	23	0.022[J]	54	<10	4.7[J]	97	<5.0	<10	<5.0	<5.0	59	4.1[J]	3.3[J]	<100	<0.20	11,000	18,000	7.79	<5.1	-	-69.95	-8.72
DM-2	12/4/2014	Low Flow	4,400	1,600	3.0	300	<0.050	3,100	20	0.082[J]	55	<10	5.7	140	<5.0	<10	<5.0	<5.0	90	8.4[J]	<10	<100	<0.20	9,900	17,000	7.90	<4.7	<0.095	N/A[2]	N/A[2]
DM-2	6/11/2015	Low Flow	4,500	2,000	3.8[J]	290	<0.10	3,500	22	<0.40	55	<10	4.1[J]	110	<5.0	2.9[J]	<5.0	<5.0	40	4.9[J]	<10	<100	<0.20	9,600	18,000	7.92	<4.7	<0.10	-68.2	-8.52
DM-2	12/10/2015	Low Flow	5,400	2,200	<5.5	290	<0.010	3,600	21	0.062	61	<10	5.9	85	<5.0	<10	<5.0	<5.0	88	<10	5.5[J]	<100	<0.20	12,000	18,000	7.85	<5.0	<0.096	-69.4	-8.43
DM-2	6/2/2016	Low Flow	4,800	1,900	8.0	280	<0.10	3,800	20	0.27[J]	60	0.51[J]	4.7	62	<1.0	1.5[J]	<1.0	<1.0	62	1.1[J]	3.5	<20	<0.20	12,000	22,000	7.95	<4.9	<0.097	-69.53	-8.63
DM-2	11/30/2016	Low Flow	5,300	2,200	2.8[J]	290	<0.010	4,200	28	<0.040	61	<20	5.9[J]	56	<10	<20	<10	<10	40	<20	18[J]	<200	<0.20	11,000	17,000	7.8	<4.7	<0.097	-70.20	-8.37
DM-2	6/1/2017	Low Flow	4,800	1,900	3.1[J]	280	<0.10	4,100	21	<1.0	62	<10	4.4[J]	52	<5.0	<10	<5.0	<5.0	17	5.2[J]	5.6[J]	<100	<0.20	12,000	16,000	7.9	<5.2	<0.097	-70.10	-8.51
DM-2	12/5/2017	Low Flow	4,930	1,960	13.4	250	<0.025	1,400	34	<1.0	62	<1.0	5.5	69	<2.5	3.7	<2.5	<2.5	-	<2.5	5.7	4.5	<0.50	11,000	17,200	7.8	<5.0	<0.10	-67.66	-8.63
DM-2	5/30/2018	Low Flow	6,000	2,280	17.5	300	0.11[J]	4,800	68	<10	67	<5.0	5.1	51	<0.50	<5.0	<0.50	<0.50	-	<0.50	6.3	<5.0	<0.50	9,900	17,000	7.9	<5.0	<0.11	-69.20	-8.39
DM-2	12/4/2018	Low Flow	5,290	1,770	11.4	240	<0.5	4,900	35	<20	60	<10	<10	57	<10	<10	<10	<10	-	<10	<10	28	<0.50	7,100	13,000	7.8	<5.0	<0.10	-72.30	-8.98
DM-2	6/14/2019	Low Flow	5,240	2,080	11.2	300	<0.005	5,100	68	<0.20	67	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<0.50	9,300	18,000	7.3	<5.0	<0.10	-70.10	-8.50
DM-2	12/5/2019	Low Flow	7,680	2,330[J]	21.2	310	0.007	4,400	30	<0.20	65	<5.0	<5.0	50	<5.0	2.9[J]	<5.0	<5.0	-	<5.0	3.2[J]	76	<0.50	10,000	17,000	7.6	<5.0	<0.10	-70.00	-8.48
DM-2	6/4/2020	Low Flow	5,580	2,240	10.4	280	0.007	4,100	41	<0.20	55	<5.0	<5.0	46	<5.0	<5.0	<5.0	<5.0	-	<5.0	9.8	24	<0.50	11,000	18,100	7.4	<5.0	<0.096	-69.90	-8.47
DM-2	12/3/2020	Low Flow	5,730	2,340	9.46	250	<0.005	11,000	34	<0.20	51	<5.0	<5.0	49	<5.0	<5.0	<5.0	<5.0	-	<5.0	0.94	<0.50	<0.50	10,000	18,000	7.8	<5.0	<0.11	-70.10	-8.50
DM-3	5/24/2012	Low Flow	4,600	2,000	<2.2	220	<0.10	3,500	20.0	<0.40	51	-	-	-	-	-	-	-	-	-	-	-	-	12,000	16,000	7.83	-	-	-71.4	-8.9
DM-3	10/23/2012	Low Flow	5,100	2,100	<2.2	210	<0.010	3,000	20.0	<0.040	52	-	-	-	-	-	-	-	<1.0	-	-	-	-	11,000	18,000	7.83	-	-	-72.6	-8.7
DM-3	5/22/2014	Low Flow	5,400	2,100	-	230	<0.010	3,600	21	<0.040	51	<10	13	18	<5.0	<10	<5.0	<5.0	<5.0	10	<10	<100	<0.20	11,000	19,000	7.66	<4.9	-	-68.86	-8.52
DM-3	12/5/2014	Low Flow	4,900	1,800	1.8[J]	230	<0.050	3,600	20	<0.20	56	<10	16	18	<5.0	<10	<5.0	<5.0	<5.0	9.6[J]	<10	<100	<0.20	11,000	18,000	7.82	<4.7	<0.099	N/A[2]	N/A[2]
DM-3	6/12/2015	Low Flow	4,400	1,900	<5.5	220	<0.10	3,600	18	<0.40	50	<10	14	17	<5.0	<10	<5.0	<5.0	<5.0	4.5[J]	<10	<100	<0.20	9,800	18,000	7.75	<4.9	<0.10	-69.6	-8.90
DM-3	12/11/2015	Low Flow	5,100	2,200	<5.5	250	0.0057[J]	3,500	19	<0.040	51	<10	17	21	<5.0	<10	<5.0	<5.0	<5.0	<10	3.1[J]	<100	<0.20	11,000	18,000	7.79	<5.0	<0.094	-70.6	-8.73
DM-3	6/3/2016	Low Flow	4,700	1,900	7.1	220	<0.10	3,700	17	<0.40	53	<2.0	14	16	<1.0	0.66[J]	<1.0	<1.0	0.64[J]	0.88[J]	1.0[J]	5.1[J]	<0.20	11,000	20,000	7.86	<4.7	<0.093	-69.29	-8.75
DM-3	12/2/2016	Low Flow	4,900	2,100	<5.5	240	0.0052[J]	4,100	23	<0.040	56	<10	16	18	<5.0	<10	<5.0	<5.0	<5.0	<10	5.6[J]	<100	<0.20	11,000	17,000	7.8	<4.8	<0.097	-72.20	-8.75
DM-3	6/1/2017	Low Flow	4,800	2,000	<5.5	240	<0.10	3,900	19	<1.0	55	<10	15	18	<5.0	<10	<5.0	<5.0	<5.0	3.9[J]	2.7[J]	<100	<0.20	11,000	16,000	7.9	<5.1	<0.095	-70.80	-8.71
DM-3	12/5/2017	Low Flow	4,880	2,020	2.77	230	0.027	1,200	31	0.073[J]	59	<2.5	15	15	<2.5	<2.5	<2.5	<2.5	-	<2.5	<2.5	5.6	<0.50	13,000	17,000	7.8	<5.0	<0.10	-69.57	-8.87
DM-3	5/30/2018	Low Flow	6,350	2,600	10.7	260	0.11[J]	4,100	61	<10	61	<0.50	14	15	<0.50	<5.0	<0.50	<0.50	-	<0.50	<5.0	<5.0	<0.50	12,000	17,100	7.9	<5.0	<0.11	-70.60	-8.67
DM-3	12/4/2018	Low Flow	6,770	2,840	2.50	280	<0.5	5,200	33	<20	69	<10	20	34	<10	<10	<10	<10	-	<10	<10	<10	<0.50	9,700	17,100	7.8	<5.0	<0.10	-70.60	-8.67
DM-3	6/14/2019	Low Flow	4,880	1,960	2.87	270	0.009	4,900	60	<0.20	59	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<0.50	9,300	16,800	7.5	<5.0	<0.10	-70.80	-8.69
DM-3	12/6/2019	Low Flow	9,760	4,350	3.52	240	0.006	4,100	31	<0.20	58	<5.0	11	18	<5.0	0.90[J]	<5.0	<5.0	-	<5.0	0.40[J]	51	<0.50	11,000	17,800	7.7	<5.0	<0.10	-70.50	-8.64
DM-3	6/5/2020	Low Flow	5,250	2,080	2.44	230	0.007	4,000	35	<0.20	48	<5.0	16	17	<5.0	<5.0	<5.0	<5.0	-	<5.0	6.4	13	<0.50	11,000	17,400	7.5	<5.0	<0.097	-70.70	-8.65
DM-3	12/3/2020	Low Flow	5,420	2,300	2.47	220	<0.005	9,100	29	<0.20	45	<5.0	<5.0	20	<5.0	<5.0	<5.0	<5.0	-	<5.0	0.68	0.55	<0.50	10,000	17,000	7.9	<5.0	<0.11	-70.90	-8.71
North Pond	6/1/2018	Composite	61,700	21,000	0.870	230	<0.015	12,000	430	<0.35	4.6[J]	<10	470	230	<10	<0.50	<10	<0.50	-	25	<25	62	<0.50	120,000	148,000	9.4	<1.40	<0.095	N/A	N/A
North Pond	12/3/2018	Composite	241,000	18,600	24.3	630	2.9	46,000	8,300	<20	27	<25	1,000	68	<25	<25	<25	<25	-	59	<25	<25	<0.50	400,000	241,000	7.6	<5.00	<0.099	N/A	N/A
North Pond	6/13/2019	Composite	39,800	12,000	<0.500	280	0.038	41,000	<0.10	<0.20	5.7	<10	25	12	<10	<10	<10	<10	-	<10	<10	-	<0.50	72,000	108,000	9.1	<5.00	<0.094	N/A	N/A
North Pond	12/5/2019	Composite	83,000	27,000	<500	380	0.090	43,000	340	<0.20	3.0	<5.0	800	200	<5.0	<50	<50	<5.0	-	<50	<50	4,300	<0.50	120,000	120,000	8.8	<5.00	<0.095	N/A	N/A
North Pond	6/4/2020	Composite	40,900	11,300	27.4	510	3.4	20,000	240	<20	570	<25	560	76	<25	<25	<25	<25	-	<25	38	39	<0.50	70,000	107,000	9.4	<5.00	<0.090	N/A	N/A
North Pond	12/3/2020	Composite	38,000	11,800	7.73	390	<0.5	30,000	250	<20	19	<25	8.7	330	<25	<25	<25	<25	-	<25	0.81	0.81	<0.50	57,000	95,000	8.9	<5.00	<0.10	N/A	N/A
South Pond	6/1/2018	Composite	152,000	59,500	22.2	27	<0.015	17,000	1,100	<0.35	17	<10	1,100	85	<25	<10	<10	<0.50	-	46	43	79	<0.50	310,000	218,000	8.3	<1.40	<0.090	N/A	N/A
South Pond	12/3/2018	Composite	33,200	8,710	65.1	410	2.8	34,000	420	<20	27	<25	390	310	<25	<25	<25	<25	-	<25	<25	160	<0.50	39,000	61,200	8.9	36.4	<0.097	N/A	N/A
South Pond	6/13/2019	Composite	38,700	10,800	57.2	430	0.064	40,000	<0.10	<0.20	16	<10	28	25	<10	<10	<10	<10	-	<10	<10	-	<0.50	68,000	104,000	9.3	<5.00	<0.097	N/A	N/A
South Pond	12/5/2019	Composite	30,000	6,770	2.17	200	0.041	14,000	160	<0.20	13	<5.0	200	170	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	190	<0.50	35,000	49,700	9.0	<5.00	<0.099	N/A	N/A
South Pond	6/4/2020	Composite	74,600	23,900	14.8	390	4.2	62,000	470	<20	1,100	<25	1,100	360	<25	<25	<25	<25	-	36	68	48	<0.50	130,000	166,000	8.8	<5.00	<0.091	N/A	N/A
South Pond	12/3/2020	Composite	73,700	16,600	10.6	370	<0.5	42,000	480	<20	23	<25	14	290	<25	<25	<25	<25	-	<25	0.73	3.0	<0.50	92,000	150,000	8.6	<5.00	<0.099	N/A	N/A

NOTES:
mg/L = milligrams per liter
ug/L = micrograms per liter
uS/cm = microsiemens per centimeter
‰ = parts per thousand
VSMOW = Vienna Standard Mean Ocean Water
< = not detected at or above the indicated reporting limit
- = information is unknown / not applicable / not analyzed
J - Result is less than the reporting limit but greater than or equal to the method detection limit, thus the concentration is an approximate value.
† - Heat Transfer Fluid (HTF) is characterized by the analytes 1,1'-oxybis-benzene and 1,1'-biphenyl.
1 - Duplicate sample
2 - Analytical results not available at time of reporting due to laboratory equipment failure.
Analytical data shaded grey is a monitored Contaminant of Concern as defined in the Waste Discharge Requirements, Condition 79, Page 16

TABLE 5

SUMMARY OF LEAKAGE DETECTION SYSTEM DATA

Genesis Solar Energy Project, Riverside County, California

	Sensor Readings[1]														
	North Pond							South Pond							
Date of Reading	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	Comments
1st Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	All probes are dry
2nd Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
3rd Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
12/05/2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
03/26/2015	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
06/12/2015	133	199	199	199	199	199	-	199	199	199	199	199	199	-	
09/03/2015	78	199	199	199	199	199	-	199	199	199	199	199	199	-	
09/15/2015	67	199	199	199	199	199	-	199	199	199	199	199	199	-	
12/10/2015	0	75	199	199	199	199	-	199	199	199	199	199	199	-	Sump pumps turned on - no water
03/01/2016	6	101	199	199	199	199	-	199	199	199	199	199	199	-	
06/02/2016	4	80	199	199	199	199	-	199	199	199	199	199	199	-	
09/01/2016	0	42	146	199	175	105	-	199	199	199	199	199	199	-	
12/01/2016	0	59	199	199	199	188	1,144.79	199	199	199	183	199	199	24.21	Readings on arrival
12/01/2016	199	199	199	199	199	199	1,144.79	199	199	199	183	199	199	24.21	Readings on departure, new probes in North Pond
03/02/2017	199	199	199	199	199	199	1,144.79	199	199	199	199	199	199	24.21	
06/01/2017	199	199	199	199	199	199	1,144.79	199	199	199	199	199	199	24.21	
09/04/2017	199	199	199	199	199	199	1,695.44	199	199	199	192	178	199	24.21	
12/05/2017	114	165	199	199	179	180	1,695.66	199	199	199	166	199	199	24.21	To date, all totalizer increases are from pump testing
03/06/2018	186	199	199	199	199	199	1,695.66	199	199	199	199	199	199	24.21	
06/01/2018	159	199	199	199	199	199	1,695.66	199	199	199	177	186	199	24.21	
09/12/2018	78	192	199	199	199	192	1,694.83	199	199	199	197	187	199	24.21	
12/03/2018	119	181	199	199	199	199	1,688.26	199	199	199	199	168	199	24.21	
03/08/2019	150	199	199	199	199	199	1,690.80	199	199	199	115	168	199	24.21	
06/13/2019	199	199	199	199	199	199	1,687.19	199	199	199	188	199	199	24.21	
09/08/2019	199	199	199	199	199	199	1,686.68	199	199	199	188	199	199	24.21	
12/05/2019	145	199	199	199	199	199	1,683.78	199	199	199	199	199	199	24.21	
03/17/2020	168	199	199	199	199	199	1,681.87	199	199	199	199	199	199	24.21	
06/04/2020	109	199	199	199	199	199	1,657.23	199	199	199	199	199	199	22.64	
09/16/2020	199	199	199	199	199	199	1,619.72	199	199	199	199	199	199	20.34	
12/03/2020	98	199	199	199	199	199	1,624.77	199	199	199	199	199	199	20.34	

1 - Readings in centibars, collected with a Watermark 30 KTCD-NL Soil Moisture Meter

APPENDIX A

FIELD DATA SHEETS

GROUNDWATER SAMPLING FIELD FORM

Date: Dec 03, 2020	Site: Genesis Solar Energy Project	Project No: 196-004-06
Project: Groundwater Quality Monitoring Program		Project Manager: AWB
Technicians: RCD/AWB		Weather: Clear, cool
Sampling Method: Low-Flow Sampling with Submersible Pump (EPA 2017 Protocols)		

Well No.	DM-1	Time (5 Min Int)	Water Level (ft btoc)	Temp °C (3%)	pH (+/- 0.1)	Cond (mS/cm) (3%)	Turbidity (NTUs) (10%)	ORP (mV) (+/- 10)	DO (mg/L) (10%)
Casing Diameter (in.)	4.0	8:45	107.72	18.70	7.69	17.48	26.4	84	4.12
Total Depth (ft btoc)	120	8:50	107.72	19.35	7.50	17.40	11.0	85	4.10
Screen Interval (ft btoc)	100 - 120	8:55	107.72	19.40	7.48	17.37	10.4	83	4.06
Depth to Water (ft btoc)	107.70	9:00	107.72	19.43	7.43	17.30	10.1	82	3.98
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	25								
Fill Time (sec)	15								
Cycles per Minute	1.5								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	188								
Volume Purged (mL)	3,760								
Sample Time	9:15								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = **1,254 mL**

COMMENTS:

Well No.	DM-2	Time (5 Min Int)	Water Level (ft btoc)	Temp °C (3%)	pH (+/- 0.1)	Cond (mS/cm) (3%)	Turbidity (NTUs) (10%)	ORP (mV) (+/- 10)	DO (mg/L) (10%)
Casing Diameter (in.)	4.0	9:45	108.20	21.05	7.48	18.25	52.3	115	1.83
Total Depth (ft btoc)	120	9:50	108.38	21.08	7.55	18.25	50.3	112	1.62
Screen Interval (ft btoc)	100 - 120	9:55	108.39	21.11	7.55	18.22	49.8	112	1.61
Depth to Water (ft btoc)	108.03	10:00	108.40	21.12	7.58	18.20	49.1	111	1.60
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	27								
Fill Time (sec)	40								
Cycles per Minute	0.9								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	120								
Volume Purged (mL)	2,400								
Sample Time	10:15								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = **2,115 mL**

COMMENTS:

Well No.	DM-3	Time (5 Min Int)	Water Level (ft btoc)	Temp °C (3%)	pH (+/- 0.1)	Cond (mS/cm) (3%)	Turbidity (NTUs) (10%)	ORP (mV) (+/- 10)	DO (mg/L) (10%)
Casing Diameter (in.)	4.0	11:00	104.78	23.12	7.40	16.98	10.3	118	3.96
Total Depth (ft btoc)	120	11:05	104.84	23.18	7.39	16.98	8.3	112	3.98
Screen Interval (ft btoc)	100 - 120	11:10	104.86	23.20	7.36	16.99	3.6	110	3.99
Depth to Water (ft btoc)	104.80	11:15	104.86	23.23	7.33	17.00	0.5	109	4.01
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	27								
Fill Time (sec)	35								
Cycles per Minute	0.97								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	121								
Volume Purged (mL)	2,420								
Sample Time	11:30								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = **1,352 mL**

COMMENTS:

APPENDIX B

LABORATORY ANALYTICAL RESULTS

EVAPORATION PONDS

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
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17 December 2020

Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, CA 92630

RE: Genesis Solar LTUs & Ponds

Enclosed are the results of analyses for samples received by the laboratory on 12/04/20 12:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Lee
Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Pond	T204119-01	Water	12/03/20 12:05	12/04/20 12:45
South Pond	T204119-02	Water	12/03/20 12:15	12/04/20 12:45

Metals analysis for EPA 200.8 and 200.7 were filtered in the field prior to laboratory analysis. The results are reported as dissolved metals. JL 12/16/20

Nitrate samples were originally analyzed within 48hr hold time. However, due to sample matrix, additional dilutions were required. The extra dilutions were conducted outside of method recommended hold time. JL 12/16/20

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

DETECTIONS SUMMARY

Sample ID: North Pond **Laboratory ID:** T204119-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**8.7**	0.50	ug/l	200.8	FILT
Barium	**330**	25	ug/l	200.8	FILT
Chromium	**0.50**	25	ug/l	200.8	J, FILT
Cobalt	**4.5**	25	ug/l	200.8	J, FILT
Copper	**89**	500	ug/l	EPA 200.7	J, A-01, FILT
Nickel	**5.5**	25	ug/l	200.8	J, FILT
Selenium	**0.81**	0.50	ug/l	200.8	FILT
Zinc	**0.81**	0.50	ug/l	200.8	FILT
Calcium	**390000**	10000	ug/l	EPA 200.7	A-01, FILT
Magnesium	**19000**	10000	ug/l	EPA 200.7	A-01, FILT
Potassium	**250000**	50000	ug/l	EPA 200.7	A-01, FILT
Sodium	**30000000**	250000	ug/l	EPA 200.7	A-01, FILT
pH	**8.9**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**57000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**95000**	10	umhos/cm	SM2510b/120.1	
Chloride	**38000**	10000	mg/l	EPA 300.0	
Sulfate as SO4	**11800**	2500	mg/l	EPA 300.0	
Nitrate as NO3	**7.73**	5.00	mg/l	EPA 300.0	O-07
Nitrate as N	**1.70**	2.00	mg/l	EPA 300.0	J, O-07

Sample ID: South Pond **Laboratory ID:** T204119-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**14**	0.50	ug/l	200.8	FILT
Barium	**290**	25	ug/l	200.8	FILT
Chromium	**5.0**	25	ug/l	200.8	J, FILT
Cobalt	**5.0**	25	ug/l	200.8	J, FILT
Copper	**91**	500	ug/l	EPA 200.7	J, A-01, FILT
Nickel	**16**	25	ug/l	200.8	J, FILT
Selenium	**0.73**	0.50	ug/l	200.8	FILT
Zinc	**3.0**	0.50	ug/l	200.8	FILT

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Sample ID: South Pond **Laboratory ID:** T204119-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Calcium	**370000**	10000	ug/l	EPA 200.7	A-01, FILT
Magnesium	**23000**	10000	ug/l	EPA 200.7	A-01, FILT
Potassium	**480000**	50000	ug/l	EPA 200.7	A-01, FILT
Sodium	**42000000**	500000	ug/l	EPA 200.7	A-01, FILT
pH	**8.6**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**92000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**150000**	10	umhos/cm	SM2510b/120.1	
Chloride	**73700**	10000	mg/l	EPA 300.0	
Sulfate as SO4	**16600**	2500	mg/l	EPA 300.0	
Nitrate as NO3	**10.6**	5.00	mg/l	EPA 300.0	O-07
Nitrate as N	**2.40**	2.00	mg/l	EPA 300.0	O-07

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

North Pond

T204119-01(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Copper	**89**	30	500	ug/l	100	0120420	12/04/20	12/15/20	EPA 200.7	J, A-01, FILT
Calcium	**390000**	10000	10000	"	"	"	"	12/15/20	"	A-01, FILT
Iron	ND	700	20000	"	"	"	"	"	"	A-01, FILT
Magnesium	**19000**	7300	10000	"	"	"	"	"	"	A-01, FILT
Potassium	**250000**	13000	50000	"	"	"	"	"	"	A-01, FILT
Sodium	**30000000**	90000	250000	"	500	"	"	12/15/20	"	A-01, FILT
Antimony	ND	2.2	25	"	50	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	**8.7**	0.00010	0.50	"	1	"	"	12/11/20	"	FILT
Barium	**330**	1.2	25	"	50	"	"	12/11/20	"	FILT
Cadmium	ND	0.070	25	"	"	"	"	"	"	FILT
Chromium	**0.50**	0.0050	25	"	"	"	"	"	"	J, FILT
Cobalt	**4.5**	0.0050	25	"	"	"	"	"	"	J, FILT
Lead	ND	2.4	25	"	"	"	"	"	"	FILT
Nickel	**5.5**	0.015	25	"	"	"	"	"	"	J, FILT
Selenium	**0.81**	0.00090	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**0.81**	0.00070	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.022	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.9**	0.030	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**57000**	5.0	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

North Pond

T204119-01(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Miscellaneous Physical/Conventional Chemistry Parameters										
Specific Conductance (EC)	**95000**	1.5	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0										
Chloride	**38000**	58.0	10000	mg/l	2000	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**11800**	12.0	2500	"	500	"	"	"	"	
Nitrate as NO3	**7.73**	0.200	5.00	"	10	"	"	12/05/20	"	O-07
Nitrate as N	**1.70**	0.0450	2.00	"	"	"	"	"	"	J, O-07

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

South Pond

T204119-02(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Copper	**91**	30	500	ug/l	100	0120420	12/04/20	12/15/20	EPA 200.7	J, A-01, FILT
Calcium	**370000**	10000	10000	"	"	"	"	12/15/20	"	A-01, FILT
Iron	ND	700	20000	"	"	"	"	"	"	A-01, FILT
Magnesium	**23000**	7300	10000	"	"	"	"	"	"	A-01, FILT
Potassium	**480000**	13000	50000	"	"	"	"	"	"	A-01, FILT
Sodium	**42000000**	180000	500000	"	1000	"	"	12/15/20	"	A-01, FILT
Antimony	ND	2.2	25	"	50	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	**14**	0.00010	0.50	"	1	"	"	12/11/20	"	FILT
Barium	**290**	1.2	25	"	50	"	"	12/11/20	"	FILT
Cadmium	ND	0.070	25	"	"	"	"	"	"	FILT
Chromium	**5.0**	0.0050	25	"	"	"	"	"	"	J, FILT
Cobalt	**5.0**	0.0050	25	"	"	"	"	"	"	J, FILT
Lead	ND	2.4	25	"	"	"	"	"	"	FILT
Nickel	**16**	0.015	25	"	"	"	"	"	"	J, FILT
Selenium	**0.73**	0.00090	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**3.0**	0.00070	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.022	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.6**	0.030	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**92000**	5.0	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

South Pond

T204119-02(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Miscellaneous Physical/Conventional Chemistry Parameters										
Specific Conductance (EC)	**150000**	1.5	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0										
Chloride	**73700**	58.0	10000	mg/l	2000	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**16600**	12.0	2500	"	500	"	"	"	"	
Nitrate as NO3	**10.6**	0.200	5.00	"	10	"	"	12/05/20	"	O-07
Nitrate as N	**2.40**	0.0450	2.00	"	"	"	"	"	"	O-07

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120419 - EPA 3010A											
Blank (0120419-BLK1)					Prepared: 12/04/20 Analyzed: 12/11/20						
Antimony	ND	0.045	0.50	ug/l							
Arsenic	ND	0.00010	0.50	"							
Barium	0.0600	0.024	0.50	"							J
Cadmium	ND	0.0014	0.50	"							
Chromium	ND	0.00010	0.50	"							
Cobalt	0.0800	0.00010	0.50	"							J
Lead	ND	0.048	0.50	"							
Nickel	ND	0.00030	0.50	"							
Selenium	0.160	0.00090	0.50	"							J
Zinc	0.490	0.00070	0.50	"							J
LCS (0120419-BS1)					Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	59.1	0.00010	0.50	ug/l	50.0		118	80-120			
Barium	49.8	0.024	0.50	"	50.0		99.6	80-120			
Cadmium	58.6	0.0014	0.50	"	50.0		117	80-120			
Chromium	49.4	0.00010	0.50	"	50.0		98.8	80-120			
Lead	53.4	0.048	0.50	"	50.0		107	80-120			
Matrix Spike (0120419-MS1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	5.66	0.00010	0.50	ug/l	50.0	0.300	10.7	75-125			QM-05
Barium	79.1	0.24	5.0	"	50.0	21.9	114	75-125			
Cadmium	50.6	0.014	5.0	"	50.0	ND	101	75-125			
Chromium	51.2	0.0010	5.0	"	50.0	0.800	101	75-125			
Lead	58.4	0.48	5.0	"	50.0	3.00	111	75-125			
Matrix Spike Dup (0120419-MSD1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	5.81	0.00010	0.50	ug/l	50.0	0.300	11.0	75-125	2.62	20	QM-05
Barium	77.8	0.24	5.0	"	50.0	21.9	112	75-125	1.66	20	
Cadmium	51.1	0.014	5.0	"	50.0	ND	102	75-125	0.983	20	

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120419 - EPA 3010A											
Matrix Spike Dup (0120419-MSD1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Chromium	53.9	0.0010	5.0	ug/l	50.0	0.800	106	75-125	5.14	20	
Lead	57.9	0.48	5.0	"	50.0	3.00	110	75-125	0.860	20	
Batch 0120420 - EPA 3010A											
Blank (0120420-BLK1)					Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	ND	0.2	5	ug/l							
Chromium	ND	0.4	5	"							
Copper	1	0.3	5	"							J
Lead	ND	2	5	"							
Molybdenum	0.9	0.6	5	"							J
Nickel	ND	0.5	5	"							
Silver	ND	18	30	"							
Zinc	ND	3	30	"							
Calcium	ND	100	100	"							
Iron	ND	7	200	"							
Magnesium	ND	73	100	"							
Potassium	151	130	500	"							J
Sodium	948	180	500	"							QB-01
LCS (0120420-BS1)					Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	495	0.2	5	ug/l	500		99.1	85-115			
Chromium	494	0.4	5	"	500		98.7	85-115			
Copper	502	0.3	5	"	500		100	85-115			
Lead	500	2	5	"	500		100	85-115			
Molybdenum	490	0.6	5	"	500		98.0	85-115			
Nickel	491	0.5	5	"	500		98.2	85-115			
Silver	505			"	500		101	85-115			
Zinc	498	3	30	"	500		99.6	85-115			

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120420 - EPA 3010A											
Matrix Spike (0120420-MS1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	533	0.2	5	ug/l	500	ND	107	70-130			
Chromium	496	0.4	5	"	500	ND	99.3	70-130			
Copper	517	0.3	5	"	500	5	102	70-130			
Lead	491	2	5	"	500	3	97.7	70-130			
Molybdenum	579	0.6	5	"	500	54	105	70-130			
Nickel	489	0.5	5	"	500	ND	97.8	70-130			
Silver	492			"	500	11	96.2	70-130			
Zinc	780	3	30	"	500	222	111	70-130			
Matrix Spike Dup (0120420-MSD1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	538	0.2	5	ug/l	500	ND	108	70-130	1.10	30	
Chromium	506	0.4	5	"	500	ND	101	70-130	1.87	30	
Copper	523	0.3	5	"	500	5	104	70-130	1.13	30	
Lead	501	2	5	"	500	3	99.5	70-130	1.84	30	
Molybdenum	579	0.6	5	"	500	54	105	70-130	0.124	30	
Nickel	494	0.5	5	"	500	ND	98.8	70-130	1.00	30	
Silver	483			"	500	11	94.4	70-130	1.85	30	
Zinc	788	3	30	"	500	222	113	70-130	1.12	30	

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120421 - EPA 7470A Water											
Blank (0120421-BLK1)					Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	0.0241	0.022	0.50	ug/l							J
LCS (0120421-BS1)					Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.92	0.022	0.50	ug/l	5.00		98.3	80-120			
Matrix Spike (0120421-MS1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.01	0.022	0.50	ug/l	5.00	0.0287	79.7	75-125			
Matrix Spike Dup (0120421-MSD1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.14	0.022	0.50	ug/l	5.00	0.0287	82.2	75-125	3.06	20	

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26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120411 - General Preparation											
Duplicate (0120411-DUP1)		**Source: T204118-01**			Prepared & Analyzed: 12/04/20						
pH	8.66	0.030	0.10	pH Units		8.67			0.115	20	
Batch 0120425 - General Preparation											
Blank (0120425-BLK1)					Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	ND	1.40	5.00	mg/l							
LCS (0120425-BS1)					Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	30.2	1.40	5.00	mg/l	35.4		85.3	80-120			
LCS Dup (0120425-BSD1)					Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	31.5	1.40	5.00	mg/l	35.4		89.0	80-120	4.21	20	
Batch 0120715 - General Preparation											
Blank (0120715-BLK1)					Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	ND	5.0	10	mg/l							
LCS (0120715-BS1)					Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	472	5.0	10	mg/l	500		94.4	80-120			
Duplicate (0120715-DUP1)		**Source: T204118-01**			Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	1260	5.0	10	mg/l		1250			0.957	20	

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25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Miscellaneous Physical/Conventional Chemistry Parameters - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120412 - General Preparation											
Duplicate (0120412-DUP1)		**Source: T204118-01**			Prepared & Analyzed: 12/04/20						
Specific Conductance (EC)	2600	1.5	10	umhos/cm		2630			1.15	15	

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120413 - General Preparation											
Blank (0120413-BLK1)					Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	0.434	0.0290	5.00	mg/l							J
Sulfate as SO4	0.605	0.0240	5.00	"							J
Nitrate as NO3	ND	0.0200	0.500	"							
Nitrate as N	ND	0.00450	0.200	"							
LCS (0120413-BS1)					Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	26.1	0.0290	5.00	mg/l	25.0		105	75-125			
Sulfate as SO4	26.1	0.0240	5.00	"	25.0		104	75-125			
Nitrate as NO3	26.3	0.0200	0.500	"	25.0		105	75-125			
Matrix Spike (0120413-MS1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	490	0.290	50.0	mg/l	25.0	481	36.3	75-125			QM-05
Sulfate as SO4	423	0.240	50.0	"	25.0	411	49.7	75-125			QM-05
Nitrate as NO3	25.8	0.0200	0.500	"	25.0	0.704	100	75-125			
Matrix Spike Dup (0120413-MSD1)		**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	488	0.290	50.0	mg/l	25.0	481	26.2	75-125	0.515	20	QM-05
Sulfate as SO4	422	0.240	50.0	"	25.0	411	43.0	75-125	0.395	20	QM-05
Nitrate as NO3	25.8	0.0200	0.500	"	25.0	0.704	101	75-125	0.310	20	

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-01	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/17/20 11:21

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
QB-01	The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
O-07	The sample was analyzed outside the EPA recommended holding time of 48 hours.
O-04	This sample was received and analyzed outside the EPA recommended holding time.
J	Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
FILT	The sample was filtered prior to analysis.
A-01	Analysis performed on multiple 5035 vials yielding various results. Highest observed results have been reported.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

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SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northstar Environmental Remediation _____
Address: 26225 Enterprise Court, Lake Forest, CA 92630 _____
Phone: 949-274-1719 _____ Fax: _____
Project Manager: Arlin Brewster _____

Date: 12/4/20 Page: 1 of 1
Project Name: Genesis Solar LTUs & Ponds _____
Collector: Arlin Brewster _____ Client Project #: 196-004-05 _____
Batch #: 120419 EDF #: Not Required _____

	Sample ID	Date Sampled	Time	Sample Type	Container Type	200.7 - Metals: Ca, Cu, Na, K, Fe, Mg (FIELD FILTERED)	200.8 - Metals: Sb, As, Ba, Cd, Cr, Co, Pb, Ni, Se, Zn (F.F.)	300.0 - Chloride, Nitrate, Sulfate,	1664 - Oil and Grease	7470A - Mercury	9040 - pH	SM2510B - Conductivity, Specific	SM2540C - Total Dis. Solids	8015M - Therminol (Subcontract)			Laboratory ID #	Comments/Preservative	Total # of containers
1	North Pond	12/3/20	1205	W	Various	X	X	X	X	X	X	X	X	X			01		6
2	South Pond	12/3/20	1215	W	Various	X	X	X	X	X	X	X	X	X			02		6
3	Field Blank	N/A	N/A	W	Various												03	HOLD	
4	Trip Blank	N/A	N/A	W	Various												04	HOLD	

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	12/04/20 @ 1245	[signature]	12-4-20 1245
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers	12
Chain of Custody seals Y/N/NA	
Seals intact? Y/N/NA	
Received good condition/cold	7.7

Turn around time: Standard

Notes

EDF report not required.

Reporting limits must match previous reports

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

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Providing Quality Analytical Services Nationwide

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T204119

Client Name: Northstar Project: Genesis Solar LTUs + Ponds

Delivered by: ☒ Client ☐ SunStar Courier ☐ GLS ☐ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: Dan Date/Time Lab Received: 12.4.20 1245

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due: 8/17/21

Temperature: Cooler #1	2.5 °C +/- the CF (-0.2°C) =	2.3	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (-0.2°C) =		°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (-0.2°C) =		°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☒ **Yes**	☐ **No**
If NO:			
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**	
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**	

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☒ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☒ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☐ **Yes**	☒ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: RB 12.4.20

Comments: Out of hold for pH.

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories

SAMPLE NON-CONFORMANCE SHEET

Batch/Work Order # T204119

- **COOLERS**
  - ☐ Not Received (received COC only)
  - ☐ Leaking/Damaged
  - ☐ Other:
- **CUSTODY SEALS**
  - ☐ None
  - ☐ Not Intact
- **TEMPERATURE (Temp criteria ≤ 6°C)**
  - ☐ Cooler/Sample Temp(s)
  - ☐ Temperature Blank(s)
- **CHAIN OF CUSTODY (COC)**
  - ☐ Not relinquished by client; No date/time relinquished
  - ☐ Incomplete information provided
  - ☐ COC not received – notify PM
- **CONTAINERS**
  - ☐ Leaking ☐ Broken
  - ☐ Extra ☐ Missing
- **LABELS**
  - ☐ Not the same sample ID / info as on the COC
  - ☐ Incomplete Information
  - ☐ Markings/Info illegible
- **SAMPLES**
  - ☐ Samples **NOT RECEIVED** but listed on COC
  - ☐ Samples received but **NOT LISTED** on COC
  - ☐ Logged based on Label Information and not COC
  - ☐ Logged according to Work Plan and not COC
  - ☐ Logged in, **ON HOLD** until further notice
  - ☐ Insufficient quantities for analysis
  - ☐ Improper container used
  - ☐ Mislabeled as to tests, preservatives, etc.
  - ☒ Holding time expired – list sample ID and test
  - ☐ Not preserved/Improper preservative used
  - ☐ Without Labels, no information on containers
  - ☐ VOA vial(s) containing headspace >6mm
  - ☐ Other

Project Manager notified of sample non-conformance(s) ☐Yes ☐No

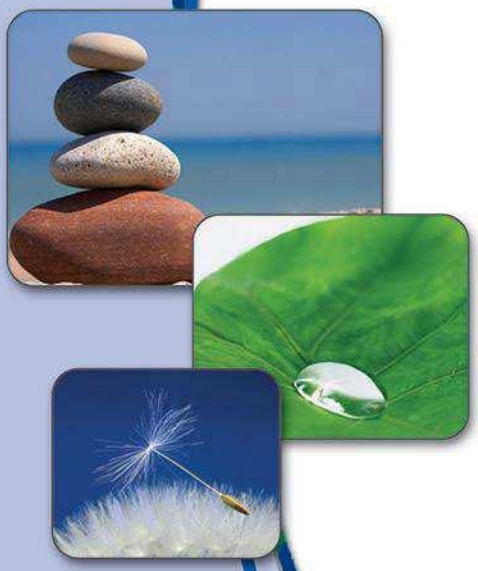
All samples accepted for processing and distributing to laboratory(ies) ☐Yes ☐No

For samples not accepted due to non-conformance, specify each specific sample ID being rejected in the comments section below:

Comments: Out of hold for pH.

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Calscience Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-275745-1
Client Project/Site: T204119

For:
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Attn: Jeff Lee

Authorized for release by:
12/11/2020 8:42:02 AM

Danielle Roberts, Senior Project Manager
(949)260-3249
Danielle.Roberts@Eurofinset.com

Table of Contents

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-275745-1	T204119-01	Water	12/03/20 12:05	12/07/20 16:09	
440-275745-2	T204119-02	Water	12/03/20 12:15	12/07/20 16:09	

Job ID: 440-275745-1

Laboratory: Eurofins Calscience Irvine

Narrative

Job Narrative
440-275745-1

Comments
No additional comments.

Receipt
The samples were received on 12/7/2020 4:09 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

GC Semi VOA
Method 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-632968 and analytical batch 440-632992. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8015 preparation batch 440-632968. LCS was performed in duplicate to provide precision of data.

Method 3510C: A very large emulsion formed for these samples. This may lead to possible low surrogate recoveries.

T204119-01 (440-275745-1) and T204119-02 (440-275745-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Client Sample ID: T204119-01 — Lab Sample ID: 440-275745-1

No Detections.

Client Sample ID: T204119-02 — Lab Sample ID: 440-275745-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Client Sample ID: T204119-01

Lab Sample ID: 440-275745-1

Date Collected: 12/03/20 12:05

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.021	mg/L		12/08/20 08:26	12/08/20 22:06	1
1,1'-Biphenyl	ND		0.10	0.021	mg/L		12/08/20 08:26	12/08/20 22:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 22:06*	*1*

Client Sample ID: T204119-02

Lab Sample ID: 440-275745-2

Date Collected: 12/03/20 12:15

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.099	0.020	mg/L		12/08/20 08:26	12/08/20 22:53	1
1,1'-Biphenyl	ND		0.099	0.020	mg/L		12/08/20 08:26	12/08/20 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*78*		*45 - 120*	*12/08/20 08:26*	*12/08/20 22:53*	*1*

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**OTCN1 (45-120)**
440-275745-1	T204119-01	81
440-275745-2	T204119-02	78
LCS 440-632968/2-A	Lab Control Sample	75
LCSD 440-632968/3-A	Lab Control Sample Dup	79
MB 440-632968/1-A	Method Blank	82

Surrogate Legend

OTCN = n-Octacosane

Method Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Client Sample ID: T204119-01

Date Collected: 12/03/20 12:05
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275745-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			975 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 22:06	RMP	TAL IRV

Client Sample ID: T204119-02

Date Collected: 12/03/20 12:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275745-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1010 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 22:53	RMP	TAL IRV

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-632968/1-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 632968

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1
1,1'-Biphenyl	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*45 - 120*	*12/08/20 08:26*	*12/08/20 17:23*	*1*

Lab Sample ID: LCS 440-632968/2-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene, 1,1'-oxybis-			0.100	0.0706	J	mg/L		71	50 - 115		
1,1'-Biphenyl			0.100	0.0703	J	mg/L		70	50 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*75*		*45 - 120*

Lab Sample ID: LCSD 440-632968/3-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-			0.100	0.0747	J	mg/L		75	50 - 115	6	30
1,1'-Biphenyl			0.100	0.0749	J	mg/L		75	50 - 115	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*79*		*45 - 120*

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

GC Semi VOA

Prep Batch: 632968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275745-1	T204119-01	Total/NA	Water	3510C	
440-275745-2	T204119-02	Total/NA	Water	3510C	
MB 440-632968/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 632992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275745-1	T204119-01	Total/NA	Water	8015B	632968
440-275745-2	T204119-02	Total/NA	Water	8015B	632968
MB 440-632968/1-A	Method Blank	Total/NA	Water	8015B	632968
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	8015B	632968
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	632968

Definitions/Glossary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T204119

Job ID: 440-275745-1

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2706	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B	3510C	Water	1,1'-Biphenyl
8015B	3510C	Water	Benzene, 1,1'-oxybis-

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T204119

SENDING LABORATORY:

SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630
Phone: (949) 297-5020
Fax: (949) 297-5027
Project Manager: Jeff Lee

RECEIVING LABORATORY:

TestAmerica (Irvine) Laboratories
17461 Derian Ave, #100
Irvine, CA 92614
Phone :(949) 261-1022
Fax: N/A

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T204119-01	**Water**	**Sampled: 12/03/20 12:05**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:05		8015M- Therminol
Containers Supplied:				
Sample ID: T204119-02	**Water**	**Sampled: 12/03/20 12:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:15		8015M- Therminol
Containers Supplied:				

00 12/7/20

440-275745 Chain of Custody

Released By	Date	Received By	Date
	12-7-20 1609	ECIRU	12/7/20 1609
Released By	Date	Received By	Date

Page 1 of 1

3.3/3.2 IP 89

12/11/2020

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 440-275745-1

Login Number: 275745
List Number: 1
Creator: Skinner, Alma D

List Source: Eurofins Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T204119

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Jeff Lee**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-01**

Report To:

Northstar Environmental Remediation
Arlin Brewster
26225 Enterprise Court
Lake Forest, CA 92630

Date Due:	12/11/20 17:00 (5 day TAT)		
Received By:	Dan Marteski	Date Received:	12/04/20 12:45
Logged In By:	Mike Jaroudi	Date Logged In:	12/04/20 14:31

Samples Received at:	**2.3°C**		
Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Analysis	Due	TAT	Expires	Comments
T204119-01 North Pond [Water] Sampled 12/03/20 12:05 (GMT-08:00) Pacific Time (US &				
1664	12/11/20 15:00	5	12/31/20 12:05	Oil & Grease
200.7	12/11/20 15:00	5	06/01/21 12:05	Ca,Cu,Na,K,Fe,Mg (F.F)
200.8	12/11/20 15:00	5	06/01/21 12:05	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (F.F)
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 12:05	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 12:05	Nitrate
7470/71 Hg	12/11/20 15:00	5	03/03/21 12:05	
Conductivity	12/11/20 15:00	5	12/31/20 12:05	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 12:05	
TDS-160.1	12/11/20 15:00	5	12/10/20 12:05	
T204119-02 South Pond [Water] Sampled 12/03/20 12:15 (GMT-08:00) Pacific Time (US &				
1664	12/11/20 15:00	5	12/31/20 12:15	Oil & Grease
200.7	12/11/20 15:00	5	06/01/21 12:15	Ca,Cu,Na,K,Fe,Mg (F.F)
200.8	12/11/20 15:00	5	06/01/21 12:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (F.F)
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 12:15	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 12:15	Nitrate
7470/71 Hg	12/11/20 15:00	5	03/03/21 12:15	
Conductivity	12/11/20 15:00	5	12/31/20 12:15	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 12:15	
TDS-160.1	12/11/20 15:00	5	12/10/20 12:15	

Page 1 of 2

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T204119

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Jeff Lee**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-01**

Analysis	Due	TAT	Expires	Comments
T204119-03 Field Blank [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				
T204119-04 Trip Blank [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				
TestAmerica (Irvine) Laboratories				
T204119-01 North Pond [Water] Sampled 12/03/20 12:05 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 12:05	8015M- Therminol
T204119-02 South Pond [Water] Sampled 12/03/20 12:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 12:15	8015M- Therminol

Reviewed By

Date

Page 2 of 2

APPENDIX C

LABORATORY ANALYTICAL RESULTS

DETECTION MONITORING WELLS

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
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23 December 2020

Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, CA 92630

RE: Genesis Solar Groundwater

Enclosed are the results of analyses for samples received by the laboratory on 12/04/20 12:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joann Marroquin For Jeff Lee
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
23a	T204118-01	Water	12/03/20 09:15	12/04/20 12:45
OBS-1	T204118-02	Water	12/03/20 14:40	12/04/20 12:45
TW-1	T204118-03	Water	12/03/20 15:00	12/04/20 12:45
TW-2	T204118-04	Water	12/03/20 13:10	12/04/20 12:45
PW-0	T204118-05	Water	12/03/20 12:40	12/04/20 12:45
PW-2	T204118-06	Water	12/03/20 12:50	12/04/20 12:45
DM-1	T204118-07	Water	12/03/20 09:15	12/04/20 12:45
DM-2	T204118-08	Water	12/03/20 10:15	12/04/20 12:45
DM-3	T204118-09	Water	12/03/20 11:30	12/04/20 12:45
DUP	T204118-10	Water	12/03/20 00:00	12/04/20 12:45

Metals analysis for EPA 200.8 and 200.7 were filtered in the field prior to laboratory analysis. The results are reported as dissolved metals. JL 12/16/20

Nitrate samples were originally analyzed within 48hr hold time. However, due to sample matrix, additional dilutions were required. The extra dilutions were conducted outside of method recommended hold time. JL 12/16/20

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Joann Marroquin

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Joann Marroquin For Jeff Lee, Project Manager

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DETECTIONS SUMMARY

Sample ID: 23a **Laboratory ID:** T204118-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**22**	5.0	ug/l	200.8	FILT
Copper	**0.005**	0.005	mg/l	EPA 200.7	FILT
Zinc	**22**	0.50	ug/l	200.8	FILT
Calcium	**16**	0.10	mg/l	EPA 200.7	FILT
Iron	**0.71**	0.20	mg/l	EPA 200.7	FILT
Potassium	**51**	0.50	mg/l	EPA 200.7	FILT
Magnesium	**0.35**	0.10	mg/l	EPA 200.7	FILT
Sodium	**650**	12	mg/l	EPA 200.7	FILT
Total Dissolved Solids	**1200**	10	mg/l	TDS by SM2540C	
pH	**8.7**	0.10	pH Units	SM 4500-H+B	O-04
Specific Conductance (EC)	**2600**	10	umhos/cm	SM2510b/120.1	
Chloride	**481**	50.0	mg/l	EPA 300.0	QM-05
Sulfate as SO4	**411**	50.0	mg/l	EPA 300.0	QM-05
Nitrate as NO3	**0.704**	0.500	mg/l	EPA 300.0	

Sample ID: OBS-1 **Laboratory ID:** T204118-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**18**	5.0	ug/l	200.8	FILT
Copper	**0.005**	0.005	mg/l	EPA 200.7	FILT
Selenium	**7.6**	0.50	ug/l	200.8	FILT
Zinc	**3.7**	0.50	ug/l	200.8	FILT
Calcium	**320**	30	mg/l	EPA 200.7	FILT
Iron	**1.2**	0.20	mg/l	EPA 200.7	FILT
Potassium	**51**	0.50	mg/l	EPA 200.7	FILT
Magnesium	**68**	0.10	mg/l	EPA 200.7	FILT
Sodium	**320**	150	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM 4500-H+B	
Total Dissolved Solids	**18000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**24000**	10	umhos/cm	SM2510b/120.1	
Chloride	**6560**	1000	mg/l	EPA 300.0	
Sulfate as SO4	**6200**	1000	mg/l	EPA 300.0	

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Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Sample ID: OBS-1 **Laboratory ID:** T204118-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Nitrate as NO3	**5.41**	0.500	mg/l	EPA 300.0	
Nitrate as N	**1.22**	0.200	mg/l	EPA 300.0	

Sample ID: TW-1 **Laboratory ID:** T204118-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**20**	5.0	ug/l	200.8	FILT
Calcium	**89**	0.10	mg/l	EPA 200.7	FILT
Iron	**3.1**	0.20	mg/l	EPA 200.7	FILT
Potassium	**30**	0.50	mg/l	EPA 200.7	FILT
Magnesium	**12**	0.10	mg/l	EPA 200.7	FILT
Sodium	**9300**	150	mg/l	EPA 200.7	FILT
pH	**9.3**	0.10	pH Units	SM 4500-H+B	
Total Dissolved Solids	**6400**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**15000**	10	umhos/cm	SM2510b/120.1	
Chloride	**4750**	500	mg/l	EPA 300.0	
Sulfate as SO4	**1710**	500	mg/l	EPA 300.0	
Nitrate as NO3	**0.657**	0.500	mg/l	EPA 300.0	

Sample ID: TW-2 **Laboratory ID:** T204118-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**44**	5.0	ug/l	200.8	FILT
Calcium	**68**	0.10	mg/l	EPA 200.7	FILT
Potassium	**23**	0.50	mg/l	EPA 200.7	FILT
Magnesium	**0.63**	0.10	mg/l	EPA 200.7	FILT
Sodium	**70**	40	mg/l	EPA 200.7	FILT
pH	**9.5**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**2500**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**5600**	10	umhos/cm	SM2510b/120.1	
Chloride	**1680**	500	mg/l	EPA 300.0	
Sulfate as SO4	**454**	50.0	mg/l	EPA 300.0	
Nitrate as NO3	**0.659**	0.500	mg/l	EPA 300.0	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Sample ID: PW-0 **Laboratory ID:** T204118-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**5.0**	5.0	ug/l	200.8	FILT
Barium	**63**	5.0	ug/l	200.8	FILT
Zinc	**4.2**	0.50	ug/l	200.8	FILT
Calcium	**96**	0.10	mg/l	EPA 200.7	FILT
Iron	**0.35**	0.20	mg/l	EPA 200.7	FILT
Magnesium	**1.4**	0.10	mg/l	EPA 200.7	FILT
Potassium	**23**	0.50	mg/l	EPA 200.7	FILT
Sodium	**2300**	50	mg/l	EPA 200.7	FILT
pH	**8.3**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**3200**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**6300**	10	umhos/cm	SM2510b/120.1	
Chloride	**1880**	250	mg/l	EPA 300.0	
Sulfate as SO4	**625**	100	mg/l	EPA 300.0	
Nitrate as NO3	**0.641**	0.500	mg/l	EPA 300.0	

Sample ID: PW-2 **Laboratory ID:** T204118-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**52**	5.0	ug/l	200.8	FILT
Calcium	**47**	0.10	mg/l	EPA 200.7	FILT
Magnesium	**3.8**	0.10	mg/l	EPA 200.7	FILT
Potassium	**6.4**	0.50	mg/l	EPA 200.7	FILT
Sodium	**1200**	25	mg/l	EPA 200.7	FILT
pH	**8.3**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**1900**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**3700**	10	umhos/cm	SM2510b/120.1	
Chloride	**1010**	250	mg/l	EPA 300.0	
Sulfate as SO4	**436**	50.0	mg/l	EPA 300.0	

Sample ID: DM-1 **Laboratory ID:** T204118-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**35**	5.0	ug/l	200.8	FILT
Selenium	**0.87**	0.50	ug/l	200.8	FILT
Calcium	**230**	20	mg/l	EPA 200.7	FILT

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Sample ID: DM-1 **Laboratory ID:** T204118-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Magnesium	**49**	0.10	mg/l	EPA 200.7	FILT
Potassium	**35**	0.50	mg/l	EPA 200.7	FILT
Sodium	**9500**	100	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**12000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**18000**	10	umhos/cm	SM2510b/120.1	
Chloride	**5530**	1000	mg/l	EPA 300.0	
Sulfate as SO4	**2150**	250	mg/l	EPA 300.0	
Nitrate as NO3	**8.50**	0.500	mg/l	EPA 300.0	
Nitrate as N	**1.92**	0.200	mg/l	EPA 300.0	

Sample ID: DM-2 **Laboratory ID:** T204118-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**49**	5.0	ug/l	200.8	FILT
Selenium	**0.94**	0.50	ug/l	200.8	FILT
Calcium	**250**	20	mg/l	EPA 200.7	FILT
Potassium	**34**	0.50	mg/l	EPA 200.7	FILT
Magnesium	**51**	0.10	mg/l	EPA 200.7	FILT
Sodium	**11000**	100	mg/l	EPA 200.7	FILT
pH	**7.8**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**10000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**18000**	10	umhos/cm	SM2510b/120.1	
Chloride	**5730**	1000	mg/l	EPA 300.0	
Sulfate as SO4	**2340**	500	mg/l	EPA 300.0	
Nitrate as NO3	**9.46**	0.500	mg/l	EPA 300.0	
Nitrate as N	**2.14**	0.200	mg/l	EPA 300.0	

Sample ID: DM-3 **Laboratory ID:** T204118-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**20**	5.0	ug/l	200.8	FILT
Selenium	**0.68**	0.50	ug/l	200.8	FILT
Zinc	**0.55**	0.50	ug/l	200.8	FILT
Calcium	**220**	20	mg/l	EPA 200.7	FILT

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Sample ID: DM-3 **Laboratory ID:** T204118-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Magnesium	**45**	0.10	mg/l	EPA 200.7	FILT
Potassium	**29**	0.50	mg/l	EPA 200.7	FILT
Sodium	**9100**	100	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	**10000**	10	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**17000**	10	umhos/cm	SM2510b/120.1	
Chloride	**5420**	1000	mg/l	EPA 300.0	
Sulfate as SO4	**2300**	500	mg/l	EPA 300.0	
Nitrate as NO3	**2.47**	0.500	mg/l	EPA 300.0	
Nitrate as N	**0.560**	0.200	mg/l	EPA 300.0	

Sample ID: DUP **Laboratory ID:** T204118-10

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**53**	5.0	ug/l	200.8	FILT
Zinc	**0.66**	0.50	ug/l	200.8	FILT
Calcium	**46**	0.10	mg/l	EPA 200.7	FILT
Magnesium	**3.9**	0.10	mg/l	EPA 200.7	FILT
Potassium	**6.3**	0.50	mg/l	EPA 200.7	FILT
Sodium	**2000**	50	mg/l	EPA 200.7	FILT
Total Dissolved Solids	**1900**	10	mg/l	TDS by SM2540C	
pH	**8.3**	0.10	pH Units	SM 4500-H+B	O-04
Specific Conductance (EC)	**3700**	10	umhos/cm	SM2510b/120.1	
Chloride	**920**	50.0	mg/l	EPA 300.0	
Sulfate as SO4	**431**	50.0	mg/l	EPA 300.0	

SunStar Laboratories, Inc.

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Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

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Providing Quality Analytical Services Nationwide

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

23a

T204118-01 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	**0.005**	0.005	mg/l	1	0120420	12/04/20	12/14/20	EPA 200.7	FILT
Calcium	**16**	0.10	"	"	"	"	12/14/20	"	FILT
Iron	**0.71**	0.20	"	"	"	"	"	"	FILT
Magnesium	**0.35**	0.10	"	"	"	"	"	"	FILT
Potassium	**51**	0.50	"	"	"	"	"	"	FILT
Sodium	**650**	12	"	25	"	"	"	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**22**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**22**	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.7**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**1200**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

23a

T204118-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**2600**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**481**	50.0	mg/l	10	0120413	12/04/20	12/05/20	EPA 300.0	QM-05
Sulfate as SO4	**411**	50.0	"	"	"	"	"	"	QM-05
Nitrate as NO3	**0.704**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	ND	0.200	"	"	"	"	"	"	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

OBS-1

T204118-02 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	**0.005**	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**320**	30	"	300	"	"	12/15/20	"	FILT
Iron	**1.2**	0.20	"	1	"	"	12/15/20	"	FILT
Magnesium	**68**	0.10	"	"	"	"	"	"	FILT
Potassium	**51**	0.50	"	"	"	"	"	"	FILT
Sodium	**320**	150	"	300	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**18**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	**7.6**	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**3.7**	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**7.9**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	
Total Dissolved Solids	**18000**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

OBS-1

T204118-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**24000**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**6560**	1000	mg/l	200	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**6200**	1000	"	"	"	"	"	"	
Nitrate as NO3	**5.41**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	**1.22**	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

TW-1

T204118-03 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**89**	0.10	"	"	"	"	12/15/20	"	FILT
Iron	**3.1**	0.20	"	"	"	"	"	"	FILT
Magnesium	**12**	0.10	"	"	"	"	"	"	FILT
Potassium	**30**	0.50	"	"	"	"	"	"	FILT
Sodium	**9300**	150	"	300	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**20**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	ND	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**9.3**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	
Total Dissolved Solids	**6400**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

TW-1

T204118-03 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**15000**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12	
		0.1							
Anions by EPA Method 300.0									
Chloride	**4750**	500	mg/l	100	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**1710**	500	"	"	"	"	"	"	
Nitrate as NO3	**0.657**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	ND	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

TW-2

T204118-04 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**68**	0.10	"	"	"	"	"	"	FILT
Iron	ND	0.20	"	"	"	"	"	"	FILT
Magnesium	**0.63**	0.10	"	"	"	"	"	"	FILT
Potassium	**23**	0.50	"	"	"	"	"	"	FILT
Sodium	**70**	40	"	80	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**44**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	ND	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**9.5**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**2500**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

TW-2

T204118-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**5600**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**1680**	500	mg/l	100	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**454**	50.0	"	10	"	"	12/05/20	"	
Nitrate as NO3	**0.659**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	ND	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

PW-0

T204118-05 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**96**	0.10	"	"	"	"	12/15/20	"	FILT
Iron	**0.35**	0.20	"	"	"	"	"	"	FILT
Magnesium	**1.4**	0.10	"	"	"	"	"	"	FILT
Potassium	**23**	0.50	"	"	"	"	"	"	FILT
Sodium	**2300**	50	"	100	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	**5.0**	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**63**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**4.2**	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.3**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**3200**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

PW-0

T204118-05 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**6300**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Fluoride	ND	0.500	mg/l	1	0120413	12/04/20	12/07/20	EPA 300.0	
Chloride	**1880**	250	"	50	"	"	12/07/20	"	
Sulfate as SO4	**625**	100	"	20	"	"	12/07/20	"	
Nitrate as NO3	**0.641**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	ND	0.200	"	"	"	"	"	"	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

PW-2

T204118-06 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**47**	0.10	"	"	"	"	12/15/20	"	FILT
Iron	ND	0.20	"	"	"	"	"	"	FILT
Magnesium	**3.8**	0.10	"	"	"	"	"	"	FILT
Potassium	**6.4**	0.50	"	"	"	"	"	"	FILT
Sodium	**1200**	25	"	50	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**52**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Copper	ND	0.50	"	1	"	"	"	"	FILT
Lead	ND	5.0	"	10	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	ND	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.3**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**1900**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

PW-2

T204118-06 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**3700**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Fluoride	ND	0.500	mg/l	1	0120413	12/04/20	12/07/20	EPA 300.0	
Chloride	**1010**	250	"	50	"	"	"	"	
Sulfate as SO4	**436**	50.0	"	10	"	"	12/05/20	"	
Nitrate as NO3	ND	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	ND	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-1

T204118-07 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**230**	20	"	200	"	"	12/15/20	"	FILT
Iron	ND	0.20	"	1	"	"	12/15/20	"	FILT
Magnesium	**49**	0.10	"	"	"	"	"	"	FILT
Potassium	**35**	0.50	"	"	"	"	"	"	FILT
Sodium	**9500**	100	"	200	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**35**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	**0.87**	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	ND	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**7.9**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**12000**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-1

T204118-07 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**18000**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**5530**	1000	mg/l	200	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**2150**	250	"	50	"	"	12/07/20	"	
Nitrate as NO3	**8.50**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	**1.92**	0.200	"	"	"	"	"	"	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-2

T204118-08 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**250**	20	"	200	"	"	12/15/20	"	FILT
Iron	ND	0.20	"	1	"	"	12/15/20	"	FILT
Magnesium	**51**	0.10	"	"	"	"	"	"	FILT
Potassium	**34**	0.50	"	"	"	"	"	"	FILT
Sodium	**11000**	100	"	200	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**49**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	**0.94**	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	ND	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**7.8**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**10000**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-2

T204118-08 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**18000**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**5730**	1000	mg/l	200	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**2340**	500	"	100	"	"	12/07/20	"	
Nitrate as NO3	**9.46**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	**2.14**	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-3

T204118-09 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**220**	20	"	200	"	"	12/15/20	"	FILT
Iron	ND	0.20	"	1	"	"	12/15/20	"	FILT
Magnesium	**45**	0.10	"	"	"	"	"	"	FILT
Potassium	**29**	0.50	"	"	"	"	"	"	FILT
Sodium	**9100**	100	"	200	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**20**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	**0.68**	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**0.55**	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**7.9**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**10000**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DM-3

T204118-09 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**17000**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**5420**	1000	mg/l	200	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**2300**	500	"	100	"	"	12/07/20	"	
Nitrate as NO3	**2.47**	0.500	"	1	"	"	12/05/20	"	
Nitrate as N	**0.560**	0.200	"	"	"	"	"	"	

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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DUP

T204118-10 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods									
Copper	ND	0.005	mg/l	1	0120420	12/04/20	12/15/20	EPA 200.7	FILT
Calcium	**46**	0.10	"	"	"	"	12/15/20	"	FILT
Iron	ND	0.20	"	"	"	"	"	"	FILT
Magnesium	**3.9**	0.10	"	"	"	"	"	"	FILT
Potassium	**6.3**	0.50	"	"	"	"	"	"	FILT
Sodium	**2000**	50	"	100	"	"	12/15/20	"	FILT
Antimony	ND	5.0	ug/l	10	0120419	12/04/20	12/11/20	200.8	FILT
Arsenic	ND	5.0	"	1	"	"	12/11/20	"	FILT
Barium	**53**	5.0	"	10	"	"	12/11/20	"	FILT
Cadmium	ND	5.0	"	"	"	"	"	"	FILT
Chromium	ND	5.0	"	"	"	"	"	"	FILT
Cobalt	ND	5.0	"	"	"	"	"	"	FILT
Lead	ND	5.0	"	"	"	"	"	"	FILT
Nickel	ND	5.0	"	"	"	"	"	"	FILT
Selenium	ND	0.50	"	1	"	"	12/11/20	"	FILT
Zinc	**0.66**	0.50	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.50	ug/l	1	0120421	12/04/20	12/11/20	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods									
Oil & Grease	ND	5.00	mg/l	1	0120425	12/04/20	12/09/20	EPA 1664B	
pH	**8.3**	0.10	pH Units	"	0120411	12/04/20	12/04/20	SM 4500-H+B	O-04
Total Dissolved Solids	**1900**	10	mg/l	"	0120715	12/07/20	12/08/20	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

DUP

T204118-10 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Miscellaneous Physical/Conventional Chemistry Parameters									
Specific Conductance (EC)	**3700**	10	umhos/cm	1	0120412	12/04/20	12/04/20	SM2510b/12 0.1	
Anions by EPA Method 300.0									
Chloride	**920**	50.0	mg/l	10	0120413	12/04/20	12/07/20	EPA 300.0	
Sulfate as SO4	**431**	50.0	"	"	"	"	12/05/20	"	
Nitrate as NO3	ND	0.500	"	1	"	"	12/05/20	"	O-07
Nitrate as N	ND	0.200	"	"	"	"	"	"	O-07

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120419 - EPA 3010A										
Blank (0120419-BLK1)				Prepared: 12/04/20 Analyzed: 12/11/20						
Antimony	ND	0.50	ug/l							
Arsenic	ND	0.50	"							
Barium	ND	0.50	"							
Cadmium	ND	0.50	"							
Chromium	ND	0.50	"							
Cobalt	ND	0.50	"							
Lead	ND	0.50	"							
Nickel	ND	0.50	"							
Selenium	ND	0.50	"							
Zinc	ND	0.50	"							
LCS (0120419-BS1)				Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	59.1	0.50	ug/l	50.0		118	80-120			
Barium	49.8	0.50	"	50.0		99.6	80-120			
Cadmium	58.6	0.50	"	50.0		117	80-120			
Chromium	49.4	0.50	"	50.0		98.8	80-120			
Lead	53.4	0.50	"	50.0		107	80-120			
Matrix Spike (0120419-MS1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	5.66	0.50	ug/l	50.0	0.300	10.7	75-125			QM-05
Barium	79.1	5.0	"	50.0	21.9	114	75-125			
Cadmium	50.6	5.0	"	50.0	ND	101	75-125			
Chromium	51.2	5.0	"	50.0	0.800	101	75-125			
Lead	58.4	5.0	"	50.0	3.00	111	75-125			
Matrix Spike Dup (0120419-MSD1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Arsenic	5.81	0.50	ug/l	50.0	0.300	11.0	75-125	2.62	20	QM-05
Barium	77.8	5.0	"	50.0	21.9	112	75-125	1.66	20	
Cadmium	51.1	5.0	"	50.0	ND	102	75-125	0.983	20	
Chromium	53.9	5.0	"	50.0	0.800	106	75-125	5.14	20	
Lead	57.9	5.0	"	50.0	3.00	110	75-125	0.860	20	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120420 - EPA 3010A										
Blank (0120420-BLK1)				Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	ND	0.005	mg/l							
Chromium	ND	0.005	"							
Copper	ND	0.005	"							
Lead	ND	0.005	"							
Molybdenum	ND	0.005	"							
Nickel	ND	0.005	"							
Silver	ND	0.030	"							
Zinc	ND	0.030	"							
Calcium	ND	0.10	"							
Iron	ND	0.20	"							
Potassium	ND	0.50	"							
Magnesium	ND	0.10	"							
Sodium	0.948	0.50	"							QB-01
LCS (0120420-BS1)				Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	0.495	0.005	mg/l	0.500		99.1	85-115			
Chromium	0.494	0.005	"	0.500		98.7	85-115			
Copper	0.502	0.005	"	0.500		100	85-115			
Lead	0.500	0.005	"	0.500		100	85-115			
Molybdenum	0.490	0.005	"	0.500		98.0	85-115			
Nickel	0.491	0.005	"	0.500		98.2	85-115			
Silver	0.505		"	0.500		101	85-115			
Zinc	0.498	0.030	"	0.500		99.6	85-115			
Matrix Spike (0120420-MS1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	0.533	0.005	mg/l	0.500	ND	107	70-130			
Chromium	0.496	0.005	"	0.500	ND	99.3	70-130			
Copper	0.517	0.005	"	0.500	0.005	102	70-130			
Lead	0.491	0.005	"	0.500	0.003	97.7	70-130			
Molybdenum	0.579	0.005	"	0.500	0.054	105	70-130			
Nickel	0.489	0.005	"	0.500	ND	97.8	70-130			
Silver	0.492		"	0.500	0.011	96.2	70-130			
Zinc	0.780	0.030	"	0.500	0.222	111	70-130			

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120420 - EPA 3010A										
Matrix Spike Dup (0120420-MSD1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/14/20						
Cadmium	0.538	0.005	mg/l	0.500	ND	108	70-130	1.10	30	
Chromium	0.506	0.005	"	0.500	ND	101	70-130	1.87	30	
Copper	0.523	0.005	"	0.500	0.005	104	70-130	1.13	30	
Lead	0.501	0.005	"	0.500	0.003	99.5	70-130	1.84	30	
Molybdenum	0.579	0.005	"	0.500	0.054	105	70-130	0.124	30	
Nickel	0.494	0.005	"	0.500	ND	98.8	70-130	1.00	30	
Silver	0.483		"	0.500	0.011	94.4	70-130	1.85	30	
Zinc	0.788	0.030	"	0.500	0.222	113	70-130	1.12	30	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120421 - EPA 7470A Water										
Blank (0120421-BLK1)				Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	ND	0.50	ug/l							
LCS (0120421-BS1)				Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.92	0.50	ug/l	5.00		98.3	80-120			
Matrix Spike (0120421-MS1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.01	0.50	ug/l	5.00	0.0287	79.7	75-125			
Matrix Spike Dup (0120421-MSD1)	**Source: T204118-01**			Prepared: 12/04/20 Analyzed: 12/11/20						
Mercury	4.14	0.50	ug/l	5.00	0.0287	82.2	75-125	3.06	20	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120411 - General Preparation										
Duplicate (0120411-DUP1)		**Source: T204118-01**		Prepared & Analyzed: 12/04/20						
pH	8.66	0.10	pH Units		8.67			0.115	20	
Batch 0120425 - General Preparation										
Blank (0120425-BLK1)				Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	ND	5.00	mg/l							
LCS (0120425-BS1)				Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	30.2	5.00	mg/l	35.4		85.3	80-120			
LCS Dup (0120425-BSD1)				Prepared: 12/04/20 Analyzed: 12/09/20						
Oil & Grease	31.5	5.00	mg/l	35.4		89.0	80-120	4.21	20	
Batch 0120715 - General Preparation										
Blank (0120715-BLK1)				Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	ND	10	mg/l							
LCS (0120715-BS1)				Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	472	10	mg/l	500		94.4	80-120			
Duplicate (0120715-DUP1)		**Source: T204118-01**		Prepared: 12/07/20 Analyzed: 12/08/20						
Total Dissolved Solids	1260	10	mg/l		1250			0.957	20	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Miscellaneous Physical/Conventional Chemistry Parameters - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120412 - General Preparation										
Duplicate (0120412-DUP1)		**Source: T204118-01**		Prepared & Analyzed: 12/04/20						
Specific Conductance (EC)	2600	10	umhos/cm		2630			1.15	15	

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Providing Quality Analytical Services Nationwide

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Lake Forest, California 92630
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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120413 - General Preparation										
Blank (0120413-BLK1)				Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	ND	5.00	mg/l							
Sulfate as SO4	ND	5.00	"							
Nitrate as NO3	ND	0.500	"							
Nitrate as N	ND	0.200	"							
LCS (0120413-BS1)				Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	26.1	5.00	mg/l	25.0		105	75-125			
Sulfate as SO4	26.1	5.00	"	25.0		104	75-125			
Nitrate as NO3	26.3	0.500	"	25.0		105	75-125			
Matrix Spike (0120413-MS1)		**Source: T204118-01**		Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	490	50.0	mg/l	25.0	481	36.3	75-125			QM-05
Sulfate as SO4	423	50.0	"	25.0	411	49.7	75-125			QM-05
Nitrate as NO3	25.8	0.500	"	25.0	0.704	100	75-125			
Matrix Spike Dup (0120413-MSD1)		**Source: T204118-01**		Prepared: 12/04/20 Analyzed: 12/05/20						
Chloride	488	50.0	mg/l	25.0	481	26.2	75-125	0.515	20	QM-05
Sulfate as SO4	422	50.0	"	25.0	411	43.0	75-125	0.395	20	QM-05
Nitrate as NO3	25.8	0.500	"	25.0	0.704	101	75-125	0.310	20	

SunStar Laboratories, Inc.

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Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
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949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	12/23/20 14:54

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
QB-01	The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
O-07	The sample was analyzed outside the EPA recommended holding time of 48 hours.
O-04	This sample was received and analyzed outside the EPA recommended holding time.
FILT	The sample was filtered prior to analysis.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

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Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northstar Environmental Remediation _____
Address: 26225 Enterprise Court, Lake Forest, CA 92630 _____
Phone: 949-274-1719 _____ Fax: _____
Project Manager: Arlin Brewster _____

Date: 12/04/20 Page: 1 of 1
Project Name: Genesis Solar Groundwater _____
Collector: Arlin Brewster _____ Client Project #: 196-004-06 _____
Batch #: T204118 EDF #: T10000006093 _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	200.7 - Metals: Ca, Cu, Na, K, Fe, Mg (FIELD FILTERED)	200.8 - Metals: Sb, As, Ba, Cd, Cr, Co, Pb, Ni, Se, Zn (F.F.)	300.0 - Chloride, Nitrate, Sulfate	1664 - Oil and Grease	7470A - Mercury	9040 - pH	SM2510B - Conductivity, Specific	SM2540C - Total Dis. Solids	8015M - Therminol (Subcontract)	Deuterium, Oxygen-18 (Subcont.)	300.0 - Fluoride	Laboratory ID #	Comments/Preservative	Total # of containers
23a	12/3/20	1335	W	Various	X	X	X	X	X	X	X	X	X	X		01		7
OBS-1	12/3/20	1440	W	Various	X	X	X	X	X	X	X	X	X	X		02		7
TW-1	12/3/20	1508	W	Various	X	X	X	X	X	X	X	X	X	X		03		7
TW-2	12/3/20	1310	W	Various	X	X	X	X	X	X	X	X	X	X		04		7
PW-0	12/3/20	12:40	W	Various	X	X	X	X	X	X	X	X	X	X	X	05		7
PW-2	12/3/20	1250	W	Various	X	X	X	X	X	X	X	X	X	X	X	06		7
DM-1	12/3/20	0915	W	Various	X	X	X	X	X	X	X	X	X	X		07		7
DM-2	12/3/20	1015	W	Various	X	X	X	X	X	X	X	X	X	X		08		7
DM-3	12/3/20	1130	W	Various	X	X	X	X	X	X	X	X	X	X		09		7
DUP	N/A	N/A	W	Various	X	X	X	X	X	X	X	X	X	X		10		7
Field Blank	N/A	N/A	W	Various												11	HOLD	
Trip Blank	N/A	N/A	W	Various												12	HOLD	

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	12/04/20 @ 1245	[signature]	12-4-20 1245
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers	70
Chain of Custody seals Y/N/NA	
Seals intact? Y/N/NA	
Received good condition/cold	2.3°C

Turn around time: Standard **

Notes
** Deuterium & Oxygen-18 subcontract has 10 day TAT

Reporting limits must match previous reports

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T20 4118

Client Name: Northstar Environmental Remediation Project: Genesis Solar Groundwater

Delivered by: ☑ Client ☐ SunStar Courier ☐ GLS ☐ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: Dave Date/Time Lab Received: 12/4/2020 12:45

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due: 8/17/21

Temperature:	Cooler #1	2.5 °C +/- the CF (-0.2°C) =	2.3	°C corrected temperature
Temperature:	Cooler #2	°C +/- the CF (-0.2°C) =		°C corrected temperature
Temperature:	Cooler #3	°C +/- the CF (-0.2°C) =		°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☑ **Yes** ☐ **No**
If NO:		
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☑ N/A
Sample containers intact	☑ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☑ Yes	☐ No*	
Total number of containers received match COC	☑ Yes	☐ No*	
Proper containers received for analyses requested on COC	☑ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☑ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☑ **Yes**	☐ **No***	

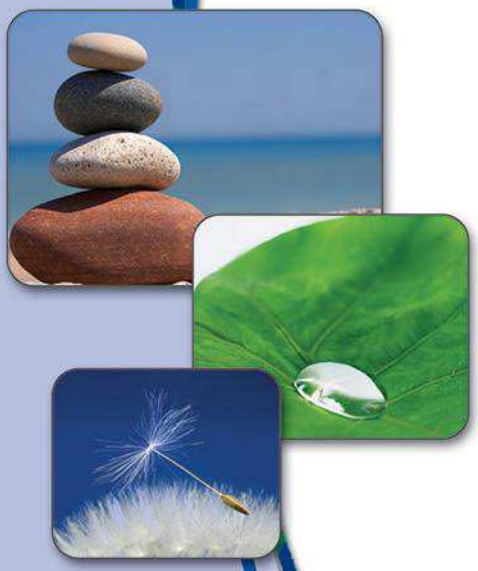
* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: PB 12/4/2020

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Calscience Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-275744-1
Client Project/Site: T204118

For:
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Attn: Jeff Lee

Authorized for release by:
12/11/2020 8:35:27 AM

Danielle Roberts, Senior Project Manager
(949)260-3249
Danielle.Roberts@Eurofinset.com

Table of Contents

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-275744-1	T204118-01	Water	12/03/20 09:15	12/07/20 16:09	
440-275744-2	T204118-02	Water	12/03/20 14:40	12/07/20 16:09	
440-275744-3	T204118-03	Water	12/03/20 15:00	12/07/20 16:09	
440-275744-4	T204118-04	Water	12/03/20 13:10	12/07/20 16:09	
440-275744-5	T204118-05	Water	12/03/20 12:40	12/07/20 16:09	
440-275744-6	T204118-06	Water	12/03/20 12:50	12/07/20 16:09	
440-275744-7	T204118-07	Water	12/03/20 09:15	12/07/20 16:09	
440-275744-8	T204118-08	Water	12/03/20 10:15	12/07/20 16:09	
440-275744-9	T204118-09	Water	12/03/20 11:30	12/07/20 16:09	
440-275744-10	T204118-10	Water	12/03/20 00:01	12/07/20 16:09	

Job ID: 440-275744-1

Laboratory: Eurofins Calscience Irvine

Narrative

Job Narrative
440-275744-1

Comments
No additional comments.

Receipt
The samples were received on 12/7/2020 4:09 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.8º C.

GC Semi VOA
Method 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-632968 and analytical batch 440-632992. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8015 preparation batch 440-632968. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-01 — Lab Sample ID: 440-275744-1

No Detections.

Client Sample ID: T204118-02 — Lab Sample ID: 440-275744-2

No Detections.

Client Sample ID: T204118-03 — Lab Sample ID: 440-275744-3

No Detections.

Client Sample ID: T204118-04 — Lab Sample ID: 440-275744-4

No Detections.

Client Sample ID: T204118-05 — Lab Sample ID: 440-275744-5

No Detections.

Client Sample ID: T204118-06 — Lab Sample ID: 440-275744-6

No Detections.

Client Sample ID: T204118-07 — Lab Sample ID: 440-275744-7

No Detections.

Client Sample ID: T204118-08 — Lab Sample ID: 440-275744-8

No Detections.

Client Sample ID: T204118-09 — Lab Sample ID: 440-275744-9

No Detections.

Client Sample ID: T204118-10 — Lab Sample ID: 440-275744-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience Irvine

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-01
Lab Sample ID: 440-275744-1
Date Collected: 12/03/20 09:15
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:21	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*45 - 120*	*12/08/20 08:26*	*12/08/20 19:21*	*1*

Client Sample ID: T204118-02
Lab Sample ID: 440-275744-2
Date Collected: 12/03/20 14:40
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:44	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 19:44*	*1*

Client Sample ID: T204118-03
Lab Sample ID: 440-275744-3
Date Collected: 12/03/20 15:00
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.021	mg/L		12/08/20 08:26	12/08/20 20:08	1
1,1'-Biphenyl	ND		0.11	0.021	mg/L		12/08/20 08:26	12/08/20 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 20:08*	*1*

Client Sample ID: T204118-04
Lab Sample ID: 440-275744-4
Date Collected: 12/03/20 13:10
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 20:56	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 20:56*	*1*

Client Sample ID: T204118-05
Lab Sample ID: 440-275744-5
Date Collected: 12/03/20 12:40
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 21:19	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*75*		*45 - 120*	*12/08/20 08:26*	*12/08/20 21:19*	*1*

Client Sample ID: T204118-06

Lab Sample ID: 440-275744-6

Date Collected: 12/03/20 12:50

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.097	0.019	mg/L		12/08/20 08:26	12/08/20 21:43	1
1,1'-Biphenyl	ND		0.097	0.019	mg/L		12/08/20 08:26	12/08/20 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*75*		*45 - 120*	*12/08/20 08:26*	*12/08/20 21:43*	*1*

Client Sample ID: T204118-07

Lab Sample ID: 440-275744-7

Date Collected: 12/03/20 09:15

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 23:41	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*68*		*45 - 120*	*12/08/20 08:26*	*12/08/20 23:41*	*1*

Client Sample ID: T204118-08

Lab Sample ID: 440-275744-8

Date Collected: 12/03/20 10:15

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:04	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*70*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:04*	*1*

Client Sample ID: T204118-09

Lab Sample ID: 440-275744-9

Date Collected: 12/03/20 11:30

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:28	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*78*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:28*	*1*

Client Sample ID: T204118-10

Lab Sample ID: 440-275744-10

Date Collected: 12/03/20 00:01

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:51	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*78*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:51*	*1*

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	OTCN1 (45-120)									
440-275744-1	T204118-01	82									
440-275744-2	T204118-02	81									
440-275744-3	T204118-03	81									
440-275744-4	T204118-04	81									
440-275744-5	T204118-05	75									
440-275744-6	T204118-06	75									
440-275744-7	T204118-07	68									
440-275744-8	T204118-08	70									
440-275744-9	T204118-09	78									
440-275744-10	T204118-10	78									
LCS 440-632968/2-A	Lab Control Sample	75									
LCSD 440-632968/3-A	Lab Control Sample Dup	79									
MB 440-632968/1-A	Method Blank	82									

Surrogate Legend

OTCN = n-Octacosane

Method Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-01
Date Collected: 12/03/20 09:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			915 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 19:21	RMP	TAL IRV

Client Sample ID: T204118-02
Date Collected: 12/03/20 14:40
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 19:44	RMP	TAL IRV

Client Sample ID: T204118-03
Date Collected: 12/03/20 15:00
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			940 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 20:08	RMP	TAL IRV

Client Sample ID: T204118-04
Date Collected: 12/03/20 13:10
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			920 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 20:56	RMP	TAL IRV

Client Sample ID: T204118-05
Date Collected: 12/03/20 12:40
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 21:19	RMP	TAL IRV

Client Sample ID: T204118-06
Date Collected: 12/03/20 12:50
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1030 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 21:43	RMP	TAL IRV

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-07
Date Collected: 12/03/20 09:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 23:41	RMP	TAL IRV

Client Sample ID: T204118-08
Date Collected: 12/03/20 10:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:04	RMP	TAL IRV

Client Sample ID: T204118-09
Date Collected: 12/03/20 11:30
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:28	RMP	TAL IRV

Client Sample ID: T204118-10
Date Collected: 12/03/20 00:01
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			900 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:51	RMP	TAL IRV

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-632968/1-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 632968

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1
1,1'-Biphenyl	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*45 - 120*	*12/08/20 08:26*	*12/08/20 17:23*	*1*

Lab Sample ID: LCS 440-632968/2-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene, 1,1'-oxybis-			0.100	0.0706	J	mg/L		71	50 - 115		
1,1'-Biphenyl			0.100	0.0703	J	mg/L		70	50 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*75*		*45 - 120*

Lab Sample ID: LCSD 440-632968/3-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-			0.100	0.0747	J	mg/L		75	50 - 115	6	30
1,1'-Biphenyl			0.100	0.0749	J	mg/L		75	50 - 115	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*79*		*45 - 120*

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

GC Semi VOA

Prep Batch: 632968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275744-1	T204118-01	Total/NA	Water	3510C	
440-275744-2	T204118-02	Total/NA	Water	3510C	
440-275744-3	T204118-03	Total/NA	Water	3510C	
440-275744-4	T204118-04	Total/NA	Water	3510C	
440-275744-5	T204118-05	Total/NA	Water	3510C	
440-275744-6	T204118-06	Total/NA	Water	3510C	
440-275744-7	T204118-07	Total/NA	Water	3510C	
440-275744-8	T204118-08	Total/NA	Water	3510C	
440-275744-9	T204118-09	Total/NA	Water	3510C	
440-275744-10	T204118-10	Total/NA	Water	3510C	
MB 440-632968/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 632992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275744-1	T204118-01	Total/NA	Water	8015B	632968
440-275744-2	T204118-02	Total/NA	Water	8015B	632968
440-275744-3	T204118-03	Total/NA	Water	8015B	632968
440-275744-4	T204118-04	Total/NA	Water	8015B	632968
440-275744-5	T204118-05	Total/NA	Water	8015B	632968
440-275744-6	T204118-06	Total/NA	Water	8015B	632968
440-275744-7	T204118-07	Total/NA	Water	8015B	632968
440-275744-8	T204118-08	Total/NA	Water	8015B	632968
440-275744-9	T204118-09	Total/NA	Water	8015B	632968
440-275744-10	T204118-10	Total/NA	Water	8015B	632968
MB 440-632968/1-A	Method Blank	Total/NA	Water	8015B	632968
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	8015B	632968
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	632968

Definitions/Glossary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2706	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B	3510C	Water	1,1'-Biphenyl
8015B	3510C	Water	Benzene, 1,1'-oxybis-

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T204118

SENDING LABORATORY:

SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630
Phone: (949) 297-5020
Fax: (949) 297-5027
Project Manager: Jeff Lee

RECEIVING LABORATORY:

TestAmerica (Irvine) Laboratories
17461 Derian Ave, #100
Irvine, CA 92614
Phone :(949) 261-1022
Fax: N/A

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T204118-01	**Water**	**Sampled:12/03/20 09:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 09:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-02	**Water**	**Sampled:12/03/20 14:40**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 14:40		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-03	**Water**	**Sampled:12/03/20 15:00**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 15:00		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-04	**Water**	**Sampled:12/03/20 13:10**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 13:10		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-05	**Water**	**Sampled:12/03/20 12:40**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:40		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-06	**Water**	**Sampled:12/03/20 12:50**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:50		8015M- Therminol
Containers Supplied:				

440-275744 Chain of Custody

12/7/20

Released By	Date	Received By	Date
12-7-20	1609	ECLRV	12/7/20 1609

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T204118

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T204118-07	**Water**	**Sampled: 12/03/20 09:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 09:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-08	**Water**	**Sampled: 12/03/20 10:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 10:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-09	**Water**	**Sampled: 12/03/20 11:30**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 11:30		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-10	**Water**	**Sampled: 12/03/20 00:00**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 00:00		8015M- Therminol
Containers Supplied:				

Released By	Date	Received By	Date
[signature]	12-7-20 1609	[signature] ECLPV	12/7/20 1609
Released By	Date	Received By	Date

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 440-275744-1

Login Number: 275744
List Number: 1
Creator: Skinner, Alma D

List Source: Eurofins Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Report To:
Northstar Environmental Remediation
Arlin Brewster
26225 Enterprise Court
Lake Forest, CA 92630
Phone: (949) 580-2800
Fax: (949) 580-2802

Invoice To:
Northstar Environmental Remediation
Arlin Brewster
26225 Enterprise Court
Lake Forest, CA 92630
Phone :(949) 580-2800
Fax: (949) 580-2802

Date Due: 12/11/20 17:00 (5 day TAT)
Received By: Dan Marteski
Date Received: 12/04/20 12:45
Logged In By: Dan Marteski
Date Logged In: 12/04/20 14:14

Samples Received at: **2.3°C**
Custody Seals No Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirı Yes

Analysis	Due	TAT	Expires	Comments
T204118-01 23a [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
200.7	12/11/20 15:00	5	06/01/21 09:15	Ca,Cu,Na,K,Fe,Mg
1664	12/11/20 15:00	5	12/31/20 09:15	Oil & Grease
TDS-160.1	12/11/20 15:00	5	12/10/20 09:15	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 09:15	
200.8	12/11/20 15:00	5	06/01/21 09:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 09:15	Chloride,Sulfate only
Conductivity	12/11/20 15:00	5	12/31/20 09:15	
7470/71 Hg	12/11/20 15:00	5	03/03/21 09:15	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 09:15	Nitrate
T204118-02 OBS-1 [Water] Sampled 12/03/20 14:40 (GMT-08:00) Pacific Time (US &				
Conductivity	12/11/20 15:00	5	12/31/20 14:40	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 14:40	
7470/71 Hg	12/11/20 15:00	5	03/03/21 14:40	
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 14:40	Chloride,Sulfate only
1664	12/11/20 15:00	5	12/31/20 14:40	Oil & Grease
200.8	12/11/20 15:00	5	06/01/21 14:40	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
200.7	12/11/20 15:00	5	06/01/21 14:40	Ca,Cu,Na,K,Fe,Mg
TDS-160.1	12/11/20 15:00	5	12/10/20 14:40	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 14:40	Nitrate

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
T204118-03 TW-1 [Water] Sampled 12/03/20 15:00 (GMT-08:00) Pacific Time (US &				
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 15:00	Chloride,Sulfate only
TDS-160.1	12/11/20 15:00	5	12/10/20 15:00	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 15:00	
Conductivity	12/11/20 15:00	5	12/31/20 15:00	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 15:00	Nitrate
200.8	12/11/20 15:00	5	06/01/21 15:00	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
200.7	12/11/20 15:00	5	06/01/21 15:00	Ca,Cu,Na,K,Fe,Mg
1664	12/11/20 15:00	5	12/31/20 15:00	Oil & Grease
7470/71 Hg	12/11/20 15:00	5	03/03/21 15:00	
T204118-04 TW-2 [Water] Sampled 12/03/20 13:10 (GMT-08:00) Pacific Time (US &				
7470/71 Hg	12/11/20 15:00	5	03/03/21 13:10	
TDS-160.1	12/11/20 15:00	5	12/10/20 13:10	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 13:10	
Conductivity	12/11/20 15:00	5	12/31/20 13:10	
200.7	12/11/20 15:00	5	06/01/21 13:10	Ca,Cu,Na,K,Fe,Mg
200.8	12/11/20 15:00	5	06/01/21 13:10	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 13:10	Chloride,Sulfate only
1664	12/11/20 15:00	5	12/31/20 13:10	Oil & Grease
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 13:10	Nitrate
T204118-05 PW-0 [Water] Sampled 12/03/20 12:40 (GMT-08:00) Pacific Time (US &				
Conductivity	12/11/20 15:00	5	12/31/20 12:40	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 12:40	
7470/71 Hg	12/11/20 15:00	5	03/03/21 12:40	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 12:40	Nitrate
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 12:40	Fluoride, Chloride,Sulfate only
200.8	12/11/20 15:00	5	06/01/21 12:40	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
200.7	12/11/20 15:00	5	06/01/21 12:40	Ca,Cu,Na,K,Fe,Mg
1664	12/11/20 15:00	5	12/31/20 12:40	Oil & Grease
TDS-160.1	12/11/20 15:00	5	12/10/20 12:40	

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
T204118-06 PW-2 [Water] Sampled 12/03/20 12:50 (GMT-08:00) Pacific Time (US &				
200.7	12/11/20 15:00	5	06/01/21 12:50	Ca,Cu,Na,K,Fe,Mg
TDS-160.1	12/11/20 15:00	5	12/10/20 12:50	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 12:50	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 12:50	Nitrate
200.8	12/11/20 15:00	5	06/01/21 12:50	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
Conductivity	12/11/20 15:00	5	12/31/20 12:50	
1664	12/11/20 15:00	5	12/31/20 12:50	Oil & Grease
7470/71 Hg	12/11/20 15:00	5	03/03/21 12:50	
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 12:50	Fluoride, Chloride,Sulfate only
T204118-07 DM-1 [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
TDS-160.1	12/11/20 15:00	5	12/10/20 09:15	
1664	12/11/20 15:00	5	12/31/20 09:15	Oil & Grease
200.7	12/11/20 15:00	5	06/01/21 09:15	Ca,Cu,Na,K,Fe,Mg
200.8	12/11/20 15:00	5	06/01/21 09:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 09:15	
Conductivity	12/11/20 15:00	5	12/31/20 09:15	
7470/71 Hg	12/11/20 15:00	5	03/03/21 09:15	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 09:15	Nitrate
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 09:15	Chloride,Sulfate only
T204118-08 DM-2 [Water] Sampled 12/03/20 10:15 (GMT-08:00) Pacific Time (US &				
1664	12/11/20 15:00	5	12/31/20 10:15	Oil & Grease
TDS-160.1	12/11/20 15:00	5	12/10/20 10:15	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 10:15	
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 10:15	Nitrate
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 10:15	Chloride,Sulfate only
200.7	12/11/20 15:00	5	06/01/21 10:15	Ca,Cu,Na,K,Fe,Mg
7470/71 Hg	12/11/20 15:00	5	03/03/21 10:15	
200.8	12/11/20 15:00	5	06/01/21 10:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
Conductivity	12/11/20 15:00	5	12/31/20 10:15	

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
T204118-09 DM-3 [Water] Sampled 12/03/20 11:30 (GMT-08:00) Pacific Time (US &				
TDS-160.1	12/11/20 15:00	5	12/10/20 11:30	
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 11:30	
200.8	12/11/20 15:00	5	06/01/21 11:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
200.7	12/11/20 15:00	5	06/01/21 11:30	Ca,Cu,Na,K,Fe,Mg
1664	12/11/20 15:00	5	12/31/20 11:30	Oil & Grease
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 11:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 11:30	Nitrate
Conductivity	12/11/20 15:00	5	12/31/20 11:30	
7470/71 Hg	12/11/20 15:00	5	03/03/21 11:30	
T204118-10 DUP [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				
300.0 - F, Cl, Br, SO4	12/11/20 15:00	5	12/31/20 00:00	Chloride,Sulfate only
pH water SM 4500-H+B	12/11/20 15:00	5	12/04/20 00:00	
Conductivity	12/11/20 15:00	5	12/31/20 00:00	
7470/71 Hg	12/11/20 15:00	5	03/03/21 00:00	
200.7	12/11/20 15:00	5	06/01/21 00:00	Ca,Cu,Na,K,Fe,Mg
TDS-160.1	12/11/20 15:00	5	12/10/20 00:00	
200.8	12/11/20 15:00	5	06/01/21 00:00	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn
300.0 - NO2, NO3, PO4	12/11/20 15:00	5	12/05/20 00:00	Nitrate
1664	12/11/20 15:00	5	12/31/20 00:00	Oil & Grease
T204118-11 FIELD BLANK [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				
T204118-12 TRIP BLANK [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				

Isotech Laboratories, Inc.

T204118-01 23a [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 09:15	Deuterium,Oxygen-18
T204118-02 OBS-1 [Water] Sampled 12/03/20 14:40 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 14:40	Deuterium,Oxygen-18

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
Isotech Laboratories, Inc.				
T204118-03 TW-1 [Water] Sampled 12/03/20 15:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 15:00	Deuterium,Oxygen-18
T204118-04 TW-2 [Water] Sampled 12/03/20 13:10 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 13:10	Deuterium,Oxygen-18
T204118-05 PW-0 [Water] Sampled 12/03/20 12:40 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 12:40	Deuterium,Oxygen-18
T204118-06 PW-2 [Water] Sampled 12/03/20 12:50 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 12:50	Deuterium,Oxygen-18
T204118-07 DM-1 [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 09:15	Deuterium,Oxygen-18
T204118-08 DM-2 [Water] Sampled 12/03/20 10:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 10:15	Deuterium,Oxygen-18
T204118-09 DM-3 [Water] Sampled 12/03/20 11:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 11:30	Deuterium,Oxygen-18
T204118-10 DUP [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/11/20 15:00	5	06/01/21 00:00	Deuterium,Oxygen-18
TestAmerica (Irvine) Laboratories				
T204118-01 23a [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 09:15	8015M- Therminol
T204118-02 OBS-1 [Water] Sampled 12/03/20 14:40 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 14:40	8015M- Therminol

T204118

SunStar Laboratories, Inc.

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
TestAmerica (Irvine) Laboratories				
T204118-03 TW-1 [Water] Sampled 12/03/20 15:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 15:00	8015M- Therminol
T204118-04 TW-2 [Water] Sampled 12/03/20 13:10 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 13:10	8015M- Therminol
T204118-05 PW-0 [Water] Sampled 12/03/20 12:40 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 12:40	8015M- Therminol
T204118-06 PW-2 [Water] Sampled 12/03/20 12:50 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 12:50	8015M- Therminol
T204118-07 DM-1 [Water] Sampled 12/03/20 09:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 09:15	8015M- Therminol
T204118-08 DM-2 [Water] Sampled 12/03/20 10:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 10:15	8015M- Therminol
T204118-09 DM-3 [Water] Sampled 12/03/20 11:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 11:30	8015M- Therminol
T204118-10 DUP [Water] Sampled 12/03/20 00:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/11/20 15:00	5	06/01/21 00:00	8015M- Therminol

Reviewed By

Date

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Calscience Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-275744-1
Client Project/Site: T204118

For:
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Attn: Jeff Lee

Authorized for release by:
12/11/2020 8:35:27 AM

Danielle Roberts, Senior Project Manager
(949)260-3249
Danielle.Roberts@Eurofinset.com

Table of Contents

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-275744-1	T204118-01	Water	12/03/20 09:15	12/07/20 16:09	
440-275744-2	T204118-02	Water	12/03/20 14:40	12/07/20 16:09	
440-275744-3	T204118-03	Water	12/03/20 15:00	12/07/20 16:09	
440-275744-4	T204118-04	Water	12/03/20 13:10	12/07/20 16:09	
440-275744-5	T204118-05	Water	12/03/20 12:40	12/07/20 16:09	
440-275744-6	T204118-06	Water	12/03/20 12:50	12/07/20 16:09	
440-275744-7	T204118-07	Water	12/03/20 09:15	12/07/20 16:09	
440-275744-8	T204118-08	Water	12/03/20 10:15	12/07/20 16:09	
440-275744-9	T204118-09	Water	12/03/20 11:30	12/07/20 16:09	
440-275744-10	T204118-10	Water	12/03/20 00:01	12/07/20 16:09	

Case Narrative

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Job ID: 440-275744-1

Laboratory: Eurofins Calscience Irvine

Narrative

Job Narrative
440-275744-1

Comments
No additional comments.

Receipt
The samples were received on 12/7/2020 4:09 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.8º C.

GC Semi VOA
Method 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-632968 and analytical batch 440-632992. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8015 preparation batch 440-632968. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-01 — Lab Sample ID: 440-275744-1

No Detections.

Client Sample ID: T204118-02 — Lab Sample ID: 440-275744-2

No Detections.

Client Sample ID: T204118-03 — Lab Sample ID: 440-275744-3

No Detections.

Client Sample ID: T204118-04 — Lab Sample ID: 440-275744-4

No Detections.

Client Sample ID: T204118-05 — Lab Sample ID: 440-275744-5

No Detections.

Client Sample ID: T204118-06 — Lab Sample ID: 440-275744-6

No Detections.

Client Sample ID: T204118-07 — Lab Sample ID: 440-275744-7

No Detections.

Client Sample ID: T204118-08 — Lab Sample ID: 440-275744-8

No Detections.

Client Sample ID: T204118-09 — Lab Sample ID: 440-275744-9

No Detections.

Client Sample ID: T204118-10 — Lab Sample ID: 440-275744-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience Irvine

Client Sample ID: T204118-01

Lab Sample ID: 440-275744-1

Date Collected: 12/03/20 09:15

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:21	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*45 - 120*	*12/08/20 08:26*	*12/08/20 19:21*	*1*

Client Sample ID: T204118-02

Lab Sample ID: 440-275744-2

Date Collected: 12/03/20 14:40

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:44	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 19:44*	*1*

Client Sample ID: T204118-03

Lab Sample ID: 440-275744-3

Date Collected: 12/03/20 15:00

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.021	mg/L		12/08/20 08:26	12/08/20 20:08	1
1,1'-Biphenyl	ND		0.11	0.021	mg/L		12/08/20 08:26	12/08/20 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 20:08*	*1*

Client Sample ID: T204118-04

Lab Sample ID: 440-275744-4

Date Collected: 12/03/20 13:10

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 20:56	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*45 - 120*	*12/08/20 08:26*	*12/08/20 20:56*	*1*

Client Sample ID: T204118-05

Lab Sample ID: 440-275744-5

Date Collected: 12/03/20 12:40

Matrix: Water

Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 21:19	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*75*		*45 - 120*	*12/08/20 08:26*	*12/08/20 21:19*	*1*

Client Sample ID: T204118-06
Lab Sample ID: 440-275744-6

Date Collected: 12/03/20 12:50
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.097	0.019	mg/L		12/08/20 08:26	12/08/20 21:43	1
1,1'-Biphenyl	ND		0.097	0.019	mg/L		12/08/20 08:26	12/08/20 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*75*		*45 - 120*	*12/08/20 08:26*	*12/08/20 21:43*	*1*

Client Sample ID: T204118-07
Lab Sample ID: 440-275744-7

Date Collected: 12/03/20 09:15
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 23:41	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/08/20 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*68*		*45 - 120*	*12/08/20 08:26*	*12/08/20 23:41*	*1*

Client Sample ID: T204118-08
Lab Sample ID: 440-275744-8

Date Collected: 12/03/20 10:15
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:04	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*70*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:04*	*1*

Client Sample ID: T204118-09
Lab Sample ID: 440-275744-9

Date Collected: 12/03/20 11:30
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:28	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*78*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:28*	*1*

Client Sample ID: T204118-10
Lab Sample ID: 440-275744-10

Date Collected: 12/03/20 00:01
Matrix: Water
Date Received: 12/07/20 16:09

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:51	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		12/08/20 08:26	12/09/20 00:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*78*		*45 - 120*	*12/08/20 08:26*	*12/09/20 00:51*	*1*

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	OTCN1 (45-120)									
440-275744-1	T204118-01	82									
440-275744-2	T204118-02	81									
440-275744-3	T204118-03	81									
440-275744-4	T204118-04	81									
440-275744-5	T204118-05	75									
440-275744-6	T204118-06	75									
440-275744-7	T204118-07	68									
440-275744-8	T204118-08	70									
440-275744-9	T204118-09	78									
440-275744-10	T204118-10	78									
LCS 440-632968/2-A	Lab Control Sample	75									
LCSD 440-632968/3-A	Lab Control Sample Dup	79									
MB 440-632968/1-A	Method Blank	82									

Surrogate Legend

OTCN = n-Octacosane

Method Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-01
Date Collected: 12/03/20 09:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			915 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 19:21	RMP	TAL IRV

Client Sample ID: T204118-02
Date Collected: 12/03/20 14:40
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 19:44	RMP	TAL IRV

Client Sample ID: T204118-03
Date Collected: 12/03/20 15:00
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			940 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 20:08	RMP	TAL IRV

Client Sample ID: T204118-04
Date Collected: 12/03/20 13:10
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			920 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 20:56	RMP	TAL IRV

Client Sample ID: T204118-05
Date Collected: 12/03/20 12:40
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 21:19	RMP	TAL IRV

Client Sample ID: T204118-06
Date Collected: 12/03/20 12:50
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1030 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 21:43	RMP	TAL IRV

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Client Sample ID: T204118-07
Date Collected: 12/03/20 09:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/08/20 23:41	RMP	TAL IRV

Client Sample ID: T204118-08
Date Collected: 12/03/20 10:15
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:04	RMP	TAL IRV

Client Sample ID: T204118-09
Date Collected: 12/03/20 11:30
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:28	RMP	TAL IRV

Client Sample ID: T204118-10
Date Collected: 12/03/20 00:01
Date Received: 12/07/20 16:09

Lab Sample ID: 440-275744-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			900 mL	1.0 mL	632968	12/08/20 08:26	NAM	TAL IRV
Total/NA	Analysis	8015B		1			632992	12/09/20 00:51	RMP	TAL IRV

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-632968/1-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 632968

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1
1,1'-Biphenyl	ND		0.10	0.020	mg/L		12/08/20 08:26	12/08/20 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*45 - 120*	*12/08/20 08:26*	*12/08/20 17:23*	*1*

Lab Sample ID: LCS 440-632968/2-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene, 1,1'-oxybis-			0.100	0.0706	J	mg/L		71	50 - 115		
1,1'-Biphenyl			0.100	0.0703	J	mg/L		70	50 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*75*		*45 - 120*

Lab Sample ID: LCSD 440-632968/3-A
Matrix: Water
Analysis Batch: 632992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 632968

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-			0.100	0.0747	J	mg/L		75	50 - 115	6	30
1,1'-Biphenyl			0.100	0.0749	J	mg/L		75	50 - 115	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*79*		*45 - 120*

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

GC Semi VOA

Prep Batch: 632968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275744-1	T204118-01	Total/NA	Water	3510C	
440-275744-2	T204118-02	Total/NA	Water	3510C	
440-275744-3	T204118-03	Total/NA	Water	3510C	
440-275744-4	T204118-04	Total/NA	Water	3510C	
440-275744-5	T204118-05	Total/NA	Water	3510C	
440-275744-6	T204118-06	Total/NA	Water	3510C	
440-275744-7	T204118-07	Total/NA	Water	3510C	
440-275744-8	T204118-08	Total/NA	Water	3510C	
440-275744-9	T204118-09	Total/NA	Water	3510C	
440-275744-10	T204118-10	Total/NA	Water	3510C	
MB 440-632968/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 632992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275744-1	T204118-01	Total/NA	Water	8015B	632968
440-275744-2	T204118-02	Total/NA	Water	8015B	632968
440-275744-3	T204118-03	Total/NA	Water	8015B	632968
440-275744-4	T204118-04	Total/NA	Water	8015B	632968
440-275744-5	T204118-05	Total/NA	Water	8015B	632968
440-275744-6	T204118-06	Total/NA	Water	8015B	632968
440-275744-7	T204118-07	Total/NA	Water	8015B	632968
440-275744-8	T204118-08	Total/NA	Water	8015B	632968
440-275744-9	T204118-09	Total/NA	Water	8015B	632968
440-275744-10	T204118-10	Total/NA	Water	8015B	632968
MB 440-632968/1-A	Method Blank	Total/NA	Water	8015B	632968
LCS 440-632968/2-A	Lab Control Sample	Total/NA	Water	8015B	632968
LCSD 440-632968/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	632968

Definitions/Glossary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T204118

Job ID: 440-275744-1

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2706	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B	3510C	Water	1,1'-Biphenyl
8015B	3510C	Water	Benzene, 1,1'-oxybis-

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T204118

SENDING LABORATORY:

SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630
Phone: (949) 297-5020
Fax: (949) 297-5027
Project Manager: Jeff Lee

RECEIVING LABORATORY:

TestAmerica (Irvine) Laboratories
17461 Derian Ave, #100
Irvine, CA 92614
Phone :(949) 261-1022
Fax: N/A

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T204118-01	**Water**	**Sampled:12/03/20 09:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 09:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-02	**Water**	**Sampled:12/03/20 14:40**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 14:40		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-03	**Water**	**Sampled:12/03/20 15:00**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 15:00		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-04	**Water**	**Sampled:12/03/20 13:10**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 13:10		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-05	**Water**	**Sampled:12/03/20 12:40**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:40		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-06	**Water**	**Sampled:12/03/20 12:50**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 12:50		8015M- Therminol
Containers Supplied:				

440-275744 Chain of Custody

12/7/20

Released By	Date	Received By	Date
[signature]	12-7-20 1609	[signature] ECLRV	12/7/20 1609
Released By	Date	Received By	Date

49/48 12 89

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T204118

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T204118-07	**Water**	**Sampled:12/03/20 09:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 09:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-08	**Water**	**Sampled:12/03/20 10:15**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 10:15		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-09	**Water**	**Sampled:12/03/20 11:30**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 11:30		8015M- Therminol
Containers Supplied:				
Sample ID: T204118-10	**Water**	**Sampled:12/03/20 00:00**		
Misc Water Testing #1	12/11/20 15:00	06/01/21 00:00		8015M- Therminol
Containers Supplied:				

Released By	Date	Received By	Date
[signature]	12-7-20 1609	[signature] ECLPV	12/7/20 1609
Released By	Date	Received By	Date

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 440-275744-1

Login Number: 275744
List Number: 1
Creator: Skinner, Alma D

List Source: Eurofins Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Lab #:	778499	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-01				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 9:15	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-75.6 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.27 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
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Lab #:	778500	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-02				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 14:40	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-60.9 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-6.80 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
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Lab #:	778501	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-03				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 15:00	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-63.8 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-7.96 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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a Stratum Reservoir brand
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Lab #:	778502	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-04				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 13:10	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-75.8 ‰ relative to VSMOW
δ^{18}O of water	----------	-9.99 ‰ relative to VSMOW
Tritium content of water	----------	na
δ^{13}C of DIC	----------	na
^{14}C content of DIC	----------	na
δ^{15}N of nitrate	----------	na
δ^{18}O of nitrate	----------	na
δ^{34}S of sulfate	----------	na
δ^{18}O of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
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Lab #:	778503	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-05				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 12:40	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-76.7 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.07 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
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Lab #:	778504	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-06				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 12:50	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-78.3 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.30 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
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Lab #:	778505	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-07				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 9:15	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-70.2 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.57 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
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Lab #:	778506	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-08				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 10:15	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-70.1 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.50 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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Lab #:	778507	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-09				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 11:30	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-70.9 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.71 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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Lab #:	778508	Job #:	46496	IS-101168	Co. Job#:
Sample Name:	T204118-10				Co. Lab#:
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T204118				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2020 0:00	Date Received:	12/08/2020	Date Reported:	12/23/2020

δD of water	----------	-78.8 ‰ relative to VSMOW
δ^{18}O of water	----------	-10.31 ‰ relative to VSMOW
Tritium content of water	----------	na
δ^{13}C of DIC	----------	na
^{14}C content of DIC	----------	na
δ^{15}N of nitrate	----------	na
δ^{18}O of nitrate	----------	na
δ^{34}S of sulfate	----------	na
δ^{18}O of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water