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2024 ANNUAL GROUNDWATER DETECTION MONITORING REPORT Genesis Solar Energy Project

Riverside County, California

COC S&W-6

January 15, 2025

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2024 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.



Arlin W. Brewster

Professional Geologist 9207

January 15, 2025

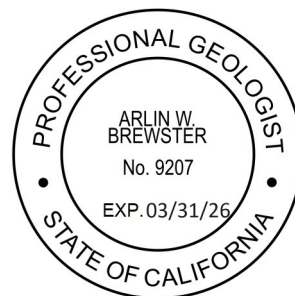


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1.0 INTRODUCTION

Northstar Environmental Remediation (Northstar) has prepared this 2024 Annual Groundwater Detection Monitoring Report on behalf of Genesis Solar, LLC (Genesis). This report details groundwater detection monitoring performed in 2024 at the Genesis Solar Energy Project (GSEP).

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 is 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 mi² (2,435 km²) 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 2024 extraction data, is approximately 103.9 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 88.40 feet bgs (299.00 feet amsl) in TW-1, located upgradient of the site, to 135.02 feet bgs (257.08 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 sump. The pond drainage sump slopes away from the centerline of the ponds to the north and south and is equipped with a set of three moisture detection probes in each side. Each pond is also equipped with a pump to return all accumulated 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 Tustin, 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 (total), cobalt, lead, nickel, zinc, mercury, oil & grease, or heat transfer fluid in either pond; and,
- Compound concentrations were slightly higher in the North Pond.

3.0 POND DRAINAGE SUMP SYSTEM

3.1 Pond Drainage Sump System Overview

A cross-sectional schematic of the pond drainage sump 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 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 part of the sump), Northstar notifies NextEra operations who then conduct further investigation.

3.3 Monitoring Results

No water was pumped from the North or South Pond during the reporting period and the totalizers currently read 607.01 and 7.48 gallons, respectively.

All of the probes provided a 'dry' reading in the fourth quarter. There was a minor amount of condensate inside the northern well cap of the North Pond.

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 sample 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 decontaminate 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 water quality field instrument (YSI, Horiba, or equivalent) connected to a flow-through cell. Staff calibrate the instrument at the beginning of each day and decontaminate it prior to use in each well. 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, $\pm 10\%$ 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 sample 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 (Part II A.1.b.). **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 Tustin, 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, 2024) 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 104.70 (well DM-3) to 107.80 (well DM-2) feet bgs, and the calculated groundwater elevations range from 283.52 (well DM-2) to 283.89 (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 (in feet per day)

Kh = aquifer horizontal hydraulic conductivity (in feet per day)

I = average hydraulic gradient (vertical change in groundwater elevation/corresponding horizontal distance in feet per lateral feet), 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 0.024 to 0.048 feet laterally per day, or 8.76 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 B** 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 5,397 mg/L.
- **Sulfate as SO₄** detections have been consistent for all wells and have ranged from 1,600 to 4,350 mg/L, averaging 2,110 mg/L.
- **Nitrate as NO₃** detections have been consistent for all wells and have ranged from non-detect to 21.2 mg/L, averaging 7.57 mg/L.
- **Total Dissolved Solid** concentrations have been consistent for all wells and have ranged from 6,800 to 14,000 mg/L, averaging 10,567 mg/L.
- **pH** levels have been consistent for all wells and have ranged from 7.2 to 8.2 standard units, averaging 7.8 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 17,736 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 26 µg/L, averaging 11.2 µg/L.
- **Barium** detections have been inconsistent between all wells, averaging 33.7 µg/L in upgradient well DM-1, 59.9 µg/L in downgradient well DM-2, and 18.4 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 190 to 470 mg/L, averaging 250 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 0.011 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 55 µg/L, averaging 14.1 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 21.8 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: Barium was detected at a concentration of 36 µg/L, but not detected above a PQL of 25 µg/L in DM-1. However, the concentration of barium is within the normal, background range for this well and does not indicate a release.
- Well DM-3: There are no constituents of concern that meet the release detection criteria.

4.7 Quality Assurance/Quality Control

As documented in the attached laboratory reports (see **Appendix B**), 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, and nitrate as NO₃, which has a 48-hour hold time).

No analytes were detected in the method blank sample.

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, with the following exceptions:

- The spike recovery and/or relative percent difference (RPD) was outside acceptable limits for the MS and/or MSD, but the batch was accepted based on acceptable LCS recovery data. This may have affected the results for **boron, calcium, copper, iron, magnesium, potassium, and sodium**.
- The spike recovery was outside acceptable limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria and no negative impact is expected. This may have affected the results for **chloride and sulfate as SO₄**.
- The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentrations more than 4 times greater than the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within acceptance limits. This may have affected the results for **sodium and magnesium** in the North and South Pond samples.

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, 2024)). 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 calcium (31%) and total dissolved solids (22%). This may be due to the samples being collected at slightly different times.

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 would be more effectively 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 (or as needed) and analyzed by EPA Method 8015M for Therminol (characterized by the chemical markers 1,1'-oxybis-benzene and 1,1'-biphenyl) 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. Laboratory reports for the data referenced below is included in **Appendix C**.

Sample Date: January 15, 2024

Reason for Sample: Initial sample of new soil stockpile after minor HTF spill on 01/11/24

Sample ID: Staging Area

Results: 1,1'-oxybis-benzene: 7,700 mg/kg; 1,1'-biphenyl: 2,800 mg/kg

Outcome: Soil moved to LTU #3 to begin onsite treatment

Sample Date: March 27, 2024

Reason for Sample: Routine quarterly sampling of soil in LTU bays

Sample ID: LTU #3

Results: 1,1'-oxybis-benzene: 6,700 mg/kg; 1,1'-biphenyl: 2,300 mg/kg

Outcome: Onsite treatment continued

Sample Date: April 4, 2024

Reason for Sample: Initial sample of new soil stockpile after minor HTF spill on 04/02/24

Sample ID: Waste Soil

Results: 1,1'-oxybis-benzene: 14,000 mg/kg; 1,1'-biphenyl: 5,300 mg/kg

Outcome: Soil transported offsite as hazardous waste

Sample Date: April 15, 2024

Reason for Sample: Initial samples of four stockpiles and six roll-top bins of soil after large HTF spill on 04/11/24

Sample IDs: Bin #RB23103, 5247, PT1416, PT6369, 5063, and 4917 (all combined into sample ID Composite (Samples 1-6)); SP #1, 2, 3, and 4

Results for Composite Sample: 1,1'-oxybis-benzene: 25,000 mg/kg; 1,1'-biphenyl: 8,900 mg/kg

Results for SP #1, 2, and 3: 1,1'-oxybis-benzene: ranged from 3,200 to 9,400 mg/kg; 1,1'-biphenyl: ranged from 1,100 to 3,400 mg/kg

Results for SP #4: 1,1'-oxybis-benzene: 16,000 mg/kg; 1,1'-biphenyl: 5,600 mg/kg

Outcome: All soil in roll-top bins and from stockpile #4 were transported offsite as hazardous waste; soil from stockpiles 1, 2, and 3 were transferred to the LTU bays 1, 2, and 3 for onsite treatment.

Sample Date: June 6, 2024

Reason for Sample: Routine quarterly sampling of soil in LTU bays

Sample ID: LTU #1, 2, and 3

Results: 1,1'-oxybis-benzene: ranged from 3,100 to 7,600 mg/kg; 1,1'-biphenyl: ranged from 890 to 2,700 mg/kg

Outcome: Onsite treatment continued

Sample Date: September 24, 2024

Reason for Sample: Routine quarterly sampling of soil in LTU bays

Sample ID: LTU #1 and 3

Results: 1,1'-oxybis-benzene: ranged from 5,300 to 6,300 mg/kg; 1,1'-biphenyl: ranged from 1,400 to 2,100 mg/kg

Outcome: Onsite treatment continued

Sample Date: December 5, 2024

Reason for Sample: Routine quarterly sampling of soil in LTU bays

Sample ID: LTU #1 and 3

Results: 1,1'-oxybis-benzene: ranged from 4,100 to 5,200 mg/kg; 1,1'-biphenyl: ranged from 1,100 to 1,700 mg/kg

Outcome: Onsite treatment continued

6.0 ANNUAL SUMMARY

In accordance with WDR R7-2013-0005, this section presents a summary of the monitoring activities conducted during the 2024 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 2024 calendar year represents the eleventh year of post-construction normal facility operation. The laboratory analytical data from the 2024 calendar year is consistent with the historical background data collected prior to evaporation pond construction and operation.

The non-statistical analysis of the constituents of concern identified one potential release during the second half of the 2024 calendar year, based upon a compound detection that was not detected in the upgradient well DM-1. Details of this detection is as follows:

1. Barium was detected above the PQL of 25 µg/L at a concentration of 36 µg/L. This concentration is within the normal background range for this well and therefore does not constitute a release.

During the 2024 calendar year, the groundwater gradient ranged from 0.0004 to 0.0005 feet per linear foot to the east-southeast; groundwater elevations ranged from 283.52 feet amsl in well DM-2 to 284.05 feet amsl in well DM-1; and groundwater flow velocity ranged between 0.024 to 0.060 feet laterally per day, or 8.76 to 30.66 lateral feet per year.

Each of the settlement ponds is equipped with a moisture detection system consisting of six moisture probes installed in a drainage sump below the pond liners. Northstar monitors the probes quarterly at a minimum. If leaks are detected, the pond is drained (if necessary) and the lining inspected and repaired. No leaks were detected in the 2024 calendar year, and the probes currently indicate they are dry. 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. No water was pumped out of the sumps in 2024.

7.0 CONCLUSIONS

Based on the available data obtained during this sample event:

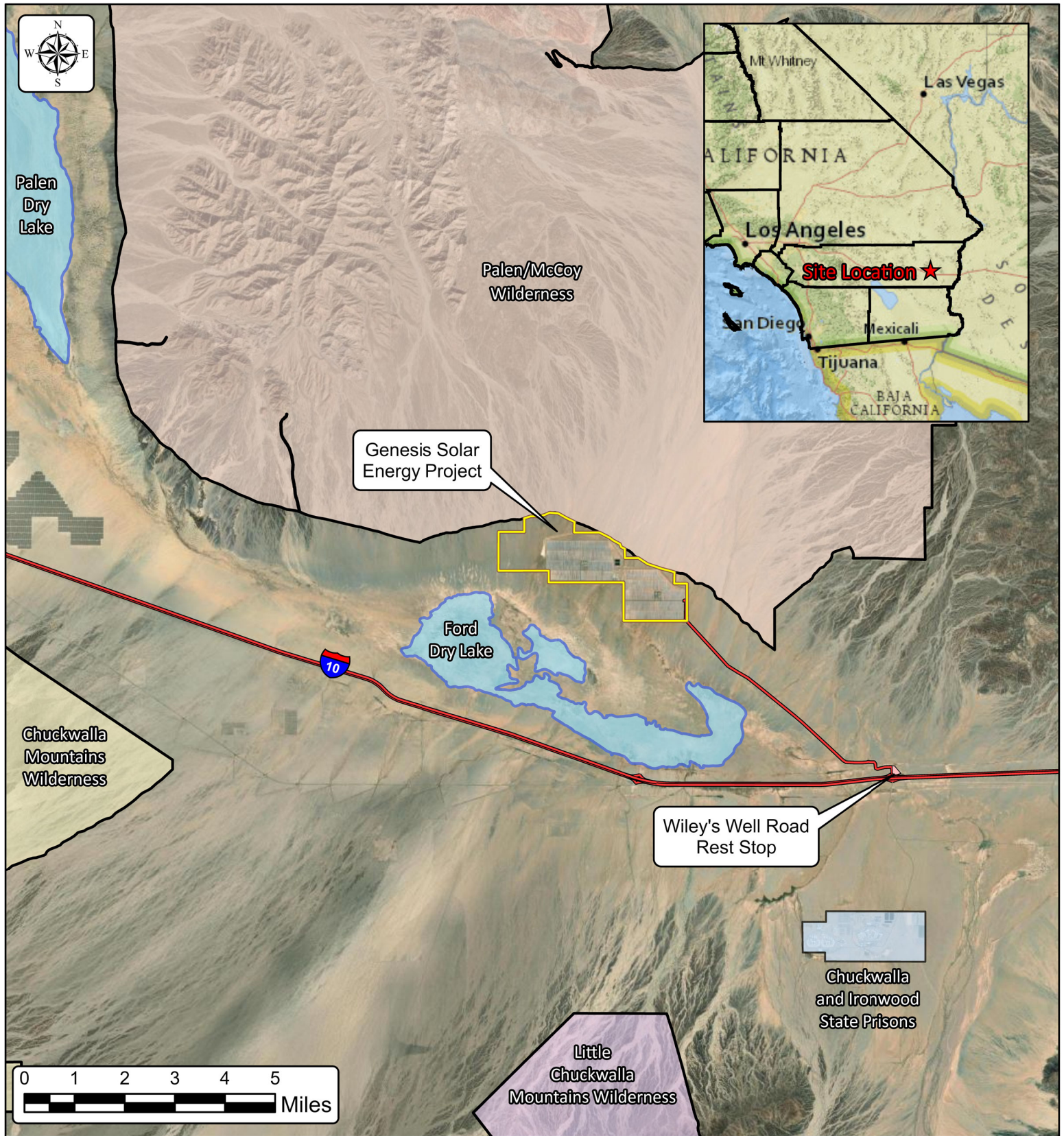
- While barium met the criteria for a potential release in downgradient detection monitoring well DM-2, the detection was within the normal range for this well and does not indicate an actual release.
- None of the compounds detected in downgradient detection monitoring well DM-3 met the criteria for a potential release.
- 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

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- Northstar Environmental Remediation, 2024. *2024 Annual Groundwater Quality Monitoring Report, Genesis Solar Energy Project, Riverside County, California*. January 14, 2025.
- 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



Legend

-  GSEP Property Boundary
-  Chuckwalla and Ironwood State Prisons
-  Chuckwalla Mountains Wilderness Area
-  Little Chuckwalla Mountains Wilderness Area
-  Palen/McCoy Wilderness Area
-  Dry Lakes
-  Roads

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

FIGURE 1
Site Vicinity Map

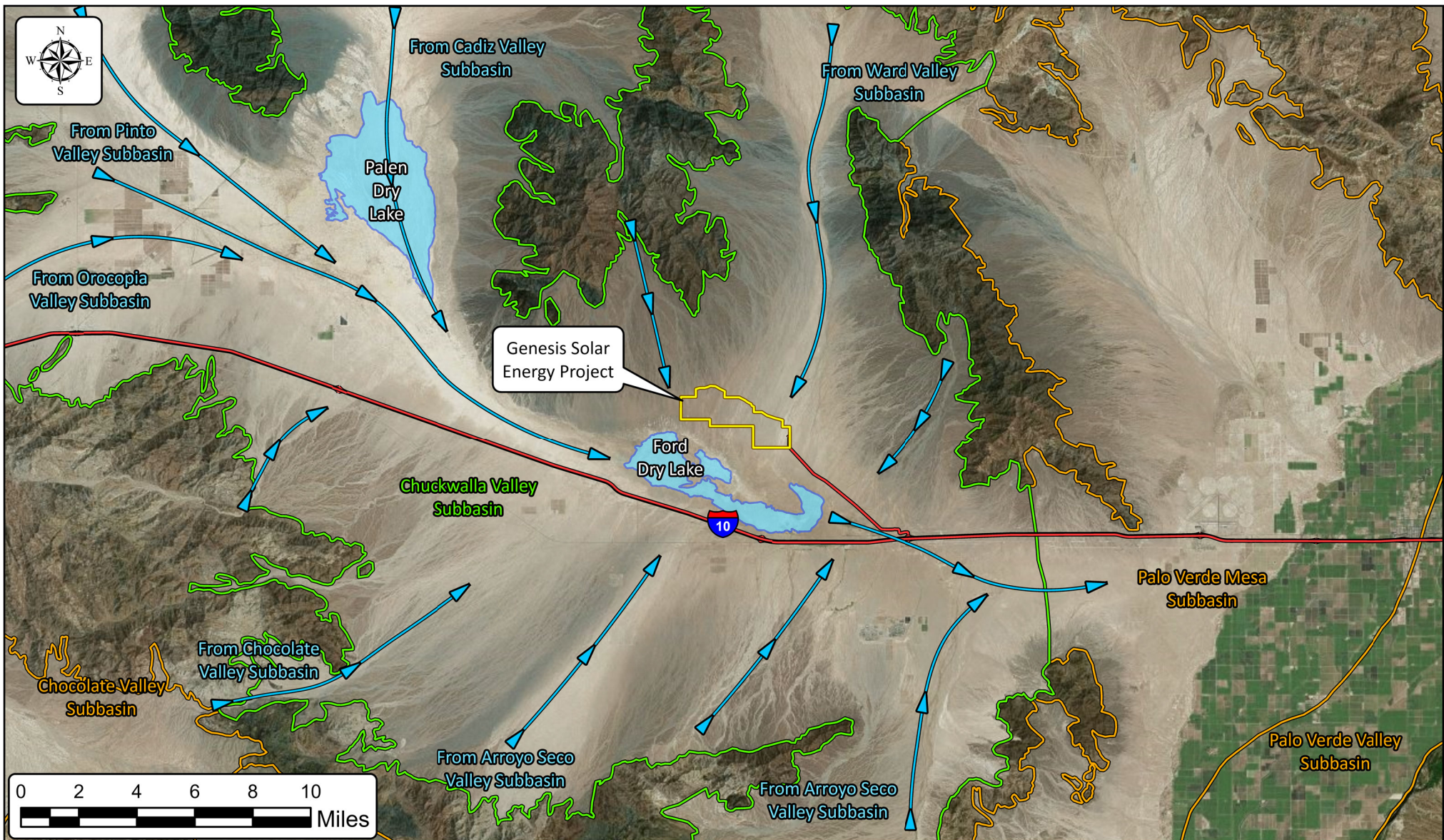


Project No. 196-004

Draw Date: 9 Jul 2024

Drawn By: AWB

Checked By: AWB



Legend

- GSEP Property Boundary
- Chuckwalla Valley Groundwater Subbasin
- Adjacent Groundwater Subbasins
- Dry Lakes
- Water Flow Direction

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

FIGURE 2
Hydrogeologic Setting

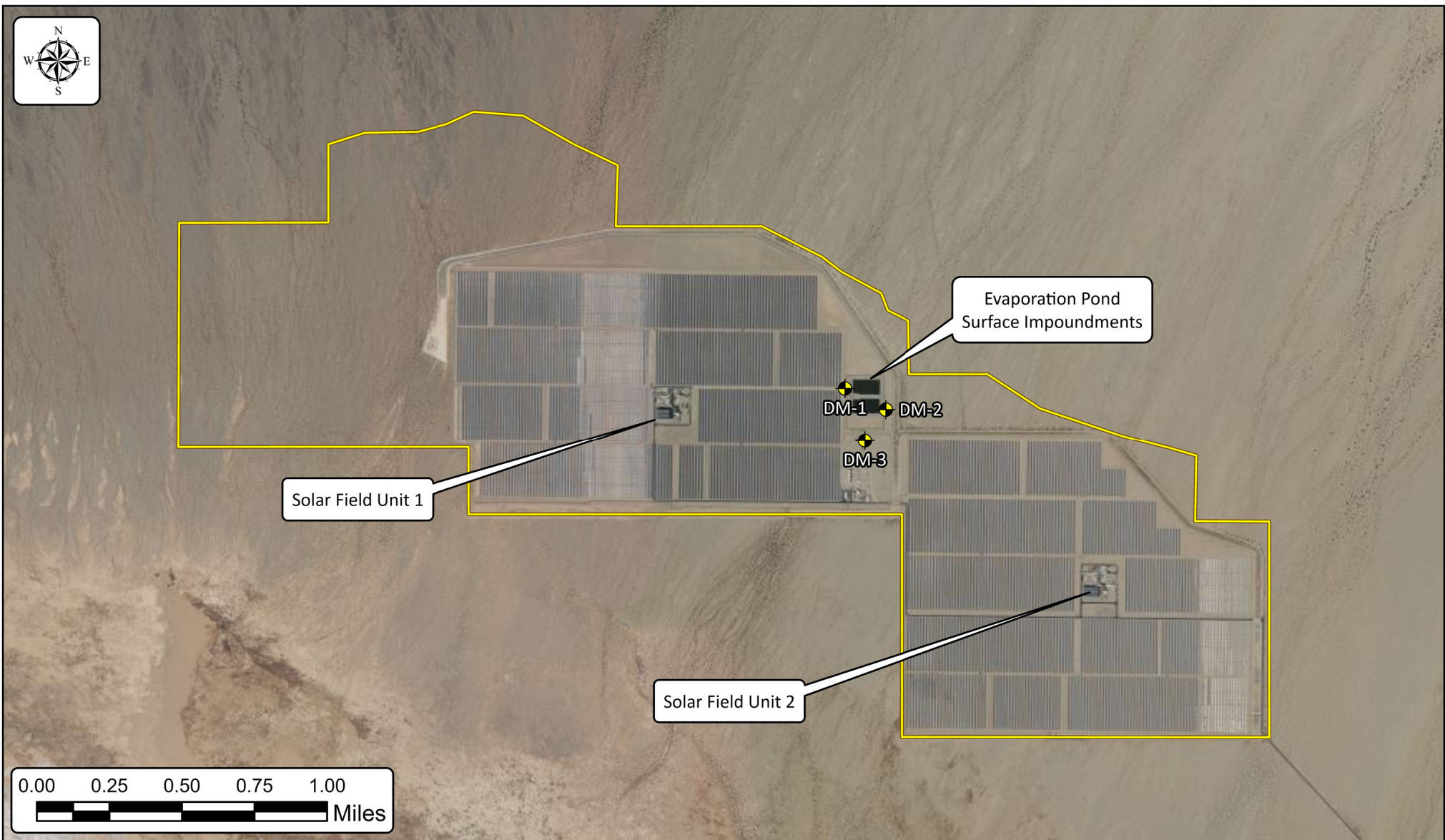


Project No. 196-004

Draw Date: 9 Jul 2024

Drawn By: AWB

Checked By: AWB



Legend

-  GSEP Property Boundary
-  Detection Monitoring Wells

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

FIGURE 3
Monitoring Area Showing
Detection Monitoring Wells

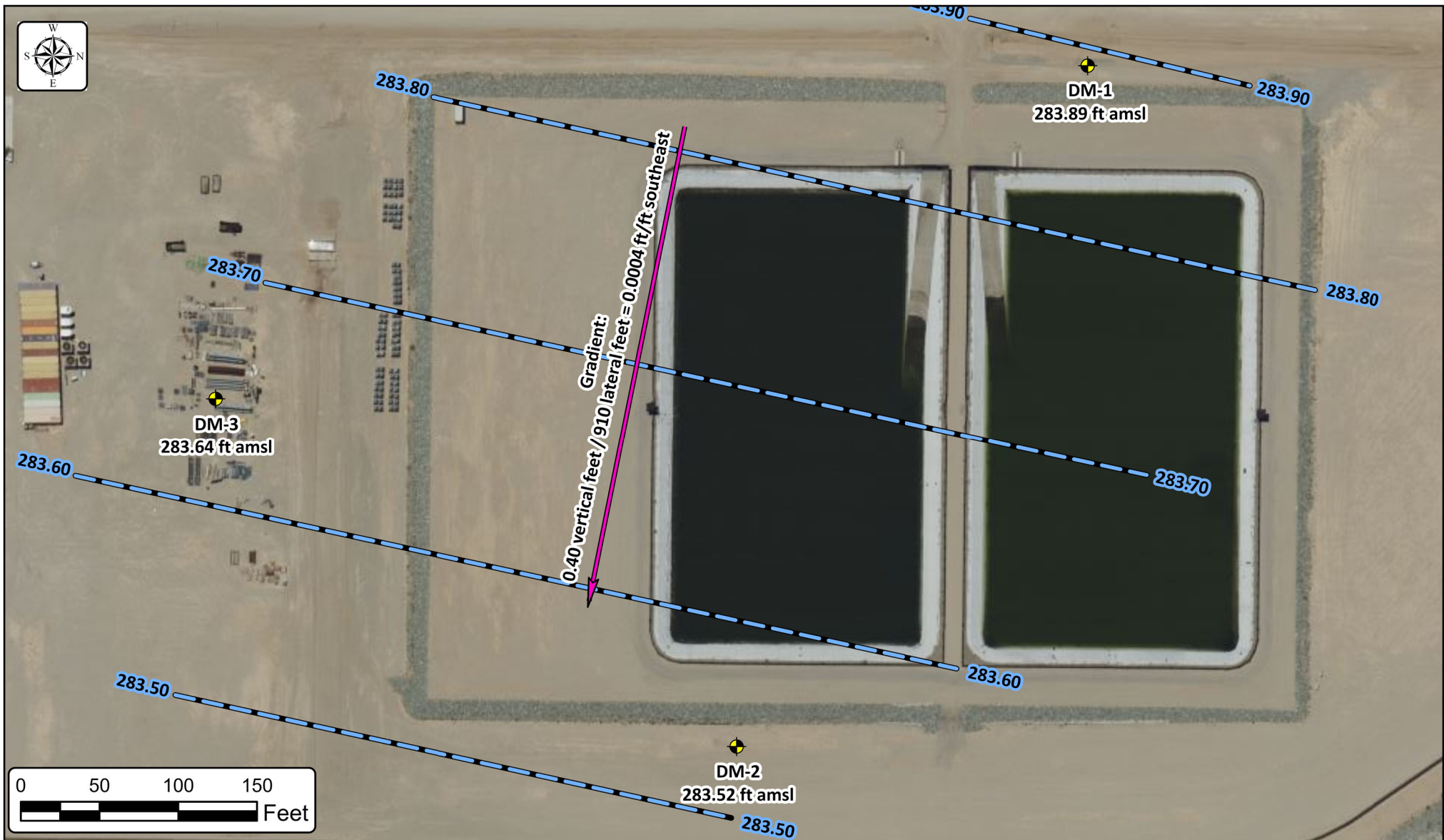


Project No. 196-004

Draw Date: 11 Jun 2024

Drawn By: AWB

Checked By: AWB



Legend

-  Detection Monitoring Wells
-  Groundwater Elevation Contour Lines
-  Groundwater Gradient Direction

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

FIGURE 4
Groundwater Elevation Contour Map
December 2024

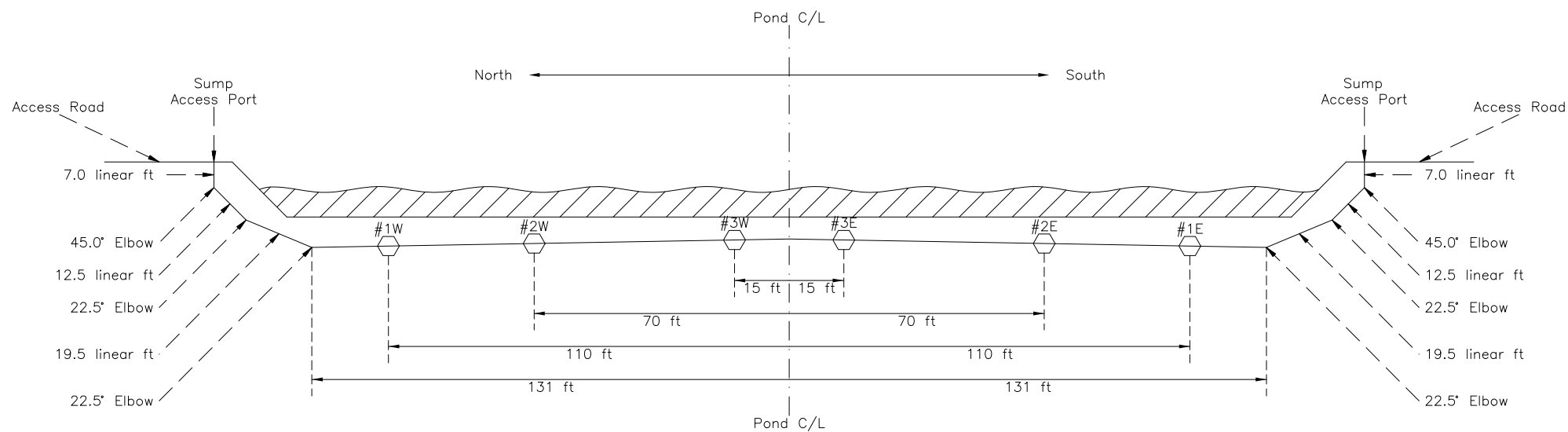


Project No. 196-004

Draw Date: 10 Jan 2025

Drawn By: AWB

Checked By: AWB



Note: All dimensions are approximate and are based upon field observations.

- Notes:
1. Probes installed at #1W through #1E are Irrrometer/Watermark Model 200SS Moisture Probes.
 2. Sump 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 Address
11995 Wiley's Well Rd, Blythe, CA
Consulting Firm
Northstar Environmental Remediation
Figure Description
Pond Drainage Sump System Detail

Project Number
196-004-05
Drawn/Checked by
AWB
Date Drawn
01/13/2023
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-1	6/3/2021	Northstar	391.49	107.06	284.43	0.05	Monitoring
DM-1	12/2/2021	Northstar	391.49	107.35	284.14	-0.24	Monitoring
DM-1	6/2/2022	Northstar	391.49	107.25	284.24	-0.14	Monitoring
DM-1	12/1/2022	Northstar	391.49	107.40	284.09	-0.29	Monitoring
DM-1	6/8/2023	Northstar	391.49	107.49	284.00	-0.38	Monitoring
DM-1	12/7/2023	Northstar	391.49	107.41	284.08	-0.30	Monitoring
DM-1	6/6/2024	Northstar	391.49	107.44	284.05	-0.33	Monitoring
DM-1	12/5/2024	Northstar	391.49	107.60	283.89	-0.49	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-2	6/3/2021	Northstar	391.32	107.64	283.68	-0.27	Monitoring
DM-2	12/2/2021	Northstar	391.32	107.71	283.61	-0.34	Monitoring
DM-2	6/2/2022	Northstar	391.32	107.65	283.67	-0.28	Monitoring
DM-2	12/1/2022	Northstar	391.32	107.72	283.60	-0.35	Monitoring
DM-2	6/8/2023	Northstar	391.32	107.82	283.50	-0.45	Monitoring
DM-2	12/7/2023	Northstar	391.32	107.74	283.58	-0.37	Monitoring
DM-2	6/6/2024	Northstar	391.32	107.79	283.53	-0.42	Monitoring
DM-2	12/5/2024	Northstar	391.32	107.80	283.52	-0.43	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

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	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
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
DM-3	6/3/2021	Northstar	388.34	104.29	284.05	0.06	Monitoring
DM-3	12/2/2021	Northstar	388.34	104.50	283.84	-0.15	Monitoring
DM-3	6/2/2022	Northstar	388.34	104.50	283.84	-0.15	Monitoring
DM-3	12/1/2022	Northstar	388.34	104.50	283.84	-0.15	Monitoring
DM-3	6/8/2023	Northstar	388.34	104.68	283.66	-0.33	Monitoring
DM-3	12/7/2023	Northstar	388.34	104.52	283.82	-0.17	Monitoring
DM-3	6/6/2024	Northstar	388.34	104.56	283.78	-0.21	Monitoring
DM-3	12/5/2024	Northstar	388.34	104.70	283.64	-0.35	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)	Temperature (°C)	pH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)
DM-1	12/5/2024	180	Bladder Pump	3,600	24.5	6.90	17.7	4.4	+85	5.39
DM-2	12/5/2024	138	Bladder Pump	3,600	24.5	6.82	18.1	69.0	+85	1.24
DM-3	12/5/2024	143	Bladder Pump	3,600	22.4	6.69	17.3	9.7	+120	5.54

NOTES:
 mL = milliliters
 mL/min = milliliters per minute
 mS/cm = millisiemens per centimeter
 NTU = Nephelometric Turbidity Units
 DO = Dissolved Oxygen
 mg/L = milligrams per liter
 °C = degree Celsius
 mV = millivolts

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

			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 (All Species) (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 (standard Units)	Oil & Grease / HEM (mg/L)	HTF [†] (mg/L)	Deuterium (% relative to VSMOW)	Oxygen-18 (% relative to VSMOW)					
Well ID	Date Sampled	Sampling Method	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	<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 ¹	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-1	6/3/2021	Low Flow	5,520	2,050	8.28	220	<0.50	3,800	<50	<20	57	<10	<10	31	<10	<10	<10	<10	-	<10	17	<10	<0.50	8,100	17,800	7.7	<5.0	<0.095	-70.80	-8.62					
DM-1	12/2/2021	Low Flow	5,360	1,930	8.59	230	<0.50	4,200	<50	<20	58	<10	<10	29	<10	<10	<10	<10	-	<10	16	<10	<1.0	14,000	17,800	7.8	<5.0	<0.099	-70.10	-8.58					
DM-1	6/2/2022	Low Flow	5,530	2,070	8.70	240	<2.5	4,500	<250	<100	69	<50	<50	<50	<50	<50	<50	<50	-	<50	52	<50	<1.0	9,300	17,800	7.8	<5.0	<0.095	-70.20	-8.62					
DM-1	12/1/2022	Low Flow	5,130	1,960	7.36	230	<0.005	4,500	58	<0.20	61	<25	<25	26	<25	<25	<25	<25	-	<25	<25	<25	<1.0	11,000	17,900	7.8	<5.0	<0.096	-70.20	-8.62					
DM-1	6/8/2023	Low Flow	5,300	2,000	7.58	240	<0.50	4,100	<50	<20	65	<10	<10	29	<10	<10	<10	<10	-	<10	<10	<10	<1.0	10,000	18,000	7.8	<5.0	<0.097	-69.30	-8.53					
DM-1	12/7/2023	Low Flow	5,290	1,830	7.18	230	<0.50	4,500	<50	<20	65	<25	<25	29	<25	<25	<25	<25	-	<25	<25	<25	<1.0	10,000	18,400	8.2	<5.0	<0.100	-69.80	-8.59					
DM-1	6/6/2024	Low Flow	5,510	1,920	7.81	230	<0.50	4,200	<50	<20	62	<5.0	5.6	25	<5.0	<5.0	<5.0	<5.0	-	<5.0	7.2	8.8	<1.0	10,000	18,600	8.0	<5.0	<0.100	-70						

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

			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 (All Species) (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 (standard Units)	Oil & Grease / HEM (mg/L)	HTF [†] (mg/L)	Deuterium (% relative to VSMOW)	Oxygen-18 (% relative to VSMOW)			
Well ID	Date Sampled	Sampling Method	EPA Method 300.0			EPA Method 200.7						EPA Method 200.8														SM7470A	SM2540C	SM2510B	SM4500H	SM1664A	8015B	Isotope Geochemistry	
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			
DM-3	6/3/2021	Low Flow	5,380	2,130	2.44	190	<0.50	3,500	<50	<20	48	<10	17	18	<10	<10	<10	<10	-	<10	20	10	<0.50	7,700	17,400	7.7	<5.0	<0.093	-70.40	-8.69			
DM-3	12/2/2021	Low Flow	5,230	2,020	3.06	220	<0.50	4,000	<50	<20	53	<10	26	17	<10	<10	<10	<10	-	<10	11	<10	<1.0	12,000	17,400	7.8	<5.0	<0.094	-70.60	-8.69			
DM-3	6/2/2022	Low Flow	5,570	2,110	2.82	240	<2.5	4,500	<250	<100	59	<50	<50	<50	<50	<50	<50	<50	-	<50	55	50	<1.0	8,500	17,400	7.8	<5.0	<0.090	-70.50	-8.71			
DM-3	12/1/2022	Low Flow	5,300	2,110	3.11	210	<0.005	4,400	55	<0.20	56	<25	<25	<25	<25	<25	<25	<25	-	<25	<25	<25	<1.0	9,900	17,600	7.8	<5.0	<0.099	-70.50	-8.71			
DM-3	6/8/2023	Low Flow	5,230	2,100	2.61	240	<0.50	4,200	<50	<20	66	<10	16	17	<10	<10	<10	<10	-	<10	<10	<10	<1.0	9,800	17,600	7.7	<5.0	<0.099	-71.10	-8.76			
DM-3	12/7/2023	Low Flow	5,300	1,940	2.65	220	<0.50	4,100	<50	<20	60	<25	<25	<25	<25	<25	<25	<25	-	<25	<25	<25	<1.0	10,000	18,100	8.0	<5.0	<0.099	-71.50	-8.76			
DM-3	6/6/2024	Low Flow	4,650	2,060	3.01	220	<0.50	4,100	<50	<20	59	<5.0	17	15	<5.0	<5.0	<5.0	<5.0	-	<5.0	5.6	6.2	<1.0	9,900	18,200	8.0	<5.0	<0.100	-70.40	-8.67			
DM-3	12/5/2024	Low Flow	5,320	1,980	2.62	220	<0.50	4,100	<50	<20	59	<25	<25	<25	<25	<25	<25	<25	-	<25	<25	<25	<1.0	10,000	17,700	8.0	<5.0	<0.095	-71.20	-8.83			
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			
North Pond	6/4/2021	Composite	48,200	15,200	53.1	400	<0.50	31,000	230	<20	12	<25	510	130	<25	<25	<25	<25	-	30	53	<25	<0.50	16,000	119,000	9.4	<5.00	<0.087	N/A	N/A			
North Pond	12/2/2021	Composite	57,500	18,600	<50.0	470	<0.50	44,000	300	<20	17	<20	640	170	<20	<20	<20	<20	-	<20	31	<20	<1.0	91,000	142,000	8.9	<5.00	<0.092	N/A	N/A			
North Pond	6/2/2022	Composite	86,200	30,400	47.8	<100	<5.0	79,000	<500	<200	<100	<50	940	300	<50	<50	<50	<50	-	<50	89	<50	<1.0	180,000	175,000	8.6	<5.00	<0.098	N/A	N/A			
North Pond	12/1/2022	Composite	24,200	8,040	47.8	250	<1.2	21,000	<250	<50	<25	<25	340	170	<25	<25	<25	<25	-	<25	41	56	<1.0	41,000	70,300	8.4	<5.00	<0.100	N/A	N/A			
North Pond	6/8/2023	Composite	28,700	7,800	1,910	380	<2.0	23,000	<200	<80	<40	<10	340	280	<10	<10	<10	<10	-	<10	<10	<10	<1.0	46,000	75,500	8.8	<5.00	<0.099	N/A	N/A			
North Pond	12/7/2023	Composite	37,200	9,530	<250	390	<2.0	28,000	<200	<80	<40	<25	420	100	<25	<25	<25	<25	-	<25	<25	<25	<1.0	65,000	100,000	9.1	<5.00	<0.100	N/A	N/A			
North Pond	6/6/2024	Composite	57,700	17,000	44.6	410	<0.50	4,500	310	<20	16	<50	460	140	<50	<50	<50	<50	-	<50	66	<50	<1.0	110,000	147,000	8.7	<5.00	<0.088	N/A	N/A			
North Pond	12/5/2024	Composite	146,000	15,900	82.3	680	<0.50	90,000	930	<20	49	<25	1,100	270	<25	<25	<25	<100	-	<25	62	<25	<1.0	17,000	237,000	7.9	<5.00	<0.084	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			
South Pond	6/4/2021	Composite	91,000	22,300	<50.0	420	<0.50	55,000	620	<20	29	<25	1,100	420	<25	<25	<25	<25	-	56	69	100	<0.50	25,000	183,000	9.0	<5.00	<0.091	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 Dis

TABLE 5
SUMMARY OF POND DRAINAGE SUMP DATA
 Genesis Solar Energy Project, Riverside County, California

	Sensor Readings ¹														Comments
Date of Reading	North Pond							South Pond							
	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	
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	
03/23/2021	104	199	199	199	199	199	1,628.91	199	199	199	199	199	199	20.34	
06/04/2021	119	199	199	199	199	199	2,017.91	199	199	199	199	199	199	205.98	Sump pumps tested prior to readings
09/21/2021	89	199	199	199	199	199	2,188.61	199	199	199	199	199	199	197.30	
12/02/2021	97	199	199	199	199	199	2,186.30	199	199	199	199	199	199	N/A ²	
03/30/2022	134	199	199	199	199	199	2,183.93	199	199	199	199	199	199	N/A ²	
06/02/2022	151	199	199	199	199	199	7.48	199	199	199	189	199	199	7.48	New pumps and totalizers installed in 2nd quarter
08/04/2022	109	191	199	199	199	105	605.44	199	199	199	188	199	199	7.48	Verification readings following leak reported by NextEra
09/30/2022	105	189	199	199	199	122	605.44	199	199	199	199	199	199	7.48	
12/01/2022	103	179	199	199	197	176	605.55	171	199	199	189	174	199	7.48	
03/29/2023	181	199	199	199	199	199	605.55	199	199	199	199	199	199	7.48	
06/08/2023	56	198	199	199	199	196	605.55	199	199	199	198	199	199	7.48	
09/28/2023	75	153	199	199	199	149	605.55	199	199	199	199	199	199	7.48	Moisture under both western caps
12/07/2023	70	110	199	199	199	98	605.55	199	199	199	167	199	199	7.48	Moisture under north pond, western cap
03/27/2024	199	199	199	199	199	199	607.01	199	199	199	198	199	199	7.48	Moisture under north pond, western cap
06/06/2024	130	199	199	199	199	199	607.01	199	199	199	199	199	199	7.48	No moisture observed under caps
09/24/2024	119	199	199	199	199	199	607.01	199	199	199	199	199	199	7.48	Moisture under north pond, western cap
12/05/2024	199	199	199	199	199	199	607.01	199	199	199	199	199	199	7.48	Moisture under north pond, western cap

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

2 - Pump totalizer not functioning

APPENDIX A

FIELD DATA SHEETS



GROUNDWATER SAMPLING FIELD FORM

Date: 12/06/24 Site: Genesis Solar Energy Project Project No: 196-004-07
Project: Groundwater Detection Monitoring Program Project Manager: AWB
Technicians: AWB, RCD Weather: Cool, clear
Sampling Method: Low-flow sampling with submersible pump (EPA 2017 protocols) and flow-through cell

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	7:15	107.61	24.3	7.19	18.0	5.3	+133	6.10
Total Depth (ft btoc)	120	7:20	107.61	24.4	6.91	17.8	4.5	+87	5.45
Screen Interval (ft btoc)	100 - 120	7:25	107.61	24.4	6.94	17.8	4.5	+87	5.40
Depth to Water (ft btoc)	107.60	7:30	107.61	24.5	6.90	17.7	4.4	+85	5.39
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	30								
Fill Time (sec)	20								
Cycles per Minute	1.2								
Volume per Cycle (mL)	150								
Pump Rate (mL/min)	180								
Volume Purged (mL)	3,600								
Sample Date	12/06/24								
Sample Time	7:30								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = 1,229 mL

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	7:30	108.00	24.5	5.73	18.4	81.0	+143	6.34
Total Depth (ft btoc)	120	7:35	108.02	24.5	6.79	18.1	70.0	+86	1.23
Screen Interval (ft btoc)	100 - 120	7:40	108.03	24.6	6.81	18.2	69.0	+85	1.24
Depth to Water (ft btoc)	107.80	7:45	108.03	24.5	6.82	18.1	69.0	+85	1.24
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	28								
Fill Time (sec)	37								
Cycles per Minute	0.9								
Volume per Cycle (mL)	150								
Pump Rate (mL/min)	138								
Volume Purged (mL)	3,600								
Sample Date	12/06/24								
Sample Time	7:45								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = 1,696 mL

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	7:00	104.75	22.6	6.33	18.3	117.0	+124	5.51
Total Depth (ft btoc)	120	7:05	104.75	22.5	6.70	17.4	10.0	+121	5.56
Screen Interval (ft btoc)	100 - 120	7:10	104.75	22.5	6.69	17.3	9.8	+120	5.55
Depth to Water (ft btoc)	104.70	7:15	104.75	22.4	6.69	17.3	9.7	+120	5.54
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	28								
Fill Time (sec)	35								
Cycles per Minute	1.0								
Volume per Cycle (mL)	150								
Pump Rate (mL/min)	143								
Volume Purged (mL)	3,600								
Sample Date	12/06/24								
Sample Time	7:15								

Purge Volume Calculation: Total must exceed tubing volume (1,204 mL) plus drawdown volume (2,460 mL/foot) = 1,327 mL

APPENDIX B

LABORATORY ANALYTICAL RESULTS

MONITORING WELLS AND EVAPORATION PONDS



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08 January 2025

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 12/06/24 11:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Lee
Project Manager



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

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DM-1	T244849-01	Water	12/06/24 07:30	12/06/24 11:45
DM-2	T244849-02	Water	12/06/24 07:45	12/06/24 11:45
DM-3	T244849-03	Water	12/06/24 07:15	12/06/24 11:45
North Pond	T244849-04	Water	12/05/24 14:30	12/06/24 11:45
South Pond	T244849-05	Water	12/05/24 14:40	12/06/24 11:45

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DETECTIONS SUMMARY

Sample ID: DM-1

Laboratory ID: T244849-01

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Calcium	220	50		mg/l	EPA 200.7	FILT
Magnesium	60	10		mg/l	EPA 200.7	FILT
Sodium	4100	50		mg/l	EPA 200.7	FILT
pH	8.0	0.10		pH Units	SM 4500-H+B	
Total Dissolved Solids	11000	10		mg/l	TDS by SM2540C	
pH Temperature °C	24			pH Units	SM 4500-H+B	
Specific Conductance (EC)	18200	10.0		mho/cm @25°C	SM2510b mod.	
Chloride	5530	500		mg/l	EPA 300.0	
Sulfate as SO ₄	1920	500		mg/l	EPA 300.0	
Nitrate as NO ₃	7.50	0.500		mg/l	EPA 300.0	
Nitrate as N	1.69	0.200		mg/l	EPA 300.0	

Sample ID: DM-2

Laboratory ID: T244849-02

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	36	25		ug/l	200.8	FILT
Calcium	250	50		mg/l	EPA 200.7	FILT
Magnesium	67	10		mg/l	EPA 200.7	FILT
Sodium	4300	50		mg/l	EPA 200.7	FILT
pH	7.9	0.10		pH Units	SM 4500-H+B	
Total Dissolved Solids	10000	10		mg/l	TDS by SM2540C	
Specific Conductance (EC)	18200	10.0		mho/cm @25°C	SM2510b mod.	
pH Temperature °C	23			pH Units	SM 4500-H+B	
Chloride	5670	500		mg/l	EPA 300.0	
Sulfate as SO ₄	2060	500		mg/l	EPA 300.0	
Nitrate as NO ₃	9.72	0.500		mg/l	EPA 300.0	
Nitrate as N	2.19	0.200		mg/l	EPA 300.0	

Sample ID: DM-3

Laboratory ID: T244849-03

Analyte	Result	Reporting		Units	Method	Notes
		Limit				

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

Sample ID: DM-3

Laboratory ID: T244849-03

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Calcium	220	50	mg/l	EPA 200.7	FILT
Magnesium	59	10	mg/l	EPA 200.7	FILT
Sodium	4100	50	mg/l	EPA 200.7	FILT
pH	8.0	0.10	pH Units	SM 4500-H+B	
Total Dissolved Solids	10000	10	mg/l	TDS by SM2540C	
pH Temperature °C	23		pH Units	SM 4500-H+B	
Specific Conductance (EC)	17700	10.0	mho/cm @25°f	SM2510b mod.	
Chloride	5320	500	mg/l	EPA 300.0	
Sulfate as SO4	1980	500	mg/l	EPA 300.0	
Nitrate as NO3	2.62	0.500	mg/l	EPA 300.0	
Nitrate as N	0.593	0.200	mg/l	EPA 300.0	

Sample ID: North Pond

Laboratory ID: T244849-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Arsenic	1100	25	ug/l	200.8	FILT
Barium	270	25	ug/l	200.8	FILT
Calcium	680	50	mg/l	EPA 200.7	FILT
Selenium	62	25	ug/l	200.8	FILT
Magnesium	49	10	mg/l	EPA 200.7	FILT
Potassium	930	50	mg/l	EPA 200.7	FILT
Sodium	90000	2000	mg/l	EPA 200.7	FILT
Total Dissolved Solids	17000	10	mg/l	TDS by SM2540C	
pH	7.9	0.10	pH Units	SM 4500-H+B	O-04
pH Temperature °C	22		pH Units	SM 4500-H+B	O-04
Specific Conductance (EC)	237000	10.0	mho/cm @25°f	SM2510b mod.	
Chloride	146000	5000	mg/l	EPA 300.0	
Sulfate as SO4	15900	5000	mg/l	EPA 300.0	
Nitrate as NO3	82.3	50.0	mg/l	EPA 300.0	

Sample ID: South Pond

Laboratory ID: T244849-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Arsenic	500	25	ug/l	200.8	FILT
Barium	290	25	ug/l	200.8	FILT

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

Sample ID: South Pond

Laboratory ID: T244849-05

Analyte	Result	Reporting		Method	Notes
		Limit	Units		
Calcium	510	50	mg/l	EPA 200.7	FILT
Selenium	58	25	ug/l	200.8	FILT
Magnesium	36	10	mg/l	EPA 200.7	FILT
Potassium	400	50	mg/l	EPA 200.7	FILT
Sodium	48000	500	mg/l	EPA 200.7	FILT
pH	9.2	0.10	pH Units	SM 4500-H+B	O-04
Total Dissolved Solids	2800	10	mg/l	TDS by SM2540C	
pH Temperature °C	22		pH Units	SM 4500-H+B	O-04
Specific Conductance (EC)	113000	10.0	mho/cm @25°C	SM2510b mod.	
Chloride	39600	5000	mg/l	EPA 300.0	
Sulfate as SO4	10400	5000	mg/l	EPA 300.0	
Nitrate as NO3	104	50.0	mg/l	EPA 300.0	
Nitrate as N	23.4	20.0	mg/l	EPA 300.0	

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

**DM-1
T244849-01 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Metals by EPA 200 Series Methods

Calcium	220	50	mg/l	100	24L0141	12/09/24	12/13/24	EPA 200.7	FILT
Copper	ND	0.50	"	"	"	"	12/13/24	"	FILT, R-01
Iron	ND	20	"	"	"	"	"	"	FILT, R-01
Magnesium	60	10	"	"	"	"	"	"	FILT
Potassium	ND	50	"	"	"	"	12/13/24	"	FILT, R-01
Sodium	4100	50	"	"	"	"	"	"	FILT
Antimony	ND	25	ug/l	50	24L0142	12/09/24	12/12/24	200.8	FILT, R-01
Arsenic	ND	25	"	"	"	"	"	"	FILT, R-01
Barium	ND	25	"	"	"	"	"	"	FILT, R-01
Cadmium	ND	25	"	"	"	"	"	"	FILT, R-01
Chromium	ND	25	"	"	"	"	"	"	FILT, R-01
Cobalt	ND	25	"	"	"	"	"	"	FILT, R-01
Lead	ND	25	"	"	"	"	"	"	FILT, R-01
Nickel	ND	25	"	"	"	"	"	"	FILT, R-01
Selenium	ND	25	"	"	"	"	"	"	FILT, R-01
Zinc	ND	25	"	"	"	"	"	"	FILT, R-01

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	1.0	ug/l	1	24L0126	12/09/24	12/10/24	EPA 7470A Water	
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Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Oil & Grease	ND	5.00	mg/l	1	24L0132	12/09/24	12/13/24	EPA 1664B	
Specific Conductance (EC)	18200	10.0	umho/cm @25°C	"	24L0122	12/09/24	12/13/24	SM2510b mod.	
pH	8.0	0.10	pH Units	"	24L0121	12/06/24	12/11/24	SM 4500-H+B	
pH Temperature °C	24		"	"	"	"	"	"	
Total Dissolved Solids	11000	10	mg/l	"	24L0115	12/06/24	12/13/24	TDS by SM2540C	

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

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26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DM-1

T244849-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Chloride	5530	500	mg/l	100	24L0113	12/06/24	12/06/24	EPA 300.0	
Sulfate as SO4	1920	500	"	"	"	"	"	"	
Nitrate as NO3	7.50	0.500	"	1	"	"	12/06/24	"	
Nitrate as N	1.69	0.200	"	"	"	"	"	"	

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DM-2

T244849-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Metals by EPA 200 Series Methods

Calcium	250	50	mg/l	100	24L0141	12/09/24	12/13/24	EPA 200.7	FILT
Copper	ND	0.50	"	"	"	"	"	"	FILT, R-01
Iron	ND	20	"	"	"	"	"	"	FILT, R-01
Magnesium	67	10	"	"	"	"	"	"	FILT
Potassium	ND	50	"	"	"	"	"	"	FILT, R-01
Sodium	4300	50	"	"	"	"	"	"	FILT
Antimony	ND	25	ug/l	50	24L0142	12/09/24	12/12/24	200.8	FILT, R-01
Arsenic	ND	25	"	"	"	"	"	"	FILT, R-01
Barium	36	25	"	"	"	"	"	"	FILT
Cadmium	ND	25	"	"	"	"	"	"	FILT, R-01
Chromium	ND	25	"	"	"	"	"	"	FILT, R-01
Cobalt	ND	25	"	"	"	"	"	"	FILT, R-01
Lead	ND	25	"	"	"	"	"	"	FILT, R-01
Nickel	ND	25	"	"	"	"	"	"	FILT, R-01
Selenium	ND	25	"	"	"	"	"	"	FILT, R-01
Zinc	ND	25	"	"	"	"	"	"	FILT, R-01

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	1.0	ug/l	1	24L0126	12/09/24	12/10/24	EPA 7470A Water	
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Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Oil & Grease	ND	5.00	mg/l	1	24L0132	12/09/24	12/13/24	EPA 1664B	
Specific Conductance (EC)	18200	10.0	umho/cm @25°C	"	24L0122	12/09/24	12/13/24	SM2510b mod.	
pH	7.9	0.10	pH Units	"	24L0121	12/06/24	12/11/24	SM 4500-H+B	
pH Temperature °C	23		"	"	"	"	"	"	
Total Dissolved Solids	10000	10	mg/l	"	24L0115	12/06/24	12/13/24	TDS by SM2540C	

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Jeff Lee, Project Manager



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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DM-2

T244849-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Chloride	5670	500	mg/l	100	24L0113	12/06/24	12/06/24	EPA 300.0	
Sulfate as SO ₄	2060	500	"	"	"	"	"	"	
Nitrate as NO ₃	9.72	0.500	"	1	"	"	12/06/24	"	
Nitrate as N	2.19	0.200	"	"	"	"	"	"	

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Jeff Lee, Project Manager



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26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DM-3

T244849-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Metals by EPA 200 Series Methods

Calcium	220	50	mg/l	100	24L0141	12/09/24	12/13/24	EPA 200.7	FILT
Copper	ND	0.50	"	"	"	"	"	"	FILT, R-01
Iron	ND	20	"	"	"	"	"	"	FILT, R-01
Magnesium	59	10	"	"	"	"	"	"	FILT
Potassium	ND	50	"	"	"	"	"	"	FILT, R-01
Sodium	4100	50	"	"	"	"	"	"	FILT
Antimony	ND	25	ug/l	50	24L0142	12/09/24	12/12/24	200.8	FILT, R-01
Arsenic	ND	25	"	"	"	"	"	"	FILT, R-01
Barium	ND	25	"	"	"	"	"	"	FILT, R-01
Cadmium	ND	25	"	"	"	"	"	"	FILT, R-01
Chromium	ND	25	"	"	"	"	"	"	FILT, R-01
Cobalt	ND	25	"	"	"	"	"	"	FILT, R-01
Lead	ND	25	"	"	"	"	"	"	FILT, R-01
Nickel	ND	25	"	"	"	"	"	"	FILT, R-01
Selenium	ND	25	"	"	"	"	"	"	FILT, R-01
Zinc	ND	25	"	"	"	"	"	"	FILT, R-01

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	1.0	ug/l	1	24L0126	12/09/24	12/10/24	EPA 7470A Water	
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Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Oil & Grease	ND	5.00	mg/l	1	24L0132	12/09/24	12/13/24	EPA 1664B	
Specific Conductance (EC)	17700	10.0	umho/cm @25°C	"	24L0122	12/09/24	12/13/24	SM2510b mod.	
pH	8.0	0.10	pH Units	"	24L0121	12/06/24	12/11/24	SM 4500-H+B	
pH Temperature °C	23		"	"	"	"	"	"	
Total Dissolved Solids	10000	10	mg/l	"	24L0115	12/06/24	12/13/24	TDS by SM2540C	

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Jeff Lee, Project Manager



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Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

DM-3

T244849-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Chloride	5320	500	mg/l	100	24L0113	12/06/24	12/06/24	EPA 300.0
Sulfate as SO ₄	1980	500	"	"	"	"	"	"
Nitrate as NO ₃	2.62	0.500	"	1	"	"	12/06/24	"
Nitrate as N	0.593	0.200	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

**North Pond
T244849-04 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Metals by EPA 200 Series Methods

Calcium	680	50	mg/l	100	24L0141	12/09/24	12/13/24	EPA 200.7	FILT
Copper	ND	0.50	"	"	"	"	"	"	FILT, R-01
Iron	ND	20	"	"	"	"	"	"	FILT, R-01
Magnesium	49	10	"	"	"	"	"	"	FILT
Potassium	930	50	"	"	"	"	"	"	FILT
Sodium	90000	2000	"	4000	"	"	12/13/24	"	FILT
Antimony	ND	25	ug/l	50	24L0142	12/09/24	12/12/24	200.8	FILT, R-01
Arsenic	1100	25	"	"	"	"	"	"	FILT
Barium	270	25	"	"	"	"	"	"	FILT
Cadmium	ND	25	"	"	"	"	"	"	FILT, R-01
Chromium	ND	25	"	"	"	"	"	"	FILT, R-01
Cobalt	ND	25	"	"	"	"	"	"	FILT, R-01
Lead	ND	100	"	200	"	"	12/12/24	"	FILT, R-01
Nickel	ND	25	"	50	"	"	12/12/24	"	FILT, R-01
Selenium	62	25	"	"	"	"	"	"	FILT
Zinc	ND	25	"	"	"	"	"	"	FILT, R-01

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	1.0	ug/l	1	24L0126	12/09/24	12/10/24	EPA 7470A Water	
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Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Oil & Grease	ND	5.00	mg/l	1	24L0132	12/09/24	12/13/24	EPA 1664B	
Specific Conductance (EC)	237000	10.0	umho/cm @25°C	"	24L0122	12/09/24	12/13/24	SM2510b mod.	
pH	7.9	0.10	pH Units	"	24L0121	12/06/24	12/11/24	SM 4500-H+B	O-04
pH Temperature °C	22		"	"	"	"	"	"	O-04
Total Dissolved Solids	17000	10	mg/l	"	24L0115	12/06/24	12/13/24	TDS by SM2540C	

SunStar Laboratories, Inc.

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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

North Pond
T244849-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Chloride	146000	5000	mg/l	1000	24L0113	12/06/24	12/06/24	EPA 300.0	
Sulfate as SO4	15900	5000	"	"	"	"	"	"	
Nitrate as NO3	82.3	50.0	"	100	"	"	12/06/24	"	
Nitrate as N	ND	20.0	"	"	"	"	"	"	

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

**South Pond
T244849-05 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Metals by EPA 200 Series Methods

Calcium	510	50	mg/l	100	24L0141	12/09/24	12/13/24	EPA 200.7	FILT
Copper	ND	0.50	"	"	"	"	"	"	FILT, R-01
Iron	ND	20	"	"	"	"	"	"	FILT, R-01
Magnesium	36	10	"	"	"	"	"	"	FILT
Potassium	400	50	"	"	"	"	"	"	FILT
Sodium	48000	500	"	1000	"	"	12/13/24	"	FILT
Antimony	ND	25	ug/l	50	24L0142	12/09/24	12/12/24	200.8	FILT, R-01
Arsenic	500	25	"	"	"	"	"	"	FILT
Barium	290	25	"	"	"	"	"	"	FILT
Cadmium	ND	25	"	"	"	"	"	"	FILT, R-01
Chromium	ND	25	"	"	"	"	"	"	FILT, R-01
Cobalt	ND	25	"	"	"	"	"	"	FILT, R-01
Lead	ND	50	"	100	"	"	12/12/24	"	FILT, R-01
Nickel	ND	25	"	50	"	"	12/12/24	"	FILT, R-01
Selenium	58	25	"	"	"	"	"	"	FILT
Zinc	ND	25	"	"	"	"	"	"	FILT, R-01

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	1.0	ug/l	1	24L0126	12/09/24	12/10/24	EPA 7470A Water	
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Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Oil & Grease	ND	5.00	mg/l	1	24L0132	12/09/24	12/13/24	EPA 1664B	
Specific Conductance (EC)	113000	10.0	umho/cm @25°C	"	24L0122	12/09/24	12/13/24	SM2510b mod.	
pH	9.2	0.10	pH Units	"	24L0121	12/06/24	12/11/24	SM 4500-H+B	O-04
pH Temperature °C	22		"	"	"	"	"	"	O-04
Total Dissolved Solids	2800	10	mg/l	"	24L0115	12/06/24	12/13/24	TDS by SM2540C	

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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

South Pond
T244849-05 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Chloride	39600	5000	mg/l	1000	24L0113	12/06/24	12/06/24	EPA 300.0	
Sulfate as SO4	10400	5000	"	"	"	"	"	"	
Nitrate as NO3	104	50.0	"	100	"	"	12/06/24	"	
Nitrate as N	23.4	20.0	"	"	"	"	"	"	

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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0141 - EPA 3010A

Blank (24L0141-BLK1)

Prepared: 12/09/24 Analyzed: 12/13/24

Boron	ND	0.005	mg/l
Calcium	ND	0.50	"
Copper	ND	0.005	"
Iron	ND	0.20	"
Magnesium	ND	0.10	"
Manganese	ND	0.10	"
Potassium	ND	0.50	"
Sodium	ND	0.50	"

LCS (24L0141-BS1)

Prepared: 12/09/24 Analyzed: 12/13/24

Boron	1.54	0.005	mg/l	1.50	103	80-120
Calcium	1.56	0.50	"	1.50	104	80-120
Copper	1.49	0.005	"	1.50	99.4	85-115
Iron	1.54	0.20	"	1.50	103	80-120
Magnesium	1.55	0.10	"	1.50	103	80-120
Manganese	1.53	0.10	"	1.50	102	80-120
Potassium	1.42	0.50	"	1.50	94.8	80-120
Sodium	1.55	0.50	"	1.50	103	80-120

Matrix Spike (24L0141-MS1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/13/24

Boron	5.85	0.50	mg/l	1.50	ND	390	70-130	FILT, QM-07
Calcium	228	50	"	1.50	219	549	70-130	FILT, QM-07
Copper	ND	0.50	"	1.50	ND		70-130	FILT, QM-07
Iron	ND	20	"	1.50	ND		70-130	FILT, QM-07
Magnesium	64.6	10	"	1.50	60.4	280	70-130	FILT, QM-4X
Manganese	1.51	10	"	1.50	ND	101	70-130	FILT
Potassium	16.6	50	"	1.50	13.5	207	70-130	FILT, QM-07
Sodium	4150	50	"	1.50	4060	NR	70-130	FILT, QM-4X

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0141 - EPA 3010A

Matrix Spike Dup (24L0141-MSD1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/13/24

Boron	5.83	0.50	mg/l	1.50	ND	389	70-130	0.378	30	FILT, QM-07
Calcium	226	50	"	1.50	219	432	70-130	0.773	30	FILT, QM-07
Copper	ND	0.50	"	1.50	ND		70-130		30	FILT, QM-07
Iron	ND	20	"	1.50	ND		70-130		30	FILT, QM-07
Magnesium	63.3	10	"	1.50	60.4	199	70-130	1.89	30	FILT, QM-07
Manganese	1.47	10	"	1.50	ND	97.7	70-130	2.99	30	FILT
Potassium	19.6	50	"	1.50	13.5	407	70-130	16.6	30	FILT, QM-07
Sodium	4110	50	"	1.50	4060	NR	70-130	1.07	30	FILT, QM-4X

Batch 24L0142 - EPA 3010A

Blank (24L0142-BLK1)

Prepared: 12/09/24 Analyzed: 12/12/24

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 (24L0142-BS1)

Prepared: 12/09/24 Analyzed: 12/12/24

Arsenic	25.9	0.50	ug/l	25.0	104	85-115
Barium	26.2	0.50	"	25.0	105	85-115
Cadmium	26.4	0.50	"	25.0	106	85-115
Chromium	24.6	0.50	"	25.0	98.4	85-115
Lead	25.4	0.50	"	25.0	102	85-115

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Project: Genesis Solar Groundwater
 Project Number: 196-004-06
 Project Manager: Arlin Brewster

Reported:
 01/08/25 12:31

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
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Batch 24L0142 - EPA 3010A

Matrix Spike (24L0142-MS1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/12/24

Arsenic	24.0	25	ug/l	25.0	5.00	76.0	70-130			FILT
Barium	46.5	25	"	25.0	24.5	88.0	70-130			FILT
Cadmium	24.5	25	"	25.0	1.50	92.0	70-130			FILT
Chromium	28.5	25	"	25.0	3.50	100	70-130			FILT
Lead	24.0	25	"	25.0	ND	96.0	70-130			FILT

Matrix Spike Dup (24L0142-MSD1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/12/24

Arsenic	22.5	25	ug/l	25.0	5.00	70.0	70-130	6.45	20	FILT
Barium	49.0	25	"	25.0	24.5	98.0	70-130	5.24	20	FILT
Cadmium	25.5	25	"	25.0	1.50	96.0	70-130	4.00	20	FILT
Chromium	29.0	25	"	25.0	3.50	102	70-130	1.74	20	FILT
Lead	24.5	25	"	25.0	ND	98.0	70-130	2.06	20	FILT

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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0126 - EPA 7470A Water

Blank (24L0126-BLK1)

Prepared: 12/09/24 Analyzed: 12/10/24

Mercury	ND	1.0	ug/l
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LCS (24L0126-BS1)

Prepared: 12/09/24 Analyzed: 12/10/24

Mercury	6.95	1.0	ug/l	7.50	92.7	80-120
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Matrix Spike (24L0126-MS1)

Source: T244784-05

Prepared: 12/09/24 Analyzed: 12/10/24

Mercury	6.64	1.0	ug/l	7.50	ND	88.5	80-120
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Matrix Spike Dup (24L0126-MSD1)

Source: T244784-05

Prepared: 12/09/24 Analyzed: 12/10/24

Mercury	6.50	1.0	ug/l	7.50	ND	86.7	80-120	2.09	20
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Jeff Lee, Project Manager

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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0115 - General Preparation

Blank (24L0115-BLK1)

Prepared: 12/06/24 Analyzed: 12/13/24

Total Dissolved Solids	ND	10	mg/l
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LCS (24L0115-BS1)

Prepared: 12/06/24 Analyzed: 12/13/24

Total Dissolved Solids	413	10	mg/l	500	82.6	80-120
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Duplicate (24L0115-DUP1)

Source: T244849-01

Prepared: 12/06/24 Analyzed: 12/13/24

Total Dissolved Solids	10500	10	mg/l	10700	2.46	20
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Batch 24L0121 - General Preparation

Duplicate (24L0121-DUP1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/11/24

pH	7.88	0.10	pH Units	7.97	1.14	10
pH Temperature °C	22.1		"	23.6	6.56	200

Batch 24L0122 - General Preparation

Duplicate (24L0122-DUP1)

Source: T244849-01

Prepared: 12/09/24 Analyzed: 12/13/24

Specific Conductance (EC)	18100	10.0	umho/cm @25°C	18200	0.276	15
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Batch 24L0132 - 418.1 / 5520C&F Mod.

Blank (24L0132-BLK1)

Prepared: 12/09/24 Analyzed: 12/13/24

Oil & Grease	ND	5.00	mg/l
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LCS (24L0132-BS1)

Prepared: 12/09/24 Analyzed: 12/13/24

Oil & Grease	39.6	5.00	mg/l	39.6	100	78-114
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Jeff Lee, Project Manager

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Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0132 - 418.1 / 5520C&F Mod.

LCS Dup (24L0132-BSD1)

Prepared: 12/09/24 Analyzed: 12/13/24

Oil & Grease	39.9	5.00	mg/l	39.6		101	78-114	0.755	20	
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Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

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
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Batch 24L0113 - General Preparation

Blank (24L0113-BLK1)

Prepared & Analyzed: 12/06/24

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 (24L0113-BS1)

Prepared & Analyzed: 12/06/24

Chloride	23.6	5.00	mg/l	25.0	94.2	75-125
Sulfate as SO4	23.9	5.00	"	25.0	95.5	75-125
Nitrate as NO3	23.5	0.500	"	25.0	94.2	75-125

Matrix Spike (24L0113-MS1)

Source: T244849-01

Prepared: 12/06/24 Analyzed: 12/07/24

Chloride	5100	500	mg/l	25.0	5530	NR	75-125			QM-05
Sulfate as SO4	1800	500	"	25.0	1920	NR	75-125			QM-05
Nitrate as NO3	32.1	0.500	"	25.0	7.50	98.5	75-125			

Matrix Spike Dup (24L0113-MSD1)

Source: T244849-01

Prepared: 12/06/24 Analyzed: 12/07/24

Chloride	4990	500	mg/l	25.0	5530	NR	75-125	2.18	20	QM-05
Sulfate as SO4	1760	500	"	25.0	1920	NR	75-125	2.25	20	QM-05
Nitrate as NO3	31.9	0.500	"	25.0	7.50	97.4	75-125	0.850	20	

SunStar Laboratories, Inc.

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Jeff Lee, Project Manager

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest CA, 92630

Project: Genesis Solar Groundwater
Project Number: 196-004-06
Project Manager: Arlin Brewster

Reported:
01/08/25 12:31

Notes and Definitions

R-01 The Reporting Limit has been raised to account for dilution necessary due to matrix interference.

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

QM-07 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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.

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.



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.

Jeff Lee, Project Manager

Chain of Custody Record

Date: _____ Page: 1 of 1
Project Name: Genesis Solar Groundwater
Collector: Arlin Brewster
Batch #: T244849 EDF #: T10000006093

[illegible]

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T244849

Client Name: Northstar Project: Genesis Solar Groundwater

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

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

Lab Received by: Panl Date/Time Lab Received: 12/6/24 11:45

Total number of coolers received: 3 Thermometer ID: SC-1 Calibration due: 11/19/2025

Temperature: Cooler #1	1.7°C +/- the CF (+ 0.1°C) =	1.8 °C corrected temperature
Temperature: Cooler #2	1.7°C +/- the CF (+ 0.1°C) =	1.8 °C corrected temperature
Temperature: Cooler #3	1.7°C +/- the CF (+ 0.1°C) =	1.8 °C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? ☒ Yes ☐ No ☐ N/A
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 12/6/24

Comments:

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Lee
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Generated 12/19/2024 5:58:34 PM

JOB DESCRIPTION

T244849

JOB NUMBER

570-210133-1

Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Authorized for release by
Sandy Tat, Project Manager I
Sandy.Tat@et.eurofinsus.com
(714)895-5494

Generated
12/19/2024 5:58:34 PM

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Definitions/Glossary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

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

Case Narrative

Client: SunStar Laboratories Inc
Project: T244849

Job ID: 570-210133-1

Job ID: 570-210133-1

Eurofins Calscience

Job Narrative 570-210133-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/9/2024 1:11 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C.

Diesel Range Organics

Method 8015B_DRO: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 570-512754. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method: 8015B_DRO

Method 8015B_DRO: An incorrect volume of surrogate spiking solution was inadvertently added the following samples: T244849-01 (570-210133-1), T244849-02 (570-210133-2), T244849-03 (570-210133-3), T244849-04 (570-210133-4) and T244849-05 (570-210133-5). Percent recoveries are based on the amount spiked.

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

Eurofins Calscience

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Client Sample ID: T244849-01	Lab Sample ID: 570-210133-1
No Detections.	
Client Sample ID: T244849-02	Lab Sample ID: 570-210133-2
No Detections.	
Client Sample ID: T244849-03	Lab Sample ID: 570-210133-3
No Detections.	
Client Sample ID: T244849-04	Lab Sample ID: 570-210133-4
No Detections.	
Client Sample ID: T244849-05	Lab Sample ID: 570-210133-5
No Detections.	

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This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: T244849-01

Date Collected: 12/06/24 07:30

Date Received: 12/09/24 13:11

Lab Sample ID: 570-210133-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		110	ug/L		12/11/24 15:47	12/16/24 22:04	1
1,1'-Biphenyl	ND		110	ug/L		12/11/24 15:47	12/16/24 22:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	85		53 - 151			12/11/24 15:47	12/16/24 22:04	1

Client Sample ID: T244849-02

Date Collected: 12/06/24 07:45

Date Received: 12/09/24 13:11

Lab Sample ID: 570-210133-2

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		100	ug/L		12/11/24 15:47	12/16/24 22:30	1
1,1'-Biphenyl	ND		100	ug/L		12/11/24 15:47	12/16/24 22:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	103		53 - 151			12/11/24 15:47	12/16/24 22:30	1

Client Sample ID: T244849-03

Date Collected: 12/06/24 07:15

Date Received: 12/09/24 13:11

Lab Sample ID: 570-210133-3

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		95	ug/L		12/11/24 15:47	12/16/24 22:55	1
1,1'-Biphenyl	ND		95	ug/L		12/11/24 15:47	12/16/24 22:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	106		53 - 151			12/11/24 15:47	12/16/24 22:55	1

Client Sample ID: T244849-04

Date Collected: 12/06/24 14:30

Date Received: 12/09/24 13:11

Lab Sample ID: 570-210133-4

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		84	ug/L		12/11/24 15:48	12/16/24 23:20	1
1,1'-Biphenyl	ND		84	ug/L		12/11/24 15:48	12/16/24 23:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	80		53 - 151			12/11/24 15:48	12/16/24 23:20	1

Client Sample ID: T244849-05

Date Collected: 12/06/24 14:40

Date Received: 12/09/24 13:11

Lab Sample ID: 570-210133-5

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		93	ug/L		12/11/24 15:48	12/16/24 23:45	1
1,1'-Biphenyl	ND		93	ug/L		12/11/24 15:48	12/16/24 23:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	105		53 - 151			12/11/24 15:48	12/16/24 23:45	1

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		OTCSN1					
Lab Sample ID	Client Sample ID	(53-151)					
570-210133-1	T244849-01	85					
570-210133-2	T244849-02	103					
570-210133-3	T244849-03	106					
570-210133-4	T244849-04	80					
570-210133-5	T244849-05	105					
LCS 570-512754/2-A	Lab Control Sample	102					
LCSD 570-512754/3-A	Lab Control Sample Dup	97					
MB 570-512754/1-A	Method Blank	95					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

QC Sample Results

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

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

Lab Sample ID: MB 570-512754/1-A

Matrix: Water

Analysis Batch: 514484

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 512754

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		100	ug/L		12/11/24 15:46	12/16/24 17:53	1
1,1'-Biphenyl	ND		100	ug/L		12/11/24 15:46	12/16/24 17:53	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	95		53 - 151			12/11/24 15:46	12/16/24 17:53	1

Lab Sample ID: LCS 570-512754/2-A

Matrix: Water

Analysis Batch: 514484

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 512754

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	1000	930.2		ug/L		93	57 - 120
1,1'-Biphenyl	1000	920.0		ug/L		92	45 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	102		53 - 151				

Lab Sample ID: LCSD 570-512754/3-A

Matrix: Water

Analysis Batch: 514484

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 512754

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	1000	969.0		ug/L		97	57 - 120	4	20
1,1'-Biphenyl	1000	960.1		ug/L		96	45 - 120	4	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	97		53 - 151						

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

GC Semi VOA

Prep Batch: 512754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-210133-1	T244849-01	Total/NA	Water	3510C	
570-210133-2	T244849-02	Total/NA	Water	3510C	
570-210133-3	T244849-03	Total/NA	Water	3510C	
570-210133-4	T244849-04	Total/NA	Water	3510C	
570-210133-5	T244849-05	Total/NA	Water	3510C	
MB 570-512754/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-512754/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-512754/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 514484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-210133-1	T244849-01	Total/NA	Water	8015B	512754
570-210133-2	T244849-02	Total/NA	Water	8015B	512754
570-210133-3	T244849-03	Total/NA	Water	8015B	512754
570-210133-4	T244849-04	Total/NA	Water	8015B	512754
570-210133-5	T244849-05	Total/NA	Water	8015B	512754
MB 570-512754/1-A	Method Blank	Total/NA	Water	8015B	512754
LCS 570-512754/2-A	Lab Control Sample	Total/NA	Water	8015B	512754
LCSD 570-512754/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	512754

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Client Sample ID: T244849-01

Lab Sample ID: 570-210133-1

Date Collected: 12/06/24 07:30

Matrix: Water

Date Received: 12/09/24 13:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			223.8 mL	2.5 mL	512754	12/11/24 15:47	TVD6	EET CAL 4
Total/NA	Analysis	8015B		1	1 mL	1 mL	514484	12/16/24 22:04	H6FE	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: T244849-02

Lab Sample ID: 570-210133-2

Date Collected: 12/06/24 07:45

Matrix: Water

Date Received: 12/09/24 13:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			245.4 mL	2.5 mL	512754	12/11/24 15:47	TVD6	EET CAL 4
Total/NA	Analysis	8015B		1	1 mL	1 mL	514484	12/16/24 22:30	H6FE	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: T244849-03

Lab Sample ID: 570-210133-3

Date Collected: 12/06/24 07:15

Matrix: Water

Date Received: 12/09/24 13:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			263.8 mL	2.5 mL	512754	12/11/24 15:47	TVD6	EET CAL 4
Total/NA	Analysis	8015B		1	1 mL	1 mL	514484	12/16/24 22:55	H6FE	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: T244849-04

Lab Sample ID: 570-210133-4

Date Collected: 12/06/24 14:30

Matrix: Water

Date Received: 12/09/24 13:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			298.2 mL	2.5 mL	512754	12/11/24 15:48	TVD6	EET CAL 4
Total/NA	Analysis	8015B		1	1 mL	1 mL	514484	12/16/24 23:20	H6FE	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: T244849-05

Lab Sample ID: 570-210133-5

Date Collected: 12/06/24 14:40

Matrix: Water

Date Received: 12/09/24 13:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			269.8 mL	2.5 mL	512754	12/11/24 15:48	TVD6	EET CAL 4
Total/NA	Analysis	8015B		1	1 mL	1 mL	514484	12/16/24 23:45	H6FE	EET CAL 4
Instrument ID: GC70B										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Eurofins Calscience

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4175	02-02-25

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Method Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T244849

Job ID: 570-210133-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-210133-1	T244849-01	Water	12/06/24 07:30	12/09/24 13:11
570-210133-2	T244849-02	Water	12/06/24 07:45	12/09/24 13:11
570-210133-3	T244849-03	Water	12/06/24 07:15	12/09/24 13:11
570-210133-4	T244849-04	Water	12/06/24 14:30	12/09/24 13:11
570-210133-5	T244849-05	Water	12/06/24 14:40	12/09/24 13:11

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SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T244849

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Eurofins Calscience (Tustin)
2841 Dow Ave, Suite 100
Tustin, CA 92780
Phone : (949) 261-1022
Fax: N/A

Normal TAT

Analysis	Due	Expires	Laboratory ID	Comments
----------	-----	---------	---------------	----------

Sample ID: T244849-01	Water	Sampled:12/06/24 07:30	1	
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Misc Water Testing #1	12/13/24 15:00	06/04/25 07:30		
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Containers Supplied:

8015M- Therminol

1L Amber- Unpres. (A)

Sample ID: T244849-02	Water	Sampled:12/06/24 07:45	2	
-----------------------	-------	------------------------	---	--

Misc Water Testing #1	12/13/24 15:00	06/04/25 07:45		
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Containers Supplied:

8015M- Therminol

1L Amber- Unpres. (A)

Sample ID: T244849-03	Water	Sampled:12/06/24 07:15	3	
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Misc Water Testing #1	12/13/24 15:00	06/04/25 07:15		
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Containers Supplied:

8015M- Therminol

1L Amber- Unpres. (A)

Sample ID: T244849-04	Water	Sampled:12/05/24 14:30	4	
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Misc Water Testing #1	12/13/24 15:00	06/03/25 14:30		
-----------------------	----------------	----------------	--	--

Containers Supplied:

8015M- Therminol

1L Amber- Unpres. (E)

Sample ID: T244849-05	Water	Sampled:12/05/24 14:40	5	
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Misc Water Testing #1	12/13/24 15:00	06/03/25 14:40		
-----------------------	----------------	----------------	--	--

Containers Supplied:

8015M- Therminol

1L Amber- Unpres. (E)



570-210133 Chain of Custody

Released By		Date	12-9-24	13:11	Received By		Date	12/09/2024	1311
-------------	--	------	---------	-------	-------------	--	------	------------	------

Released By

Date

Received By

Date

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 570-210133-1

Login Number: 210133

List Source: Eurofins Calscience

List Number: 1

Creator: Patel, Jayesh

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab #: 949862**Job #:** 61017**CoreTrac:** IS-101168**Co. Job#:** T244849**Sample Name:** T244849-01**Company:** SunStar Laboratories, Inc**Container:** Plastic Bottle**Location:** DM-1**Date Sampled:** 12/06/2024 07:30**Date Received:** 12/27/2024**Date Reported:** 01/08/2025

δD of water	-69.9‰ 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
---------------------------	----

δ^{34} 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



1308 Parkland Court
Champaign, IL 61821

P 217-398-3490
isotechlabs.com

Lab #: 949863

Job #: 61017

CoreTrac: IS-101168

Co. Job#: T244849

Sample Name: T244849-02

Company: SunStar Laboratories, Inc

Container: Plastic Bottle

Location: DM-2

Date Sampled: 12/06/2024 07:45

Date Received: 12/27/2024

Date Reported: 01/08/2025

δD of water	-69.1‰ relative to VSMOW
---------------------	--------------------------

$\delta^{18}O$ of water	-8.49‰ 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
---------------------------	----

δ^{34} 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



1308 Parkland Court
Champaign, IL 61821

P 217-398-3490
isotechlabs.com

Lab #: 949864

Job #: 61017

CoreTrac: IS-101168

Co. Job#: T244849

Sample Name: T244849-03

Company: SunStar Laboratories, Inc

Container: Plastic Bottle

Location: DM-3

Date Sampled: 12/06/2024 07:15

Date Received: 12/27/2024

Date Reported: 01/08/2025

δD of water	-71.2‰ relative to VSMOW
$\delta^{18}O$ of water	-8.83‰ 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
δ^{34} 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

WORK ORDER

T244849

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

Date Due: 12/13/24 17:00 (5 day TAT)

Received By: Paul Berner

Date Received: 12/06/24 11:45

Logged In By: Jeff Lee

Date Logged In: 12/06/24 15:07

Samples Received at: 1.8°C

Custody Seals No Received On Ice Yes

Containers Intact Yes

COC/Labels Agree Yes

Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T244849-01 DM-1 [Water] Sampled 12/06/24 07:30 (GMT-08:00) Pacific Time (US &				
1664	12/13/24 15:00	5	01/03/25 07:30	Oil & Grease
200.7	12/13/24 15:00	5	06/04/25 07:30	Ca,Cu,Na,K,Fe,Mg (Field Filtered)
200.8	12/13/24 15:00	5	06/04/25 07:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	12/13/24 15:00	5	01/03/25 07:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/13/24 15:00	5	12/08/24 07:30	Nitrate
7470/71 Hg	12/13/24 15:00	5	03/06/25 07:30	
Conductivity	12/13/24 15:00	5	01/03/25 07:30	
pH water SM 4500-H+B	12/11/24 15:00	3	12/07/24 07:30	
TDS-160.1	12/13/24 15:00	5	12/13/24 07:30	

T244849-02 DM-2 [Water] Sampled 12/06/24 07:45 (GMT-08:00) Pacific Time (US &				
1664	12/13/24 15:00	5	01/03/25 07:45	Oil & Grease
200.7	12/13/24 15:00	5	06/04/25 07:45	Ca,Cu,Na,K,Fe,Mg (Field Filtered)
200.8	12/13/24 15:00	5	06/04/25 07:45	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	12/13/24 15:00	5	01/03/25 07:45	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/13/24 15:00	5	12/08/24 07:45	Nitrate
7470/71 Hg	12/13/24 15:00	5	03/06/25 07:45	
Conductivity	12/13/24 15:00	5	01/03/25 07:45	
pH water SM 4500-H+B	12/11/24 15:00	3	12/07/24 07:45	
TDS-160.1	12/13/24 15:00	5	12/13/24 07:45	

WORK ORDER

T244849

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater

Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
T244849-03 DM-3 [Water] Sampled 12/06/24 07:15 (GMT-08:00) Pacific Time (US &				
1664	12/13/24 15:00	5	01/03/25 07:15	Oil & Grease
200.7	12/13/24 15:00	5	06/04/25 07:15	Ca,Cu,Na,K,Fe,Mg (Field Filtered)
200.8	12/13/24 15:00	5	06/04/25 07:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	12/13/24 15:00	5	01/03/25 07:15	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/13/24 15:00	5	12/08/24 07:15	Nitrate
7470/71 Hg	12/13/24 15:00	5	03/06/25 07:15	
Conductivity	12/13/24 15:00	5	01/03/25 07:15	
pH water SM 4500-H+B	12/11/24 15:00	3	12/07/24 07:15	
TDS-160.1	12/13/24 15:00	5	12/13/24 07:15	
T244849-04 North Pond [Water] Sampled 12/05/24 14:30 (GMT-08:00) Pacific Time (US &				
1664	12/13/24 15:00	5	01/02/25 14:30	Oil & Grease
200.7	12/13/24 15:00	5	06/03/25 14:30	Ca,Cu,Na,K,Fe,Mg (Field Filtered)
200.8	12/13/24 15:00	5	06/03/25 14:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	12/13/24 15:00	5	01/02/25 14:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/13/24 15:00	5	12/07/24 14:30	Nitrate
7470/71 Hg	12/13/24 15:00	5	03/05/25 14:30	
Conductivity	12/13/24 15:00	5	01/02/25 14:30	
pH water SM 4500-H+B	12/11/24 15:00	3	12/06/24 14:30	
TDS-160.1	12/13/24 15:00	5	12/12/24 14:30	
T244849-05 South Pond [Water] Sampled 12/05/24 14:40 (GMT-08:00) Pacific Time (US &				
1664	12/13/24 15:00	5	01/02/25 14:40	Oil & Grease
200.7	12/13/24 15:00	5	06/03/25 14:40	Ca,Cu,Na,K,Fe,Mg (Field Filtered)
200.8	12/13/24 15:00	5	06/03/25 14:40	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	12/13/24 15:00	5	01/02/25 14:40	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	12/13/24 15:00	5	12/07/24 14:40	Nitrate
7470/71 Hg	12/13/24 15:00	5	03/05/25 14:40	
Conductivity	12/13/24 15:00	5	01/02/25 14:40	
pH water SM 4500-H+B	12/11/24 15:00	3	12/06/24 14:40	
TDS-160.1	12/13/24 15:00	5	12/12/24 14:40	

Eurofins Calscience (Tustin)

WORK ORDER

T244849

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater

Project Manager: Jeff Lee
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
Eurofins Calscience (Tustin)				
T244849-01 DM-1 [Water] Sampled 12/06/24 07:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/13/24 15:00	5	06/04/25 07:30	8015M- Therminol
T244849-02 DM-2 [Water] Sampled 12/06/24 07:45 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/13/24 15:00	5	06/04/25 07:45	8015M- Therminol
T244849-03 DM-3 [Water] Sampled 12/06/24 07:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/13/24 15:00	5	06/04/25 07:15	8015M- Therminol
T244849-04 North Pond [Water] Sampled 12/05/24 14:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/13/24 15:00	5	06/03/25 14:30	8015M- Therminol
T244849-05 South Pond [Water] Sampled 12/05/24 14:40 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	12/13/24 15:00	5	06/03/25 14:40	8015M- Therminol
Isotech Laboratories, Inc.				
T244849-01 DM-1 [Water] Sampled 12/06/24 07:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/13/24 15:00	5	06/04/25 07:30	Deuterium,Oxygen-18
T244849-02 DM-2 [Water] Sampled 12/06/24 07:45 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/13/24 15:00	5	06/04/25 07:45	Deuterium,Oxygen-18
T244849-03 DM-3 [Water] Sampled 12/06/24 07:15 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	12/13/24 15:00	5	06/04/25 07:15	Deuterium,Oxygen-18

APPENDIX C

LABORATORY ANALYTICAL RESULTS

LAND TREATMENT UNITS

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

Generated 1/23/2024 6:32:18 PM

JOB DESCRIPTION

Genesis

JOB NUMBER

570-168127-1

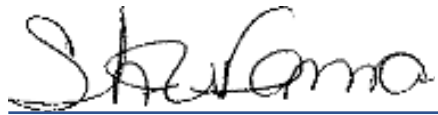
Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Sheri Fama, Project Manager I
Sheri.Fama@et.eurofinsus.com
(657)210-6368

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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-168127-1

Job ID: 570-168127-1

Eurofins Calscience

Job Narrative 570-168127-1

Receipt

The sample was received on 1/15/2024 1:55 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

GC Semi VOA

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

Organic Prep

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

Eurofins Calscience

Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-168127-1	Staging Area	Solid	01/15/24 09:15	01/15/24 13:55

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Client Sample ID: Staging Area					Lab Sample ID: 570-168127-1				
Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type	
Benzene, 1,1'-oxybis- - DL	7700		500	mg/Kg	100		8015B	Total/NA	
1,1'-Biphenyl - DL	2800		500	mg/Kg	100		8015B	Total/NA	

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Client Sample ID: Staging Area
Date Collected: 01/15/24 09:15
Date Received: 01/15/24 13:55

Lab Sample ID: 570-168127-1
Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene, 1,1'-oxybis-	7700		500	mg/Kg		01/17/24 18:01	01/23/24 17:16	100	
1,1'-Biphenyl	2800		500	mg/Kg		01/17/24 18:01	01/23/24 17:16	100	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
n-Octacosane (Surr)	97		60 - 138			01/17/24 18:01	01/23/24 17:16	100	

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)					
570-168127-1 - DL	Staging Area	97					
570-168127-1 MS - DL	Staging Area	89					
570-168127-1 MSD - DL	Staging Area	92					
LCS 570-402101/2-A	Lab Control Sample	73					
LCSD 570-402101/3-A	Lab Control Sample Dup	71					
MB 570-402101/1-A	Method Blank	73					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Client Sample ID: Staging Area
Date Collected: 01/15/24 09:15
Date Received: 01/15/24 13:55

Lab Sample ID: 570-168127-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.04 g	10 mL	402101	01/17/24 18:01	E5RH	EET CAL 4
Total/NA	Analysis	8015B	DL	100	1 mL	1 mL	403676	01/23/24 17:16	SP9M	EET CAL 4
Instrument ID: GC70B										

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

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

Lab Sample ID: MB 570-402101/1-A

Matrix: Solid

Analysis Batch: 403676

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 402101

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		01/17/24 18:01	01/23/24 13:25	1
1,1'-Biphenyl	ND		5.0	mg/Kg		01/17/24 18:01	01/23/24 13:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	73		60 - 138			01/17/24 18:01	01/23/24 13:25	1

Lab Sample ID: LCS 570-402101/2-A

Matrix: Solid

Analysis Batch: 403676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 402101

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	114		mg/Kg		114	68 - 120
1,1'-Biphenyl	100	82.8		mg/Kg		83	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	73		60 - 138				

Lab Sample ID: LCSD 570-402101/3-A

Matrix: Solid

Analysis Batch: 403676

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 402101

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	115		mg/Kg		115	68 - 120	1	20
1,1'-Biphenyl	100	83.3		mg/Kg		83	57 - 120	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	71		60 - 138						

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

Lab Sample ID: 570-168127-1 MS

Matrix: Solid

Analysis Batch: 403676

Client Sample ID: Staging Area

Prep Type: Total/NA

Prep Batch: 402101

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis- - DL	7700		95.6	6350	4	mg/Kg		-1402	68 - 120
1,1'-Biphenyl - DL	2800		95.6	2370	4	mg/Kg		-485	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr) - DL	89		60 - 138						

Lab Sample ID: 570-168127-1 MSD

Matrix: Solid

Analysis Batch: 403676

Client Sample ID: Staging Area

Prep Type: Total/NA

Prep Batch: 402101

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis- - DL	7700		96.1	6080	4	mg/Kg		-1671	68 - 120	4	20
1,1'-Biphenyl - DL	2800		96.1	2280	4	mg/Kg		-578	57 - 120	4	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

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

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
<i>n-Octacosane (Surr) - DL</i>	92		60 - 138

- 1
- 2
- 3
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- 13
- 14
- 15

QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

GC Semi VOA

Prep Batch: 402101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-168127-1 - DL	Staging Area	Total/NA	Solid	3550C	
MB 570-402101/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-402101/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-402101/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-168127-1 MS - DL	Staging Area	Total/NA	Solid	3550C	
570-168127-1 MSD - DL	Staging Area	Total/NA	Solid	3550C	

Analysis Batch: 403676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-168127-1 - DL	Staging Area	Total/NA	Solid	8015B	402101
MB 570-402101/1-A	Method Blank	Total/NA	Solid	8015B	402101
LCS 570-402101/2-A	Lab Control Sample	Total/NA	Solid	8015B	402101
LCSD 570-402101/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	402101
570-168127-1 MS - DL	Staging Area	Total/NA	Solid	8015B	402101
570-168127-1 MSD - DL	Staging Area	Total/NA	Solid	8015B	402101

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-168127-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

[illegible]

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-168127-1

Login Number: 168127

List Number: 1

Creator: Khana, Piyush

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

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JOB DESCRIPTION

Genesis

JOB NUMBER

570-178469-1

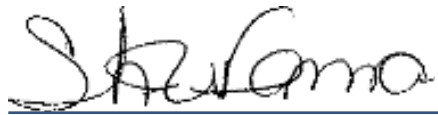
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Job Notes

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Sheri Fama, Project Manager I
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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits

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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-178469-1

Job ID: 570-178469-1

Eurofins Calscience

Job Narrative 570-178469-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 3/29/2024 3:29 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C.

Diesel Range Organics

Method 8015B_DRO: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 570-426558 and analytical batch 570-429291 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

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

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Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-178469-1	LTU #3	Solid	03/27/24 06:45	03/29/24 15:29

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Job ID: 570-178469-1

Lab Sample ID: 570-178469-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	6700	F2	250	mg/Kg	50		8015B	Total/NA
1,1'-Biphenyl - DL	2300		50	mg/Kg	10		8015B	Total/NA

4/11/2024

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Client Sample ID: LTU #3
Date Collected: 03/27/24 06:45
Date Received: 03/29/24 15:29

Lab Sample ID: 570-178469-1
Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene, 1,1'-oxybis-	6700	F2	250	mg/Kg		04/02/24 13:38	04/10/24 17:50	50	
1,1'-Biphenyl	2300		50	mg/Kg		04/02/24 13:38	04/10/24 16:01	10	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
n-Octacosane (Surr)	117		60 - 138			04/02/24 13:38	04/10/24 16:01	10	
n-Octacosane (Surr)	113		60 - 138			04/02/24 13:38	04/10/24 17:50	50	

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

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

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)					
570-178469-1 - DL	LTU #3	117					
570-178469-1 - DL	LTU #3	113					
570-178469-1 MS	LTU #3	115					
570-178469-1 MS	LTU #3	98					
570-178469-1 MSD	LTU #3	106					
570-178469-1 MSD	LTU #3	109					
LCS 570-426558/2-A	Lab Control Sample	75					
LCSD 570-426558/3-A	Lab Control Sample Dup	77					
MB 570-426558/1-A	Method Blank	73					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Client Sample ID: LTU #3
Date Collected: 03/27/24 06:45
Date Received: 03/29/24 15:29

Lab Sample ID: 570-178469-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		9.98 g	10 mL	426558	04/02/24 13:38	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	10	1 mL	1 mL	429291	04/10/24 16:01	N5Y3	EET CAL 4
		Instrument ID: GC70B								
Total/NA	Prep	3550C	DL		9.98 g	10 mL	426558	04/02/24 13:38	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	50	1 mL	1 mL	429291	04/10/24 17:50	N5Y3	EET CAL 4
		Instrument ID: GC70B								

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

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

Lab Sample ID: MB 570-426558/1-A

Matrix: Solid

Analysis Batch: 429027

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 426558

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		04/02/24 13:38	04/09/24 22:21	1
1,1'-Biphenyl	ND		5.0	mg/Kg		04/02/24 13:38	04/09/24 22:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	73		60 - 138			04/02/24 13:38	04/09/24 22:21	1

Lab Sample ID: LCS 570-426558/2-A

Matrix: Solid

Analysis Batch: 429027

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	79.8		mg/Kg		80	68 - 120
1,1'-Biphenyl	100	77.4		mg/Kg		77	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	75		60 - 138				

Lab Sample ID: LCSD 570-426558/3-A

Matrix: Solid

Analysis Batch: 429027

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	83.8		mg/Kg		84	68 - 120	5	20
1,1'-Biphenyl	100	81.4		mg/Kg		81	57 - 120	5	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	77		60 - 138						

Lab Sample ID: 570-178469-1 MS

Matrix: Solid

Analysis Batch: 429291

Client Sample ID: LTU #3

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	2300		95.9	2140	4	mg/Kg		-211	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr)	115		60 - 138						

Lab Sample ID: 570-178469-1 MS

Matrix: Solid

Analysis Batch: 429291

Client Sample ID: LTU #3

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	6700	F2	95.9	5030	4	mg/Kg		-1743	68 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr)	98		60 - 138						

Eurofins Calscience

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

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

Lab Sample ID: 570-178469-1 MSD

Matrix: Solid

Analysis Batch: 429291

Client Sample ID: LTU #3

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1'-Biphenyl	2300		97.8	2190	4	mg/Kg		-150	57 - 120	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
n-Octacosane (Surr)	106		60 - 138								

Lab Sample ID: 570-178469-1 MSD

Matrix: Solid

Analysis Batch: 429291

Client Sample ID: LTU #3

Prep Type: Total/NA

Prep Batch: 426558

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	6700	F2	97.8	6610	4 F2	mg/Kg		-95	68 - 120	27	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
n-Octacosane (Surr)	109		60 - 138								

QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

GC Semi VOA

Prep Batch: 426558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-178469-1 - DL	LTU #3	Total/NA	Solid	3550C	
MB 570-426558/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-426558/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-426558/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-178469-1 MS	LTU #3	Total/NA	Solid	3550C	
570-178469-1 MSD	LTU #3	Total/NA	Solid	3550C	

Analysis Batch: 429027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-426558/1-A	Method Blank	Total/NA	Solid	8015B	426558
LCS 570-426558/2-A	Lab Control Sample	Total/NA	Solid	8015B	426558
LCSD 570-426558/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	426558

Analysis Batch: 429291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-178469-1 - DL	LTU #3	Total/NA	Solid	8015B	426558
570-178469-1 - DL	LTU #3	Total/NA	Solid	8015B	426558
570-178469-1 MS	LTU #3	Total/NA	Solid	8015B	426558
570-178469-1 MS	LTU #3	Total/NA	Solid	8015B	426558
570-178469-1 MSD	LTU #3	Total/NA	Solid	8015B	426558
570-178469-1 MSD	LTU #3	Total/NA	Solid	8015B	426558

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-178469-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

[illegible]

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-178469-1

Login Number: 178469

List Number: 1

Creator: Khana, Piyush

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

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JOB DESCRIPTION

Genesis

JOB NUMBER

570-179152-1

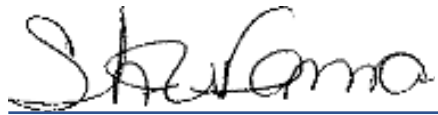
Eurofins Calscience

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-179152-1

Job ID: 570-179152-1

Eurofins Calscience

Job Narrative 570-179152-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/4/2024 1:35 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C.

Diesel Range Organics

Method 8015B_DRO: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-428290 and analytical batch 570-431566 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS/D) recovery was within acceptance limits.

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

Eurofins Calscience

Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-179152-1	Waste Soil	Solid	04/04/24 09:00	04/04/24 13:35

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Client Sample ID: Waste Soil					Lab Sample ID: 570-179152-1				
Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type	
Benzene, 1,1'-oxybis- - DL	14000		500	mg/Kg	100		8015B	Total/NA	
1,1'-Biphenyl - DL	5300		500	mg/Kg	100		8015B	Total/NA	

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Client Sample ID: Waste Soil
Date Collected: 04/04/24 09:00
Date Received: 04/04/24 13:35

Lab Sample ID: 570-179152-1
Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene, 1,1'-oxybis-	14000		500	mg/Kg		04/08/24 11:13	04/17/24 16:23	100	
1,1'-Biphenyl	5300		500	mg/Kg		04/08/24 11:13	04/17/24 16:23	100	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
n-Octacosane (Surr)	116		60 - 138			04/08/24 11:13	04/17/24 16:23	100	

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)				
570-179152-1 - DL	Waste Soil	116				
570-179152-1 MS - DL	Waste Soil	108				
570-179152-1 MSD - DL	Waste Soil	106				
LCS 570-428290/2-A	Lab Control Sample	81				
LCSD 570-428290/3-A	Lab Control Sample Dup	82				
MB 570-428290/1-A	Method Blank	79				
Surrogate Legend						
OTCSN = n-Octacosane (Surr)						

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Client Sample ID: Waste Soil
Date Collected: 04/04/24 09:00
Date Received: 04/04/24 13:35

Lab Sample ID: 570-179152-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.01 g	10 mL	428290	04/08/24 11:13	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	100	1 mL	1 mL	431566	04/17/24 16:23	SP9M	EET CAL 4
Instrument ID: GC70B										

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

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

Lab Sample ID: MB 570-428290/1-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 428290

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		04/08/24 11:13	04/17/24 12:56	1
1,1'-Biphenyl	ND		5.0	mg/Kg		04/08/24 11:13	04/17/24 12:56	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	79		60 - 138			04/08/24 11:13	04/17/24 12:56	1

Lab Sample ID: LCS 570-428290/2-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 428290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	81.9		mg/Kg		82	68 - 120
1,1'-Biphenyl	100	79.8		mg/Kg		80	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	81		60 - 138				

Lab Sample ID: LCSD 570-428290/3-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 428290

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	85.5		mg/Kg		86	68 - 120	4	20
1,1'-Biphenyl	100	83.1		mg/Kg		83	57 - 120	4	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	82		60 - 138						

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

Lab Sample ID: 570-179152-1 MS

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Waste Soil

Prep Type: Total/NA

Prep Batch: 428290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis- - DL	14000		100	13300	4	mg/Kg		-1091	68 - 120
1,1'-Biphenyl - DL	5300		100	4950	4	mg/Kg		-355	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr) - DL	108		60 - 138						

Lab Sample ID: 570-179152-1 MSD

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Waste Soil

Prep Type: Total/NA

Prep Batch: 428290

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis- - DL	14000		96.5	13400	4	mg/Kg		-1051	68 - 120	1	20
1,1'-Biphenyl - DL	5300		96.5	4950	4	mg/Kg		-366	57 - 120	0	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
n-Octacosane (Surr) - DL	106		60 - 138

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

GC Semi VOA

Prep Batch: 428290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-179152-1 - DL	Waste Soil	Total/NA	Solid	3550C	
MB 570-428290/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-428290/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-428290/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-179152-1 MS - DL	Waste Soil	Total/NA	Solid	3550C	
570-179152-1 MSD - DL	Waste Soil	Total/NA	Solid	3550C	

Analysis Batch: 431566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-179152-1 - DL	Waste Soil	Total/NA	Solid	8015B	428290
MB 570-428290/1-A	Method Blank	Total/NA	Solid	8015B	428290
LCS 570-428290/2-A	Lab Control Sample	Total/NA	Solid	8015B	428290
LCSD 570-428290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	428290
570-179152-1 MS - DL	Waste Soil	Total/NA	Solid	8015B	428290
570-179152-1 MSD - DL	Waste Soil	Total/NA	Solid	8015B	428290

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-179152-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Loc: 570
179152

[illegible]

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-179152-1

Login Number: 179152

List Number: 1

Creator: Le, Sunny

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

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JOB DESCRIPTION

Genesis

JOB NUMBER

570-180649-1

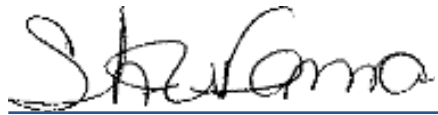
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Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-180649-1

Job ID: 570-180649-1

Eurofins Calscience

Job Narrative 570-180649-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 4/15/2024 5:51 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

Diesel Range Organics

Method 8015B_DRO: Surrogate recovery for the following samples were outside control limits: Composite (Samples 1-6) (570-180649-7), SP # 4 (570-180649-11), (570-180649-A-7-A MS) and (570-180649-A-7-B MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Metals

Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Thallium were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Organic Prep

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

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Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-180649-1	Bin # RB23103	Soil	04/15/24 09:45	04/15/24 17:51
570-180649-2	Bin # 5247	Soil	04/15/24 09:50	04/15/24 17:51
570-180649-3	Bin # PT1416	Soil	04/15/24 10:05	04/15/24 17:51
570-180649-4	Bin # PT6369	Soil	04/15/24 10:00	04/15/24 17:51
570-180649-5	Bin # 5063	Soil	04/15/24 10:20	04/15/24 17:51
570-180649-6	Bin # 4917	Soil	04/15/24 10:25	04/15/24 17:51
570-180649-7	Composite (Samples 1-6)	Soil	04/15/24 10:25	04/15/24 17:51
570-180649-8	SP # 1	Soil	04/15/24 10:10	04/15/24 17:51
570-180649-9	SP # 2	Soil	04/15/24 10:12	04/15/24 17:51
570-180649-10	SP # 3	Soil	04/15/24 10:14	04/15/24 17:51
570-180649-11	SP # 4	Soil	04/15/24 10:16	04/15/24 17:51

Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: Bin # RB23103

Lab Sample ID: 570-180649-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Bin # 5247

Lab Sample ID: 570-180649-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Bin # PT1416

Lab Sample ID: 570-180649-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Bin # PT6369

Lab Sample ID: 570-180649-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Bin # 5063

Lab Sample ID: 570-180649-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Bin # 4917

Lab Sample ID: 570-180649-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Composited	Yes			NONE	1		Composite	Total/NA

Client Sample ID: Composite (Samples 1-6)

Lab Sample ID: 570-180649-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	25000		510	mg/Kg	100		8015B	Total/NA
1,1'-Biphenyl - DL	8900		510	mg/Kg	100		8015B	Total/NA
Arsenic	4.1		3.0	mg/Kg	5		6010B	Total/NA
Barium	70		3.0	mg/Kg	5		6010B	Total/NA
Cobalt	3.6		1.0	mg/Kg	5		6010B	Total/NA
Chromium	7.1		1.0	mg/Kg	5		6010B	Total/NA
Copper	14		2.0	mg/Kg	5		6010B	Total/NA
Nickel	5.9		2.0	mg/Kg	5		6010B	Total/NA
Vanadium	16		1.0	mg/Kg	5		6010B	Total/NA
Zinc	30		5.1	mg/Kg	5		6010B	Total/NA
Lead	5.9		2.0	mg/Kg	5		6010B	Total/NA

Client Sample ID: SP # 1

Lab Sample ID: 570-180649-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	7600		99	mg/Kg	20		8015B	Total/NA
1,1'-Biphenyl - DL	2700		99	mg/Kg	20		8015B	Total/NA

Client Sample ID: SP # 2

Lab Sample ID: 570-180649-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	3200		48	mg/Kg	10		8015B	Total/NA
1,1'-Biphenyl - DL	1100		48	mg/Kg	10		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: SP # 3					Lab Sample ID: 570-180649-10				
Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type	
Benzene, 1,1'-oxybis- - DL	9400		250	mg/Kg	50		8015B	Total/NA	
1,1'-Biphenyl - DL	3400		250	mg/Kg	50		8015B	Total/NA	

Client Sample ID: SP # 4					Lab Sample ID: 570-180649-11				
Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type	
Benzene, 1,1'-oxybis- - DL	16000		500	mg/Kg	100		8015B	Total/NA	
1,1'-Biphenyl - DL	5600		500	mg/Kg	100		8015B	Total/NA	

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: Bin # RB23103

Lab Sample ID: 570-180649-1

Date Collected: 04/15/24 09:45

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Bin # 5247

Lab Sample ID: 570-180649-2

Date Collected: 04/15/24 09:50

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Bin # PT1416

Lab Sample ID: 570-180649-3

Date Collected: 04/15/24 10:05

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Bin # PT6369

Lab Sample ID: 570-180649-4

Date Collected: 04/15/24 10:00

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Bin # 5063

Lab Sample ID: 570-180649-5

Date Collected: 04/15/24 10:20

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Bin # 4917

Lab Sample ID: 570-180649-6

Date Collected: 04/15/24 10:25

Matrix: Soil

Date Received: 04/15/24 17:51

Method: Composite - Sample Compositing

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Composited	Yes			NONE			04/16/24 10:39	1

Client Sample ID: Composite (Samples 1-6)

Lab Sample ID: 570-180649-7

Date Collected: 04/15/24 10:25

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	25000		510	mg/Kg		04/16/24 10:36	04/18/24 13:21	100
1,1'-Biphenyl	8900		510	mg/Kg		04/16/24 10:36	04/18/24 13:21	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	157	S1+	60 - 138	04/16/24 10:36	04/18/24 13:21	100

Eurofins Calscience

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: Composite (Samples 1-6)

Lab Sample ID: 570-180649-7

Date Collected: 04/15/24 10:25

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.5	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Arsenic	4.1		3.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Barium	70		3.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Beryllium	ND		0.51	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Cadmium	ND		0.51	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Cobalt	3.6		1.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Chromium	7.1		1.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Copper	14		2.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Molybdenum	ND		2.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Nickel	5.9		2.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Antimony	ND		10	mg/Kg		04/16/24 07:11	04/17/24 13:57	5
Selenium	ND		3.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Thallium	ND		10	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Vanadium	16		1.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Zinc	30		5.1	mg/Kg		04/16/24 07:11	04/17/24 12:53	5
Lead	5.9		2.0	mg/Kg		04/16/24 07:11	04/17/24 12:53	5

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.083	mg/Kg		04/16/24 13:15	04/16/24 16:35	1

Client Sample ID: SP # 1

Lab Sample ID: 570-180649-8

Date Collected: 04/15/24 10:10

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	7600		99	mg/Kg		04/16/24 10:36	04/18/24 13:46	20
1,1'-Biphenyl	2700		99	mg/Kg		04/16/24 10:36	04/18/24 13:46	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	112		60 - 138			04/16/24 10:36	04/18/24 13:46	20

Client Sample ID: SP # 2

Lab Sample ID: 570-180649-9

Date Collected: 04/15/24 10:12

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	3200		48	mg/Kg		04/16/24 10:36	04/18/24 14:10	10
1,1'-Biphenyl	1100		48	mg/Kg		04/16/24 10:36	04/18/24 14:10	10
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	103		60 - 138			04/16/24 10:36	04/18/24 14:10	10

Client Sample ID: SP # 3

Lab Sample ID: 570-180649-10

Date Collected: 04/15/24 10:14

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	9400		250	mg/Kg		04/16/24 10:36	04/18/24 14:34	50

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Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: SP # 3

Lab Sample ID: 570-180649-10

Date Collected: 04/15/24 10:14

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	3400		250	mg/Kg		04/16/24 10:36	04/18/24 14:34	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	119		60 - 138			04/16/24 10:36	04/18/24 14:34	50

Client Sample ID: SP # 4

Lab Sample ID: 570-180649-11

Date Collected: 04/15/24 10:16

Matrix: Soil

Date Received: 04/15/24 17:51

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	16000		500	mg/Kg		04/16/24 10:36	04/18/24 14:59	100
1,1'-Biphenyl	5600		500	mg/Kg		04/16/24 10:36	04/18/24 14:59	100
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	146	S1+	60 - 138			04/16/24 10:36	04/18/24 14:59	100

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

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

Matrix: Soil

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)					
570-180649-7 - DL	Composite (Samples 1-6)	157 S1+					
570-180649-7 MS - DL	Composite (Samples 1-6)	143 S1+					
570-180649-7 MSD - DL	Composite (Samples 1-6)	144 S1+					
570-180649-8 - DL	SP # 1	112					
570-180649-9 - DL	SP # 2	103					
570-180649-10 - DL	SP # 3	119					
570-180649-11 - DL	SP # 4	146 S1+					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)					
LCS 570-431082/2-A	Lab Control Sample	79					
LCSD 570-431082/3-A	Lab Control Sample Dup	85					
MB 570-431082/1-A	Method Blank	77					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: Bin # RB23103

Lab Sample ID: 570-180649-1

Date Collected: 04/15/24 09:45

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Client Sample ID: Bin # 5247

Lab Sample ID: 570-180649-2

Date Collected: 04/15/24 09:50

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Client Sample ID: Bin # PT1416

Lab Sample ID: 570-180649-3

Date Collected: 04/15/24 10:05

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Client Sample ID: Bin # PT6369

Lab Sample ID: 570-180649-4

Date Collected: 04/15/24 10:00

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Client Sample ID: Bin # 5063

Lab Sample ID: 570-180649-5

Date Collected: 04/15/24 10:20

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Client Sample ID: Bin # 4917

Lab Sample ID: 570-180649-6

Date Collected: 04/15/24 10:25

Matrix: Soil

Date Received: 04/15/24 17:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Composite		1			431085	04/16/24 10:39	KZX6	EET CAL 4
Instrument ID: NOEQUIP										

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: Composite (Samples 1-6)
Date Collected: 04/15/24 10:25
Date Received: 04/15/24 17:51

Lab Sample ID: 570-180649-7
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		9.88 g	10 mL	431082	04/16/24 10:36	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	100	1 mL	1 mL	431965	04/18/24 13:21	SP9M	EET CAL 4
Instrument ID: GC70B										
Total/NA	Prep	3050B			1.97 g	50 mL	431005	04/16/24 07:11	GYR8	EET CAL 4
Total/NA	Analysis	6010B		5			431635	04/17/24 12:53	VZ0K	EET CAL 4
Instrument ID: ICP10										
Total/NA	Prep	3050B			1.97 g	50 mL	431005	04/16/24 07:11	GYR8	EET CAL 4
Total/NA	Analysis	6010B		5			431628	04/17/24 13:57	VZ0K	EET CAL 4
Instrument ID: ICP11										
Total/NA	Prep	7471A			0.50 g	50 mL	431178	04/16/24 13:15	VCN7	EET CAL 4
Total/NA	Analysis	7471A		1			431099	04/16/24 16:35	ECX6	EET CAL 4
Instrument ID: HG8										

Client Sample ID: SP # 1
Date Collected: 04/15/24 10:10
Date Received: 04/15/24 17:51

Lab Sample ID: 570-180649-8
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.14 g	10 mL	431082	04/16/24 10:36	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	20	1 mL	1 mL	431965	04/18/24 13:46	SP9M	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: SP # 2
Date Collected: 04/15/24 10:12
Date Received: 04/15/24 17:51

Lab Sample ID: 570-180649-9
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.39 g	10 mL	431082	04/16/24 10:36	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	10	1 mL	1 mL	431965	04/18/24 14:10	SP9M	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: SP # 3
Date Collected: 04/15/24 10:14
Date Received: 04/15/24 17:51

Lab Sample ID: 570-180649-10
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.16 g	10 mL	431082	04/16/24 10:36	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	50	1 mL	1 mL	431965	04/18/24 14:34	SP9M	EET CAL 4
Instrument ID: GC70B										

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Client Sample ID: SP # 4

Date Collected: 04/15/24 10:16

Date Received: 04/15/24 17:51

Lab Sample ID: 570-180649-11

Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		9.97 g	10 mL	431082	04/16/24 10:36	JE	EET CAL 4
Total/NA	Analysis	8015B	DL	100	1 mL	1 mL	431965	04/18/24 14:59	SP9M	EET CAL 4
Instrument ID: GC70B										

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

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

Lab Sample ID: MB 570-431082/1-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431082

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		04/16/24 10:36	04/17/24 18:29	1
1,1'-Biphenyl	ND		5.0	mg/Kg		04/16/24 10:36	04/17/24 18:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	77		60 - 138			04/16/24 10:36	04/17/24 18:29	1

Lab Sample ID: LCS 570-431082/2-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	76.2		mg/Kg		76	68 - 120
1,1'-Biphenyl	100	74.4		mg/Kg		74	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	79		60 - 138				

Lab Sample ID: LCSD 570-431082/3-A

Matrix: Solid

Analysis Batch: 431566

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431082

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	70.8		mg/Kg		71	68 - 120	7	20
1,1'-Biphenyl	100	80.5		mg/Kg		80	57 - 120	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	85		60 - 138						

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

Lab Sample ID: 570-180649-7 MS

Matrix: Soil

Analysis Batch: 431965

Client Sample ID: Composite (Samples 1-6)

Prep Type: Total/NA

Prep Batch: 431082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis- - DL	25000		103	22200	4	mg/Kg		-2669	68 - 120
1,1'-Biphenyl - DL	8900		103	8000	4	mg/Kg		-854	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr) - DL	143	S1+	60 - 138						

Lab Sample ID: 570-180649-7 MSD

Matrix: Soil

Analysis Batch: 431965

Client Sample ID: Composite (Samples 1-6)

Prep Type: Total/NA

Prep Batch: 431082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis- - DL	25000		98.1	21800	4	mg/Kg		-3187	68 - 120	2	20
1,1'-Biphenyl - DL	8900		98.1	7860	4	mg/Kg		-1039	57 - 120	2	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

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

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
n-Octacosane (Surr) - DL	144	S1+	60 - 138

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 570-431005/1-A ^5

Matrix: Solid

Analysis Batch: 431635

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431005

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.5	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Arsenic	ND		3.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Barium	ND		3.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Beryllium	ND		0.50	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Cadmium	ND		0.50	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Cobalt	ND		1.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Chromium	ND		1.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Copper	ND		2.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Molybdenum	ND		2.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Nickel	ND		2.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Antimony	ND		10	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Selenium	ND		3.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Thallium	ND		10	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Vanadium	ND		1.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Zinc	ND		5.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5
Lead	ND		2.0	mg/Kg		04/16/24 06:48	04/17/24 12:31	5

Lab Sample ID: LCSD 570-431005/3-A ^5

Matrix: Solid

Analysis Batch: 431635

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431005

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec		RPD	
		Result	Qualifier				Limits		RPD	Limit
Silver	25.3	24.3		mg/Kg		96	80 - 120		2	20
Arsenic	50.5	47.6		mg/Kg		94	80 - 120		2	20
Barium	50.5	49.0		mg/Kg		97	80 - 120		2	20
Beryllium	50.5	48.9		mg/Kg		97	80 - 120		2	20
Cadmium	50.5	47.9		mg/Kg		95	80 - 120		1	20
Cobalt	50.5	49.3		mg/Kg		98	80 - 120		2	20
Chromium	50.5	48.9		mg/Kg		97	80 - 120		2	20
Copper	50.5	48.4		mg/Kg		96	80 - 120		2	20
Molybdenum	50.5	50.1		mg/Kg		99	80 - 120		2	20
Nickel	50.5	49.1		mg/Kg		97	80 - 120		2	20
Antimony	50.5	51.1		mg/Kg		101	80 - 120		1	20
Selenium	50.5	44.9		mg/Kg		89	80 - 120		3	20
Thallium	50.5	48.0		mg/Kg		95	80 - 120		2	20
Vanadium	50.5	48.4		mg/Kg		96	80 - 120		2	20
Zinc	50.5	47.6		mg/Kg		94	80 - 120		1	20
Lead	50.5	48.8		mg/Kg		97	80 - 120		1	20

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 570-180658-A-1-B MS ^5

Matrix: Solid

Analysis Batch: 431628

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 431005

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		25.0	24.9		mg/Kg		100	75 - 125
Arsenic	ND		50.0	47.5		mg/Kg		95	75 - 125
Barium	4.3		50.0	53.7		mg/Kg		99	75 - 125
Beryllium	ND		50.0	49.4		mg/Kg		99	75 - 125
Cadmium	ND		50.0	48.3		mg/Kg		97	75 - 125
Cobalt	1.3		50.0	50.3		mg/Kg		98	75 - 125
Chromium	7.6		50.0	61.6		mg/Kg		108	75 - 125
Copper	5.7		50.0	57.6		mg/Kg		104	75 - 125
Molybdenum	ND		50.0	49.7		mg/Kg		99	75 - 125
Nickel	3.2		50.0	52.3		mg/Kg		98	75 - 125
Antimony	ND		50.0	44.7		mg/Kg		89	75 - 125
Selenium	ND		50.0	45.4		mg/Kg		91	75 - 125
Thallium	ND	F1	50.0	35.9	F1	mg/Kg		72	75 - 125
Vanadium	6.2		50.0	58.7		mg/Kg		105	75 - 125
Zinc	13		50.0	61.6		mg/Kg		98	75 - 125
Lead	2.7		50.0	51.6		mg/Kg		98	75 - 125

Lab Sample ID: 570-180658-A-1-C MSD ^5

Matrix: Solid

Analysis Batch: 431628

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 431005

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Silver	ND		24.9	22.9		mg/Kg		92	75 - 125	8	20
Arsenic	ND		49.8	44.2		mg/Kg		89	75 - 125	7	20
Barium	4.3		49.8	51.5		mg/Kg		95	75 - 125	4	20
Beryllium	ND		49.8	45.5		mg/Kg		91	75 - 125	8	20
Cadmium	ND		49.8	44.5		mg/Kg		89	75 - 125	8	20
Cobalt	1.3		49.8	46.4		mg/Kg		91	75 - 125	8	20
Chromium	7.6		49.8	57.7		mg/Kg		101	75 - 125	6	20
Copper	5.7		49.8	52.9		mg/Kg		95	75 - 125	9	20
Molybdenum	ND		49.8	49.5		mg/Kg		99	75 - 125	0	20
Nickel	3.2		49.8	48.5		mg/Kg		91	75 - 125	8	20
Antimony	ND		49.8	44.5		mg/Kg		90	75 - 125	0	20
Selenium	ND		49.8	41.3		mg/Kg		83	75 - 125	9	20
Thallium	ND	F1	49.8	32.9	F1	mg/Kg		66	75 - 125	9	20
Vanadium	6.2		49.8	54.7		mg/Kg		98	75 - 125	7	20
Zinc	13		49.8	57.0		mg/Kg		89	75 - 125	8	20
Lead	2.7		49.8	47.7		mg/Kg		91	75 - 125	8	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-431178/1-A

Matrix: Solid

Analysis Batch: 431099

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431178

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.080	mg/Kg		04/16/24 13:15	04/16/24 14:59	1

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 570-431178/2-A

Matrix: Solid

Analysis Batch: 431099

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.392	0.350		mg/Kg		89	80 - 120

Lab Sample ID: LCSD 570-431178/3-A

Matrix: Solid

Analysis Batch: 431099

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431178

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.392	0.332		mg/Kg		85	80 - 120	5	10

Lab Sample ID: 570-180656-A-1-E MS

Matrix: Solid

Analysis Batch: 431099

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 431178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.385	0.352		mg/Kg		83	80 - 120

Lab Sample ID: 570-180656-A-1-F MSD

Matrix: Solid

Analysis Batch: 431099

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 431178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.385	0.349		mg/Kg		82	80 - 120	1	20

QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

GC Semi VOA

Prep Batch: 431082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7 - DL	Composite (Samples 1-6)	Total/NA	Soil	3550C	
570-180649-8 - DL	SP # 1	Total/NA	Soil	3550C	
570-180649-9 - DL	SP # 2	Total/NA	Soil	3550C	
570-180649-10 - DL	SP # 3	Total/NA	Soil	3550C	
570-180649-11 - DL	SP # 4	Total/NA	Soil	3550C	
MB 570-431082/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-431082/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-431082/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-180649-7 MS - DL	Composite (Samples 1-6)	Total/NA	Soil	3550C	
570-180649-7 MSD - DL	Composite (Samples 1-6)	Total/NA	Soil	3550C	

Analysis Batch: 431566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-431082/1-A	Method Blank	Total/NA	Solid	8015B	431082
LCS 570-431082/2-A	Lab Control Sample	Total/NA	Solid	8015B	431082
LCSD 570-431082/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	431082

Analysis Batch: 431965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7 - DL	Composite (Samples 1-6)	Total/NA	Soil	8015B	431082
570-180649-8 - DL	SP # 1	Total/NA	Soil	8015B	431082
570-180649-9 - DL	SP # 2	Total/NA	Soil	8015B	431082
570-180649-10 - DL	SP # 3	Total/NA	Soil	8015B	431082
570-180649-11 - DL	SP # 4	Total/NA	Soil	8015B	431082
570-180649-7 MS - DL	Composite (Samples 1-6)	Total/NA	Soil	8015B	431082
570-180649-7 MSD - DL	Composite (Samples 1-6)	Total/NA	Soil	8015B	431082

Metals

Prep Batch: 431005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7	Composite (Samples 1-6)	Total/NA	Soil	3050B	
MB 570-431005/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCSD 570-431005/3-A ^5	Lab Control Sample Dup	Total/NA	Solid	3050B	
570-180658-A-1-B MS ^5	Matrix Spike	Total/NA	Solid	3050B	
570-180658-A-1-C MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 431099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7	Composite (Samples 1-6)	Total/NA	Soil	7471A	431178
MB 570-431178/1-A	Method Blank	Total/NA	Solid	7471A	431178
LCS 570-431178/2-A	Lab Control Sample	Total/NA	Solid	7471A	431178
LCSD 570-431178/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	431178
570-180656-A-1-E MS	Matrix Spike	Total/NA	Solid	7471A	431178
570-180656-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	431178

Prep Batch: 431178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7	Composite (Samples 1-6)	Total/NA	Soil	7471A	
MB 570-431178/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 570-431178/2-A	Lab Control Sample	Total/NA	Solid	7471A	

Eurofins Calscience

QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Metals (Continued)

Prep Batch: 431178 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-431178/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
570-180656-A-1-E MS	Matrix Spike	Total/NA	Solid	7471A	
570-180656-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 431628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7	Composite (Samples 1-6)	Total/NA	Soil	6010B	431005
570-180658-A-1-B MS ^5	Matrix Spike	Total/NA	Solid	6010B	431005
570-180658-A-1-C MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	431005

Analysis Batch: 431635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-7	Composite (Samples 1-6)	Total/NA	Soil	6010B	431005
MB 570-431005/1-A ^5	Method Blank	Total/NA	Solid	6010B	431005
LCSD 570-431005/3-A ^5	Lab Control Sample Dup	Total/NA	Solid	6010B	431005

Organic Prep

Analysis Batch: 431085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-180649-1	Bin # RB23103	Total/NA	Soil	Composite	
570-180649-2	Bin # 5247	Total/NA	Soil	Composite	
570-180649-3	Bin # PT1416	Total/NA	Soil	Composite	
570-180649-4	Bin # PT6369	Total/NA	Soil	Composite	
570-180649-5	Bin # 5063	Total/NA	Soil	Composite	
570-180649-6	Bin # 4917	Total/NA	Soil	Composite	

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

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
6010B	3050B	Soil	Antimony
6010B	3050B	Soil	Arsenic
6010B	3050B	Soil	Barium
6010B	3050B	Soil	Beryllium
6010B	3050B	Soil	Cadmium
6010B	3050B	Soil	Chromium
6010B	3050B	Soil	Cobalt
6010B	3050B	Soil	Copper
6010B	3050B	Soil	Lead
6010B	3050B	Soil	Molybdenum
6010B	3050B	Soil	Nickel
6010B	3050B	Soil	Selenium
6010B	3050B	Soil	Silver
6010B	3050B	Soil	Thallium
6010B	3050B	Soil	Vanadium
6010B	3050B	Soil	Zinc
7471A	7471A	Soil	Mercury
8015B	3550C	Soil	1,1'-Biphenyl
8015B	3550C	Soil	Benzene, 1,1'-oxybis-
Composite		Soil	Composited

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-180649-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
6010B	Metals (ICP)	SW846	EET CAL 4
7471A	Mercury (CVAA)	SW846	EET CAL 4
Composite	Sample Compositing	None	EET CAL 4
3050B	Preparation, Metals	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4
7471A	Preparation, Mercury	SW846	EET CAL 4

Protocol References:

None = None

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

2841 Dow Avenue
Tustin CA 92780
(714) 730-7950

Chain of Custody Record



Enviro

Amerit

Loc 570
180649

Client Information		Sampler R. DeLaParra		Lab PM Sheri Fama		Carrier Tracking No(s)		COC No:	
Client Contact: Mr Arlin Brewster		Phone: (949) 702-0968		E-Mail: sherifama@eurofinset.com		State of Origin: California		Page: Page 1 of 1	
Company: Northstar Environmental Remediation				PWSID:		Analysis Requested			
Address: 26225 Enterprise Court		Due Date Requested		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 8016M Terminol 8016B Gasoline + Diesel + Motor Oil Title 22 Metals Mercury 8260B - Total VOCs TCLP - RCRA 8 Metals (6010)		Barcode 570-180649 Chain of Custody		Preservation Codes	
City: Lake Forest		TAT Requested (days) ASAP							
State Zip CA, 92630		Compliance Project: ☐ Yes ☐ No							
Phone: (949) 274-1719		PO #: 196-004-07							
Email: Arlin.Brewster@NorthstarER.com		WO #:							
Project Name: Genesis		Project #:						J - DI Water K - EDTA L - EDA V - MCAA W pH 4-5 Z other (specify)	
Site: Genesis		SSOW#:						Other	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			Total Number of containers	
								Special Instructions/Note EDF file NOT required	
B.in # RB23103		4-15-24	0945	G	S		X	X	1 Composite all
B.in # 5247			0950	G			X	X	1 Bin Samples (6)
B.in # PT1416			1005				X	X	1 + report as
B.in # PT6369			1000				X	X	1 Bin Composite Sample
B.in # 5063			1020				X	X	1 w/a time of 1025
B.in # 4917			1025				X	X	1
SP #1			1010				X		1
SP #2			1012				X		1
SP #3			1014				X		1
SP #4			1016				X		1
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months			
Deliverable Requested I II III IV Other (specify)						Special Instructions/QC Requirements			
Empty Kit Relinquished by:		Date		Time		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 4-15-24 @ 12:51		Company: Northstar		Received by: <i>[Signature]</i>		Date/Time: 4-15-24 17:51	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: 2.0 / 2.1 SC14					

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-180649-1

Login Number: 180649

List Source: Eurofins Calscience

List Number: 1

Creator: Fama, Sheri M

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	Sample compositing requested.
Residual Chlorine Checked.	True	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

Generated 6/26/2024 2:23:11 PM

JOB DESCRIPTION

Genesis

JOB NUMBER

570-187307-1

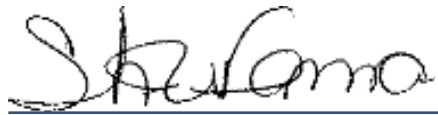
Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Sheri Fama, Project Manager I
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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-187307-1

Job ID: 570-187307-1

Eurofins Calscience

Job Narrative 570-187307-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/7/2024 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C.

Diesel Range Organics

Method 8015B_DRO: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-449057 and analytical batch 570-452056 recovered outside control limits for the following analytes: 1,1'-Biphenyl.

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

Eurofins Calscience

Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-187307-1	LTU #1	Solid	06/06/24 18:20	06/07/24 10:10
570-187307-2	LTU #2	Solid	06/06/24 18:22	06/07/24 10:10
570-187307-3	LTU #3	Solid	06/06/24 18:24	06/07/24 10:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Client Sample ID: LTU #1

Lab Sample ID: 570-187307-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	6100		250	mg/Kg	50		8015B	Total/NA
1,1'-Biphenyl - DL	2200	*1	250	mg/Kg	50		8015B	Total/NA

Client Sample ID: LTU #2

Lab Sample ID: 570-187307-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	7600		250	mg/Kg	50		8015B	Total/NA
1,1'-Biphenyl - DL	2700	*1	250	mg/Kg	50		8015B	Total/NA

Client Sample ID: LTU #3

Lab Sample ID: 570-187307-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis-	3100		50	mg/Kg	10		8015B	Total/NA
1,1'-Biphenyl	890	*1	50	mg/Kg	10		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Client Sample ID: LTU #1

Date Collected: 06/06/24 18:20

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-1

Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	6100		250	mg/Kg		06/08/24 15:29	06/24/24 21:05	50
1,1'-Biphenyl	2200	*1	250	mg/Kg		06/08/24 15:29	06/24/24 21:05	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	82		60 - 138			06/08/24 15:29	06/24/24 21:05	50

Client Sample ID: LTU #2

Date Collected: 06/06/24 18:22

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-2

Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	7600		250	mg/Kg		06/08/24 15:29	06/24/24 21:29	50
1,1'-Biphenyl	2700	*1	250	mg/Kg		06/08/24 15:29	06/24/24 21:29	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	92		60 - 138			06/08/24 15:29	06/24/24 21:29	50

Client Sample ID: LTU #3

Date Collected: 06/06/24 18:24

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-3

Matrix: Solid

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	3100		50	mg/Kg		06/08/24 15:29	06/24/24 19:09	10
1,1'-Biphenyl	890	*1	50	mg/Kg		06/08/24 15:29	06/24/24 19:09	10
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	91		60 - 138			06/08/24 15:29	06/24/24 19:09	10

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)					
570-187307-1 - DL	LTU #1	82					
570-187307-1 MS - DL	LTU #1	79					
570-187307-1 MSD - DL	LTU #1	80					
570-187307-2 - DL	LTU #2	92					
570-187307-3	LTU #3	91					
LCS 570-449057/2-A	Lab Control Sample	78					
LCSD 570-449057/3-A	Lab Control Sample Dup	70					
MB 570-449057/1-A	Method Blank	66					
Surrogate Legend							
OTCSN = n-Octacosane (Surr)							

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Client Sample ID: LTU #1

Date Collected: 06/06/24 18:20

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.04 g	10 mL	449057	06/08/24 15:29	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL	50	1 mL	1 mL	454024	06/24/24 21:05	SP9M	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: LTU #2

Date Collected: 06/06/24 18:22

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.03 g	10 mL	449057	06/08/24 15:29	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL	50	1 mL	1 mL	454024	06/24/24 21:29	SP9M	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: LTU #3

Date Collected: 06/06/24 18:24

Date Received: 06/07/24 10:10

Lab Sample ID: 570-187307-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			10.01 g	10 mL	449057	06/08/24 15:29	NV8K	EET CAL 4
Total/NA	Analysis	8015B		10	1 mL	1 mL	454024	06/24/24 19:09	SP9M	EET CAL 4
Instrument ID: GC70B										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

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

Lab Sample ID: MB 570-449057/1-A

Matrix: Solid

Analysis Batch: 452056

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 449057

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		06/08/24 15:29	06/18/24 20:02	1
1,1'-Biphenyl	ND		5.0	mg/Kg		06/08/24 15:29	06/18/24 20:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	66		60 - 138			06/08/24 15:29	06/18/24 20:02	1

Lab Sample ID: LCS 570-449057/2-A

Matrix: Solid

Analysis Batch: 454363

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 449057

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	84.8		mg/Kg		85	68 - 120
1,1'-Biphenyl	100	92.2		mg/Kg		92	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	78		60 - 138				

Lab Sample ID: LCSD 570-449057/3-A

Matrix: Solid

Analysis Batch: 452056

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 449057

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	76.1		mg/Kg		76	68 - 120	11	20
1,1'-Biphenyl	100	74.5	*1	mg/Kg		74	57 - 120	21	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	70		60 - 138						

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

Lab Sample ID: 570-187307-1 MS

Matrix: Solid

Analysis Batch: 454024

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 449057

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis- - DL	6100		99.2	6030	4	mg/Kg		-122	68 - 120
1,1'-Biphenyl - DL	2200	*1	99.2	2180	4	mg/Kg		10	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr) - DL	79		60 - 138						

Lab Sample ID: 570-187307-1 MSD

Matrix: Solid

Analysis Batch: 454024

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 449057

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis- - DL	6100		99.8	6480	4	mg/Kg		327	68 - 120	7	20
1,1'-Biphenyl - DL	2200	*1	99.8	2330	4	mg/Kg		162	57 - 120	7	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

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

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
<i>n-Octacosane (Surr) - DL</i>	80		60 - 138

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QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

GC Semi VOA

Prep Batch: 449057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-187307-1 - DL	LTU #1	Total/NA	Solid	3550C	
570-187307-2 - DL	LTU #2	Total/NA	Solid	3550C	
570-187307-3	LTU #3	Total/NA	Solid	3550C	
MB 570-449057/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-449057/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-449057/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-187307-1 MS - DL	LTU #1	Total/NA	Solid	3550C	
570-187307-1 MSD - DL	LTU #1	Total/NA	Solid	3550C	

Analysis Batch: 452056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-449057/1-A	Method Blank	Total/NA	Solid	8015B	449057
LCSD 570-449057/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	449057

Analysis Batch: 454024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-187307-1 - DL	LTU #1	Total/NA	Solid	8015B	449057
570-187307-2 - DL	LTU #2	Total/NA	Solid	8015B	449057
570-187307-3	LTU #3	Total/NA	Solid	8015B	449057
570-187307-1 MS - DL	LTU #1	Total/NA	Solid	8015B	449057
570-187307-1 MSD - DL	LTU #1	Total/NA	Solid	8015B	449057

Analysis Batch: 454363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-449057/2-A	Lab Control Sample	Total/NA	Solid	8015B	449057

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-187307-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Loc: 570
187307

[illegible]

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-187307-1

Login Number: 187307

List Number: 1

Creator: Mouton, Alain

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

Generated 10/14/2024 2:10:04 PM

JOB DESCRIPTION

Genesis

JOB NUMBER

570-200538-1

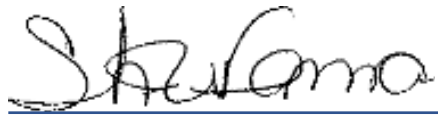
Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Sheri Fama, Project Manager I
Sheri.Fama@et.eurofinsus.com
(657)210-6368

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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
S1+	Surrogate recovery exceeds control limits, high biased.

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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-200538-1

Job ID: 570-200538-1

Eurofins Calscience

Job Narrative 570-200538-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/26/2024 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

Diesel Range Organics

Method 8015B_DRO: The following samples were re-prepared outside of preparation holding time due to QC failure: LTU #1 (570-200538-1), LTU #3 (570-200538-2), (570-200538-A-1-D MS) and (570-200538-A-1-E MSD).

Method 8015B_DRO: Surrogate recovery for the following samples were outside control limits: LTU #1 (570-200538-1) and LTU #3 (570-200538-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Eurofins Calscience

Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-200538-1	LTU #1	Solid	09/24/24 14:50	09/26/24 13:30
570-200538-2	LTU #3	Solid	09/24/24 14:55	09/26/24 13:30

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Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Client Sample ID: LTU #1 Lab Sample ID: 570-200538-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	6300	H	100	mg/Kg	20		8015B	Total/NA
1,1'-Biphenyl - DL	2100	H	100	mg/Kg	20		8015B	Total/NA

Client Sample ID: LTU #3 Lab Sample ID: 570-200538-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL2	5300	H	100	mg/Kg	20		8015B	Total/NA
1,1'-Biphenyl - DL2	1400	H	100	mg/Kg	20		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Client Sample ID: LTU #1

Lab Sample ID: 570-200538-1

Date Collected: 09/24/24 14:50

Matrix: Solid

Date Received: 09/26/24 13:30

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	6300	H	100	mg/Kg		10/10/24 12:15	10/12/24 17:14	20
1,1'-Biphenyl	2100	H	100	mg/Kg		10/10/24 12:15	10/12/24 17:14	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	144	S1+	60 - 138			10/10/24 12:15	10/12/24 17:14	20

Client Sample ID: LTU #3

Lab Sample ID: 570-200538-2

Date Collected: 09/24/24 14:55

Matrix: Solid

Date Received: 09/26/24 13:30

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	5300	H	100	mg/Kg		10/10/24 12:15	10/12/24 18:15	20
1,1'-Biphenyl	1400	H	100	mg/Kg		10/10/24 12:15	10/12/24 18:15	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	139	S1+	60 - 138			10/10/24 12:15	10/12/24 18:15	20

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)						
570-200538-1 - DL	LTU #1	144 S1+						
570-200538-1 MS	LTU #1	116						
570-200538-1 MSD	LTU #1	134						
570-200538-2 - DL2	LTU #3	139 S1+						
LCS 570-489946/2-A	Lab Control Sample	91						
LCSD 570-489946/3-A	Lab Control Sample Dup	93						
MB 570-489946/1-A	Method Blank	94						
Surrogate Legend								
OTCSN = n-Octacosane (Surr)								

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Client Sample ID: LTU #1
Date Collected: 09/24/24 14:50
Date Received: 09/26/24 13:30

Lab Sample ID: 570-200538-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.01 g	10 mL	489946	10/10/24 12:15	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL	20	1 mL	1 mL	490800	10/12/24 17:14	UJ3K	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: LTU #3
Date Collected: 09/24/24 14:55
Date Received: 09/26/24 13:30

Lab Sample ID: 570-200538-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL2		10.04 g	10 mL	489946	10/10/24 12:15	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL2	20	1 mL	1 mL	490800	10/12/24 18:15	UJ3K	EET CAL 4
Instrument ID: GC70B										

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

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

Lab Sample ID: MB 570-489946/1-A

Matrix: Solid

Analysis Batch: 490800

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 489946

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		10/10/24 12:15	10/12/24 12:29	1
1,1'-Biphenyl	ND		5.0	mg/Kg		10/10/24 12:15	10/12/24 12:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	94		60 - 138			10/10/24 12:15	10/12/24 12:29	1

Lab Sample ID: LCS 570-489946/2-A

Matrix: Solid

Analysis Batch: 490800

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 489946

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	79.3		mg/Kg		79	68 - 120
1,1'-Biphenyl	100	90.5		mg/Kg		90	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	91		60 - 138				

Lab Sample ID: LCSD 570-489946/3-A

Matrix: Solid

Analysis Batch: 490800

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 489946

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	85.3		mg/Kg		85	68 - 120	7	20
1,1'-Biphenyl	100	95.0		mg/Kg		95	57 - 120	5	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	93		60 - 138						

Lab Sample ID: 570-200538-1 MS

Matrix: Solid

Analysis Batch: 490800

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 489946

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	6300	H	99.0	5450	4	mg/Kg		-834	68 - 120
1,1'-Biphenyl	2100	H	99.0	1890	4	mg/Kg		-208	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr)	116		60 - 138						

Lab Sample ID: 570-200538-1 MSD

Matrix: Solid

Analysis Batch: 490800

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 489946

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	6300	H	99.0	6160	4	mg/Kg		-116	68 - 120	12	20
1,1'-Biphenyl	2100	H	99.0	2130	4	mg/Kg		37	57 - 120	12	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

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

Lab Sample ID: 570-200538-1 MSD
Matrix: Solid
Analysis Batch: 490800

Client Sample ID: LTU #1
Prep Type: Total/NA
Prep Batch: 489946

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
n-Octacosane (Surr)	134		60 - 138

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QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

GC Semi VOA

Prep Batch: 489946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-200538-1 - DL	LTU #1	Total/NA	Solid	3550C	
570-200538-2 - DL2	LTU #3	Total/NA	Solid	3550C	
MB 570-489946/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-489946/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-489946/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-200538-1 MS	LTU #1	Total/NA	Solid	3550C	
570-200538-1 MSD	LTU #1	Total/NA	Solid	3550C	

Analysis Batch: 490800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-200538-1 - DL	LTU #1	Total/NA	Solid	8015B	489946
570-200538-2 - DL2	LTU #3	Total/NA	Solid	8015B	489946
MB 570-489946/1-A	Method Blank	Total/NA	Solid	8015B	489946
LCS 570-489946/2-A	Lab Control Sample	Total/NA	Solid	8015B	489946
LCSD 570-489946/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	489946
570-200538-1 MS	LTU #1	Total/NA	Solid	8015B	489946
570-200538-1 MSD	LTU #1	Total/NA	Solid	8015B	489946

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-26
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-200538-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

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JKP

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-200538-1

Login Number: 200538

List Source: Eurofins Calscience

List Number: 1

Creator: Vitente, Precy

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630

Generated 12/18/2024 1:18:22 PM

JOB DESCRIPTION

Genesis

JOB NUMBER

570-210105-1

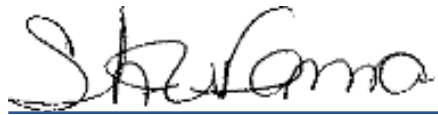
Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
S1+	Surrogate recovery exceeds control limits, high biased.

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

Case Narrative

Client: Northstar Environmental Remediation
Project: Genesis

Job ID: 570-210105-1

Job ID: 570-210105-1

Eurofins Calscience

Job Narrative 570-210105-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/6/2024 2:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C.

Diesel Range Organics

Method 8015B_DRO: Surrogate recovery for the following samples were outside control limits: (570-210105-A-1-A MS) and (570-210105-A-1-B MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015B_DRO: Due to the high concentration of parent sample, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 570-512290 and analytical batch 570-513790 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

Method 8015B_DRO: Due to the additional level of analyte present in the spiked samples, the concentration of Benzene, 1,1'-oxybis- in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 8015B_DRO: Surrogate recovery for the following sample was outside control limits: LTU #3 (570-210105-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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Sample Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-210105-1	LTU #1	Solid	12/05/24 14:04	12/06/24 14:26
570-210105-2	LTU #3	Solid	12/05/24 14:06	12/06/24 14:26

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Detection Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Client Sample ID: LTU #1 Lab Sample ID: 570-210105-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL2	5200		97	mg/Kg	20		8015B	Total/NA
1,1'-Biphenyl - DL2	1700		97	mg/Kg	20		8015B	Total/NA

Client Sample ID: LTU #3 Lab Sample ID: 570-210105-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene, 1,1'-oxybis- - DL	4100		97	mg/Kg	20		8015B	Total/NA
1,1'-Biphenyl - DL	1100		97	mg/Kg	20		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Client Sample ID: LTU #1

Lab Sample ID: 570-210105-1

Date Collected: 12/05/24 14:04

Matrix: Solid

Date Received: 12/06/24 14:26

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	5200		97	mg/Kg		12/10/24 16:16	12/16/24 16:28	20
1,1'-Biphenyl	1700		97	mg/Kg		12/10/24 16:16	12/16/24 16:28	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	126		60 - 138			12/10/24 16:16	12/16/24 16:28	20

Client Sample ID: LTU #3

Lab Sample ID: 570-210105-2

Date Collected: 12/05/24 14:06

Matrix: Solid

Date Received: 12/06/24 14:26

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	4100		97	mg/Kg		12/10/24 16:16	12/17/24 17:00	20
1,1'-Biphenyl	1100		97	mg/Kg		12/10/24 16:16	12/17/24 17:00	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	167	S1+	60 - 138			12/10/24 16:16	12/17/24 17:00	20

Surrogate Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

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

Matrix: Solid

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTCSN1 (60-138)						
570-210105-1 - DL2	LTU #1	126						
570-210105-1 MS	LTU #1	163 S1+						
570-210105-1 MSD	LTU #1	152 S1+						
570-210105-2 - DL	LTU #3	167 S1+						
LCS 570-512290/2-A	Lab Control Sample	96						
LCSD 570-512290/3-A	Lab Control Sample Dup	92						
MB 570-512290/1-A	Method Blank	97						
Surrogate Legend								
OTCSN = n-Octacosane (Surr)								

Lab Chronicle

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Client Sample ID: LTU #1
Date Collected: 12/05/24 14:04
Date Received: 12/06/24 14:26

Lab Sample ID: 570-210105-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL2		10.28 g	10 mL	512290	12/10/24 16:16	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL2	20	1 mL	1 mL	514484	12/16/24 16:28	H6FE	EET CAL 4
Instrument ID: GC70B										

Client Sample ID: LTU #3
Date Collected: 12/05/24 14:06
Date Received: 12/06/24 14:26

Lab Sample ID: 570-210105-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C	DL		10.31 g	10 mL	512290	12/10/24 16:16	NV8K	EET CAL 4
Total/NA	Analysis	8015B	DL	20	1 mL	1 mL	515023	12/17/24 17:00	H6FE	EET CAL 4
Instrument ID: GC70B										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

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

Lab Sample ID: MB 570-512290/1-A

Matrix: Solid

Analysis Batch: 513790

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 512290

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		5.0	mg/Kg		12/10/24 16:16	12/13/24 19:39	1
1,1'-Biphenyl	ND		5.0	mg/Kg		12/10/24 16:16	12/13/24 19:39	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	97		60 - 138			12/10/24 16:16	12/13/24 19:39	1

Lab Sample ID: LCS 570-512290/2-A

Matrix: Solid

Analysis Batch: 513790

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 512290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	100	96.6		mg/Kg		97	68 - 120
1,1'-Biphenyl	100	95.6		mg/Kg		96	57 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
n-Octacosane (Surr)	96		60 - 138				

Lab Sample ID: LCSD 570-512290/3-A

Matrix: Solid

Analysis Batch: 513790

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 512290

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	100	96.0		mg/Kg		96	68 - 120	1	20
1,1'-Biphenyl	100	95.0		mg/Kg		95	57 - 120	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
n-Octacosane (Surr)	92		60 - 138						

Lab Sample ID: 570-210105-1 MS

Matrix: Solid

Analysis Batch: 513790

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 512290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene, 1,1'-oxybis-	5200		100	3050	E 4	mg/Kg		-2198	68 - 120
1,1'-Biphenyl	1700		100	185	4	mg/Kg		-1538	57 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
n-Octacosane (Surr)	163	S1+	60 - 138						

Lab Sample ID: 570-210105-1 MSD

Matrix: Solid

Analysis Batch: 513790

Client Sample ID: LTU #1

Prep Type: Total/NA

Prep Batch: 512290

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-	5200		97.5	2790	E 4	mg/Kg		-2522	68 - 120	9	20
1,1'-Biphenyl	1700		97.5	180	4	mg/Kg		-1583	57 - 120	3	20

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QC Sample Results

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

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

Lab Sample ID: 570-210105-1 MSD
Matrix: Solid
Analysis Batch: 513790

Client Sample ID: LTU #1
Prep Type: Total/NA
Prep Batch: 512290

Surrogate	MSD		Limits
	%Recovery	Qualifier	
n-Octacosane (Surr)	152	S1+	60 - 138

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QC Association Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

GC Semi VOA

Prep Batch: 512290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-210105-1 - DL2	LTU #1	Total/NA	Solid	3550C	
570-210105-2 - DL	LTU #3	Total/NA	Solid	3550C	
MB 570-512290/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-512290/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-512290/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-210105-1 MS	LTU #1	Total/NA	Solid	3550C	
570-210105-1 MSD	LTU #1	Total/NA	Solid	3550C	

Analysis Batch: 513790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-512290/1-A	Method Blank	Total/NA	Solid	8015B	512290
LCS 570-512290/2-A	Lab Control Sample	Total/NA	Solid	8015B	512290
LCSD 570-512290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	512290
570-210105-1 MS	LTU #1	Total/NA	Solid	8015B	512290
570-210105-1 MSD	LTU #1	Total/NA	Solid	8015B	512290

Analysis Batch: 514484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-210105-1 - DL2	LTU #1	Total/NA	Solid	8015B	512290

Analysis Batch: 515023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-210105-2 - DL	LTU #3	Total/NA	Solid	8015B	512290

Accreditation/Certification Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-25
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	3550C	Solid	1,1'-Biphenyl
8015B	3550C	Solid	Benzene, 1,1'-oxybis-

Method Summary

Client: Northstar Environmental Remediation
Project/Site: Genesis

Job ID: 570-210105-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
3550C	Ultrasonic Extraction	SW846	EET CAL 4

Protocol References:

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

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

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RHKS

Login Sample Receipt Checklist

Client: Northstar Environmental Remediation

Job Number: 570-210105-1

Login Number: 210105

List Source: Eurofins Calscience

List Number: 1

Creator: Yu, Tiffany

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	