

Appendix I Focused Phase II Environmental Investigation

Appendices

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northgate
environmental management, inc.

FOCUSED PHASE II ENVIRONMENTAL INVESTIGATION

Brea 265 Property

Valencia Avenue at Lambert Road

Brea, California

Prepared For:

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Prepared By:

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May 10, 2017

Project No. 2077.01.03S

FOCUSED PHASE II ENVIRONMENTAL INVESTIGATION

**Brea 265 Property
Valencia Avenue at Lambert Road
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Prepared For:

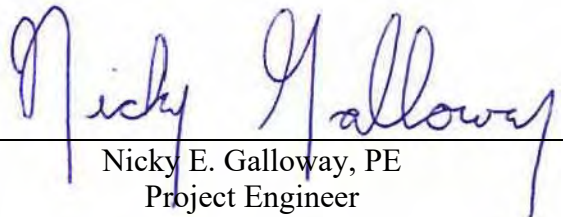
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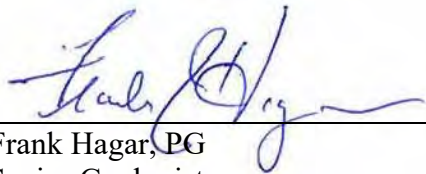
APPENDICES

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CERTIFICATION

All geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Northgate California Professional Geologist.

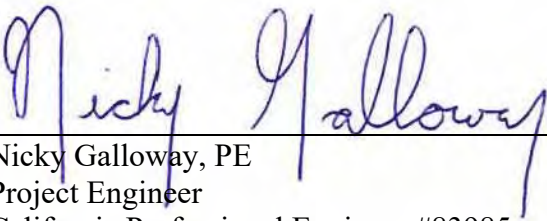


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1.0 INTRODUCTION

This report presents the results of a Focused Phase II Environmental Investigation performed by Northgate Environmental Management, Inc. (Northgate) for Aera Energy LLC (“Aera”), at the Brea 265 Property located in the City of Brea, California (the Central Property or Site). The Site consists of approximately 265 acres of land developed as an active oil production field, a plant nursery, and a tree farm, located along Valencia Avenue at the intersections of Lambert Road, Carbon Canyon Road, and Rose Drive. The Site is identified as Assessor’s Parcel Numbers (APNs) 320-073-07 and -09, and 322-031-01, -12, -13, -14, -19, -21, and -24 in Orange County.

For the purpose of this report, the Site has been divided into two properties, identified as the 100-Acre Property and the 165-Acre Property. The 100-Acre Property comprises that portion of the Central Property located west of Valencia Avenue and is divided into northern and southern sections by Lambert Road. The 165-Acre Property comprises the portion of the Central Property located east of Valencia Road, south of Carbon Canyon Road, north of Blake Road, and northeast of Rose Drive. A Site Location Map is shown on Figure 1 and a Site Plan is shown on Figure 2.

1.1 Objectives

The primary objective of the Focused Phase II Environmental Investigation is to evaluate the potential presence of contaminated soil related to the long-term historic oil field operations at the Site. The Phase II investigation focused on evaluating potential subsurface contamination impacts at specific features of potential environmental concern identified in a Phase I Environmental Site Assessment (ESA) concurrently being prepared for the Site by Northgate (Northgate, 2017a).

1.2 Scope of Work

The Focused Phase II Environmental Investigation was conducted in general accordance with our *Proposal for Focused Phase II Environmental Investigation, Brea-Olinda Central Oil Field Property, Brea, California* dated March 12, 2017 (Northgate, 2017b) and our *Change Order #1 to Focused Phase II Investigation, Brea-Olinda Central Oil Field Property, Brea, California* dated March 24, 2017 (Northgate, 2017c). The scope of work included the following:

- Site walk to mark the proposed boring locations, and notification to Underground Service Alert (USA) for underground utility clearance;
- Preparing a Site-specific Health and Safety Plan (HASp);
- Obtaining drilling permits;



- Excavating nine trenches to approximately 15 feet below ground surface (bgs) on the 100-Acre Property and five trenches on the 165-Acre Property for collecting representative soil samples (14 trenches total);
- Advancing four hand auger borings to 5 feet bgs along the drainage that traverses the 100-Acre Property for collecting soil samples;
- Advancing two direct-push GeoProbe borings to a maximum depth of 56 feet bgs on the 100-Acre Property;
- Advancing one hollow-stem auger boring to an approximate depth of 60 feet bgs on the 100-Acre Property and one boring to 60 feet bgs on the 165-Acre Property for collecting soil and soil vapor samples (two borings total);
- Analyzing a total of 78 soil samples for total petroleum hydrocarbons (TPH) – carbon chain identification (TPH-cc), 21 soil samples for TPH quantified as gasoline (TPH-g) , 21 soil samples for volatile organic compounds (VOCs), 21 soil samples for semi-volatile organic compounds (SVOCs), 17 soil samples for 17-Title 22 metals, , 14 soil samples for polychlorinated biphenyls (PCBs), 9 soil samples for uranium, 5 soil samples for organochlorine pesticides (OCPs), 5 soil samples for chlorinated herbicides; and 5 soil samples for organophosphorus pesticides (OPPs);
- Installing one temporary soil vapor probe (SVP) at 15 feet bgs in a hollow stem auger borings for collecting a soil vapor sample for VOC analysis;
- Preparing geographic information system (GIS) base maps depicting Site features and sample locations, managing data, and providing statistics and spatial analysis of results; and
- Preparing this report.

This Focused Phase II Environmental Investigation was based on the scope of work outlined in our *Proposal for Focused Phase II Environmental Investigation, Brea-Olinda Central Oil Field Property, Brea, California* dated March 12, 2017, (Northgate, 2017b) and our *Change Order #1 to Focused Phase II Investigation, Brea-Olinda Central Oil Field Property, Brea, California* dated March 24, 2017 (Northgate, 2017c).



2.0 BACKGROUND

2.1 Site Description

The Site, identified as the Brea 265 Property, consists of 265 acres of land covering nine non-contiguous parcels located on the east and west sides of Valencia Avenue at the intersections with Lambert Road, Carbon Canyon Road, and Rose Drive in Brea, California. For the purpose of this report, the Brea 265 Property has been divided into two separate properties for ease of geographic reference in describing historic Site operations, specific locations of potential environmental concerns, and current Site conditions. An overall Site Location Map is shown on Figure 1, and a Site Plan showing the property designations is shown on Figure 2. The properties are defined as follows:

The 100-Acre Property

The 100-Acre Property consists of two parcels totaling 100 acres located west of Valencia Avenue. The property is split into northern and southern sections by Lambert Road. The area north of Lambert road includes APN 320-073-07 which is identified as 2601 Valencia Avenue. The area south of Lambert road includes APN 320-073-29 which is identified as 2501-2811 Valencia Avenue. This property is developed with an active oil production field and agricultural operations including a nursery and an organic food growing business.

The 165-Acre Property

The 165-Acre Property consists of seven contiguous parcels located east of Valencia Avenue, south of Carbon Canyon Road, north of Blake Road, and northeast of Rose Drive. It includes APNs 322-031-01, -12, -13, -14, -19, -21, and -24. There are no street addresses associated with the 165-Acre Property.

2.2 Site History

Information collected by Northgate during a concurrent Phase I ESA at the Site (Northgate, 2017a) indicates that the Site has historically been developed and primarily operated as an oil field since the 1920s, with some agricultural uses since the 1930s. Operations at the oil fields have historically included underground storage tanks (UST) and aboveground storage tanks (ASTs) for the storage and containment of gasoline, diesel, crude oil, and other process hydrocarbons. The 100-Acre Property and the northern and central portions of the 165-Acre Property are still developed as operating oil fields that include 104 oil wells, a dehydration unit, a vapor recovery system, a production unit and tank farm, and a carbon filtration area. Petroleum and steam pipelines are also present throughout the Site as both aboveground and belowground



features. Oil sumps were not observed during our Phase I ESA reconnaissance, but have historically been utilized across the Site for the oil field operations. Sumps are identified at the Site from historical aerial photographs as unlined areas historically utilized for the storage of waste oil and oil field related waste liquids. Approximate locations of historical and current oil field features of potential concern are shown on Figure 3 for the 100-Acre Property and Figure 4 for the 165-Acre Property. Northgate's Phase I ESA identified the presence of the following Recognized Environmental Conditions (RECs) in connection with the property:

- The Site has been developed as an operating oil field since the 1920s. Some oil wells are still operational and various levels of ponded oil and staining were observed at each well, primarily in the vicinity of the well box. The historic and current operations of the oil field, including the oil wells, tank farms, and pipelines, represent a potential threat to soil, groundwater, and/or soil vapor quality at the subject Site. It should be noted that the California Division of Oil Gas and Geothermal Resources generally prohibits construction of residences directly over active or sealed and abandoned oil or gas wells.
- Multiple historic oil sumps, including a large former, unlined oil sump located in the southwestern portion of the 165-Acre Property that has since been filled in and developed to include Rose Road, were present across both properties of the subject Site. These historic sumps represent a potential threat to soil, groundwater, and/or soil vapor quality at the Site.
- Given that the Site is a defined oil/gas field, the Site will be subject to the guidelines and requirements set forth in the Orange County Fire Authority's (OCFA's) *Combustible Soil Gas Hazard Mitigation* document that outlines the guidance for the investigation, remediation, and/or mitigation of potentially hazardous concentrations of combustible soil gases associated with the construction and occupancy of a building located on or within the vicinity of an oil/gas field and the OCFA specified areas.
- Petroleum and natural gas pipelines are present throughout portions of both the 100-Acre and 165-Acre Properties. Petroleum hydrocarbon, or other hazardous materials releases may have occurred along the pipelines

Northgate's review also identified the following Historic REC (HREC) at the Site:

- The 100-Acre Property portion of the Site has a documented release from a leaking diesel UST that impacted soil to depths of 90 feet bgs. The facility received regulatory closure from the OCHCA on August 20, 1991. However, no remedial action was performed and petroleum hydrocarbons remain in soil at the Site.



Northgate's Phase I ESA also identified the following potential environmental concerns:

- A drainage channel traverses the 100-Acre Property from north to south that is reported to originate from the Olinda Alpha Landfill to the north, extend through the adjacent oil field property to the north, and potentially contain runoff from that upgradient facility. Runoff from a landfill facility could contain contaminants that could potentially impact future development of the Site.
- Given the historic use of the Site for agricultural purposes, there is a possibility that pesticides and herbicides may be present in shallow soil in some areas of the Site.
- Test results from indoor air samples collected within the local zip code area indicate that radon may constitute a potential environmental concern at the Site.
- Injection wells are present at the Site and are subject to many new regulations. Further review of specific requirements for closing out the existing injection wells may be required prior to development of the Site.

Northgate's Phase I ESA recommended that a Phase II ESA be conducted to evaluate the existing soil and soil vapor conditions at the Site related to these RECs and issues of potential environmental concern.

2.3 Regional and Local Geology and Hydrology

2.3.1 Geology

The Site is located in the Puente Hills, an area underlain by an assemblage of Cenozoic rocks overlying a Mesozoic basement of igneous and metamorphic rock. Exposed bedrock near the Site consists of marine clastic sedimentary rocks of the Upper Miocene Puente Formation and Pliocene Fernando Formation that were laid down over thin Cretaceous age igneous basement (Yerkes, 1965). The Puente Formation is composed of fine-grained turbidite, flysch, and ash deposits high in organic material. The high heat flow emanating through the thin basement complex facilitated conversion of the organics to petroleum. The Fernando Formation is a marine mudstone, siltstone, and sandstone. Rocks exposed near the Site consist of marine clastic rocks of the Sycamore Canyon Member, the uppermost member of the Fernando Formation (Yerkes, 1972).

Surface soils exposed at the Site are mapped as marine terrace and continental alluvial deposits of Quaternary age. Localized areas of the Site contain lenses of fill placed for oil field roadways and drill pads (Morton 1981 and 2004). Subsurface soils encountered during the current investigation generally consist of dark yellowish brown clays with little silt. Thin beds of sandy and clayey silt are present within the clay near the surface and below 25 feet bgs. The silts and



clays are medium-stiff to stiff, dry, and have little to no plasticity. Calcification was also observed below 25 feet bgs.

2.3.2 Hydrology

The Site is located on the northern edge of the Coastal Plain of Orange County, a sub-unit of the Central Plain of the Orange County Groundwater Basin. The Orange County Groundwater Basin is a northwest-trending elliptical syncline filled with alluvium. The syncline is bounded by the Puente Hills and Whittier Fault to the northeast, the Santa Ana Mountains and San Joaquin Hills to the southeast, and the Newport-Inglewood Fault to the southwest.

The Site is located within the Forebay area of the Orange County Groundwater Basin, in the Yorba Linda subbasin. The Yorba Linda subbasin has very little groundwater pumping due to the high total dissolved solids concentrations and low transmissivity (Warne, 1961). Groundwater from the subbasin flows southward into the main groundwater basin.

The topography of the Site is gently sloping with drainage flowing primarily to the south in various natural drainages that eventually run to storm drains, channels, or seasonal streams. Near the ground surface, groundwater generally exists in zones beneath the arroyo drainages, or as discontinuous perched water zones in the sediments.

According to the Orange County Water District, groundwater is present in the principal aquifer zone at approximately 280 feet bgs in the Site vicinity (Woodside, 2015). The principal aquifer zone is where most of the groundwater production occurs in the Site vicinity. Information presented in unpublished engineering reports for a corrective actions site located approximately one mile southeast of the Site indicated an average depth to groundwater of approximately 88 feet bgs, with a groundwater flow direction toward the southwest at a gradient of 0.02 feet per foot (DEC, 2006). Groundwater was not encountered in the borings advanced to a maximum depth of 60 feet bgs during the present investigation.



3.0 INVESTIGATION METHODS

Northgate conducted soil and soil vapor sampling at the Site between March 17 and 29, 2017. Sampling locations are shown on Figures 5 and 6 for the 100- and 165-Acre Properties, respectively.

3.1 Pre-Field Activities

Before sampling activities began, Northgate coordinated Site access with Mr. Michael Klancher of Aera. In addition, Northgate conducted a walk-through of the Site to mark proposed sampling locations and coordinated with Russ Quinliven and Bill Wren of Linn Energy (operator of the oilfield) to obtain approval of the proposed sampling locations. Other pre-field activities included the specific tasks outlined below.

3.1.1 Health and Safety Plan

Northgate prepared a Site-specific HASP for the Focused Phase II Environmental Investigation. The HASP was prepared in accordance with applicable federal and state regulations. The HASP addressed the potential for exposure to hazardous constituents, and delineated the general safety procedures that are required for the safe operation of mechanical equipment to be used while conducting the field operations at the Site.

3.1.2 Clearance of Underground Utilities

USA was notified, as required by law, 48-hours prior to any intrusive activities began in order to locate utilities in the vicinity of the borings. In addition, all proposed locations were “cleared” with a metal detector and all locations were then reviewed and approved by Linn Energy.

3.1.3 Drilling Permits

Drilling permits for the deep hollow-stem auger borings were obtained from the Orange County Health Care Agency, as required, prior to drilling. Copies of the permits are provided in Appendix A.

3.2 Soil Sampling and Analysis

Northgate conducted a soil sampling program that consisted of excavating 14 trenches, four shallow hand-auger borings, two deeper hollow-stem auger borings, and two direct-push GeoProbe borings as described in the sections below.



3.2.1 Soil Sample Collection – Trenching Program

A total of nine exploratory test trenches were excavated on the 100-Acre Property, and five trenches and three potholes were advanced on the 165-Acre Property as shown on Figures 5 and 6, respectively. The trenches were excavated using a backhoe provided and operated by American Integrated Services (AIS), a licensed contractor headquartered in Wilmington, California. The trenches measured approximately 18 feet in length and were excavated to an approximate depth of 15 feet bgs. Potholes were variable in length and depth, and were excavated only to a specific depth of interest. Soil excavated from the trenches was logged in the field in accordance with the Unified Soil Classification System (USCS) and screened with a photoionization detector (PID) for the possible presence of organic vapors. Representative soil samples were collected from each trench at approximate depths of 5, 10, and 15 feet bgs, or otherwise based upon field indications and PID readings. After the sampling was completed, the trenches were backfilled with the excavated soil cuttings. Copies of the trench logs are attached in Appendix B.

Trench locations are described below:

The 100-Acre Property

- Trench 104-T1 was excavated to 15 feet bgs near an abandoned tank in the vicinity of oil well 104, with soil samples collected at 5, 10, and 15 feet bgs. Select soil samples were analyzed for TPH-cc, TPH-g, VOCs, SVOCs, Title 22 metals, uranium, and PCBs.
- Trench DRU-T1 was excavated to 15 feet bgs in the vicinity of the dehydration unit equipment, with soil samples collected at 5, 10, and 15 feet bgs. Select soil samples were analyzed for TPH-cc, TPH-g, and VOCs.
- Trench S3-T1 was excavated to 15 feet bgs in former sump S3, co-located with a historic tank farm, with soil samples collected at 5, 10, and 15 feet bgs. Select soil samples were analyzed for TPH-cc, TPH-g, VOCs, SVOCs, and Title 22 metals.
- Trench S5-T1 was excavated to 17 feet bgs in former sump S5, located within the historic oil processing area just south of the dehydration unit, with soil samples collected at 5, 10, and 15 feet bgs. Select soil samples were analyzed for TPH-cc, TPH-g, VOCs, SVOCs, Title 22 metals, uranium, and PCBs.
- Trench S7-T1 was excavated to 15 feet bgs in former sump S7, located south of the historic oil processing area, with soil samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc.
- Trench S8-T1 was excavated to a depth of 15 feet bgs in the southern portion of former sump S8, located in the eastern portion of the historic oil processing area, with soil



samples collected at 5, 10, and 15 feet bgs. Soil samples were analyzed for TPH-cc and select samples were analyzed for TPH-g, VOCs, SVOCs, Title 22 metals, uranium, OCPs, PCBs, OPPs, and chlorinated herbicides.

- Trench S8-T2 was excavated to a depth of 15 feet bgs in the northern portion of former sump S8, located in the eastern portion of the historic oil processing area, with soil samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc.
- Trench VRS-T1 was excavated to a depth of 15 feet bgs in the southeastern portion of the vapor recovery system, with samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc. Select soil samples were additionally analyzed for TPH-g, VOCs, Title 22 metals, and PCBs.
- Trench VRS-T2 was excavated to 15 feet bgs in the southwestern portion of the vapor recovery system, with samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc. Select soil samples were additionally analyzed for TPH-g, VOCs, SVOCs, Title 22 metals, and PCBs.

The 165-Acre Property

- Trench BOTF-T1 was excavated to 15 feet bgs in the northeastern portion of the Brea-Olinda Tank Farm in the vicinity of the equipment downslope of the compressor and Header 1, with soil samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc.
- Trench BOTF-T2 was excavated to 15 feet bgs in the southeastern portion of the Brea-Olinda Tank Farm in the vicinity of the former tank foundations and equipment, with soil samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc. Select soil samples were additionally analyzed for TPH-g, VOCs, SVOCs, Title 22 metals, and PCBs.
- Trench H2-T1 was excavated to 15 feet bgs in the vicinity of the Header 2 process pipes located in the northwestern portion of the property, with soil samples collected at 5, 10, and 15 feet bgs analyzed for TPH-cc.
- Trench S20-T1 was excavated to 15 feet bgs in the southern and lowest portion of former sump S20, with soil samples collected at 5, 10, and 15 feet bgs and analyzed for TPH-cc. Select soil samples were additionally analyzed for TPH-cc, VOCs, SVOCs, Title 22 metals, uranium, and PCBs.
- Trench S20-T2 was excavated to 15 feet bgs in the northern portion of former sump S20 at the location of a former tank farm, with soil samples collected at 5, 10, and 15 feet bgs and analyzed for TPH-cc. Select soil samples were additionally analyzed for TPH-g, VOCs, SVOCs, Title 22 metals, and PCBs.



- Pothole S20-PH1 was excavated to approximately 8 feet bgs approximately 20 feet west of trench S20-T1. No samples were collected. However, visual confirmation of petroleum contamination beginning at approximately 5 feet bgs was obtained from this location.
- Pothole S20-PH2 was excavated to approximately 8 feet bgs approximately 20 feet east of trench S20-T1. No samples were collected. However, visual confirmation of petroleum contamination beginning at approximately 5 feet bgs was obtained from this location.

Samples collected for non-volatile compound analysis were collected by manually placing soil from the backhoe bucket into laboratory-supplied sample jars, sealed with Teflon-lined lids, labeled and stored on ice in a cooler. Samples collected for petroleum hydrocarbons or for VOC analysis were collected using LockⁿLoadTM samplers and preserved in ethanol and sodium bisulfate in volatile organic analysis (VOA) vials in compliance with Environmental Protection Agency (EPA) Method 5035. Soil sampling methodology is further described in Appendix C.

3.2.2 Soil Sample Collection – Hand Auger Program

Northgate advanced four hand auger borings along the drainage channel that traverses the 100-Acre Property. The hand auger borings were targeted to depths of 5 feet bgs. Representative soil samples were collected at approximate depths of 1 and 5 feet bgs. The borings were logged in the field in accordance with the USCS (Appendix B). The hand auger borings were advanced at the locations described below:

- Boring DR-HA-1 was advanced to 5 feet bgs in the northern portion of the drainage channel at the inlet to the Site.
- Boring DR-HA-2 was advanced to 5 feet bgs in the central portion of the drainage channel in the vicinity of the historic oil process area and suspended pipelines over the channel.
- Boring DR-HA-3 was advanced to 5 feet bgs in the central portion of the drainage channel in the vicinity of the historic oil process area and suspended pipelines over the channel.
- Boring DR-HA-4 was advanced to a depth of 5 feet bgs in the southern portion of the drainage channel in a low spot near where the channel exits the Site.

Soil samples collected at 1 and 5 feet bgs from each boring were analyzed for TPH-cc, TPH-g, VOCs, SVOCs, Title 22 metals, uranium, OCPs, PCBs, OPPs, and chlorinated herbicides. Samples collected for non-volatile compound analysis were collected by manually placing soil into laboratory-supplied sample jars, sealed with Teflon-lined lids, labeled and stored on ice in a



cooler. Samples collected for petroleum hydrocarbons or for VOC analysis were collected using LockⁿLoadTM samplers and preserved in ethanol and sodium bisulfate in volatile organic analysis (VOA) vials in compliance with EPA Method 5035. Soil sampling methodology is further described in Appendix C.

3.2.3 Soil Sample Collection – Boring Program

Northgate advanced two borings to depths ranging from 36 to 61 feet bgs on the Central Property. The borings were advanced by BC2 Environmental of Orange, California, a C-57 licensed drilling company, using a truck-mounted hollow-stem auger rig and a direct push (GeoprobeTM) rig. During sampling via the hollow-stem auger rig, continuous cores of subsurface materials were collected using a California Split Spoon sampler with brass sample rings. During sampling via the GeoprobeTM rig, continuous cores of subsurface materials were collected in clear acetate liners. Upon removing the sampler from the borehole, the sample rings or acetate liner containing the soil core were opened at various intervals, and soils were visually inspected and screened with a PID for the possible presence of contamination. The borings were backfilled with hydrated bentonite and a concrete surface plug after sampling. Logs of the borings are presented in Appendix B.

The borings were advanced at the following locations:

The 100-Acre Property

- Boring S5-B1 was advanced using a GeoprobeTM rig to 36 feet bgs in former sump S5 located within the historic oil processing area to evaluate the vertical extent of contaminated soil identified in trench S5-T1. Soil samples were collected at 20, 24, 28, 32, and 36 feet bgs, with select soil samples analyzed for TPH-cc, TPH-g, and VOCs.
- Boring S8-B1 was advanced using a GeoprobeTM rig to a depth of 56 feet bgs in the southern portion of former sump S8 located in the eastern portion of the historic oil processing area to evaluate the vertical extent of contaminated soil identified in trench S8-T1. Soil samples were collected at 15, 20, 23, 27, 31, 35, 43, 47, 51, and 55 feet bgs, with select samples were analyzed for TPH-cc, TPH-g, VOCs, SVOCs, Title 22 metals, uranium, and PCBs.
- Boring VRS-B1 was advanced using a hollow-stem auger rig to 61 feet bgs in the southeastern portion of the vapor recovery system area (deeper within trench VRS-T1), with samples collected at 5, 10, and 15 feet bgs. Select soil samples were analyzed for TPH-cc, TPH-g, GRO, VOCs, and SVOCs.



The 165-Acre Property

- Boring BOTF-B1 was advanced using a hollow-stem auger rig to a depth of 61 feet bgs in the northeastern portion of the Brea-Olinda Tank Farm in the vicinity of the equipment, with soil samples collected at 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, and 60 feet bgs. Select soil samples were analyzed for TPH-cc.

Brass sample ring intervals and sections of the soil core liner that were cut and selected for non-volatile compound analysis were sealed with Teflon-lined endcaps, labeled and stored on ice in a cooler. Samples collected for petroleum hydrocarbons or for VOC analysis were collected using LockⁿLoadTM samplers and preserved in ethanol and sodium bisulfate in volatile organic analysis (VOA) vials in compliance with EPA Method 5035. Soil sampling methodology is further described in Appendix C.

3.3 Soil Vapor Sampling

A temporary SVP was installed in boring VRS-B1 at 15 feet bgs. The SVP was installed using 2-1/4 inch inside-diameter hollow drill rods. The probe consisted of a 3/8" x 1" Stone PolyPro vapor probe implant with 1/4-inch Speed Fit installed at 5 feet bgs. Nylaflo tubing (1/4 inch diameter) was connected from the implant to the ground surface, and terminated above the existing finished grade. The borehole annulus around the implant and tubing was filled through the drill rods with sand 6 inches above and below the implant, 12 inches of dry bentonite placed 1 foot above the

After installation, the SVP was allowed to stabilize for a minimum of 48-hours. Prior to sampling, each probe was purged of approximately three-well volumes of air. A vapor sample was then collected from the probe using a one-liter summa canister and flow regulator that maintained a flow rate of 150 milliliters per minute.

After the soil vapor survey was conducted, the SVP was removed and the borings backfilled with hydrated bentonite to just below the surface soil was placed at the surface to match existing conditions. Soil vapor sampling methodology is further described in Appendix C.

3.4 Laboratory Analysis

Soil samples were transported to SunStar Laboratories, Inc. (SunStar), a California certified laboratory in Lake Forest, California, under proper chain-of-custody control for analysis. Soil samples were analyzed for the following:

- 78 soil samples for TPH-cc using EPA Method 8015B;
- 21 soil samples for TPH-g using EPA Method 8015M/5035;



- 21 soil samples for VOCs using EPA Method 8260B/5035;
- 21 soil samples for SVOCs using EPA Method 8270C;
- 17 soil samples for Title 22 metals (17 metals) using EPA Method 6010B/7471A;
- 14 soil samples for PCBs using EPA Method 8082;
- 9 soil samples for uranium using EPA Method 7141;
- 5 soil samples for OCPs using EPA Method 8081A;
- 5 soil samples for OPPs using EPA Method 8141A; and
- 5 soil samples for chlorinated herbicides using EPA Method 8151A.

The soil vapor sample was transported to SunStar under proper chain-of-custody control for analysis. The sample was analyzed for VOCs using EPA Method TO-15.

3.5 Data Evaluation Criteria

Chemical test results from soil samples collected during this investigation were evaluated using the Regional Screening Levels (RSLs) established by the US EPA Region 9 and the modified Screening Levels (SLs) established by the California Department of Toxic Substances Control (DTSC). The RSLs and DTSC SLs are health-based exposure concentrations to chemicals of concern in both residential and commercial land use. The RSLs and SLs are not regulatory cleanup standards. Soil samples analyzed for TPH were also evaluated using the Regional Water Quality Control Board (RWQCB) TPH Maximum Soil Screening Level (SSL). RWQCB soil cleanup levels are screening levels to evaluate the potential threat to groundwater and were calculated based upon the RWQCB Interim Site Assessment and Cleanup Guidebook procedures by applying attenuation factors, calculated based upon both distance above groundwater and the soil type(s), to establish California Maximum Contaminant Levels (MCLs), the State primary drinking water standard established under Title 22 of the California Code of Regulations. The RWQCB SSLs were calculated for varying soil sample depths based on their varying distance above groundwater. The RWQCB utilizes the SSLs as guidance to close investigations or petroleum and VOC impacted sites (RWQCB, 1996).

The presence of a chemical at a concentration above these standards does not necessarily indicate that adverse impacts to human health or the environment are present, but rather, indicate that a potential for adverse risk may exist and that additional evaluation may be warranted. However, in general practice, the absence of chemical constituents above these screening levels generally indicates that the Site is suitable for its intended use.

Soil vapor sample test results are compared to EPA RSLs and DTSC SLs for residential and commercial land use. The RSLs and SLs have been developed for indoor air concentrations; therefore, RSLs and SLs for soil vapor were calculated using an attenuation factor. A non-Site



specific, conservative attenuation factor of 0.002 was applied to the RSLs and SLs for indoor residential indoor air, and a conservative attenuation factor of 0.001 was applied to the RSLs and SLs for commercial indoor air to develop calculated SLs for soil vapor. The attenuation factors were derived from the DTSC *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)* (DTSC, 2001),



4.0 INVESTIGATION RESULTS

4.1 Subsurface Conditions

The ground surface at all drilling locations consisted of bare soil. Subsurface soils encountered during drilling generally consisted of dark yellowish brown to red clays with little silt. Thin beds of sandy and clayey silts are present within the clay near the surface and below 25 feet bgs. The silts and clays are medium-stiff to stiff, dry, and have little to no plasticity. Calcification was also observed below 25 feet bgs. Localized areas of the Site contain lenses of fill placed for oil field roadways and drill pads. Groundwater was not encountered in the borings to a maximum depth of 60 feet bgs. Sampling locations are shown on Figures 5 and 6 for the 100- and 165-Acre Properties, respectively. A copy of Northgate's field notes and boring logs are attached in Appendix B. As documented in the boring logs, localized areas of staining were observed in several trenches and borings.

100-Acre Property

An approximate 2-inch hydrocarbon layer with a strong odor was reported in the surface soils at the trench from the eastern portion of the vapor recovery system area. Occasional staining was observed in the upper approximate 8 feet of soil at sump S3. A very light hydrocarbon staining was reported in sump S5 in the upper 2 to 3 feet followed by a heavier staining and stronger hydrocarbon odor to 10 feet bgs and light staining to the total depth of 17 feet bgs. Heavy hydrocarbon staining and a strong odor were noted in sump S8 between depths of approximately 8 to 43 feet bgs. A hydrocarbon odor was reported in sump S8 to the total depth explored of 56 feet bgs and staining was additionally observed between 50 and 56 feet bgs.

165-Acre Property

Surface soils within the upper foot in the southeastern portion of the Brea-Olinda Tank Farm were reported to have a darker color due to staining; however, no staining or odor was observed at deeper depths. In addition, black staining was observed in the southern portion of sump S20 between 4 and seven 7 bgs and an approximate 3-6 inch lenses of staining were reported in the northern portion of sump S20.

4.2 Analytical Results

Chemical test results for TPHs in soil samples analyzed during this investigation are presented in Table 1. A summary of the soil sample analytical results for VOCs is presented in Table 2. Table 3 presents the soil sample analytical results for SVOCs. Chemical test results for soil samples analyzed for Title 22 metals is presented in Table 4 and includes results for mercury and



uranium. Table 5 presents the soil sample analytical results for OCPs, PCBs, OPPs, and CHs. Soil vapor sample test results are presented in Table 6. Copies of the laboratory analytical reports are presented in Appendix D. Test results are discussed in the following sections.

4.2.1 Soil Sampling Analytical Results

4.2.1.1 TPH

As shown in Table 1, TPH was detected above laboratory reporting limits (RLs) in 18 of the 51 samples analyzed from the 100-Acre Property and in 5 of the 27 samples analyzed from the 165-Acre Property. TPH test results from samples collected at each area of concern are discussed below.

Vapor Recovery System – 100-Acre Property:

Low levels of TPH quantified as diesel (TPH-d) and motor oil (TPH-mo) were detected in soil samples collected at depths of 5 and 10 feet bgs from trench VRS-T2. TPH-d and TPH-mo were reported at concentrations of 42 and 86 milligrams per kilogram (mg/kg), respectively, at 5 feet bgs, and at 39 and 45 feet bgs, respectively, at a depth of 10 feet bgs. None of these reported concentrations exceeded their respective regulatory screening criteria. TPH was not detected above laboratory RLs in any of the samples collected between 15 feet bgs and the total depth explored of 60 feet bgs.

Dehydration Unit – 100-Acre Property:

TPH was not detected above the laboratory RLs in any of the samples collected at 5, 10, or 15 feet bgs from trench DRU-T1, advanced in the vicinity of the dehydration unit on the 100-Acre Property.

Historic Sumps – 100-Acre Property:

TPH-g, -d, and -mo were reported in soil samples collected from each of the four historic sumps (sumps S3, S5, S7, and S8) investigated at the Site. The test results are further discussed below:

- **Sump S3** –TPH-d and TPH-mo were reported at concentrations of 790 and 1,100 mg/kg, respectively, in the samples collected at 5 feet bgs in trench S3-T1. The reported TPH concentrations decreased to 44 and 85 mg/kg, respectively at 10 feet bgs, and were not detected above the laboratory RL in the sample from 15 feet bgs. The reported concentration of TPH-d at 5 feet bgs exceeded both the EPA residential and commercial RSLs of 110 and 600 mg/kg, respectively; however, the detected TPH-mo concentrations



were below regulatory screening criteria. TPH-g was not detected in any of the samples collected at this sump.

- **Sump S5** – TPH-d and TPH-mo were detected at decreasing concentrations between depths of 5 and 20 feet bgs in the trench and boring advanced at Sump S5. TPH-d was reported at 9,200, 330, 270, and 11 mg/kg in samples collected at depths of 5, 10, 15, and 20 feet bgs, respectively, in trench S5-T1 and boring S5-B1. TPH-d was not reported above the laboratory RL in the samples collected at 24 and 36 feet bgs.

TPH-mo was detected at 22,000, 1,500, and 810 mg/kg at depths of 5, 10, and 15 feet bgs, respectively, but was not detected above the laboratory RL in samples from 20, 24, and 36 feet bgs.

TPH-g was reported at a concentration of 1,700 mg/kg in the sample from 5-foot bgs, but was not present above the laboratory RL in other samples collected to a depth of 36 feet bgs.

The concentrations of TPH-g, TPH-d, and TPH-mo reported in the sample collected at 5 feet bgs exceed the TPH maximum SSLs of 500, 1,000, and 10,000 mg/kg, respectively. The concentrations also exceed both the EPA residential (82, 110, and 2,500 mg/kg, respectively) and commercial (420, 600, and 33,000, respectively) RSLs. The detected concentrations of TPH-d in samples from 10 and 15 feet bgs also exceeded the EPA residential RSL, but not the EPA commercial RSL.

- **Sump S7** – TPH-mo was detected at a concentration of 33 mg/kg in the sample collected at 5 feet bgs in trench S7-T1, but not detected in the samples from 10 and 15 feet bgs. TPH-g and TPH-d were not reported in the samples from trench S7-T1 above the laboratory RL. The reported concentration of TPH-mo in the 5-foot sample did not exceed any regulatory screening criteria.

- **Sump S8** – TPH-g, TPH-d, and TPH-mo were variously detected in soil samples collected from 1 foot bgs to 55 feet bgs (the total depth sampled) in the trenches (S8-T1 and S8-T2) and boring (S8-B1) advanced at Sump 8. TPH-d was reported at concentrations ranging from 1,100 to 13,000 mg/kg, with the highest concentration reported in a sample collected at 39 feet bgs. Reported TPH-d concentrations exceeded one or more regulatory screening criteria in samples collected at depths ranging from 10 to at least 55 feet bgs.

TPH-mo was reported in the samples at concentrations ranging from 66 mg/kg to 19,000 mg/kg, with the highest concentration reported in samples from 10 and 15 feet bgs. Reported concentrations of TPH-mo equal or exceed one or more regulatory screening criteria in samples collected at depths between 10 and 39 feet bgs.



TPH-g was reported in the samples at concentrations ranging from 80 mg/kg to 6,300 mg/kg, with the highest concentration reported in the sample from 39 feet bgs. Reported TPH-g concentrations exceeded regulatory screening criteria in samples collected at depths of 10 to 55 feet bgs.

Drainage Channel – 100-Acre Property:

Low levels of TPH-d and TPH-mo were measured in shallow soil samples collected from three of the four hand auger borings (borings DR-HA1, -HA2, -HA3, and -HA4) advanced along the drainage channel extending the length of the 100-Acre Property. TPH-d and TPH-mo were reported at concentrations of 57 and 230 mg/kg, respectively, in the 1-foot sample collected from boring DR-HA1, located in the northern most portion of the drainage channel at the inlet to the Site. TPH-d and TPH-mo were reported at 75 and 220 mg/kg in the 1-foot sample from DR-HA3, located in the central portion of the drainage channel in the vicinity of the historic oil production area. Pipelines were observed to be suspended above the channel in this area. TPH-d and TPH-mo were reported at concentrations of 160 and 460 mg/kg in the 1-foot sample collected from boring DR-HA4, located in the southernmost location within the drainage channel,

With the exception of 16 mg/kg of TPH-mo reported in the 5-foot sample from boring DR-HA3, TPH-d and TPH-mo were not reported in the 5-foot bgs samples from the four borings. None of the samples contained TPH-g above the laboratory RLs. None of the reported concentrations of TPH-d or TPH-mo exceeded their respective regulatory screening criteria.

The measured concentration of TPH-d at 1 foot bgs exceeded the EPA residential RSL of 110 mg/kg.

Abandoned Tank – 100-Acre Property:

TPH was not detected above the laboratory RLs in any of the samples collected to a depth of 15 feet bgs from trench 104-T1, advanced in the vicinity of the abandoned tank on the northern portion of the 100-Acre Property.

Brea-Olinda Tank Farm – 165-Acre Property:

TPH-d and TPH-mo were reported at concentrations of 52 and 83 mg/kg, respectively in the sample from 5 feet bgs in trench BOTF-T2, excavated in the southeastern portion of the tank farm. TPH-mo was detected at 33 mg/kg from a sample collected at 45 feet bgs from boring BOTF-B1, located in the southern portion of the tank farm. TPH-g was not detected above the



laboratory RLs in any of the samples analyzed from this area. None of the reported concentrations of TPH-d and TPH-mo exceeded their respective regulatory screening criteria.

Manifold H2 – 165-Acre Property:

TPH-d and TPH-mo were not detected above their respective laboratory RLs in the samples collected at depths of 5, 10, and 15 feet bgs from trench H2-T1, excavated in the vicinity of manifold header 2 and across a portion of the dirt road in this area.

Historic Sump S20 – 165-Acre Property:

TPH-d and TPH-mo were detected at concentrations of 100 and 390 mg/kg, respectively, at a depth of 5 feet bgs in trench S20-T1, located in the southern and lowest portion of the sump. TPH-d and TPH-mo were not detected in the sample from 10 bgs in this trench, but TPH-mo was reported at 22 mg/kg in the sample from 15 feet bgs. Two potholes were also excavated in the vicinity of this trench (S20-PH1 and S20-PH2). The results of this potholing investigation indicated that the stained soil was present at approximately 4 to 11 feet bgs; similar to what was found in trench S20-T1. Samples from trench S20-T2, advanced in the northern portion of the sump and downslope of a former tank farm area, contained TPH-d and TPH-mo at concentrations of 51 and 120 mg/kg, at a depth of 10 feet bgs. TPH was not detected in samples collected from 5 and 15 feet bgs in this trench. None of the reported concentrations of hydrocarbons from these areas exceeded regulatory screening criteria.

4.2.1.2 VOCs and SVOCs

Based on the results of the TPH analyses, soil samples collected from areas with elevated concentrations of TPH were also analyzed for VOCs and SVOCs. As shown in Table 2, several VOCs were detected above the laboratory RLs in samples collected on the 100-Acre Property including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, isopropylbenzene, m,p-xylene, naphthalene, n-butylbenzene, n-propylbenzene, p-isopropyltoluene, o-xylene, sec-butylbenzene, and ter-butylbenzene. None of the reported concentrations of VOCs exceed their respective regulatory screening criteria.

VOCs were not reported above their laboratory RLs in any samples collected from the 165-Acre Property.

As shown in Table 3, several SVOCs were reported above laboratory RLs in samples collected on the 100-Acre Property, including 1-methylnaphthalene, 2-methylnaphthalene, flourene, n-nitrosodiphenylamine, and phenanthrene. None of the reported concentrations exceed their respective regulatory screening criteria, except for 23,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$)



reported in the 15-foot sample from trench S8-T1 which exceeds the EPA RSL for residential land use of 18,000 µg/kg.

SVOCs were not reported above their laboratory RLs in any samples collected from the 165-Acre Property.

4.2.1.3 Metals

Based on the results of the analyses of soil samples for TPH, soil samples from areas with elevated concentrations of TPH were selected for additional analysis for metals and uranium. As shown in Table 4, low concentrations of several metals, including barium, chromium, cobalt, copper, nickel, vanadium, and zinc were reported in all 16 of the samples analyzed. Low levels of uranium were also detected in all 9 soil samples analyzed for uranium. None of the samples contained metals or uranium above their respective regulatory screening criteria for residential or commercial land use, or in the case of arsenic and vanadium, above naturally occurring background concentrations. The reported concentrations of all metals were within the range of generally accepted background levels.

4.2.1.4 OCPs, PCBs, OPPs, and Chlorinated Herbicides

As shown in Table 5, OCPs were not reported above their respective laboratory RLs in any of the four samples collected at 1 foot bgs from borings DR-HA1 through DR-HA-4, advanced along the 100-Acre Property drainage channel, or from the 1 foot bgs sample collected from trench S8-T1, excavated in historic Sump S8.

With the exception of a single detection of Aroclor-1260, PCBs were not reported above their respective laboratory RLs in any of the 14 samples analyzed. Aroclor-1260 was measured at 19 µg/kg in the sample collected at 1 foot bgs from boring DR-HA3, located in the drainage channel in the central portion of the 100-Acre Property. The reported concentration of Aroclor did not exceed any regulatory screening criteria.

As shown in Table 5, no OPPs or chlorinated herbicides were measured above their laboratory RLs in any of the four samples collected at 1 foot bgs from borings DR-HA1 through DR-HA4, located in the 100-Acre Property drainage channel or from trench S8-T1, excavated in historic Sump 8.

4.2.2 Soil Vapor Analytical Results

Test results for soil vapor sample VRS-B1-SV15, collected at a depth of 15 feet bgs near the vapor recovery system located on the northern portion of the 100-Acre Property are shown in



Table 6. As shown in the table, a number of VOCs were reported in the vapor sample, including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-ethyltoluene, benzene, carbon disulfide, ethylbenzene, heptane, hexane, o-xylene, m,p-xylene, and toluene. None of the reported concentrations of VOCs exceed their respective residential or commercial soil vapor RSLs or calculated SLs.



5.0 GEOGRAPHIC INFORMATION SYSTEM MAPS AND SPATIAL ANALYSIS

A geographic information system (GIS) was used as a tool to evaluate and estimate the extent of impacted soil at the Site potentially requiring remediation in association with Site redevelopment. The GIS evaluation method is described below.

5.1 Geographic Information System Integration and Data Sources

Geographical data for the Central Property Site was integrated into a GIS to facilitate the display and analysis of the historic and existing project specific data generated during the investigation.

Data included:

- Project boundaries, topography, and drainages, supplied by Aera Energy.
- Historical oil field facility operations information supplied by Aera Energy and Linn Energy and compiled by Northgate. Information included the locations and geometry for:
 - Historical sumps;
 - Existing and historical tanks and tank farms;
 - Existing and historical manifolds;
 - Existing and historical nursery operation;
 - Existing and historical storage and processing areas;
 - Existing and historical underground tanks and berms;
 - Site roads, trails and paths; and
 - Surface pipelines to the extent that they have been identified on maps and photographs.
- Interpretation and identification of the feature classes listed above, from historical aerial photographs dated:
 - 1938: Scale: 1" = 1000' Flight Date: January 01, 1938 USDA¹
 - 1946: Scale: 1" = 1000' Flight Date: January 01, 1946 USGS²
 - 1952: Scale: 1" = 1000' Flight Date: January 01, 1952 USDA¹
 - 1963: Scale: 1" = 1000' Flight Date: January 01, 1963 USGS²
 - 1968: Scale: 1" = 480' USGS²
 - 1972: Scale: 1" = 1000' Flight Date: January 01, 1972 USGS²
 - 1977: Scale: 1" = 1000' Flight Date: January 01, 1977 Brewster Pacific
 - 1989: Scale: 1" = 1000' Flight Date: January 01, 1989 USDA¹
 - 1994: Scale: 1" = 666" USGS²

¹ USDA – United States Department of Agriculture

² USGS – United States Geological Survey



- May 1994 – Google Earth™
 - 1995: Scale: 1" = 500' Acquisition Date: October 03, 1995 USGS²/DOQQ³
 - October 1995 – Google Earth™
 - May 2002 – Google Earth™
 - 2002: Scale: 1" = 666' USGS²
 - August 2005 – Google Earth™
 - 2005: Scale: 1" = 500' Flight Year: 2005 USDA/NAIP⁴
 - October 2007 – Google Earth™
 - 2009: Scale: 1" = 500' Flight Year: 2009 USDA/NAIP⁴
 - 2010: Scale: 1" = 500' Flight Year: 2010 USDA/NAIP⁴
 - March 2011 – Google Earth™
 - 2012: Scale: 1" = 500' Flight Year: 2012 USDA/NAIP⁴
 - February 2016 – Google Earth
- Oil well and lease boundary information from the California Division of Oil, Gas and Geothermal Resources GIS database.
 - Sample locations and laboratory analytical results generated during this investigation.

5.2 Subsurface Chemistry

The GIS was also used to display and provide visual analyses of the chemical test results from soil and vapor samples collected during the Focused Phase II Investigation. After reviewing the spatial distribution of the analytical results, it was determined that the analyses for TPH had the widest coverage and provided the best representation of potentially contaminated subsurface materials. Analytical test results for VOCs, herbicides, pesticides, metals and SVOC analyses provided some additional information and expanded areas of concern in some cases. These additional analyses also provided information on where additional sampling may be advantageous in the future.

The TPH occurrence maps are shown on Figures 7 and 8.

5.3 Spatial Data Analysis for Soil Volume Calculations

Similar oil field features were grouped together within the mapping environments. For example, the historical sumps were grouped as a single feature and tank farms were grouped as a single feature. In cases where the exact outlines of the features were not specifically known, historical aerial photography was used to create a reasonable representation of the perimeter of the features.

³ DOQQ – Digital Orthophoto Quarter Quads

⁴ NAIP – National Agricultural Imagery Program



Once the perimeters of the features were established, the potential surficial impacted areas were calculated within the GIS. An estimated depth of contamination was assumed using the results of the limited subsurface soil sampling performed during this investigation. The estimated volume of material to be excavated was calculated by multiplying the surface area by the total assumed depth of contamination. An angle of repose was assumed (25% slope) in order to maintain a stable slope during excavation activities, which was used to determine the volume of additional material required to be excavated to achieve removal of the contaminated material. The angle of repose 4:1 (vertical:horizontal) was assumed for all potential excavation areas with the exception of Sump S8. Due to the depth of Sump S8, a 2:1 angle of repose was assumed. These values are presented in Table 7.

Most of the features had well defined or estimated surface perimeters except for the roads and disturbed areas, which were more difficult to establish. In Northgate's experience, oil field operators frequently oiled the roads and disturbed areas during the early through mid-1900s to minimize dust. Therefore, Northgate estimated potential volumes of material that may require removal from these areas. The GIS was used with current aerial photographs to determine road and disturbed areas (considered to be areas with less to no vegetation) by creating a discrimination algorithm based on the colors present in the photographs. Areas without vegetation were assumed to have less green reflectance and were identified by a trial and error process where the road/disturbed area polygons were identified by color and outlined. A final range of spectral response was then used to establish the road/disturbed area boundaries at the Site.



6.0 CONCLUSIONS AND RECOMMENDATIONS

This Focused Phase II Investigation of the Brea 265 Property consisted of analyzing 78 soil samples and one soil vapor sample collected from 14 trenches, four hand auger borings, two hollow-stem auger borings, two direct push borings and one SVP advanced in areas of the Site where primary historic oil field activities occurred and in areas where potential environmental risk was determined to be highest. The investigation areas of concern include an oil-field vapor recovery system, a dehydration unit, a drainage channel, an abandoned tank, the Brea-Olinda tank farm, a piping header area, and historic sumps located in the vicinity of historic oil production and tank farm areas of the Site. The investigation also included the production and analysis of GIS base maps developed to provide an estimate of the aerial extent and volume of impacted soil at the Site. Conclusions and recommendations based on the sampling performed during this investigation are presented below.

6.1 Soil

The investigation results indicate that oil-field production-related hydrocarbons, quantified primarily in the diesel and motor oil range, are present in soil at concentrations that exceed regulatory screening levels for residential and commercial land use in the historic sump areas of the Site and in a drainage channel that traverses the length of the 100-Acre Property on the western portion of the Site.

At Sump S8, located on the south-central portion of the 100-Acre Property, TPH-contaminated soil was present to the total depth sampled of 55 feet bgs, with TPH-d reported up to 13,000 mg/kg, and TPH-mo present up to 19,000 mg/kg. TPH-d and TPH-mo were detected at concentrations up to 9,200 and 22,000 mg/kg at 5 feet bgs, respectively, in a bermed area located just south of sump S5 on the 100-Acre Property. However, at this location, TPH concentrations attenuated with depth and were not detected in soil samples collected at 24 feet bgs.

TPH impacted soil encountered at Sump S20, located on the western portion of the 165-Acre Property was reported at concentrations below regulatory screening criteria where sampled. However, the sump, and associated TPH impacts cover large area of the Site. Samples collected during the present investigation suggest that TPH impact in the sump area may be limited in vertical extent (i.e., limited to about 10 feet bgs); however, additional evaluation is required to confirm the findings of this limited testing program.

TPH-d and TPH-mo were reported at concentrations of 160 and 460 mg/kg, respectively, in surface soil samples collected at the southern end of the drainage channel that traverses the 100-Acre Property. In general, low concentrations of TPH were reported in other samples



collected at a depth of 1-foot bgs along the drainage channel, but were not reported in samples collected at 5-foot bgs, except for one location in the center of the drainage channel near an area where process piping crosses the channel. The extent of TPH impact likely extends laterally throughout the length of the channel, but appears limited in vertical extent.

Select soil samples containing elevated concentrations of TPH were additionally analyzed for VOCs, SVOCs, metals, PCBs, and uranium. Concentrations of these compounds were either not detected above the laboratory RLs or were reported at low concentrations below their respective regulatory screening criteria, with the exception of one detection of an SVOC above screening criteria at a depth of 15 feet bgs in Sump 8. A low concentration of PCB (aroclor-1260) reported in shallow soil in the central portion of the drainage channel at a location where process piping traverses the channel may suggest a historic release of PCB-containing material in the channel.

OCPs, OPPs, and chlorinated herbicides were not detected above their respective laboratory reporting limits in any of the samples collected from the drainage channel.

Based on the soil testing performed during this investigation, it appears, with the exception of Sump S8, which appeared to be the major historic production sump on the 100-Acre property, that the impacts to the subsurface are generally confined to the upper layers as a result of the large amounts of clay present in subsurface soils. Additional areas of the Site were not investigated during this Focused Phase II Investigation that may present an environmental concern for the Site based on the historic operations. These areas include the additional historic sumps, oil wells, additional former tank areas, the roads, manifolds and pipelines, and the agricultural areas of the Site

6.2 Soil Vapor

A number of VOCs were reported in the soil vapor sample collected at the oil-field vapor recovery system located on the northern end of the 100-Acre Property. However, none of the reported concentrations of VOCs exceeded their respective residential or commercial soil vapor RSLs or SLs.

6.3 Soil Volume Estimate Summary

The investigation results indicate that oil-field production related hydrocarbons are present in soil locally at concentrations that exceed regulatory screening levels for residential and commercial land use. Based on field observations, soil sample analytical results, and the geospatial analysis described above, total impacted soil volumes were calculated for the major features at the Site, including the drainage channel, oil wells, vapor recovery system, dehydration



unit, tank farms, manifolds and pipes, drainage channel, roads, and former agricultural areas. A total of approximately 178,000 cubic yards (CY) of soil were estimated to be impacted across the Site that would require relocation, treatment and/or off-Site disposal. This estimate total includes additional soil removed to accommodate proper sloping for safe excavation activities but does not include the removal of clean overburden soil. The estimated soil volume calculations are presented in detail for the Site in Table 7.

An estimated percent of area impacted was estimated for each Site feature based upon analytical results, field observations, GIS analysis (including review of historical aerial photographs) and experience at other oilfield properties. As shown in Table 7, this estimated percent of area impacted was applied to the area of each major Site feature to calculate the total volume of impacted soil at each feature including any sloping required during the excavation. A clean overburden excavation volume was additionally calculated for several features, as appropriate. As a result, a total excavated volume (which included removal of an assumed clean soil) and a total impacted volume were calculated for each feature. A summary of the impacted soil calculated for major features is provided below:

100-Acre Property

- **Vapor Recovery System** - This feature was estimated to be 50% impacted to a depth of approximately 10 feet bgs. The total estimated impacted volume was calculated to be 512 CY.
- **Dehydration Unit** - This area was estimated to be 35% impacted to a depth of approximately 10 feet bgs. The total estimated impacted volume was calculated to be 2,574 CY.
- **Historic Sump S3** - This sump was estimated to be 30% impacted to a depth of approximately 10 feet bgs. The total estimated impacted volume was calculated to be 111 CY.
- **Historic Sump S5** - This area was estimated to be 100% impacted to a depth of approximately 17 feet bgs. The total estimated impacted volume was calculated to be 2,151 CY.
- **Historic Sump S7** - This sump was estimated to be 30% impacted to a depth of approximately 10 feet bgs. The total estimated impacted volume was calculated to be 257 CY.
- **Historic Sump S8** - This area was estimated to be 100% impacted to a depth of approximately 50 feet bgs. The sump is known to be impacted to at least 56 feet bgs, the deepest depth explored. Remediation of this sump is planned to include excavation to



50 feet bgs followed by the placement of a liner and the treatment of deeper impacts in-situ. The total estimated impacted volume was calculated to be 27,440 CY.

- **Drainage Channel** - This feature was estimated to be between 75 and 80% impacted to a depth of approximately 2.5 feet bgs. The total estimated impacted volume was calculated to be 11,247 CY.
- **Oil Wells/Roads./Former Agricultural Use/Additional Historic Sumps** – Excavation volumes were also estimated for additional Site features identified to be of potential environmental concern that were not directly investigated at this time. The total estimated impacted volume was calculated to be 46,492 CY.

165-Acre Property

- **Brea-Olinda Tank Farm:** This area was estimated to be 25% impacted to a depth of approximately 5 feet bgs. The total estimated impacted volume was calculated to be 763 CY.
- **Manifolds and Pipelines:** This feature was estimated to be 10% impacted to a depth of approximately 10 feet bgs and includes 6 manifolds and pipeline areas. The total estimated impacted volume was calculated to be 830 CY
- **Historic Sump S20:** This sump was estimated to be 50% impacted to a depth of approximately 7 feet bgs. The total estimated impacted volume was calculated to be 16,597 CY.
- **Oil Wells/Roads/Former Agricultural Use/Additional Historic Sumps** – Excavation volumes were also estimated for additional Site features identified to be of potential environmental concern that were not directly investigated at this time. The total estimated impacted volume was calculated to be 69,301 CY.

6.4 Recommendations

Northgate recommends that additional investigation be performed at the historic sumps and within the drainage channel to further define and better evaluate the vertical and lateral extent of impacted soil. The results of this additional Phase II investigation would provide additional benefit in further refining the estimated volumes and subsequently the cost estimates associated with remedial cleanup of the Site.

Additional Phase II investigation activities are also recommended at other areas of the Site to further evaluate additional areas of concern not covered by the current investigation. Additional areas of concern identified during the previous Phase I ESA that should be considered for additional Phase II testing include additional historic sumps, oil wells, former tank areas, the



roads, manifolds and pipelines, and the agricultural areas of the Site. The collection and analysis of soil samples in these areas is recommended to more fully identify impacts from historic operations, define the extents of these impacts, and to refine impacted soil volumes and associated remedial cost scenarios.



7.0 LIMITATIONS

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.



8.0 REFERENCES

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TABLES



TABLE 1
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Brea 265 Property

			Total Petroleum Hydrocarbons EPA Method 8015B			
Sample Identification	Sample Top	Date Sampled	C13-C28 (TPH-d) Extractable	C29-C40 (TPH-mo) Extractable	C6-C12 (TPH- g) Extractable	C6-C12 (TPH- g) Purgeable
			mg/kg	mg/kg	mg/kg	µg/kg
100-ACRE PARCEL						
Vapor Recovery System						
VRS-B1-20	20	3/23/2017	<10	<10	<10	<350
VRS-B1-25	25	3/23/2017	<10	<10	<10	--
VRS-B1-30	30	3/23/2017	<10	<10	<10	--
VRS-B1-35	35	3/23/2017	<10	<10	<10	--
VRS-B1-40	40	3/23/2017	<10	<10	<10	--
VRS-B1-45	45	3/23/2017	<10	<10	<10	--
VRS-B1-50	50	3/23/2017	<10	<10	<10	--
VRS-B1-55	55	3/23/2017	<10	<10	<10	--
VRS-B1-60	60	3/23/2017	<10	<10	<10	<350
VRS-T1-5	5	3/21/2017	<10	<10	<10	<170
VRS-T1-10	10	3/21/2017	<10	<10	<10	--
VRS-T1-15	15	3/21/2017	<10	<10	<10	--
VRS-T2-5	5	3/21/2017	42	86	<10	<170
VRS-T2-10	10	3/21/2017	39	45	<10	--
VRS-T2-15	15	3/21/2017	<10	<10	<10	--
Dehydration Unit						
DRU-T1-5	5	3/21/2017	<10	<10	<10	<170
DRU-T1-10	10	3/21/2017	<10	<10	<10	--
DRU-T1-15	15	3/21/2017	<10	<10	<10	--
Historic Sumps						
Sump S3						
S3-T1- 5	5	3/29/2017	790	1,100	<100	<500
S3-T1- 10	10	3/29/2017	44	85	<10	--
S3-T1- 15	15	3/29/2017	<10	<10	<10	--
Sump S5						
S5-B1-20	20	3/28/2017	11	<10	<10	--
S5-B1-24	24	3/28/2017	<10	<10	--	<500
S5-B1-36	36	3/28/2017	<10	<10	--	<290
S5-T1-5	5	3/21/2017	9,200	22,000	1,700	6,700
S5-T1-10	10	3/21/2017	330	1,500	<10	--
S5-T1-15	15	3/21/2017	270	810	<10	--
Sump S7						
S7-T1- 5	5	3/29/2017	<10	33	<10	--
S7-T1- 10	10	3/29/2017	<10	<10	<10	--
S7-T1- 15	15	3/29/2017	<10	<10	<10	--
Sump S8						
S8-B1-15	15	3/28/2017	2,100	720	80	--
S8-B1-39	39	3/28/2017	13,000	4,300	--	380,000
S8-B1-55	55	3/28/2017	7,900	1,800	--	180,000
S8-T1-1	1	3/23/2017	<10	66	<10	--
S8-T1-5	5	3/21/2017	<10	<10	<10	<190

TABLE 1
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Brea 265 Property

			Total Petroleum Hydrocarbons EPA Method 8015B			
Sample Identification	Sample Top	Date Sampled	C13-C28 (TPH-d) Extractable	C29-C40 (TPH-mo) Extractable	C6-C12 (TPH- g) Extractable	C6-C12 (TPH- g) Purgeable
			mg/kg	mg/kg	mg/kg	µg/kg
100-ACRE PARCEL						
S8-T1-10	10	3/21/2017	1,100	19,000	4,900	--
S8-T1-15	15	3/21/2017	1,100	14,000	6,300	9,400
S8-T2- 5	5	3/29/2017	<10	<10	<10	--
S8-T2- 10	10	3/29/2017	<10	<10	<10	--
S8-T2- 15	15	3/29/2017	3,200	2,500	<100	--
Drainage Channel						
DR-HA1-1.0	1	3/21/2017	57	230	<10	<200
DR-HA1-5.0	5	3/21/2017	<10	<10	<10	--
DR-HA2-1.0	1	3/21/2017	<10	<10	<10	<190
DR-HA2-5.0	5	3/21/2017	<10	<10	<10	--
DR-HA3-1.0	1	3/21/2017	75	220	<10	<200
DR-HA3-5.0	5	3/21/2017	<10	16	<10	--
DR-HA4-1.0	1	3/21/2017	160	460	<10	<200
DR-HA4-5.0	5	3/21/2017	<10	<10	<10	--
Abandoned Tank						
104-T1-5	5	3/21/2017	<10	<10	<10	<220
104-T1-10	10	3/21/2017	<10	<10	<10	--
104-T1-15	15	3/21/2017	<10	<10	<10	--
165-ACRE PARCEL						
Brea-Olinda Tank Farm						
BOTF-B1-5	5	3/23/2017	<10	<10	<10	--
BOTF-B1-10	10	3/23/2017	<10	<10	<10	--
BOTF-B1-15	15	3/23/2017	<10	<10	<10	--
BOTF-B1-20	20	3/23/2017	<10	<10	<10	--
BOTF-B1-25	25	3/23/2017	<10	<10	<10	--
BOTF-B1-30	30	3/23/2017	<10	<10	<10	--
BOTF-B1-35	35	3/23/2017	<10	<10	<10	--
BOTF-B1-40	40	3/23/2017	<10	<10	<10	--
BOTF-B1-45	45	3/23/2017	<10	33	<10	--
BOTF-B1-50	50	3/23/2017	<10	<10	<10	--
BOTF-B1-55	55	3/23/2017	<10	<10	<10	--
BOTF-B1-60	60	3/23/2017	<10	<10	<10	--
BOTF-T1-5	5	3/20/2017	<10	<10	<10	--
BOTF-T1-10	10	3/20/2017	<10	<10	<10	--
BOTF-T1-15	15	3/20/2017	<10	<10	<10	--
BOTF-T2-5	5	3/20/2017	52	83	<10	<160
BOTF-T2-10	10	3/20/2017	<10	<10	<10	--
BOTF-T2-15	15	3/20/2017	<10	<10	<10	--
Manifold H2						
H2-T1-5	5	3/20/2017	<10	<10	<10	--
H2-T1-10	10	3/20/2017	<10	<10	<10	--
H2-T1-15	15	3/20/2017	<10	<10	<10	--

TABLE 1
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Brea 265 Property

			Total Petroleum Hydrocarbons EPA Method 8015B			
Sample Identification	Sample Top	Date Sampled	C13-C28 (TPH-d) Extractable	C29-C40 (TPH-mo) Extractable	C6-C12 (TPH- g) Extractable	C6-C12 (TPH- g) Purgeable
			mg/kg	mg/kg	mg/kg	µg/kg
100-ACRE PARCEL						
Historic Sump 20						
S20-T1-5	5	3/20/2017	100	390	<10	<180
S20-T1-10	10	3/20/2017	<10	<10	<10	--
S20-T1-15	15	3/20/2017	<10	22	<10	--
S20-T2-5	5	3/20/2017	<10	<10	<10	<120
S20-T2-10	10	3/20/2017	51	120	<10	--
S20-T2-15	15	3/20/2017	<10	<10	<10	--
REGULATORY SCREENING CRITERIA						
RWQCB TPH Maximum SSLs 20 to 150 feet Above Groundwater			1,000	10,000	500	500,000
EPA Residential Soil RSLs			110	2,500	82	82,000
EPA Commercial Soil RSLs			600	33,000	420	420,000
DTSC Residential Soil SLs (cancer endpoint)			NE	NE	NE	NE
DTSC Commercial Soil SLs (cancer endpoint)			NE	NE	NE	NE

Notes/Abbreviations:

- < Not detected at or above the indicated laboratory method reporting limit
- Not tested
- Bold** Detected above one or more regulatory screening levels
- bgs Below ground surface
- DTSC Department of Toxic Substance Control
- EPA United States Environmental Protection Agency
- mg/kg Milligrams per kilogram (units)
- NA Not available
- ND Not detected
- NE Not established
- RSL EPA Region 9 Regional Screening Level, updated May 2016
- RWQCB Regional Water Quality Control Board - Los Angeles Region
- SL Screening levels, updated January 2016
- SSL RWQCB Maximum Soil Screening Levels - Distance to groundwater 20 to 150 feet, Interim Site Assessment Cleanup Guidance, May 1996.
- TPH Total petroleum hydrocarbons
- TPH-d Total petroleum hydrocarbons quantified as diesel
- TPH-g Total petroleum hydrocarbons quantified as gasoline
- TPH-mo Total petroleum hydrocarbons quantified as motor oil
- µg/kg Micrograms per kilogram (units)

TABLE 2
Summary of Soil Analytical Results - Volatile Organic Compounds - Brea 265 Property

			Volatile Organic Compounds EPA Method 8260B												
Sample Identification	Sample Top	Date Sampled	1,3,5-Trimethylbenzene	Ethylbenzene	o-Xylene	Naphthalene	1,2,4-Trimethylbenzene	Isopropylbenzene	m,p-Xylene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	Other VOCs
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL															
Vapor Recovery System															
VRS-B1-20	20	3/23/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
VRS-B1-25	25	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-30	30	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-35	35	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-40	40	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-45	45	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-50	50	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-55	55	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-60	60	3/23/2017	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<8.8	<4.4	<4.4	<4.4	<4.4	<4.4	ND
VRS-T1-5	5	3/21/2017	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<7.5	<3.7	<3.7	<3.7	<3.7	<3.7	ND
VRS-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T2-5	5	3/21/2017	<4	<4	<4	<4	<4	<4	<7.9	<4	<4	<4	<4	<4	ND
VRS-T2-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T2-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Dehydration Unit															
DRU-T1-5	5	3/21/2017	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<7.6	<3.8	<3.8	<3.8	<3.8	<3.8	ND
DRU-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
DRU-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Historic Sumps															
Sump S3															
S3-T1- 5	5	3/29/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
S3-T1- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S3-T1- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Sump S5															
S5-B1-20	20	3/28/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-B1-24	24	3/28/2017	<3.9	<3.9	<3.9	<3.9	<3.9	<3.9	<7.7	<3.9	<3.9	<3.9	<3.9	<3.9	ND
S5-B1-36	36	3/28/2017	<3.2	<3.2	<3.2	<3.2	<3.2	<3.2	<6.4	<3.2	<3.2	<3.2	<3.2	<3.2	ND
S5-T1-5	5	3/21/2017	10	20	20	150	28	9.2	27	10	11	6.5	8.9	<5.7	ND
S5-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Sump S7															
S7-T1- 5	5	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S7-T1- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S7-T1- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
Summary of Soil Analytical Results - Volatile Organic Compounds - Brea 265 Property

			Volatile Organic Compounds EPA Method 8260B												
Sample Identification	Sample Top	Date Sampled	1,3,5-Trimethylbenzene	Ethylbenzene	o-Xylene	Naphthalene	1,2,4-Trimethylbenzene	Isopropylbenzene	m,p-Xylene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	Other VOCs
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL															
Sump S8															
S8-B1-15	15	3/28/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-B1-39	39	3/28/2017	<5	<5	<5	120	<5	57	<10	18	48	<5	56	5.9	ND
S8-B1-55	55	3/28/2017	<3.7	<3.7	<3.7	5.4	<3.7	28	<7.4	18	20	13	42	4.2	ND
S8-T1-1	1	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T1-5	5	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
S8-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T1-15	15	3/21/2017	<5	17	<5	130	<5	19	<10	16	<5	<5	18	<5	ND
S8-T2- 5	5	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T2- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T2- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Drainage Channel															
DR-HA1-1.0	1	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
DR-HA1-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
DR-HA2-1.0	1	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
DR-HA2-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
DR-HA3-1.0	1	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
DR-HA3-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
DR-HA4-1.0	1	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
DR-HA4-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Abandoned Tank															
104-T1-5	5	3/21/2017	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	ND
104-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
104-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
165-ACRE PARCEL															
Brea-Olinda Tank Farm															
BOTF-B1-5	5	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-10	10	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-15	15	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-20	20	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-25	25	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-30	30	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-35	35	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-40	40	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-45	45	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-50	50	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-55	55	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
Summary of Soil Analytical Results - Volatile Organic Compounds - Brea 265 Property

Sample Identification	Sample Top	Date Sampled	Volatile Organic Compounds EPA Method 8260B												
			1,3,5-Trimethylbenzene	Ethylbenzene	o-Xylene	Naphthalene	1,2,4-Trimethylbenzene	Isopropylbenzene	m,p-Xylene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	Other VOCs
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	ug/kg	µg/kg
100-ACRE PARCEL															
BOTF-B1-60	60	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-5	5	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T2-5	5	3/20/2017	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<7.4	<3.7	<3.7	<3.7	<3.7	<3.7	ND
BOTF-T2-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T2-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Manifold H2															
H2-T1-5	5	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
H2-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
H2-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
Historic Sump S20															
S20-T1-5	5	3/20/2017	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<5.4	<2.7	<2.7	<2.7	<2.7	<2.7	ND
S20-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T2-5	5	3/20/2017	<3.2	<3.2	<3.2	<3.2	<3.2	<3.2	<6.4	<3.2	<3.2	<3.2	<3.2	<3.2	ND
S20-T2-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T2-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--
REGULATORY SCREENING CRITERIA															
RWQCB TPH Maximum SSLs 20 to 150 feet Above Groundwater			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NA
EPA Residential Soil RSLs			780,000	5,800	650,000	3,800	58,000	NE	550,000	3,900,000	NE	NE	7,800,000	7,800,000	NA
EPA Commercial Soil RSLs			12,000,000	25,000	2,800,000	17,000	240,000	NE	2,400,000	58,000,000	NE	NE	120,000,000	120,000,000	NA
DTSC Residential Soil SLs (cancer endpoint)			210,000*	NE	NE	NE	NE	NE	NE	1,200,000*	NE	NE	2,200,000*	2,200,000*	NA
DTSC Commercial Soil SLs (cancer endpoint)			1,100,000*	NE	NE	NE	NE	NE	NE	6,400,000*	NE	NE	12,000,000*	12,000,000*	NA

Notes/Abbreviations:

- | | | | |
|-------|--|-------|---|
| < | Not detected at or above the indicated laboratory method reporting limit | SL | Screening levels, updated January 2016 |
| -- | Not tested | SSL | RWQCB Maximum Soil Screening Levels - Distance to groundwater 20 to 150 feet, Interim Site Assessment Cleanup Guidance, May 1996. |
| * | Noncancer endpoint value used as cancer endpoint value was not established | µg/kg | Micrograms per kilogram (units) |
| bgs | Below ground surface | VOCs | Volatile organic compounds |
| DTSC | Department of Toxic Substance Control | | |
| EPA | United States Environmental Protection Agency | | |
| NA | Not available | | |
| ND | Not detected | | |
| NE | Not established | | |
| RSL | EPA Region 9 Regional Screening Level, updated May 2016 | | |
| RWQCB | Regional Water Quality Control Board - Los Angeles Region | | |

TABLE 3
Summary of Soil Analytical Results - Semi-Volatile Organic Compounds
Brea 265 Property

			SVOCs EPA Method 8270C					
Sample Identification	Sample Top	Date Sampled	2-Methylnaphthalene	1-Methylnaphthalene	Flourene	N-Nitrosodiphenylamine	Phenanthrene	Other SVOCs
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL								
Vapor Recovery System								
VRS-B1-20	20	3/23/2017	<300	<300	<300	<300	<300	ND
VRS-B1-25	25	3/23/2017	--	--	--	--	--	--
VRS-B1-30	30	3/23/2017	--	--	--	--	--	--
VRS-B1-35	35	3/23/2017	--	--	--	--	--	--
VRS-B1-40	40	3/23/2017	--	--	--	--	--	--
VRS-B1-45	45	3/23/2017	--	--	--	--	--	--
VRS-B1-50	50	3/23/2017	--	--	--	--	--	--
VRS-B1-55	55	3/23/2017	--	--	--	--	--	--
VRS-B1-60	60	3/23/2017	<300	<300	<300	<300	<300	ND
VRS-T1-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
VRS-T1-10	10	3/21/2017	--	--	--	--	--	--
VRS-T1-15	15	3/21/2017	--	--	--	--	--	--
VRS-T2-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
VRS-T2-10	10	3/21/2017	--	--	--	--	--	--
VRS-T2-15	15	3/21/2017	--	--	--	--	--	--
Dehydration Unit								
DRU-T1-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
DRU-T1-10	10	3/21/2017	--	--	--	--	--	--
DRU-T1-15	15	3/21/2017	--	--	--	--	--	--
Historic Sumps								
Sump S3								
S3-T1- 5	5	3/29/2017	<300	<300	<300	<300	<300	ND
S3-T1- 10	10	3/29/2017	--	--	--	--	--	--
S3-T1- 15	15	3/29/2017	--	--	--	--	--	--
Sump S5								
S5-B1-20	20	3/28/2017	--	--	--	--	--	--
S5-B1-24	24	3/28/2017	--	--	--	--	--	--
S5-B1-36	36	3/28/2017	--	--	--	--	--	--
S5-T1-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
S5-T1-10	10	3/21/2017	--	--	--	--	--	--
S5-T1-15	15	3/21/2017	--	--	--	--	--	--
Sump S7								
S7-T1- 5	5	3/29/2017	--	--	--	--	--	--
S7-T1- 10	10	3/29/2017	--	--	--	--	--	--
S7-T1- 15	15	3/29/2017	--	--	--	--	--	--
Sump S8								
S8-B1-15	15	3/28/2017	<300	<300	480	<300	<300	ND
S8-B1-39	39	3/28/2017	2,800	3,500	<1,500	<1,500	2,800	ND
S8-B1-55	55	3/28/2017	<1,500	<1,500	1,600	2,700	<1,500	ND
S8-T1-1	1	3/23/2017	<300	<300	<300	<300	<300	ND
S8-T1-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
S8-T1-10	10	3/21/2017	--	--	--	--	--	--
S8-T1-15	15	3/21/2017	32,000	23,000	<300	<300	<300	ND
S8-T2- 5	5	3/29/2017	--	--	--	--	--	--
S8-T2- 10	10	3/29/2017	--	--	--	--	--	--
S8-T2- 15	15	3/29/2017	--	--	--	--	--	--
Drainage Channel								
DR-HA1-1.0	1	3/21/2017	<300	<300	<300	<300	<300	ND
DR-HA1-5.0	5	3/21/2017	--	--	--	--	--	--
DR-HA2-1.0	1	3/21/2017	<300	<300	<300	<300	<300	ND
DR-HA2-5.0	5	3/21/2017	--	--	--	--	--	--
DR-HA3-1.0	1	3/21/2017	<300	<300	<300	<300	<300	ND
DR-HA3-5.0	5	3/21/2017	--	--	--	--	--	--
DR-HA4-1.0	1	3/21/2017	<300	<300	<300	<300	<300	ND

TABLE 3
Summary of Soil Analytical Results - Semi-Volatile Organic Compounds
Brea 265 Property

Sample Identification	Sample Top	Date Sampled	SVOCs EPA Method 8270C					
			2-Methylnaphthalene	1-Methylnaphthalene	Flourene	N-Nitrosodiphenylamine	Phenanthrene	Other SVOCs
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL								
DR-HA4-5.0	5	3/21/2017	--	--	--	--	--	--
Abandoned Tank								
104-T1-5	5	3/21/2017	<300	<300	<300	<300	<300	ND
104-T1-10	10	3/21/2017	--	--	--	--	--	--
104-T1-15	15	3/21/2017	--	--	--	--	--	--
CENTRAL PROPERTY - 165-ACRE PARCEL								
Brea-Olinda Tank Farm								
BOTF-B1-5	5	3/23/2017	--	--	--	--	--	--
BOTF-B1-10	10	3/23/2017	--	--	--	--	--	--
BOTF-B1-15	15	3/23/2017	--	--	--	--	--	--
BOTF-B1-20	20	3/23/2017	--	--	--	--	--	--
BOTF-B1-25	25	3/23/2017	--	--	--	--	--	--
BOTF-B1-30	30	3/23/2017	--	--	--	--	--	--
BOTF-B1-35	35	3/23/2017	--	--	--	--	--	--
BOTF-B1-40	40	3/23/2017	--	--	--	--	--	--
BOTF-B1-45	45	3/23/2017	--	--	--	--	--	--
BOTF-B1-50	50	3/23/2017	--	--	--	--	--	--
BOTF-B1-55	55	3/23/2017	--	--	--	--	--	--
BOTF-B1-60	60	3/23/2017	--	--	--	--	--	--
BOTF-T1-5	5	3/20/2017	--	--	--	--	--	--
BOTF-T1-10	10	3/20/2017	--	--	--	--	--	--
BOTF-T1-15	15	3/20/2017	--	--	--	--	--	--
BOTF-T2-5	5	3/20/2017	--	--	--	--	--	ND
BOTF-T2-10	10	3/20/2017	--	--	--	--	--	--
BOTF-T2-15	15	3/20/2017	--	--	--	--	--	--
Manifold H2								
H2-T1-5	5	3/20/2017	--	--	--	--	--	--
H2-T1-10	10	3/20/2017	--	--	--	--	--	--
H2-T1-15	15	3/20/2017	--	--	--	--	--	--
Historic Sump S20								
S20-T1-5	5	3/20/2017	--	--	--	--	--	ND
S20-T1-10	10	3/20/2017	--	--	--	--	--	--
S20-T1-15	15	3/20/2017	--	--	--	--	--	--
S20-T2-5	5	3/20/2017	--	--	--	--	--	ND
S20-T2-10	10	3/20/2017	--	--	--	--	--	--
S20-T2-15	15	3/20/2017	--	--	--	--	--	--
REGULATORY SCREENING CRITERIA								
RWQCB TPH Maximum SSLs 20 to 150 feet Above Groundwater			NE	NE	NE	NE	NE	NA
EPA Residential Soil RSLs			240,000	18,000	2,400,000	110,000	NE	NA
EPA Commercial Soil RSLs			3,000,000	73,000	30,000,000	470,000	NE	NA
DTSC Residential Soil SLs (cancer endpoint)			NE	NE	NE	NE	NE	NA
DTSC Commercial Soil SLs (cancer endpoint)			NE	NE	NE	NE	NE	NA

Notes/Abbreviations:

<	Not detected at or above the indicated laboratory method reporting limit	RSL	EPA Region 9 Regional Screening Level, updated May 2016
--	Not tested	RWQCB	Regional Water Quality Control Board - Los Angeles Region
Bold	Detected above one or more regulatory screening levels	SL	Screening levels, updated January 2016
bgs	Below ground surface	SSL	RWQCB Maximum Soil Screening Levels - Distance to groundwater 20 to 150 feet
DTSC	Department of Toxic Substance Control		Interim Site Assessment Cleanup Guidance, May 1996.
EPA	United States Environmental Protection Agency	SVOCs	Semi-volatile organic compounds
NA	Not available	µg/kg	Micrograms per kilogram (units)
ND	Not detected		
NE	Not established		

TABLE 4
Summary of Soil Analytical Results - Title 22 Metals
Brea 265 Property

			Title 22 Metals EPA Method 6010B/7471A																	Uranium EPA 6020A
Sample Identification	Sample Top	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Uranium
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
100-ACRE PARCEL																				
Vapor Recovery System																				
VRS-B1-20	20	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-25	25	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-30	30	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-35	35	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-40	40	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-45	45	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-50	50	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-55	55	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-B1-60	60	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T1-5	5	3/21/2017	<3	<5	41	<1	<2	3.2	4.3	<1	<3	<0.1	<5	5.4	<5	<2	<2	6.3	11	--
VRS-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T2-5	5	3/21/2017	<3	<5	67	<1	<2	6.6	4.4	7.4	<3	<0.1	<5	7.8	<5	<2	<2	18	27	--
VRS-T2-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VRS-T2-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dehydration Unit																				
DRU-T1-5	5	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DRU-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DRU-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Historic Sumps																				
Sump S3																				
S3-T1- 5	5	3/29/2017	<3	<5	88	<1	<2	8.6	5.3	6	<3	<0.1	<5	10	<5	<2	<2	23	34	--
S3-T1- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S3-T1- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sump S5																				
S5-B1-20	20	3/28/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-B1-24	24	3/28/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-B1-36	36	3/28/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-T1-5	5	3/21/2017	<3	<5	34	<1	<2	3.2	2.7	3.6	<3	<0.1	<5	6.5	<5	<2	<2	11	24	0.71
S5-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S5-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sump S7																				
S7-T1- 5	5	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S7-T1- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S7-T1- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 4
Summary of Soil Analytical Results - Title 22 Metals
Brea 265 Property

			Title 22 Metals EPA Method 6010B/7471A																	Uranium EPA 6020A
Sample Identification	Sample Top	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Uranium
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
100-ACRE PARCEL																				
Sump S8																				
S8-B1-15	15	3/28/2017	<3	<5	71	<1	<2	7.8	6.0	5.3	<3	<0.1	<5	8.2	<5	<2	<2	24	23	--
S8-B1-39	39	3/28/2017	<3	<5	56	<1	<2	5.8	4.8	5.2	<3	<0.1	<5	11	<5	<2	<2	17	26	0.67
S8-B1-55	55	3/28/2017	<3	<5	57	<1	<2	8.9	5.5	6.7	<3	<0.1	<5	14	<5	<2	<2	24	35	--
S8-T1-1	1	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T1-5	5	3/21/2017	<3	<5	45	<1	<2	4.6	3.5	3.0	<3	<0.1	<5	3.8	<5	<2	<2	14	23	0.76
S8-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T1-15	15	3/21/2017	<3	<5	220	<1	<2	18	5.2	11	<3	<0.1	<5	14	<5	<2	<2	19	35	--
S8-T2- 5	5	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T2- 10	10	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S8-T2- 15	15	3/29/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drainage Channel																				
DR-HA1-1.0	1	3/21/2017	<3	<5	65	<1	<2	7.0	3.9	8.8	<3		<5	8.2	<5	<2	<2	15	35	1
DR-HA1-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
DR-HA2-1.0	1	3/21/2017	<3	<5	27	<1	<2	2.8	2.0	2.4	<3		<5	4.4	<5	<2	<2	9.0	13	0.73
DR-HA2-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
DR-HA3-1.0	1	3/21/2017	<3	<5	80	<1	<2	5.6	5.0	5.5	<3		<5	11	<5	<2	<2	16	34	1.2
DR-HA3-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
DR-HA4-1.0	1	3/21/2017	<3	<5	50	<1	<2	6.4	4.3	4.1	<3		<5	7.5	<5	<2	<2	19	23	0.93
DR-HA4-5.0	5	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
Abandoned Tank																				
104-T1-5	5	3/21/2017	<3	<5	47	<1	<2	4.7	4.2	4.9	<3		<5	10	<5	<2	<2	14	24	1.3
104-T1-10	10	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
104-T1-15	15	3/21/2017	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
165-ACRE PARCEL																				
Brea-Olinda Tank Farm																				
BOTF-B1-5	5	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-10	10	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-15	15	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-20	20	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-25	25	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-30	30	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-35	35	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-40	40	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-45	45	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 4
Summary of Soil Analytical Results - Title 22 Metals
Brea 265 Property

Sample Identification	Sample Top	Date Sampled	Title 22 Metals EPA Method 6010B/7471A																	Uranium EPA 6020A
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Uranium
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
100-ACRE PARCEL																				
BOTF-B1-50	50	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-55	55	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-B1-60	60	3/23/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-5	5	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T2-5	5	3/20/2017	<3	<5	120	<1	<2	9.5	6.8	7.8	<3	<0.1	5.3	8.8	<5	<2	<2	24	31	--
BOTF-T2-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOTF-T2-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manifold H2																				
H2-T1-5	5	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H2-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H2-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Historic Sump S20																				
S20-T1-5	5	3/20/2017	<3	<5	55	<1	<2	6.4	4.1	4.0	<3	<0.1	<5	6.5	<5	<2	<2	16	22	0.53
S20-T1-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T1-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T2-5	5	3/20/2017	<3	<5	88	<1	<2	7.7	5.2	5.1	<3	<0.1	<5	10	<5	<2	<2	22	24	--
S20-T2-10	10	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S20-T2-15	15	3/20/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGULATORY SCREENING CRITERIA																				
RWQCB TPH Maximum SSLs 20 to 150 feet Above Groundwater			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EPA Residential Soil RSLs			31	0.39	15,000	160	70	NE	23	3,100	80 ¹	10	390	1,500	390	390	0.78	390	23,000	230,000
EPA Commercial Soil RSLs			410	1.6	190,000	2,000	800	NE	300	41,000	320 ¹	43	5,100	20,000	5,100	5,100	10	5,200	310,000	3,500,000
DTSC Residential Soil SLs (cancer endpoint)			NE	0.67	NE	NE	2,100	NE	NE	NE	80*	1.0*	NE	NE	NE	390*	NE	390*	NE	NE
DTSC Commercial Soil SLs (cancer endpoint)			NE	2.5	NE	NE	9,300	NE	NE	NE	320*	4.5*	NE	NE	NE	1,500*	NE	1,000*	NE	NE

Notes/Abbreviations:

- < Not detected at or above the indicated laboratory method reporting limit
- Not tested
- ¹ California Human Health Screening Level (CHHSL) used for lead
- bgs Below ground surface
- DTSC Department of Toxic Substance Control
- EPA United States Environmental Protection Agency
- mg/kg Milligrams per kilogram (units)
- NA Not available
- ND Not detected
- NE Not established
- RSL EPA Region 9 Regional Screening Level, updated May 2016

- RWQCB Regional Water Quality Control Board - Los Angeles Region
- SL Screening levels, updated January 2016
- SSL RWQCB Maximum Soil Screening Levels - Distance to groundwater 20 to 150 feet, Interim Site Assessment Cleanup Guidance, May 1996.
- µg/kg Micrograms per kilogram (units)

TABLE 5
Summary of Soil Analytical Results - OCPs, PCBs, OPPs, and CHs
Brea 265 Property

			OCPs EPA 8081A	PCBs EPA 8082		OPPs EPA 8141A	CHs EPA 8151A
Sample Identification	Sample Top	Date Sampled	OCPs	Aroclor-1260	Other PCBs	OPPs	Chlorinated Herbicides
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL							
Vapor Recovery System							
VRS-B1-20	20	3/23/2017	--	--	--	--	--
VRS-B1-25	25	3/23/2017	--	--	--	--	--
VRS-B1-30	30	3/23/2017	--	--	--	--	--
VRS-B1-35	35	3/23/2017	--	--	--	--	--
VRS-B1-40	40	3/23/2017	--	--	--	--	--
VRS-B1-45	45	3/23/2017	--	--	--	--	--
VRS-B1-50	50	3/23/2017	--	--	--	--	--
VRS-B1-55	55	3/23/2017	--	--	--	--	--
VRS-B1-60	60	3/23/2017	--	--	--	--	--
VRS-T1-5	5	3/21/2017	--	<10	ND	--	--
VRS-T1-10	10	3/21/2017	--	--	--	--	--
VRS-T1-15	15	3/21/2017	--	--	--	--	--
VRS-T2-5	5	3/21/2017	--	<10	ND	--	--
VRS-T2-10	10	3/21/2017	--	--	--	--	--
VRS-T2-15	15	3/21/2017	--	--	--	--	--
Dehydration Unit							
DRU-T1-5	5	3/21/2017	--	--	--	--	--
DRU-T1-10	10	3/21/2017	--	--	--	--	--
DRU-T1-15	15	3/21/2017	--	--	--	--	--
Historic Sumps							
Sump S3							
S3-T1- 5	5	3/29/2017	--	--	--	--	--
S3-T1- 10	10	3/29/2017	--	--	--	--	--
S3-T1- 15	15	3/29/2017	--	--	--	--	--
Sump S5							
S5-B1-20	20	3/28/2017	--	--	--	--	--
S5-B1-24	24	3/28/2017	--	--	--	--	--
S5-B1-36	36	3/28/2017	--	--	--	--	--
S5-T1-5	5	3/21/2017	--	<10	ND	--	--
S5-T1-10	10	3/21/2017	--	--	--	--	--
S5-T1-15	15	3/21/2017	--	--	--	--	--
Sump S7							
S7-T1- 5	5	3/29/2017	--	--	--	--	--
S7-T1- 10	10	3/29/2017	--	--	--	--	--
S7-T1- 15	15	3/29/2017	--	--	--	--	--
Sump S8							
S8-B1-15	15	3/28/2017	--	--	--	--	--
S8-B1-39	39	3/28/2017	--	<10	ND	--	--
S8-B1-55	55	3/28/2017	--	<10	ND	--	--
S8-T1-1	1	3/23/2017	ND	--	--	ND	ND
S8-T1-5	5	3/21/2017	--	<10	ND	--	--
S8-T1-10	10	3/21/2017	--	--	--	--	--

TABLE 5
Summary of Soil Analytical Results - OCPs, PCBs, OPPs, and CHs
Brea 265 Property

			OCPs EPA 8081A	PCBs EPA 8082		OPPs EPA 8141A	CHs EPA 8151A
Sample Identification	Sample Top	Date Sampled	OCPs	Aroclor-1260	Other PCBs	OPPs	Chlorinated Herbicides
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL							
S8-T1-15	15	3/21/2017	--	--	--	--	--
S8-T2- 5	5	3/29/2017	--	--	--	--	--
S8-T2- 10	10	3/29/2017	--	--	--	--	--
S8-T2- 15	15	3/29/2017	--	--	--	--	--
Drainage Channel							
DR-HA1-1.0	1	3/21/2017	ND	<10	ND	ND	ND
DR-HA1-5.0	5	3/21/2017	--	--	--	--	--
DR-HA2-1.0	1	3/21/2017	ND	<10	ND	ND	ND
DR-HA2-5.0	5	3/21/2017	--	--	--	--	--
DR-HA3-1.0	1	3/21/2017	ND	19	ND	ND	ND
DR-HA3-5.0	5	3/21/2017	--	--	--	--	--
DR-HA4-1.0	1	3/21/2017	ND	<10	ND	ND	ND
DR-HA4-5.0	5	3/21/2017	--	--	--	--	--
Abandoned Tank							
104-T1-5	5	3/21/2017	--	<10	ND	--	--
104-T1-10	10	3/21/2017	--	--	--	--	--
104-T1-15	15	3/21/2017	--	--	--	--	--
165-ACRE PARCEL							
Brea-Olinda Tank Farm							
BOTF-B1-5	5	3/23/2017	--	--	--	--	--
BOTF-B1-10	10	3/23/2017	--	--	--	--	--
BOTF-B1-15	15	3/23/2017	--	--	--	--	--
BOTF-B1-20	20	3/23/2017	--	--	--	--	--
BOTF-B1-25	25	3/23/2017	--	--	--	--	--
BOTF-B1-30	30	3/23/2017	--	--	--	--	--
BOTF-B1-35	35	3/23/2017	--	--	--	--	--
BOTF-B1-40	40	3/23/2017	--	--	--	--	--
BOTF-B1-45	45	3/23/2017	--	--	--	--	--
BOTF-B1-50	50	3/23/2017	--	--	--	--	--
BOTF-B1-55	55	3/23/2017	--	--	--	--	--
BOTF-B1-60	60	3/23/2017	--	--	--	--	--
BOTF-T1-5	5	3/20/2017	--	--	--	--	--
BOTF-T1-10	10	3/20/2017	--	--	--	--	--
BOTF-T1-15	15	3/20/2017	--	--	--	--	--
BOTF-T2-5	5	3/20/2017	--	<0.1	ND	--	--
BOTF-T2-10	10	3/20/2017	--	--	--	--	--
BOTF-T2-15	15	3/20/2017	--	--	--	--	--
Manifold H2							
H2-T1-5	5	3/20/2017	--	--	--	--	--
H2-T1-10	10	3/20/2017	--	--	--	--	--
H2-T1-15	15	3/20/2017	--	--	--	--	--

TABLE 5
Summary of Soil Analytical Results - OCPs, PCBs, OPPs, and CHs
Brea 265 Property

Sample Identification	Sample Top	Date Sampled	OCPs EPA 8081A	PCBs EPA 8082		OPPs EPA 8141A	CHs EPA 8151A
			OCPs	Aroclor-1260	Other PCBs	OPPs	Chlorinated Herbicides
			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
100-ACRE PARCEL							
Historic Sump S20							
S20-T1-5	5	3/20/2017	--	<0.1	ND	--	--
S20-T1-10	10	3/20/2017	--	--	--	--	--
S20-T1-15	15	3/20/2017	--	--	--	--	--
S20-T2-5	5	3/20/2017	--	<0.1	ND	--	--
S20-T2-10	10	3/20/2017	--	--	--	--	--
S20-T2-15	15	3/20/2017	--	--	--	--	--
REGULATORY SCREENING CRITERIA							
RWQCB TPH Maximum SSLs 20 to 150 feet Above Groundwater			NA	NE	NA	NA	NA
EPA Residential Soil RSLs			NA	240	NA	NA	NA
EPA Commercial Soil RSLs			NA	990	NA	NA	NA
DTSC Residential Soil SLs (cancer endpoint)			NA	NE	NA	NA	NA
DTSC Commercial Soil SLs (cancer endpoint)			NA	NE	NA	NA	NA

Notes/Abbreviations:

- < Not detected at or above the indicated laboratory method reporting limit
- Not tested
- bgs Below ground surface
- CHs Chlorinated herbicides
- DTSC Department of Toxic Substance Control
- EPA United States Environmental Protection Agency
- NA Not available
- ND Not detected
- NE Not established
- OCPs Organochlorine pesticides
- OPPs Organophosphorous pesticides
- PCBs Polychlorinated biphenyls
- RSL EPA Region 9 Regional Screening Level, updated May 2016
- RWQCB Regional Water Quality Control Board - Los Angeles Region
- SL Screening levels, updated January 2016
- SSL RWQCB Maximum Soil Screening Levels - Distance to groundwater 20 to 150 feet, Interim Site Assessment Cleanup Guidance, May 1996.
- µg/kg Micrograms per kilogram (units)

TABLE 6
Summary of Soil Vapor Analytical Results - Brea 265 Property

Volatile Organic Compounds EPA Method TO-15														
Sample Identification	Sample Top	Date Sampled	1,3,5-Trimethylbenzene	Benzene	Carbon disulfide	Ethylbenzene	o-Xylene	Toluene	1,2,4-Trimethylbenzene	4-Ethyltoluene	Heptane	Hexane	m,p-Xylene	Other VOCs
			µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
100-ACRE PARCEL														
Vapor Recovery System														
VRS-B1-SV15	15	3/29/2017	15	12	26	8.2	9.2	20	86	11	23	74	23	ND
Residential Indoor Air RSLs ¹			NE	0.36	730	1.1	100	520	7.3	NE	NE	NE	100	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated EPA Residential Soil Vapor RSLs			NE	180	365,000	550	50,000	260,000	3,650	NE	NE	NE	50,000	NA
Commercial/Industrial Indoor Air RSLs ¹			NE	1.6	3,100	4.9	440	22,000	31	NE	NE	NE	440	NA
Attenuation Factor			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	NA
Calculated EPA Industrial Soil Vapor RSLs			NE	1,600	3,100,000	4,900	440,000	22,000,000	31,000	NE	NE	NE	440,000	NA
DTSC Residential SLs (cancer endpoint) ¹			42*	0.97	NE	NE	NE	310*	NE	NE	NE	NE	NE	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated DTSC Residential Soil Vapor SLs			21,000	485	NE	NE	NE	155,000	NE	NE	NE	NE	NE	NA
DTSC Commercial/Industrial SLs (cancer endpoint) ¹			180*	4.2	NE	NE	NE	1,300*	NE	NE	NE	NE	NE	NA
Attenuation Factor			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	NA
Calculated DTSC Industrial Soil Vapor SLs			180,000	4,200	NE	NE	NE	1,300,000	NE	NE	NE	NE	NE	NA

Notes/Abbreviations:

- * Noncancer endpoint value used as cancer endpoint value not established
- Bold** Calculated screening criteria for soil vapor based on quotient of screening criteria for air and attenuation factor
- Bold** Exceedance of screening criteria
- ¹ Value provided is for indoor air, not soil vapor
- bgs Below ground surface
- DTSC Department of Toxic Substance Control
- EPA United States Environmental Protection Agency
- NA Not available
- ND Not detected
- NE Note Established
- RSL EPA Region 9 Regional Screening Level, updated May 2016
- SL Screening level Screening levels, updated January 2016
- µg/m3 Units are in micrograms per meter cubed
- VOCs Volatile Organic Compounds

TABLE 7
Impacted Soil Volume Estimates

PROPERTY/FEATURE	SOIL IMPACTS FOUND?	IMPACTED SOIL VOLUME									
		Area (sf)	Perimeter (ft)	Percent of Area Impacted (%)	Estimated Depth (ft)	Clean Overburden Depth (ft)	Excav Volume (no slope) (CY)	Slope Volume (CY)	Total Excav Vol (CY)	Total Impacted Vol (CY)	Clean Overburden Vol (CY)
100-ACRE LEASE PROPERTY - NORTH OF LAMBERT:											
DRAINAGE CHANNEL	Y	37,335	1566	80%	2.5	0	2,766	36	2,802	2,802	0
ABANDONED TANK	N	0	0	0%			0	0	0	0	0
OIL WELLS/CURRENT (22) ⁽¹⁾	U	19,800	2640	100%	10	0	7,333	1,222	8,556	8,556	0
OIL WELLS/PLUGGED (DOGGR) (11) ⁽¹⁾	U	9,900	1320	100%	10	0	3,667	611	4,278	4,278	0
ROADS	U	490,114	3600	50%	1.5	1	13,614	19	13,633	4,540	9,093
FORMER AGRICULTURAL USE	U	228,735	1977	10%	1	0	847	1	849	849	0
TOTALS (IMPACTED SOIL ONLY)		327,499	7,211				28,227	1,890	30,117	21,024	9,093
TOTALS (IMPACTED SOIL, OIL WELLS ONLY)		29,700	3,960				11,000	1,833	12,833	12,833	0
TOTALS (IMPACTED SOIL, NON-OIL WELLS ONLY)		297,799	3,251				17,227	56	17,283	8,191	9,093
100-ACRE LEASE PROPERTY - SOUTH OF LAMBERT:											
VAPOR RECOVERY SYSTEM	Y	3,464	235.5	50%	10	2.5	641	55	696	512	184
DEHYDRATION UNIT	N	24,115	706	35%	10	2	3,126	114	3,240	2,574	666
DRAINAGE CHANNEL/PIPES	Y	120,040	5040	75%	2.5	0	8,336	109	8,445	8,445	0
FORMER SUMPS - S1	U	2,102	178.3	30%	10	5	234	25	258	123	135
FORMER SUMPS - S2	U	2,883	229.1	20%	10	5	214	21	235	112	123
FORMER SUMPS - S3	N	1,896	175.2	30%	10	5	211	24	235	111	124
FORMER SUMPS - S4	U	2,393	195.4	30%	10	5	266	27	293	140	153
FORMER SUMPS - S5	Y	4,440	266.1	100%	17	5	2,796	356	3,152	2,151	1,001
FORMER SUMPS - S6	U	1,429	153.2	30%	10	5	159	21	180	85	95
FORMER SUMPS - S7	N	4,466	255.2	30%	10	5	496	35	532	257	275
FORMER SUMPS - S8 ⁽²⁾	Y	15,757	553	100%	50	10	29,180	12,801	41,981	27,440	14,541
FORMER SUMPS - S9	U	1,942	170.8	30%	10	5	216	24	240	114	126
FORMER SUMPS - S10	U	2,355	205.8	30%	10	5	262	29	290	138	152
FORMER TANK FARM	N	4,789	284.1	20%	10	2.5	355	26	381	281	100
OIL AND INJECTION WELLS/CURRENT (25) ⁽¹⁾	N	22,500	3000	100%	10	0	8,333	1,389	9,722	9,722	0
OIL WELLS/PLUGGED (DOGGR) (27) ⁽¹⁾	N	24,300	3240	100%	10	0	9,000	1,500	10,500	10,500	0
ROADS	N	461,473	12500	75%	1.5	1	19,228	98	19,326	6,420	12,906
FORMER AGRICULTURAL USE	N	342,320	3088.1	5%	1	0	634	1	635	635	0
TOTALS (IMPACTED SOIL ONLY)		536,929	21,236.2				83,685	16,656	100,341	69,760	30,581
TOTALS (IMPACTED SOIL, OIL WELLS ONLY)		46,800	6,240.0				17,333	2,889	20,222	20,222	0
TOTALS (IMPACTED SOIL, NON-OIL WELLS ONLY)		490,129	14,996.2				66,352	13,767	80,118	49,538	30,581
165-ACRE LEASE PROPERTY - NORTH:											
ROADS	U	543,200	25000	50%	2	1	20,119	231	20,350	10,117	10,233
MANIFOLDS AND PIPELINES (4)	N	19,880	1112	10%	10	3	736	77	814	553	260
FORMER SUMPS - S11	U	5,095	275.2	30%	10	2	566	38	604	477	127
FORMER SUMPS - S16	U	9,907	373.1	30%	10	2	1,101	52	1,153	914	239
FORMER SUMPS - S17	U	55,791	1116.7	20%	5	2	2,066	26	2,092	1,249	843
OIL WELLS (OnSite) (36)	U	32,400	4320	100%	10	0	12,000	2,000	14,000	14,000	0
OIL WELLS (Plugged/Buried) (21)	U	18,900	2520	100%	10	0	7,000	1,167	8,167	8,167	0
TOTALS (IMPACTED SOIL ONLY)		340,547	19869.03				43,588	3,591	47,179	35,477	11,702
TOTALS (IMPACTED SOIL, OIL WELLS ONLY)		51,300	6,840.0				19,000	3,167	22,167	22,167	0
TOTALS (IMPACTED SOIL, NON-OIL WELLS ONLY)		289,247	13,029.0				24,588	425	25,013	13,311	11,702
165-ACRE LEASE PROPERTY - SOUTH:											
MANIFOLDS AND PIPELINES (2)	U	9,940	556	10%	10	3	368	39	407	277	130
BREA PRODUCTION UNIT/OLINDA TANK FARM	Y	16,161	522.5	25%	5	0	748	15	763	763	0
CARBON FILTRATION TANK AREA	U	5,139	288.5	25%	10	5	476	33	509	246	263
FORMER TANK AREA	Y	8,922	32.8	100%	12	7	3,965	22	3,987	1,656	2,331
OIL WELLS (OnSite) (26)	U	23,400	3120	100%	10	0	8,667	1,444	10,111	10,111	0
OIL WELLS (Plugged/Buried) (19)	U	17,100	2280	100%	10	0	6,333	1,056	7,389	7,389	0
ROADS (Oil Field Operations Only)	U	685,000	25000	50%	1.5	1	19,028	130	19,158	6,357	12,801
FORMER SUMPS - S12	U	5,789	337.8	30%	10	2	643	47	690	545	146
FORMER SUMPS - S13	U	2,641	209.5	50%	10	2	489	48	538	422	115
FORMER SUMPS - S14	U	8,664	352.7	15%	5	2	241	6	247	147	100
FORMER SUMPS - S15	U	3,366	233.4	10%	5	2	62	3	65	38	27
FORMER SUMPS - S18	U	23,654	705	30%	10	2	2,628	98	2,726	2,165	561
FORMER SUMPS - S19	U	12,292	408.7	50%	10	2	2,276	95	2,371	1,882	489
FORMER SUMPS - S20	Y	297,550	3182	50%	7	4	38,571	361	38,932	16,597	22,335
AGRICULTURAL AREA	U	1,844,750	7569.5	5%	2	1	6,832	11	6,843	3,419	3,424
TOTALS (IMPACTED SOIL ONLY)		657,189	20,858.8				91,329	3,407	94,736	52,014	42,723
TOTALS (IMPACTED SOIL, OIL WELLS ONLY)		40,500	5,400.0				15,000	2,500	17,500	17,500	0
TOTALS (IMPACTED SOIL, NON-OIL WELLS ONLY)		616,689	15,458.8				76,329	907	77,236	34,514	42,723
CENTRAL LEASE TOTALS		1,862,164	69,175				246,829	25,544	272,373	178,275	94,098
CENTRAL LEASE TOTALS (OIL WELLS)		168,300	22,440				62,333	10,389	72,722	72,722	0
CENTRAL LEASE TOTALS (NON-OIL WELLS)		1,693,864	46,735				184,495	15,155	199,651	105,553	94,098

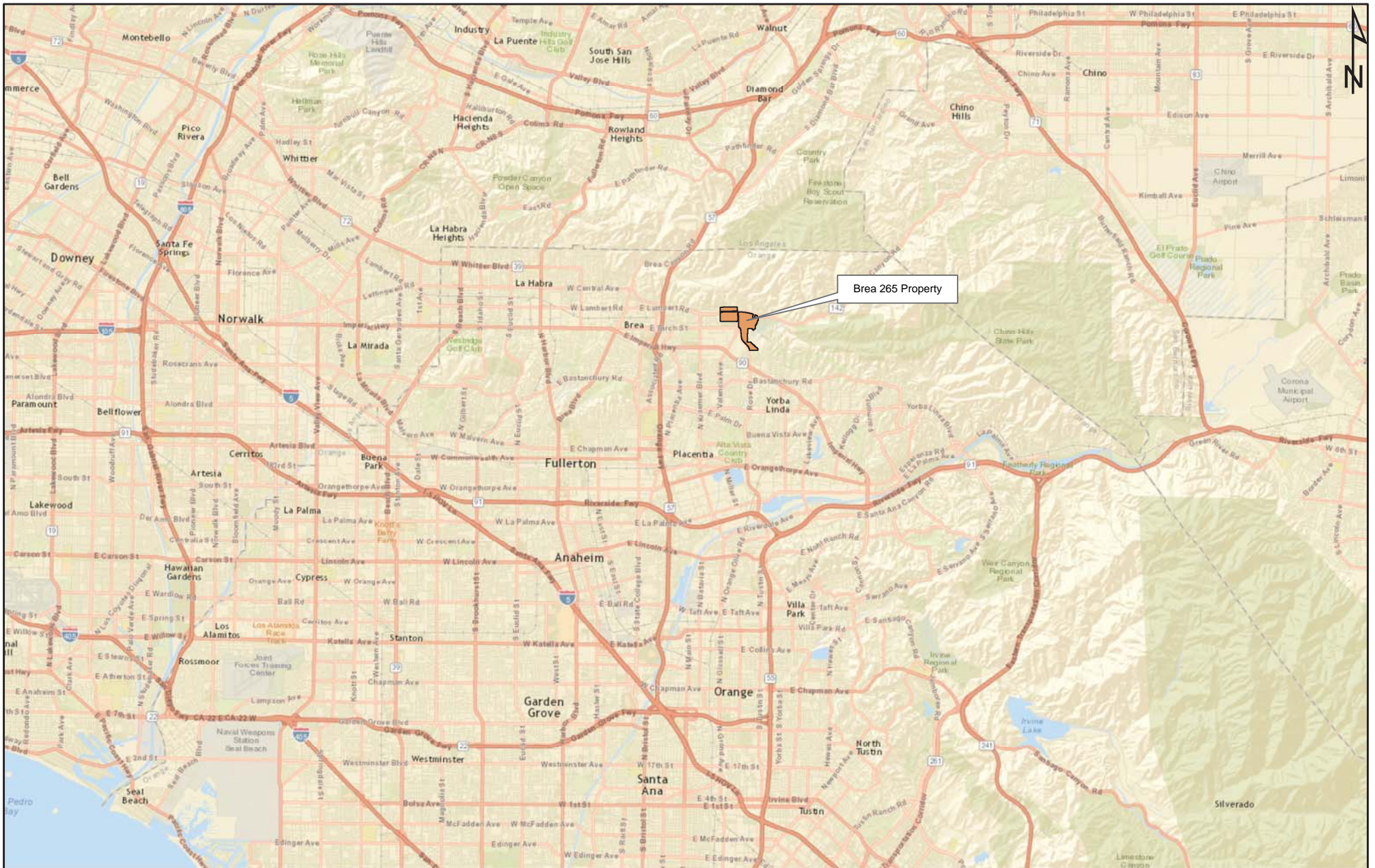
Total, Onsite Impacted - Biotreat or Direct Fill
Total, Off-site Disposal

173,372
4,902
178,275

⁽¹⁾ Assumes impacted area of 30x30 feet around each well
⁽²⁾ Impacts to at least 56' (deepest drilled). Excavate to 20', place liner; treat deeper impacts in-situ.

FIGURES





Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, Esri China (Hong Kong), Esri Korea, Esri (Thailand),

FIGURE 1
Site Location Map

Phase II Environmental Investigation
Brea 265 Property
Valencia Avenue at Lambert Road
Brea, California



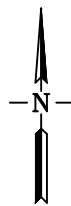
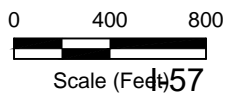
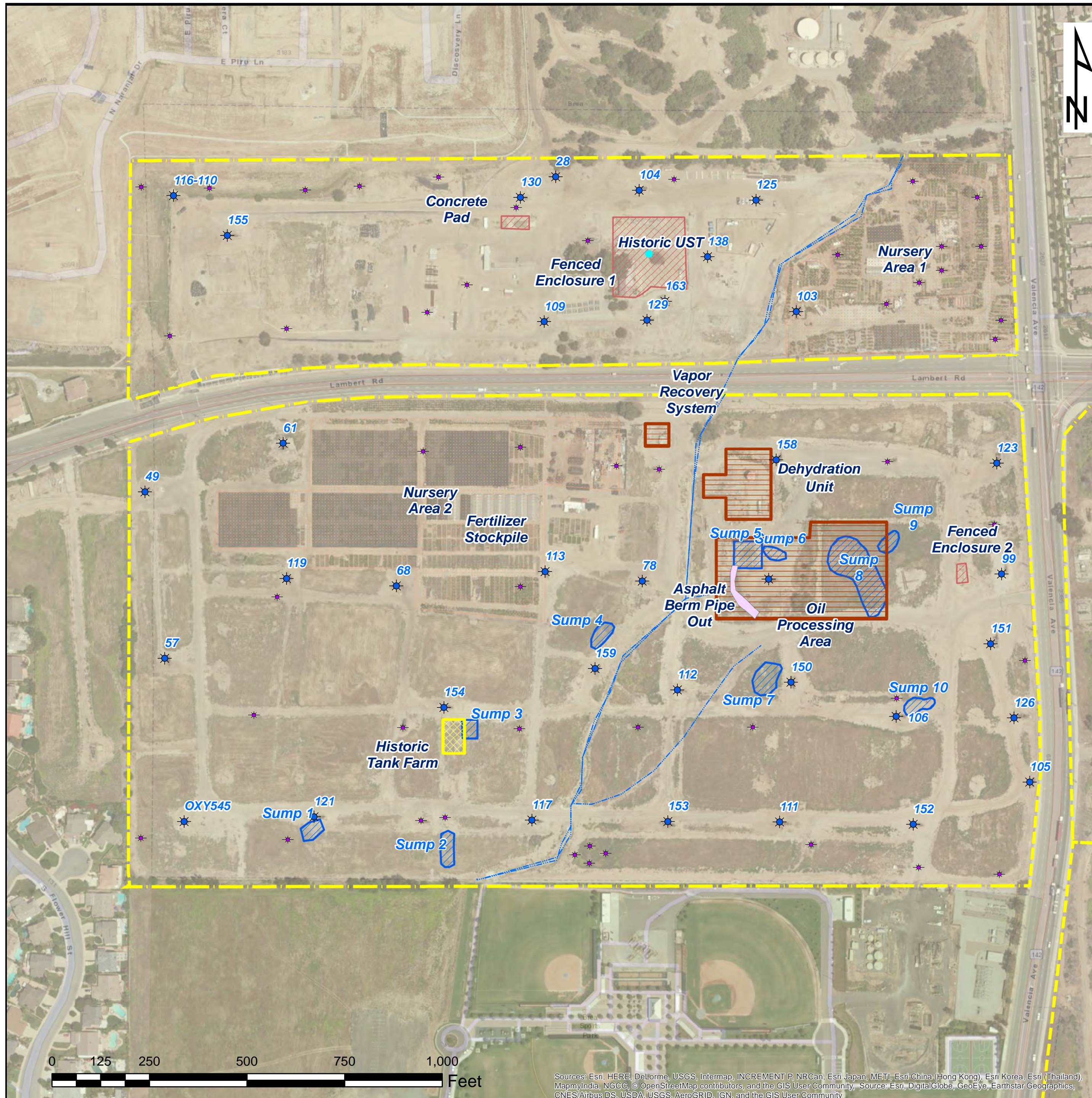


FIGURE 2
Site Plan

Phase I Environmental Site Assessment
Brea 265 Property - Valencia Avenue and Lambert Road
Brea, California



Project No. 2077.01.01S



Legend

Wells

- Active
- Plugged

Drainage

Oil Field Features

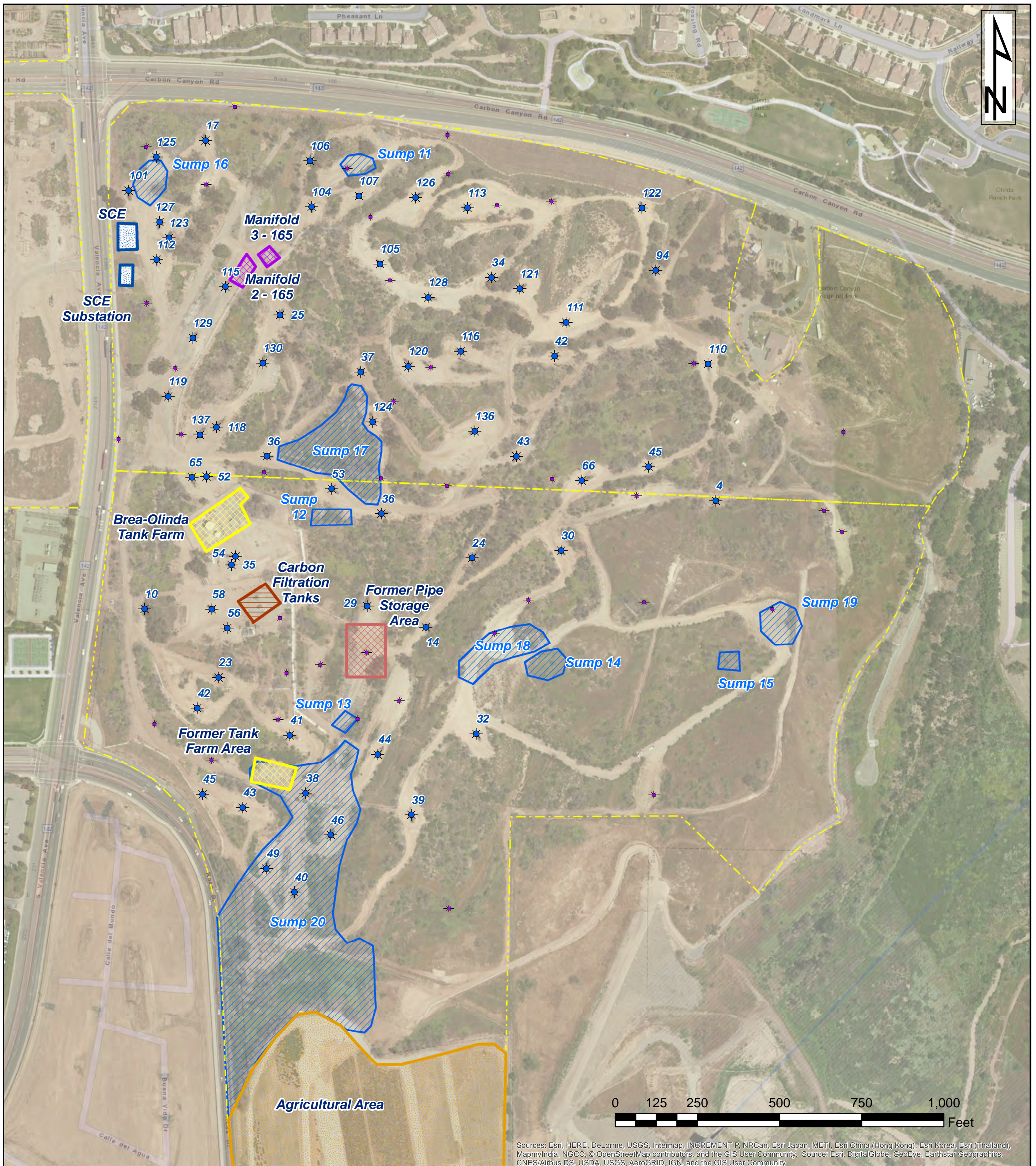
- Berm
- Misc Processing Area
- Nursery
- Storage
- Tank Farm
- Underground Tank
- Sumps
- Approximate Lease Boundary

Figure 3

Oil Field Features 100-Acre Property

Project Number	Scale	Approved	Date
2077.01.03S	1:2,250	DW	05/01/2017





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

Wells

- Active or Idle
- Buried or Plugged

Oil Field Features

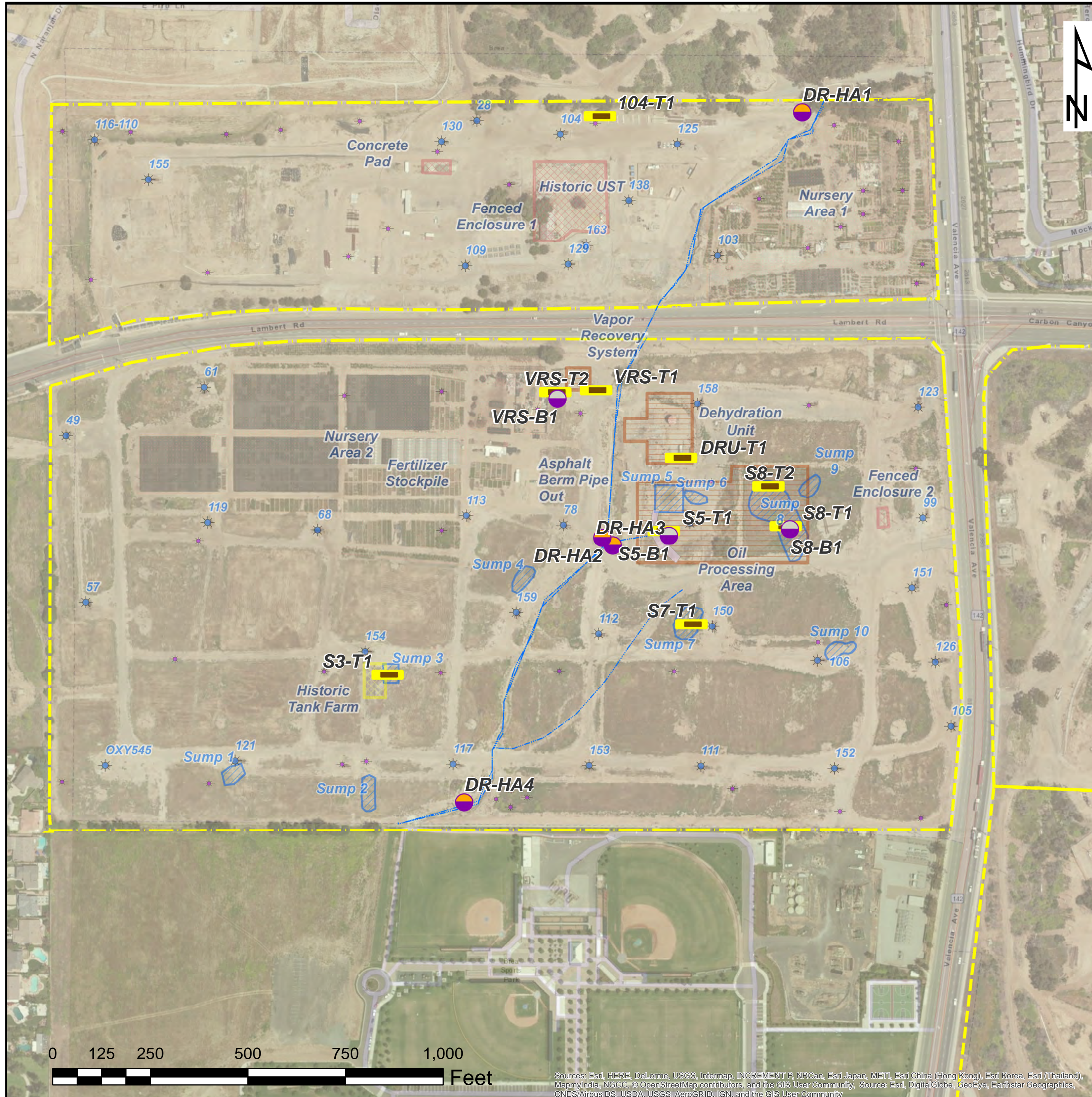
- Agricultural Area
- Electrical
- Manifold
- Misc Processing Area
- Sumps
- Approximate Boundary
- Storage
- Tank Farm

Figure 4

Oil Field Features 165-Acre Property

Project Number 2077.01.03S	Scale 1:2,500	Approved DW	Date 05/01/2017
-------------------------------	------------------	----------------	--------------------





Legend

Sample Locations

- Boring
- Hand Auger
- Trench

Wells

- Active
- Plugged

Drainage

-

Oil Field Features

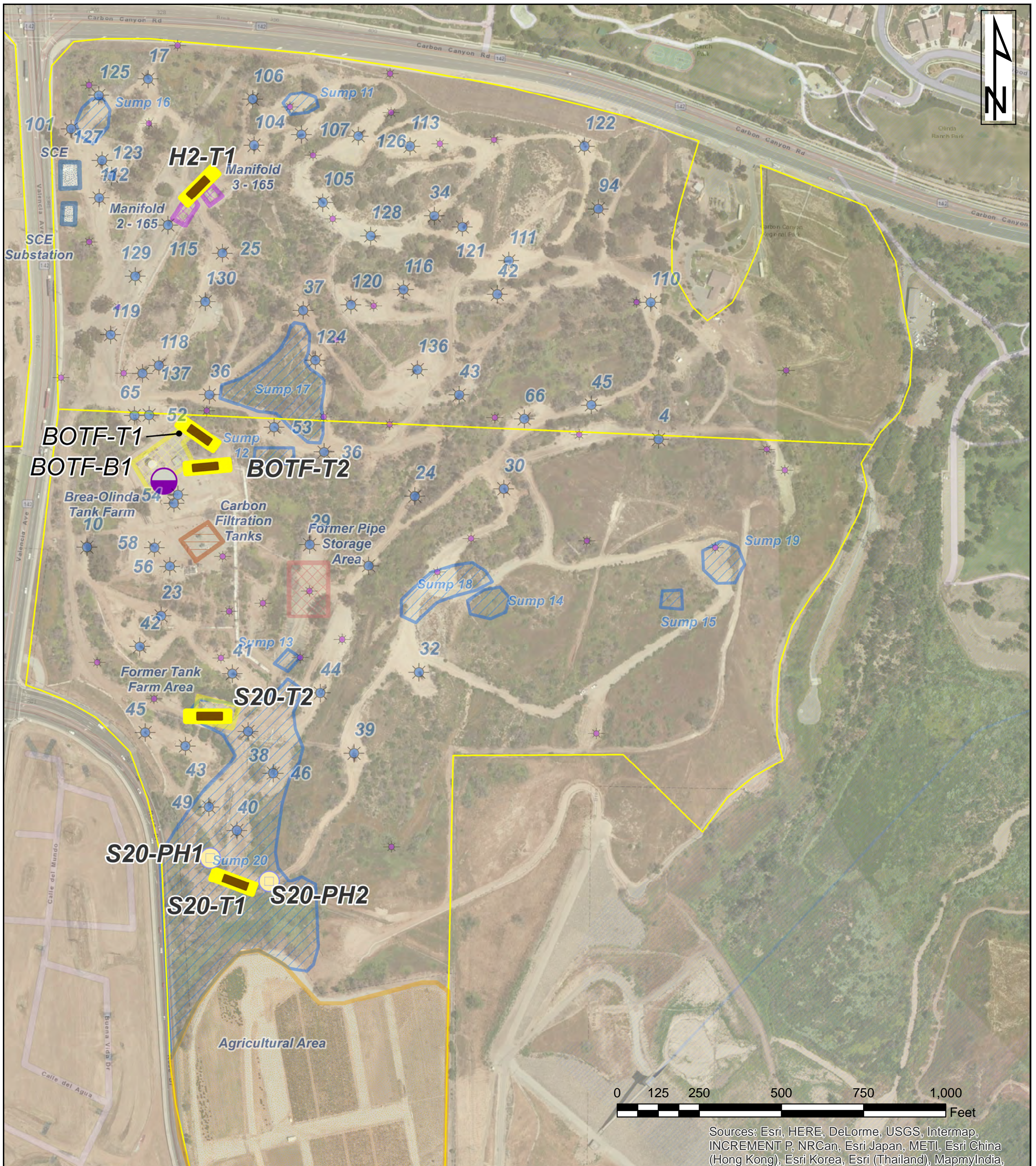
- Berm
- Processing Area
- Nursery
- Storage
- Tank Farm
- Former Sumps
- Approximate Lease Boundary

Figure 5

Sampling Locations 100-Acre Property

Project Number	Scale	Approved	Date
2077.01.03S	1:2,250	DW	05/01/2017





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia,

Legend

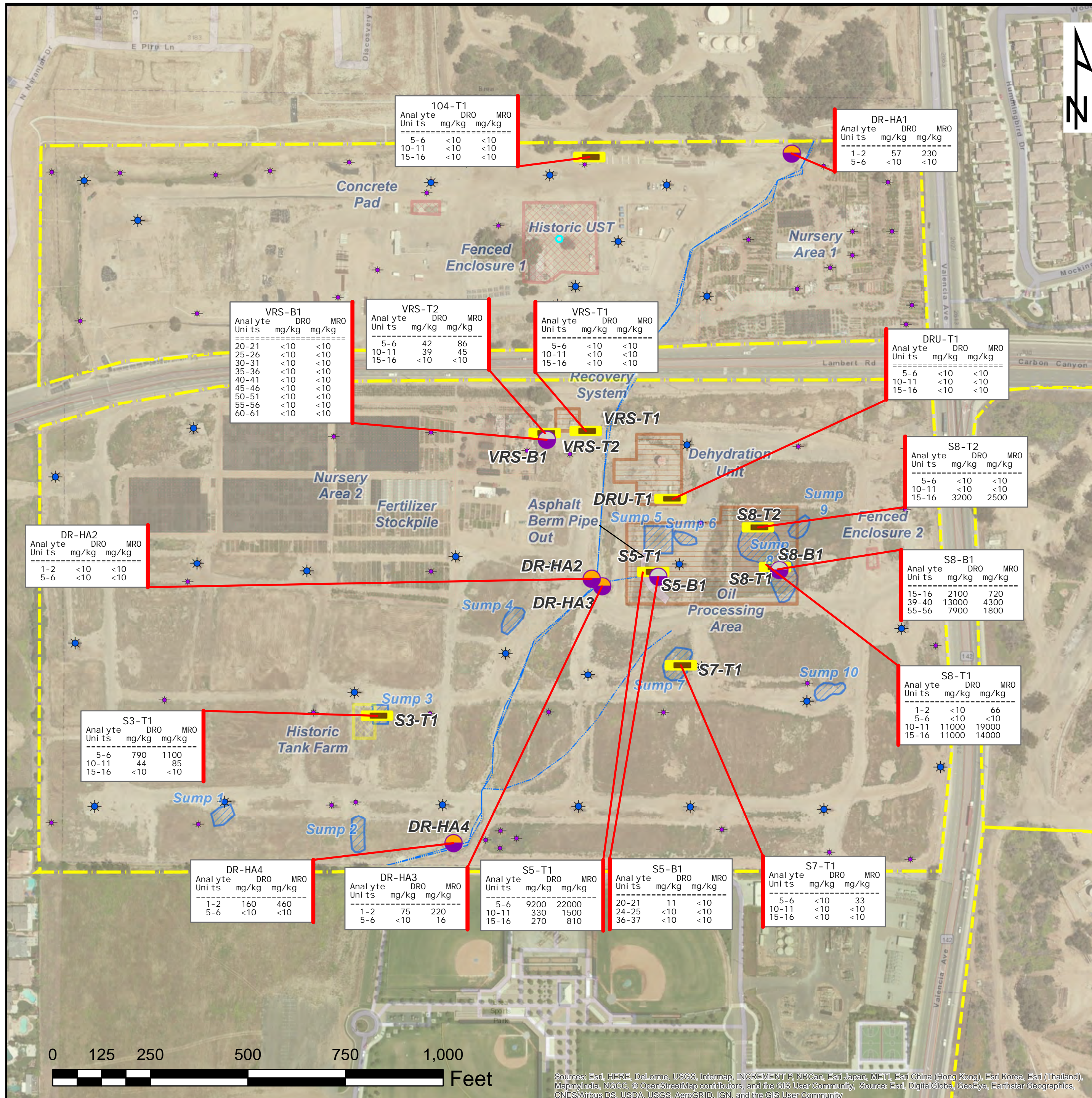
Wells		Sample Locations		Oil Field Feet	
	Active or Idle		Boring		Agricultural Area
	Buried or Plugged		Hand Auger		Electrical
	Pot Hole		Pot Hole		Manifold
	Trench		Misc Processing Area		Tank Farm
			Sumps		Approximate Boundary
			Storage		

Figure 6

Sampling Locations 165-Acre Property

Project Number 2077.01.03S	Scale 1:2,500	Approved DW	Date 05/01/2017
-------------------------------	------------------	----------------	--------------------





Legend

Sample Locations

- Boring
- Hand Auger
- Trench

Wells

- Active
- Plugged

Oil Field Features

- Berm
- Processing Area
- Nursery
- Storage
- Tank Farm
- Underground Tank
- Sumps
- Approximate Lease Boundary

The callout box includes laboratory analysis information obtained using EPA Method 8015M for the samples collected at the location shown in bold type at the top center of the box.

The numbers in the left column (i.e.5-6) are the depth that the soil sample was collected at.

The middle column of numbers is the concentration of diesel range organics/"medium" hydrocarbons (C10-C28) in mg/kg.

The third column of numbers is the concentration of motor oil range organics/"heavy" hydrocarbons (C29-C40) in mg/kg.

A less than sign (" $<$ ") indicates that the analyte was not detected at the laboratory reporting limit.

DRU-T1			
Anal yte	DRO	MRO	
Uni ts	mg/kg	mg/kg	
5-6	<10	<10	
10-11	<10	<10	
15-16	<10	<10	

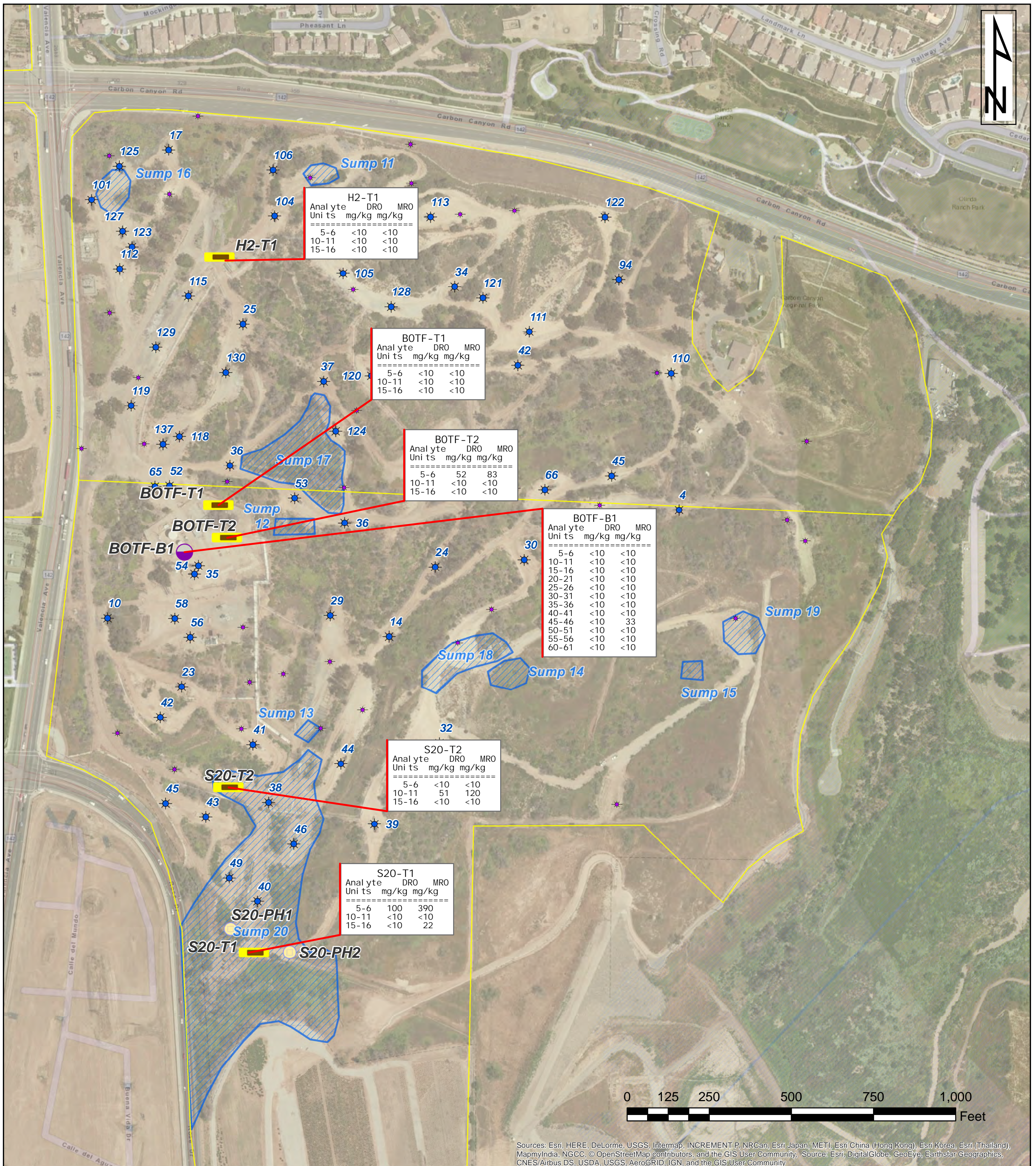
DRU-T1			
Anal yte	DRO	MRO	
Uni ts	mg/kg	mg/kg	
5-6	<10	66	
10-11	11000	19000	
15-16	11000	14000	

Figure 7

TPH Results in Soil 100-Acre Property

Project Number	Scale	Approved	Date
2077.01.03S	1:2,250	DW	05/01/2017





Legend

- | | | |
|---------------------|-------------------------|------------------------|
| Wells | Sample Locations | |
| ☀ Active or Idle | ⊖ Boring | ⬜ Approximate Boundary |
| ⊛ Buried or Plugged | ⊙ Hand Auger | ▨ Sumps |
| | ⦿ Pot Hole | |
| | ▬ Trench | |

DRU-T1		
Analyte	DRO	MRO
Uni ts	mg/kg	mg/kg
5-6	<10	<10
10-11	<10	<10
15-16	<10	<10

The callout box includes laboratory analysis information obtained using EPA Method 8015M for the samples collected at the location shown in bold type at the top center of the box.

The numbers in the left column (i.e.5-6) are the depth that the soil sample was collected. The middle column of numbers is the concentration of diesel range organics/"medium" hydrocarbons (C10-C28) in mg/kg. The third column of numbers is the concentration of motor oil range organics/"heavy" hydrocarbons (C29-C40) in mg/kg.

A less than sign ("<") indicates that the analyte was not detected at the laboratory reporting limit.

Figure 8

TPH Results in Soil 165-Acre Property

Project Number 2077.01.03S	Scale 1:2,500	Approved DW	Date 05/01/2017
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APPENDIX A
DRILLING PERMITS



APPLICATION FOR WELL CONSTRUCTION PERMIT

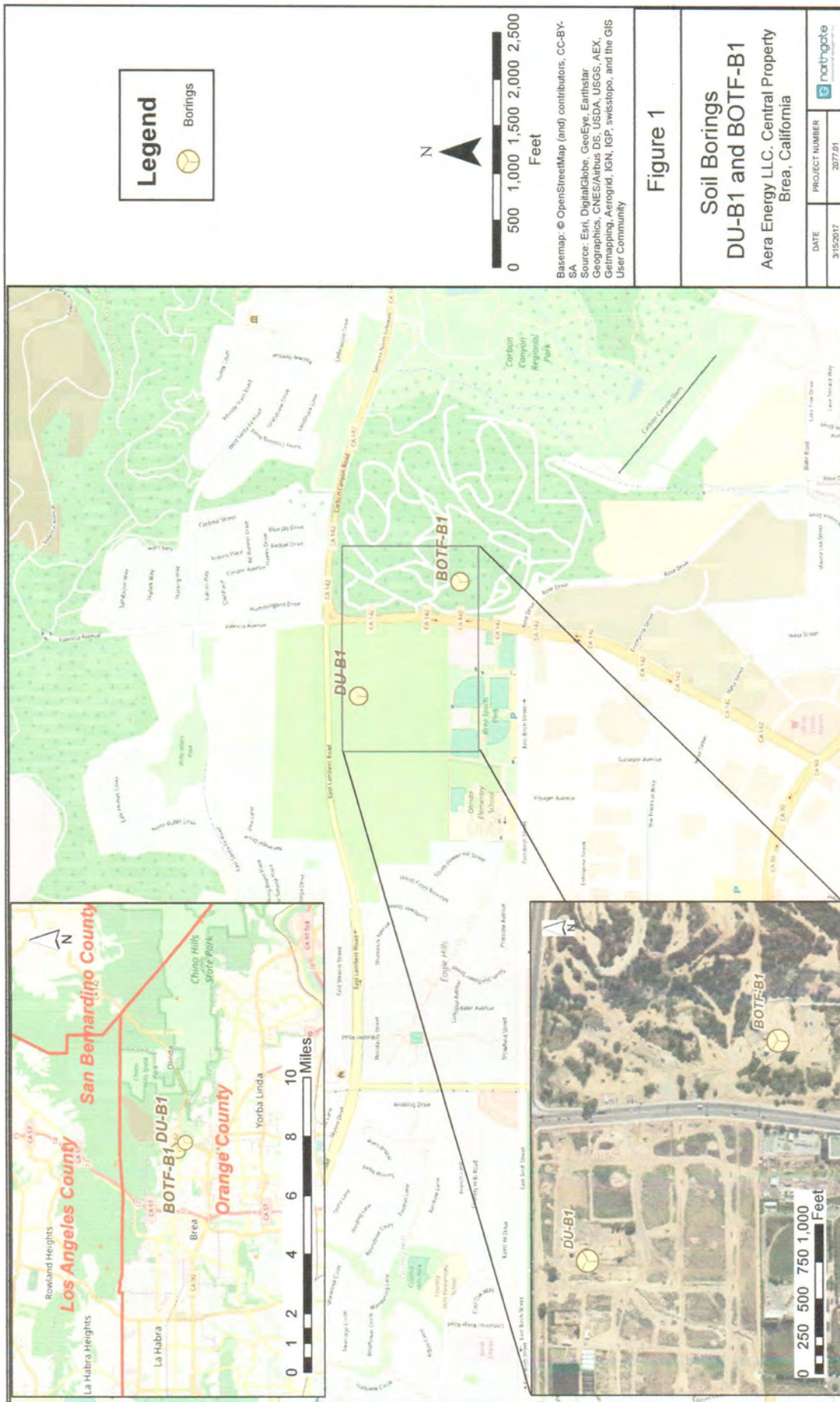
ORANGE COUNTY HEALTH CARE AGENCY
ENVIRONMENTAL HEALTH DIVISION

1241 E. DYER ROAD, SUITE 120
SANTA ANA, CA 92705-5611

TEL: (714) 433-6000
FAX: (714) 433-6481

CITY Brea	DATE 3/16/2017	WELL PERMIT NUMBER
WELL LOCATION (ADDRESS IF AVAILABLE) Valencia Avenue at Lambert Road		
NAME OF WELL OWNER Aera Energy LLC	TYPE OF WELL (CHECK)	
ADDRESS 3030 Saturn Street, Suite 101	PRIVATE DOMESTIC <input type="checkbox"/>	
CITY ZIP TELEPHONE Brea 92821 (714)924-1003	PUBLIC DOMESTIC <input type="checkbox"/>	
NAME OF CONSULTING FIRM Northgate Environmental Management, Inc.	IRRIGATION <input type="checkbox"/>	
BUSINESS ADDRESS 24411 Ridge Route Drive, Suite 130	CATHODIC <input type="checkbox"/>	
CITY ZIP TELEPHONE Laguna Hills, 92653 (949) 716-0050	PROBE SURVEY <input type="checkbox"/>	
NAME OF DRILLING CO. C-57 LICENSE NO. BC2 Environmental 969758	MONITORING <input type="checkbox"/>	
CITY ZIP TELEPHONE Orange 92867 (714) 744-2990	SOIL BORING <input checked="" type="checkbox"/>	
DIAGRAM OF WELL SITE (Use additional sheets and/or attachments)	OTHER _____ <input type="checkbox"/>	
<input checked="" type="checkbox"/> SITE PLAN ATTACHED	TOTAL NUMBER <u>2</u>	
I hereby agree to comply in every respect with all requirements of the Health Care Agency and with all ordinances and laws of the County of Orange and of the State of California pertaining to well construction, reconstruction and destruction, including the requirements to maintain the integrity of all significant confining zones.		
APPLICANT'S SIGNATURE: <u><i>Frank Hagar</i></u> DATE: <u>3/16/2017</u>		
PRINT NAME: <u>Frank Hagar / Northgate</u>		
PHONE NUMBER: <u>(949) 716-0050</u> FAX NUMBER: <u>(949) 315-3365</u>		
FOR ACCOUNTING USE ONLY: HSO NO. _____ CHECK NO. _____ DATE _____ AMOUNT _____ INTL. _____	DISPOSITION OF PERMIT (DO NOT FILL IN):	
APPROVAL BY OTHER AGENCIES: JURISDICTION _____ REMARKS _____ _____ _____ _____ _____ AUTHORIZED SIGNATURE _____ DATE _____	<input type="checkbox"/> APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:	
A. NOTIFY THIS AGENCY AT LEAST 48 HOURS		
<input type="checkbox"/> PRIOR TO START.		
<input type="checkbox"/> PRIOR TO SEALING THE ANNULAR SPACE OR FILLING OF THE CONDUCTOR CASING.		
B. <input type="checkbox"/> SUBMIT TO THE AGENCY WITHIN 30 DAYS AFTER COMPLETION OF WORK, A WELL COMPLETION REPORT AND/OR DRILLING LOGS. PLEASE REFERENCE PERMIT NO.		
C. <input type="checkbox"/> SECURE ALL MONITORING WELLS TO PREVENT TAMPERING.		
D. <input type="checkbox"/> OTHER _____		
<input type="checkbox"/> DENIED _____		
PERMIT ISSUED BY _____ DATE _____		PRINT NAME _____ PHONE NUMBER _____

WHEN SIGNED BY ORANGE COUNTY HEALTH CARE AGENCY REPRESENTATIVE, THIS APPLICATION IS A PERMIT.



ORANGE COUNTY HEALTH CARE AGENCY
 ENVIRONMENTAL HEALTH DIVISION
 HEALTH SERVICE ORDER

377197

County of Orange
 Environmental Health
 1241 E Dyer Rd, Ste 120
 Santa Ana, CA 92705
 (714)433-6000

Date 3-16-17 Initials JMS
 Client Name Aera Energy LLC
 Address Valencia Ave at Lambert Rd
Brea, CA Ph# _____
 Paid By Northgate Environmental
 Address 428 13th St, 4th Floor
Oakland CA 94612 Ph# 5108390688
 Please circle the respective service code(s)

Sales Receipt

Transaction #: 97847
 Date: 3/16/2017 Time: 11:20:03 AM
 Cashier: 024 Register #: 1

Reference: 377197
 AERA ENERGY LLC

Item	Description	Amount
21	WELLS (CONST, RECON, DESTR)	\$489.00
54	OVERAGE	\$8.00
	Sub Total	\$497.00
	Total	\$497.00
	Check Tendered	\$497.00
	Change Due	\$0.00



* 9 7 8 4 7 *

Thank you for shopping
 County of Orange

We hope you'll come back soon!

- 01 CEQ/HSF (Acct/Bat# _____) \$ _____
- 02 CEQ Plan Check/Foods (PC# _____) \$ _____
- 03 CEQ Plan Check/Pools (PC# _____) \$ _____
- 04 Food Vehicles Cat _____ \$ _____
 Decal No(s) _____
- 05 CEQ/ Court Restitution/Judgment \$ _____
 Name _____
 Case# _____
- 06 Hotels/Motels (Acct/Bat# _____) \$ _____
- 07 Massage Parlor (Acct/Bat# _____) \$ _____
- 08 Noise \$ _____
- 09 Liquid Waste Hauler \$ _____
- 10 Farm Labor Camp Registration \$ _____
- 11 Aboveground Petroleum Storage Act \$ _____
- 12 Hazardous Waste (Acct/Bat# _____) \$ _____
- 13 Hazardous Waste Fines \$ _____
- 14 Hazardous Waste Restitution/Judgment \$ _____
 Name _____
 Case# _____
- 15 Hazardous Waste Clean-up \$ _____
- 16 Medical Waste/Body Art \$ _____
- 17 UST/HSF (Acct/Bat# _____) \$ _____
- 18 UST Plan Check (PC# _____) \$ _____
- 19 UST State Surcharge \$ _____
- 20 UST Restitution/Judgment \$ _____
 Name _____
 Case# _____
- 21 Wells (Const _____ Recon _____ Destr _____) \$ 489.00
 Water _____ Cath _____ Init. Monit. _____
 Add. Monit. _____ #Wells _____
 Driller _____
 Consultant _____
- 22 Backflow/Cross Connection \$ _____
 Client(s) _____
- 23 Small Water Systems \$ _____
- 24 CUPA - Base Fee \$ _____
- 25 CUPA - CalArp \$ _____
- 26 FOG - OC Sanitation District \$ _____
- 27 Tiered Permitting \$ _____
- 28 OTHER Over / Refund \$ _____
- 29 OTHER Overage \$ 8.00
- OTHER \$ _____
- OTHER \$ _____

PAID BY CHECK NO: _____

\$497.00

167

97845

Check Date: 3/15/2017

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
Central Boring Permit	3/15/2017	0026126	497.00			497.00
Orange County Environmental Health			TOTAL			497.00
Citi Bank Checking	2	O054				

OV-B1 +

BOTF-B1

2077.01

489- Δ = +8[#]
Requires
Key 40 extra forms

APPENDIX B
FIELD NOTES WITH BORING LOGS



Field Activity Report



northgate

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
 main (949) 716-0050; fax (949) 716-0055

Page 1 of 7

Date: 3/13/17

Recorded By: F. Hager

Project Name: Boca Delindos Field

Project No.: 2077.01

Client Name: Brook St Southern California Division

Weather: Clear Warm

Temperature: 72

Site Conditions: _____

NORTHGATE PERSONNEL ON-SITE

Demetrius Willis
F. Hager

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: _____ Phone No.: _____
 Supervisor: _____ Task: _____

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Stake out kit
Cable and pipe locator / Pine rental C20338Z

Field Activity Report



northgate

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653

main (949) 716-0050; fax (949) 716-0055

Page 2 of 2

Date: 3/13/17

Recorded By: F. Hagan

Project Name: Brea-Cluda Oil Field
 Client Name: Brook St. So Cal.

Project No.: 02077.01

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0930	CRV1 - VRS T1, VRS T2, VRS HA1 Vapor recovery area - cleared with magnetometer
1015	DUT1 (trench - south side) DUT3
1030	104 T1 cleared with magnetometer. South of heat separator.
1047	PR-HA1 - 20 feet downstream of culvert - staked.
1100	DR-HA2 DR-HA3 - drainages from VRS and Dehydration tank seen
1115	DR-HA3 - hard area at turn/low spot in drainage - evidence of recent scours - bed load dropping
1155	BOTF-B1 and BOTF-T1 both cleared magnetometer.
1201	BOTF-T2 - south of Foundation - short due to old concrete foundation
1215	H2T1 - 1 to road. 12' trench from borell to center line. magnetometer cleared - short low gain
1224	S20-T1 - in wetland drainage south of oil field operations. Gas pipeline east of location
12:4	S20-T2 cleared along road
13:44	Above cut lab and at solvent storage tanks Mag check - OK for Dorehole 1 S20A-B1
1400	BH2 at fire training area. FTA-B1

Print Name: Frank Hagan

Signature:

Field Activity Report



northgate

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
 main (949) 716-0050; fax (949) 716-0055

Page 1 of 3

Date: 3/20/17

Recorded By: F. Heger

Project Name: Brea. Dunder

Project No.: 02077.01

Client Name: Brooks Street - Southern Div.

Weather: Cloudy / Warm

Temperature: _____

Site Conditions: Operating oil field

NORTHGATE PERSONNEL ON-SITE

Frank Heger

VISITORS

Name	Company/Agency	Time Arrived	Time Left
<u>Russ</u>	<u>Linn Energy</u>		
<u>Bill Wren</u>	<u>Linn Energy</u>	<u>714-257-1615</u>	<u>0700</u>
	<u>714-616-1545</u>		<u>0430</u>

CONTRACTORS

Contractor Name: American Integrated Services Phone No.: 714-921-4102

Supervisor: John Farmer / Rob Ferrer Task: Trenching

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Soil sampling kit - did not use
Encore sample kit - did not use
Staking/Location kit - used
PID - Pine rental - used
Pipe locator - Pine rental - used

Field Activity Report



northgate
environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
main (949) 716-0050; fax (949) 716-0055

Page 2 of 3

Date: 3/20/17

Recorded By: F Heger

Project Name: Brea - Olinda

Project No.: 02077.0\$

Client Name: Brook St. Southern Div

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0600	Office to pick up bottles stop to get ice
0715	arrive at site N3S meeting and project
0745	Move to S20 / PID calibrated begin trenching
0800	at 4' 6" hit crude/tar in trench - 5' collected sample S20-T1-5 4oz jar
0815	Loader changing controls
0900	Start trenching again - collect VOC GRO/HAZ sample at 5'
0915	Sample at 10' - oil lens approx 3" thick from 4' - 6" to 5' bags
0925	Sample at 14' 1 TD no stain - clay no odor PID = 0
0935	move 12' east and pathole to 5' - 6" - minor staining no crude/tar material
0945	Moved 820" west of S20-T1 to edge of channel. Same crude/tar layer at 4' 8" - 5' 5" - thin (6") staining at 1.5 ft bags
0955	Move to S20-T2 begin digging after second check with pipe locator
1009	Sample (4oz and 5035) at 5' 0.6 ppmv
1019	Sample (4oz) at 10' S20-T2-10 0.1 ppmv
1032	Sample (4oz and VOC at) 15' S20-T2-15 1.2 ppmv this layer of HC extends to about 4' 5"
1100	At BOTF-T2 - begin excavating - small diameter abandoned pipe on west end of trench
1150	BOTF-T2 4oz and VOCs - 2.5' of asphalt fill - some odor - headspace 18.2 ppmv
1200	BOTF-T2-10 4oz jar headspace 0.4 ppmv
1204	Headspace only 0.0 ppmv
1208	BOTF-T2-15 - 4oz jar headspace 0.1 ppmv
1300	BOTF-T1 start
1315	BOTF-T1-5 VOC 7 4oz
1330	BOTF-T1-10 4oz glass
1445/1345	BOTF-T1-15 4oz glass

Print Name: _____

Signature: _____

Date & Time: 0715 3/20/17 Recorded By: F. Hager
 Project Name: Brea-Orinda Project No.: 07077.81
 Field Activities: Trenching Project Location: Brea 165-acre
 Chemicals Present: Oil field

SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Inhalation

Physical Hazards: Slip, trip, fall.

Special Hazards: Underground utilities

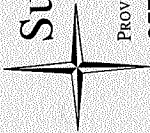
Other Topics of Concern: _____

SITE SAFETY CHECKLIST		YES	NO
Attached Signature Page			X
Written Health and Safety Plan (HASP) is on-site		X	
Information in the HASP matches conditions and activities at the site		X	
Site personnel have appropriate training and certification and medical clearance		X	
Air monitoring equipment has been calibrated daily		X	
Site zones are set up and observed where appropriate		X	
Access to Work Areas is limited to authorized personnel		X	
Decontamination stations (including hand/face wash) are set up and used		X	
Personal protective equipment used matches HASP requirements		X	
Emergency and First Aid equipment is on-site as described in the HASP		X	
Drinking water is readily available		X	

Note: All "NO" answers must be addressed & corrected immediately. Note additionally health and safety observations here.

Ray Ferrer
Goff Harris

Conducted By: [Signature] Signature: F. Hager Date: 3/20/17
 Print Initials: [Initials]



SunStar Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc
 Address: 24411 Redwood Pointe Dr Suite 130
 Phone: 949-716-0050 Fax: 949-716-0055
 Project Manager: Dennis Williams

Date: 3/20/17 Page: 1 Of 2
 Project Name: Field of the Old Field
 Collector: Paul Hager Client Project #: 0207301
 Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers	Chain of Custody seals Y/N/NA	Seals intact? Y/N/NA	Received good condition/cold	Notes
520-11-5	3/20/17	0800	Soils	400ml VOA H							X	X								
520-11-5	3/20/17	0800	Soils	400ml VOA H							X	X								
520-11-10	3/20/17	0915	Soils	400ml VOA H							X	X								
520-11-15	3/20/17	0915	Soils	400ml VOA H							X	X								
520-12-5	3/20/17	1007	Soils	400ml VOA H							X	X								
520-12-5	3/20/17	1107	Soils	400ml VOA H							X	X								
520-12-10	3/20/17	1117	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1122	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1122	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1150	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1200	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1200	Soils	400ml VOA H							X	X								
520-12-15	3/20/17	1200	Soils	400ml VOA H							X	X								

COC 162516

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

Turn around time: 510

Field Activity Report



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24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
 main (949) 716-0050; fax (949) 716-0055

Page 1 of 3

Date: 3/21/17

Recorded By: F. Hager

Project Name: Brea-Olinda Oil Field

Project No.: 02077.1

Client Name: Brooks Street

Weather: Cloudy

Temperature: 60

Site Conditions: Operating oil field

NORTHGATE PERSONNEL ON-SITE

F. Hager, Mark Wankala, Michelle Hugheson

VISITORS

Name	Company/Agency	Time Arrived	Time Left
<u>Bill Wren</u>	<u>Linn Energy</u>	<u>0645</u>	<u>13:00</u>
<u>Matt</u>			

CONTRACTORS

Contractor Name: American Integrated Services Phone No.: _____
 Supervisor: Ray Ferrer Task: Trenching

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Soil Sample Kit, Encore Kit, Stake Kit - Not used
Rental PID (Multi-Rob) Locater.

Field Activity Report



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Page 2 of 3

Date: 3/21/17
 Recorded By: Frank Heger

Project Name: Brea-Olinda O.I. Field Project No.: 02077.01
 Client Name: Brook Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0545	Leave office drive to site
0630	At site - meet Mark Weenkalla, Michelle Hughson Bill-Linn Energy and Ron Ferran H&S and Day plan
0710	DRU-T1 - move west. 5'
0744	DRU-T1-5 sample 6 VOA 1 4oz jar bag for head
0754	DRU-T1-10 4oz jar bag for headspace
0800	DRU-T1-15 4oz jar bag for headspace
0810	Leave DRU-T1
0815	VRS-T1 - bad location - Linn not willing to ok due to live electric VRS-T2 - moved west and changed orientation to go down slope
0840	VRS-T2-5 4oz and 6 40ml VOAs bag
0850	VRS-T2-10 4oz jar bag
0900	VRS-T2-15 4oz jar bag
0910	Fill VRS-T2
0915	Begin VRST1 At 13 feet found conduit north side of trench
0935	VRS-T1-5 4oz and 6 40ml VOA 5035
0945	VRS-T1-10 4oz jar sample
0955	VRS-T1-15 4oz jar sample
1000	Fill VRS-T1 - Matt? arrived. Move to SB-T1 and clear location - very soft ground - leave truck on road to avoid fire hazard
1020	SB-T1-5 Sample 6 40ml VOAs and 1 4oz glass jar
1025	At 8' very heavily stained -> to saturated HC soils - mostly clay with silt - w/ sand layers Strong odor
1034	SB-T1-10 1 - 4oz glass jar Still saturated with HC - when pressed with bucket free drops of HC/H2O? mix. Soil very soft
1048	SB-T1-15 1 - 4oz glass jar as above HC saturation - odor No indication of bottom

Print Name: Frank Heger Signature:

Field Activity Report



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Page 3 of 3

Date: 3/21/17

Recorded By: Frank Heger

Project Name: Brea-Blunde O.I. Field

Project No.: 02077.01

Client Name: Brook Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
11:00	Moved 25' south and potholed. At 8' stained soil - 9-11' HC saturated soils - no samples Fill and move
11:10	Clear 55-T1
!	At 2.5' bgs soil staining in brown SC
11:20	55-T1-5' 6 vials 1 4oz glass HC saturated soils
11:32	55-T1-10' 1 4oz glass HC saturated soils
11:42	55-T1-15' 1 4oz glass - HC saturated soils Continued trench to 17' bgs at 12' HC staining only and increasing red/brown clays
11:50	Fill and move
12:00	Clear 104-T1
12:10	104-T1-5' 6 40ml vials 1 4oz glass
12:18	brown SC 104-T1-10' 1 4oz glass
12:25	104-T1-15' 1 4oz glass no HC indications - Fill
1:300	Leave site
1:500	Lab
1:520	Office and meet with DW
1:545	Clean out truck
1:610	Leave office
/	

Print Name: Frank Heger

Signature:

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Date & Time: 3/21/17 0700 Recorded By: E. Heger
Project Name: Brea-Olinda Project No.: 02077.01
Field Activities: Trenching / hand augering Project Location: Brea-Olinda Oil Field
Chemicals Present: TPH - Benzene SVOC's pesticides

SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Ingestion, dermal contact, inhalation (dust)

Physical Hazards: Trip, slip, Fall, uneven ground

Special Hazards: _____

Other Topics of Concern: _____

SITE SAFETY CHECKLIST	YES	NO
Attached Signature Page		<input checked="" type="checkbox"/>
Written Health and Safety Plan (HASP) is on-site	↓	
Information in the HASP matches conditions and activities at the site		
Site personnel have appropriate training and certification and medical clearance		
Air monitoring equipment has been calibrated daily		
Site zones are set up and observed where appropriate		
Access to Work Areas is limited to authorized personnel		
Decontamination stations (including hand/face wash) are set up and used		
Personal protective equipment used matches HASP requirements		
Emergency and First Aid equipment is on-site as described in the HASP		
Drinking water is readily available		

Note: All "NO" answers must be addressed & corrected immediately. Note additionally health and safety observations here.

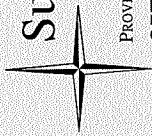
Ray Farnsworth
MARK S. WERTHALA
Michelle Hughson

Conducted By: [Signature] Signature: [Signature] Date: 3/21/17
Print Initials: [Initials]

Chain of Custody Record

Client: 10117 Date: 1/11/17 Page: 1 Of 1
 Project Name: 10117 Collector: 10117 Client Project #: 020117.01
 Phone: 949-297-5020 Fax: 949-297-5025 EDF #: _____
 Project Manager: 10117 Batch #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers	
10117-1	1/11/17	0840	VIA	VIA														
10117-2	1/11/17	0840	VIA	VIA														
10117-3	1/11/17	0840	VIA	VIA														
10117-4	1/11/17	0840	VIA	VIA														
10117-5	1/11/17	0840	VIA	VIA														
10117-6	1/11/17	0840	VIA	VIA														
10117-7	1/11/17	0840	VIA	VIA														
10117-8	1/11/17	0840	VIA	VIA														
10117-9	1/11/17	0840	VIA	VIA														
10117-10	1/11/17	0840	VIA	VIA														
Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																		
Chain of Custody seals Y/N/NA _____ Seals intact? Y/N/NA _____ Received good condition/cold _____ Turn around time: <u>STD</u>																		
Notes: <u>HIGHLIGHT</u> <u>949-297-9787</u> <u>10117-01</u>																		



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25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Norridge Environmental Management Date: 3/21/2017 Page: 1 Of 1
 Address: 2441 Ridge Lake Drive, Suite 130 Project Name: Brea Omba
 Phone: 949-716-0050 Fax: 949-716-0055 Collector: Michelle Hughes Client Project #: 02017-01
 Project Manager: Derrick Willis Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	EPA 8081	BPA	BPA	8151	Laboratory ID #	Comments/Preservative	Total # of containers	Notes
DR-HA1-T.O	3/21/17	0755	Sol	VRB-COC	H	H	H	H	H	H	H	H	H	H	H	H	H	24			
DR-HA1-S.O	3/21/17	0743	Sol	COC																	
DR-HA2-T.O	3/21/17	0802	Sol	VRB-COC	H																
DR-HA2-S.O	3/21/17	0815	Sol	COC																	
DR-HA3-T.O	3/21/17	0825	Sol	VRB-COC	H																
DR-HA3-S.O	3/21/17	0846	Sol	COC																	
DR-HA4-T.O	3/21/17	0917	Sol	VRB-COC	H																
DR-HA4-S.O	3/21/17	0941	Sol	COC																	
Relinquished by: (signature)		Date / Time	Received by: (signature)		Date / Time	Chain of Custody seals Y/N/NA		Seals intact? Y/N/NA		Received good condition/cold		Turn around time:									
<i>[Signature]</i>		3/21/17 1230	<i>[Signature]</i>		3/21/17 1230																
Relinquished by: (signature)		Date / Time	Received by: (signature)		Date / Time																
<i>[Signature]</i>		3/21/17 25	<i>[Signature]</i>		3/21/17 25																
Relinquished by: (signature)		Date / Time	Received by: (signature)		Date / Time																
<i>[Signature]</i>		3/21/17	<i>[Signature]</i>		3/21/17																

Sample disposal Instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____
 Total # of containers: _____

COC 162513

Field Activity Report



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Page 1 of 3

Date: 3/21/17

Recorded By: Michelle Hughson

Project Name: Bea Olinda

Project No.: 02077.01

Client Name: Brooks street

Weather: Cool and mostly cloudy

Temperature: ~70°

Site Conditions: fenced and gated operating oil field

NORTHGATE PERSONNEL ON-SITE

Michelle Hughson

Frank Hagak

Mark Warhala

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: _____

Phone No.: _____

Supervisor: _____

Task: _____

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Camera

Soil sample kit

Level D PPE

Field Activity Report



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Page 2 of 3

Date: 3/21/2017
Recorded By: Michelle Hughson

Project Name: Brea Olinda Project No.: 02077.01
Client Name: Brooks Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0545	Mobilize to Brea Olinda site.
0645	Arrive on site and meet with Mark & Frank
0700	Health and Safety.
0700	Sampling overview with Frank
0710	Drive to first boring location
0720	Begin hand augering DR-HA1 10YR 3/2 Fine sand with ~25% silt, sub angular, damp no odor or staining, non-plastic, medium dense.
0735	Collect sample at one foot. 5035 set collected 1.0-1.5', core collected 1.5-2.0'. DR-HA1-1.0
0740	water table encountered ~4 feet deep.
0743	Collect sample at 5 feet. Core collected 5.0-5.5'. DR-HA1-5.0
0755	Drive to second boring location
0758	Begin hand augering DR-HA2, soil is the same as DR-HA1
0802	Collect one foot sample (same as above) DR-HA2-1.0
0812	Water table encountered ~4.5'. Soil becomes less sandy, more clay: 5% sand, 30% silt, remainder clay. Moderately plastic, stiff
0815	Collect sample DR-HA2-5.0 between 5.0-5.5'
0810	Begin hand augering DR-HA3 10YR 2/2 Silt with same clay and few fine sand. Low plasticity, sub angular, very stiff.
0825	Collect sample DR-HA3-1.0, same as 1' above
0840	At 3' soil becomes same as DR-HA1 at surface, and damp.
0845	Water table encountered ~5.0', soil also becomes like DR-HA2 at 4.5'
0846	Collect sample DR-HA3-5.0 between 5.0-5.5'
0855	Drive to fourth boring location
0905	Begin hand augering DR-HA4
0911	Collect sample DR-HA4-1.0 same as above Medium sand with ~30% coarse sand and gravel and 10% coarse gravel. Subangular, medium dense, dry.
0915	At 1.5' soil becomes: 10YR 3/6 Clay with ~20% silt, dry, moderately plastic, hard, no odor or staining.
0941	Collect sample DR-HA4-5.0 between 5.0 and 5.5'
0948	Finish hand auger samples, return to meet with Frank.

Print Name: Michelle Hughson Signature: Michelle Hughson

Field Activity Report



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 main (949) 716-0050; fax (949) 716-0055

Page 1 of 3

Date: 3/23/17

Recorded By: Frank Heger

Project Name: Brea Olinda

Project No.: 02077.01

Client Name: Brooks Street

Weather: Clear

Temperature: 58

Site Conditions: Operating oil field/Hank farm

NORTHGATE PERSONNEL ON-SITE

Frank Heger
Michelle Hughson

VISITORS

Name	Company/Agency	Time Arrived	Time Left
<u>Sergio Perez</u>			
<u>Harold Madrazo</u>			
<u>Ezra Espinosa</u>			

CONTRACTORS

Contractor Name: BCZ drilling

Phone No.: 714-744-2990

Supervisor: _____

Task: HSA drilling

Company	No. of Supervisors	No. of Workers	Remarks
<u>BCZ</u>		<u>3</u>	

EQUIPMENT

Rental - Pipe and Cable Locator Multi-Race 2000
Stakeout kit - not used

Field Activity Report



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Page 2 of 3

Date: 3/23/07

Recorded By: Frank Heger

Project Name: Bree-Olinda
 Client Name: Brook Street

Project No.: 02077.01

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0540	Office to get truck, lab supplies and rental equipment
0630	Arrive at 165-acre parcel for drilling. BC2 at wrong location. Met them and led them to site Michelle Hugson there. Bill Wren had cleared the BOTF-T1 location to 4.5' bays with back hoe. BC2 there with 3 man crew. Set up rig - MH to log FH sample and assist
0730	begin drilling - drum waste
0750	Sample BOTF-B1-05 Ring → clay
0757	Sample BOTF-B1-10 5035/Ring → "
0800	Sample BOTF-B1-15 Ring - No supplies for vapor probe install - called BC2 - Derrick on line with them
0807	Sample BOTF-B1-20 5035/Ring → Clay
0813	Sample BOTF-B1-25 Ring → Clay
0825	Sample BOTF-B1-30 5035/Ring → Clay
0834	Sample BOTF-B1-35 Ring → clay
0840	Sample BOTF-B1-40 5035/Ring cl - Vapor probe building supplies on site
0853	Sample BOTF-B1-45 Ring - clay
0855	Bill Wren back on site
0900	Sample BOTF-B1-50 Ring and 5035 Clay
0912	Sample BOTF-B1-55 Ring - Dry Clay
0916	Sample BOTF-B1-60 5035/Ring - Clay
0920	Called DW - no vapor probe build since all clay -
0930	Sample maintenance w Drillers build out (abandon) well with neat cement and grout
1040	Leave BOTF-B1-
1100	At PRS-T1 - waiting for Bill Wren to clear location - FH recleared location Problem with nest rooms - drillers need to go - Bill W takes them to Linn Energy Office - FH follows to Site.

Print Name: Frank Heger

Signature: [Signature]

Field Activity Report



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Page 3 of 3

Date: 3/20/17
 Recorded By: Frank Hegar

Project Name: Bree - Olinda Project No.: 02077.01
 Client Name: Brooke Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
1200	Set up on VRS-B1
1235	Sampling to start at 20' bgs since previous trench at location sampled to 15'
1241	Sample at VRS-B1-20 ring / 5035 silty clay
1246	Sample at VRS-B1-25 ring
1253	Sample at VRS-B1-30 ring / 5035
1307	Sample at VRS-B1-35 ring
1317	Sample at VRS-B1-40 ring / 5035
1327	Sample at VRS-B1-45 ring
1335	Problem with Kelly chain on rig grease guide bars to help relieve chain tension
1338	Sample at VRS-B1-55 ring
1415	Sample at VRS-B1-60 ring / 5035 Place vapor probe at 15' bgs - chips to 15' bgs 1' sand, probe sample management
1430	Using shovel at SS-T1 approximate location collected 4 log for pesticides etc
1445	Back to drill rig Emptied 3 drums onto ground P10 = 0.0 ppmv
1500	Leave site. Instructed Michelle H to make sure drums empty on 165 acre property at BOTF-B1
1600	At lab (Sunstar) to drop samples
1630	Back to office - Drop truck - return equipment
1645	Meet with DW Leave office

Print Name: Frank Hegar Signature: [Signature]



24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
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Date & Time: 3/23/17 0715 Recorded By: Frank Heger
 Project Name: Brea Olinda Project No.: 02077A
 Field Activities: HSA drilling - soil borings Project Location: Brea California
 Chemicals Present: TPH, Unknown metals

SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D - hearing protection

Hazards of Chemicals Present: Inhalation, Dermal Contact Ingestion

Physical Hazards: slip, trip, fall, rotating machinery stepping onto truck noise

Special Hazards: _____

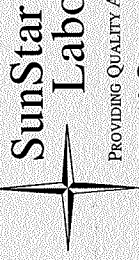
Other Topics of Concern: _____

SITE SAFETY CHECKLIST			YES	NO
Attached Signature Page				<input checked="" type="checkbox"/>
Written Health and Safety Plan (HASP) is on-site			<input checked="" type="checkbox"/>	
Information in the HASP matches conditions and activities at the site			<input checked="" type="checkbox"/>	
Site personnel have appropriate training and certification and medical clearance			<input checked="" type="checkbox"/>	
Air monitoring equipment has been calibrated daily			<input checked="" type="checkbox"/>	
Site zones are set up and observed where appropriate			<input checked="" type="checkbox"/>	
Access to Work Areas is limited to authorized personnel			<input checked="" type="checkbox"/>	
Decontamination stations (including hand/face wash) are set up and used			<input checked="" type="checkbox"/>	
Personal protective equipment used matches HASP requirements			<input checked="" type="checkbox"/>	
Emergency and First Aid equipment is on-site as described in the HASP			<input checked="" type="checkbox"/>	
Drinking water is readily available			<input checked="" type="checkbox"/>	

Note: All "NO" answers must be addressed & corrected immediately. Note additionally health and safety observations here.

Arnold Espinoza - BC2 Bill Wren (LION)
Marcus Anderson - BC2
Sergio Perez - BC2
Michelle Hylk - Northgate

Conducted By: [Signature] Signature: Frank Heger Date: 3/23/17
 Print Initials: [Initials]



**SunStar
Laboratories, Inc.**

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Montgomery Environmental Mgmt Inc
Address: 2441 Ridge Road Dr Suite 130
Phone: 949-216-0050 Fax: 949-316-0055
Project Manager: Drew Williams

Date: 12/17 Page: 2 Of 2
Project Name: Dr. Bruce O'Leary
Collector: Frank Heger Client Project #: 02077.01
Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8081 other test	8082 PCB	Laboratory ID #	Comments/Preservative	Total # of containers	Notes
VRS-01-5	12/17	1355	Soil	8015M															
VRS-01-40	12/17	1357	Soil	8015M															
VRS-01-45	12/17	1317	Soil	8015M															
VRS-01-50	12/17	1327	Soil	8015M															
VRS-01-55	12/17	1335	Soil	8015M															
VRS-01-60	12/17	1338	Soil	8015M															
SA-01-1	12/17	1415	Soil	8015M															
<i>[Handwritten signature across the table]</i>																			
Relinquished by: (signature)					Date / Time					Received by: (signature)					Date / Time				
<i>[Signature]</i>					12/17 1400					<i>[Signature]</i>					12/17 16:00				
Relinquished by: (signature)					Date / Time					Received by: (signature)					Date / Time				
<i>[Signature]</i>										<i>[Signature]</i>									
Relinquished by: (signature)					Date / Time					Received by: (signature)					Date / Time				
<i>[Signature]</i>										<i>[Signature]</i>									
Chain of Custody seals Y/N/NA Received good condition/cold																			
Total # of containers Received good condition/cold																			

Front Heger
949-689-9987

Turn around time: 5TD

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

GOC 162582

Field Activity Report



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environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
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Page 1 of 2

Date: 3/23/17

Recorded By: Michelle Hughson

Project Name: Brea Olinda

Project No.: 02077.01

Client Name: Brooks Street

Weather: Clear

Temperature: ~70°F

Site Conditions: fenced and gated operating oil fields

NORTHGATE PERSONNEL ON-SITE

Michelle Hughson
Frank Hagar

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: BC2 Environmental

Phone No.: _____

Supervisor: _____

Task: _____

Company	No. of Supervisors	No. of Workers	Remarks
<u>BC2 Environmental</u>		<u>3</u>	

EQUIPMENT

Camera
Soil Sampling Kit
Level D PPE

Field Activity Report



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Page 2 of 2

Date: 3/23/17
Recorded By: Michelle Hughson

Project Name: Brea Olinda Project No.: 02077.01
Client Name: Brooks Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
0530	Mobilize to Brea Olinda, 165 acre site
0625	Arrive on site
0640	Frank and Drillers arrive, drive to first boring location
0645	Meet with Frank and Bill and drillers, Bill has already excavated a five foot pothole to ensure there are no pipes immediately under the surface. Soil is already stained.
0700	BC2 Environmental begins setting up drill rig.
0730	Health and Safety meeting
0740	Begin drilling BOTF-B4
0815	Water was added during drilling to cool and lubricate the auger.
0920	Finished drilling and sampling BOTF-B1, begin clean-up.
0925	No soil vapor probes installed in BOTF-B1
1100	Finished clean-up
1110	Drive to 100 acre site, identify second boring location.
1115	Take 15 minute lunch break.
1130	Begin set-up at VRS-B1, check for pipes in area
1215	Begin drilling VRS-B1 first 15' were trenched previously so were not logged or sampled.
1330	Drill having issues with the chain
1340	Finished drilling and sampling VRS-B1, install soil vapor probe
1440	Probe installed at 15' bgs 15'-61': Hydrated bentonite. 14'-15': Sand 0'-14': Hydrated Bentonite 3/8" x 8" probe bottom at 15', 1/4" ID tubing.
1520	Finish clean up, all soils and rinse water dumped on site.
1530	Return to 165 acre site to dump soils spread
1600	Return home
1730 1645	Arrive home (End work: 1645)

Print Name: Michelle Hughson

Signature: Michelle Hughson

Field Activity Report



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24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653

main (949) 716-0050; fax (949) 716-0055

Page 1 of 2

Date: 2/28/17

Recorded By: Frank Heger

Project Name: Brea Linda

Project No.: 02077.01

Client Name: Brock Street

Weather: Clear

Temperature: 56° 0715

Site Conditions: Operating oil field 100 acre parcel

NORTHGATE PERSONNEL ON-SITE

F. Heger

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: BC2

Phone No.: 714-744-2990

Supervisor: Sam

Task: Geoprobe exploration

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Marking kit
Rental PID and Pipe/Electrical locator



Date & Time: 3/28/17 0730 Recorded By: Frank Heger
 Project Name: Brea-Olinda Project No.: 02077.01
 Field Activities: Push for sampling Project Location: Brea-Olinda oil field, Brea, Ca
 Chemicals Present: TPH, light ends

SAFETY TOPICS DISCUSSED

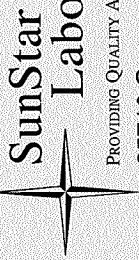
Protective Clothing/Equipment: Level D
 Hazards of Chemicals Present: Inhalation, ingestion, dermal contact
 Physical Hazards: slip, trip, fall, rotating parts
 Special Hazards: Bees and insects, hydration, sun exposure
 Other Topics of Concern: soft ground

SITE SAFETY CHECKLIST	YES	NO
Attached Signature Page		<input checked="" type="checkbox"/>
Written Health and Safety Plan (HASP) is on-site	<input checked="" type="checkbox"/>	
Information in the HASP matches conditions and activities at the site	<input checked="" type="checkbox"/>	
Site personnel have appropriate training and certification and medical clearance	<input checked="" type="checkbox"/>	
Air monitoring equipment has been calibrated daily	<input checked="" type="checkbox"/>	
Site zones are set up and observed where appropriate	<input checked="" type="checkbox"/>	
Access to Work Areas is limited to authorized personnel	<input checked="" type="checkbox"/>	
Decontamination stations (including hand/face wash) are set up and used	<input checked="" type="checkbox"/>	
Personal protective equipment used matches HASP requirements	<input checked="" type="checkbox"/>	
Emergency and First Aid equipment is on-site as described in the HASP	<input checked="" type="checkbox"/>	
Drinking water is readily available	<input checked="" type="checkbox"/>	

Note: All "NO" answers must be addressed & corrected immediately. Note additionally health and safety observations here.

[Signature] PLC
[Signature]
[Signature]

Conducted By [Signature] Signature: Frank Heger Date: 3/28/17
 Print Initials: [Signature]



SunStar Laboratories, Inc.
 PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
 25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc Date: 3/28/17 Page: 1 Of 1
 Address: 2441 Indee Road Drive Project Name: Env. Divis
 Phone: 949-466-0050 Fax: 949-276-0555 Collector: Frank Heger Client Project #: 02072.01
 Project Manager: Derrick Wallis Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020-CP-MS-Metals-EIAB092	Laboratory ID #	Comments/Preservative	Total # of containers
58-B1-15	3/28/17	12:17	Soil	Shore			A	A	A	A	A	A	CPA8151		
58-B1-21	3/28/17	12:17	Soil	Shore SGA A			A	A	A	A	A	A	CPA8151		
58-B1-25	3/28/17	12:17	Soil	Shore SGA A			A	A	A	A	A	A	CPA8151		
58-B1-20	3/28/17	12:17	Soil	Shore			A	A	A	A	A	A	CPA8151		
58-B1-24	3/28/17	12:17	Soil	SH VCA A			A	A	A	A	A	A	CPA8151		
58-B1-26	3/28/17	12:17	Soil	SH VCA A			A	A	A	A	A	A	CPA8151		
58-B1-1	3/28/17	12:17	Soil	Shore			A	A	A	A	A	A	CPA8151		

Relinquished by: (signature) _____ Date / Time _____															
Relinquished by: (signature) _____ Date / Time _____															
Relinquished by: (signature) _____ Date / Time _____															
Received by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____															
Chain of Custody seals Y/N/NA _____ Seals intact? Y/N/NA _____ Received good condition/cold _____															
Total # of containers _____ Turn around time: <u>STD</u>															

Notes
 Frank Heger
 949-289-9987

COC 162583

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

Field Activity Report



northgate
environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
main (949) 716-0050; fax (949) 716-0055

Page 1 of 2

Date: 3/29/17

Recorded By: Frank Hager

Project Name: Brea- Olinda

Project No.: 02077.01

Client Name: Brooks Street

Weather: Clear Warm

Temperature: 60°F 0700

Site Conditions: Operating oil Field AMPC for FFTA-T1
Central Site for SB-T2, S7-T1, S3-T1

NORTHGATE PERSONNEL ON-SITE

Frank Hager

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: AIS

Phone No.: _____

Supervisor: _____

Task: _____

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Rental - PID and Pipe and Electrical Locator

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
main (949) 716-0050; fax (949) 716-0055

Date & Time: 3/29/17 0630 Recorded By: Frank Hayer
Project Name: Brea-Orinda Project No.: 02077.01
Field Activities: Trenching - operating oil field Project Location: Brea-Orinda
Chemicals Present: TPH - unknown metals and light ends

SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D - safety glasses, hard hat, hearing protection, steel toe boots, gloves
Hazards of Chemicals Present: Dermal contact, inhalation, ingestion

Physical Hazards: Slip, trip, fall - uneven ground, open trench, bees, hearing, dust

Special Hazards: Traffic

Other Topics of Concern: _____

SITE SAFETY CHECKLIST		YES	NO
Attached Signature Page			X
Written Health and Safety Plan (HASP) is on-site			
Information in the HASP matches conditions and activities at the site			
Site personnel have appropriate training and certification and medical clearance			
Air monitoring equipment has been calibrated daily			
Site zones are set up and observed where appropriate			
Access to Work Areas is limited to authorized personnel			
Decontamination stations (including hand/face wash) are set up and used			
Personal protective equipment used matches HASP requirements			
Emergency and First Aid equipment is on-site as described in the HASP			
Drinking water is readily available			

Note: All "NO" answers must be addressed & corrected immediately. Note additionally health and safety observations here.

Conducted By SH Signature: Frank Hayer Date: 3/29/17
Print Initials: _____



PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
 25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

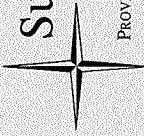
Chain of Custody Record

Client: Nature's Environmental Mgmt, Inc Date: 3/29/17 Page: 1 Of 1
 Address: 2411 Ridge Route, Suite 1150 Project Name: Brea - Orinda
 Phone: 949-716-0050 Fax: 949-716-0055 Collector: Frank Heger Client Project #: 02077.01
 Project Manager: Derrick Hollis Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	6030 PCBs	Laboratory ID #	Comments/Preservative	Total # of containers	Notes
FFTA-11-S	3/29/17	0913	Soil	100-1004														
FFTA-11-RD	3/29/17	0950	Soil	400														
FFTA-11-15	3/29/17	0900	Soil	400														
SS-12-S	3/29/17	0708	Soil	400-1004														
SS-12-10	3/29/17	0915	Soil	100-1004														
SS-11-S	3/29/17	0956	Soil	400														
SS-11-10	3/29/17	1016	Soil	100-1004														
SS-11-15	3/29/17	1025	Soil	400														
SS-11-10	3/29/17	1015	Soil	100-1004														
SS-11-15	3/29/17	1102	Soil	100-1004														
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p>																		
<p>Chain of Custody seals Y/N/NA _____ Total # of containers _____</p> <p>Seals intact? Y/N/NA _____ Received good condition/cold _____</p> <p>Turn around time: <u>STD</u></p>																		

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

COC 162643



SunStar Laboratories, Inc.
 PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
 25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc Date: 3/23/17 Page: 1 Of 2
 Address: 24411 Rader Road Suite 130 Project Name: Drum - Oil
 Phone: 949-716-0050 Fax: 949-716-0055 Collector: F.Hess Client Project #: 02077.01
 Project Manager: Dennis Willis Batch #: _____ EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers
BOIF-BI-5	3/23/17	0730	Soil	8260											
BOIF-BI-10	3/23/17	0754	Soil	8260											
BOIF-BI-15	3/23/17	0800	Soil	8260											
BOIF-BI-20	3/23/17	0807	Soil	8260											
BOIF-BI-25	3/23/17	0815	Soil	8260											
BOIF-BI-30	3/23/17	0825	Soil	8260											
BOIF-BI-35	3/23/17	0844	Soil	8260											
BOIF-BI-40	3/23/17	0840	Soil	8260											
BOIF-BI-45	3/23/17	0853	Soil	8260											
BOIF-BI-50	3/23/17	0902	Soil	8260											
BOIF-BI-55	3/23/17	0912	Soil	8260											
BOIF-BI-60	3/23/17	0916	Soil	8260											
VES-BI-70	3/23/17	1225	Soil	8260											
VES-BI-75	3/23/17	1241	Soil	8260											
VES-BI-80	3/23/17	1246	Soil	8260											
Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____															
Chain of Custody seals Y/N/NA _____ Seals intact? Y/N/NA _____ Received good condition/cold _____ Turn around time: <u>5TD</u>															

Notes
 Frank Hess
 949-689-9987

COC 162581

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

Field Activity Report



northgate

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
 main (949) 716-0050; fax (949) 716-0055

Page 1 of 3

Date: 3/29/2017

Recorded By: Michelle Hughson

Project Name: Brea Olinda

Project No.: 2077.01

Client Name: Brooks Street

Weather: Clear and warm

Temperature: 30°C

Site Conditions: Active oil fields, fenced and gated.

NORTHGATE PERSONNEL ON-SITE

Michelle Hughson
Frank Hagar (left site ~1215)

VISITORS

Name	Company/Agency	Time Arrived	Time Left

CONTRACTORS

Contractor Name: _____ Phone No.: _____

Supervisor: _____ Task: _____

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Soil vapor sampling kit
Summa cans and nitrogen purge
Bil Air pumps
Personal vehicle
Camera

Field Activity Report



northgate

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
 main (949) 716-0050; fax (949) 716-0055

Page 2 of 3

Date: 3/29/2017
 Recorded By: Michelle Hughson

Project Name: Brea Olinda Project No.: 2077.01
 Client Name: Brooks Street

ACTIVITIES

Time:	Activities (include event, time, observations, observers, etc.)
1100	Mobilize to Brea Olinda for soil vapor sampling (100 Acre site)
1145	Arrive on site. Call Pine delivery driver to coordinate GilAir pump drop off.
1153	Receive pump from Pine driver
1155	Drive to VRS-B1 and meet Frank Hagar with equipment.
1200	Begin set up at VRS-B1 to sample soil vapor probe located 18 feet bgs.
1215	Perform shut-in test, test successful
1219.	Begin purging VRS-B1-SV15. Purge for 1h33 minutes at 200 mL/min to remove three purge volumes.
1330	Purge manifold SSAT: 2044 with nitrogen.
1353	Stop purging VRS-B1-SV15. Total purge time 94 minutes Percentage of time sampling run varied more than 5% from set flow rate: 0%
1358	Begin sampling VRS-B1-SV15. Initial pressure -30 psi Hg.
1405	Stop sampling VRS-B1-SV15. Final pressure -7.5 psi Hg.
1415	Drive to site at 2000 Site Drive
1425	Arrive on site
1435	Locate BBGP-B1 and set up to purge and sample
1500	Perform shut in test, test successful
1507	Begin purging BBGP-B1-SV10. Purge for 93 minutes at 200mL/min to remove three purge volumes
1550	Drive to SSA-B1
1600	Locate SSA-B1 and set up to purge and sample SSA-B1-SV10
1620	Perform shut in test, test successful
1626	Begin purging BR SSA-B1-SV10. Purge for 93 minutes at 200 mL/min to remove three purge volumes. Return to BBGP-B1-SV10
1639	Purge manifold SSAT 2044 with Nitrogen
1641	Stop purging BBGP-B1-SV10. Total Purge time: 94 minutes Percentage of time sampling run varied more than 5% from set flow rate: 0%.
	Attach sample summa can SSAT-0772
1642	Begin sampling BBGP-B1-SV10, initial pressure -29psi Hg.
1648	Stop sampling BBGP-B1-SV10, final pressure -7psi Hg.
1650	Clean up equipment around BBGP-B1

Print Name: Michelle Hughson Signature: Michelle Hughson

Trench Log

Project Number: 02077.01		Trench No.: 104-T1	
Project Name: Brea Olinda		Logged by: Michelle Hughson	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 100 Acre Parcel			










Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill	
1					Dark yellowish brown sandy silt, loose, dry.				
2									
3									
4									
5	104-T1-5 12:10							0.1	
6									
7									
8				SM					
9									
10	104-T1-10 12:18							0.3	
11									
12									
13									
14									
15	104-T1-15 12:25							0.1	
16					TD=15'				
17									
18									
19									

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Boring Log

Project Number: 02077.01		Boring No.: BOTF-B1	
Project Name: Brea Olinda		Logged by: Michelle Hughson	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/23/17	Date Completed: 03/23/17
Drilling Contractor: BC2 Environmental		Total Depth (ft bgs): 61.0	Depth to Water (ft bgs): ---
Drilling Method: Hollow Stem Auger		Borehole Dia. (in): 8	Surface Elevation (ft MSL): UNK

Remarks: Boring located near the southeast corner of the Tank Farm on the 165 acre parcel. A five foot pothole was excavated prior to drilling to ensure no pipes were within the area. Drilling begins: 07:40

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				CL	Black clay with few medium subangular sand, silt, and coarse subrounded gravel. Stiff, low plasticity, and dry. Dark color due to staining.			
2				ML	Yellowish Brown Silt with few clay, sand, and fine gravel. Subangular, stiff, low plasticity, and dry. No staining or odor.			
2				ML	Brownish yellow subangular silt with few fine subrounded gravel. Stiff, low plasticity, and dry. No staining or odor.			
5	BOTF-B1-5 07:50				Dark brown clay with trace silt, very stiff, and dry. No odor or staining.			
10	BOTF-B1-10 07:57			CL	Dark brown clay, very stiff, and dry. No odor or staining.		2.7	
15	BOTF-B1-15 08:00				Strong brown clay, very stiff, and dry. No odor or staining.			

DRB-ENVIRO BORING_02077.01_2017.03.23.GPJ 3/24/17

Boring Log

Project Number: 02077.01

Boring No.: BOTF-B1






Project Name: Brea Olinda

Logged by: Michelle Hughson

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/23/17

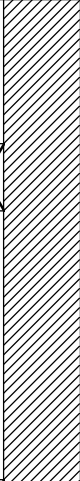



Date Completed: 03/23/17

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
21	BOTF-B1-20 08:07	X			Brown clay, very stiff, and dry. No odor or staining.		26.4	
22								
23								
24				CL				
25	BOTF-B1-25 08:13	X			Yellowish brown clay, very stiff, and dry. No odor or staining.		22.8	
26								
27					Contact inferred			
28								
29								
30	BOTF-B1-30 08:25	X		ML	Yellowish brown clayey silt, very stiff, and dry. Trace fine white angular gravel (quartz like). No odor or staining.		3.0	
31								
32					Contact inferred			
33								
34								
35	BOTF-B1-35 08:34	X			Dark yellowish brown clay, very stiff, dry, with calcification. No odor or staining.		0.6	
36								
37								
38				CL				
39								
40	BOTF-B1-40 08:40	X			Dark yellowish brown clay, stiff, dry, with calcification. No odor or staining.		0.2	
41								
42								

DRB-ENVIRO BORING 02077.01_2017.03.23.GPJ 3/24/17

Boring Log

Project Number: 02077.01		Boring No.: BOTF-B1	
Project Name: Brea Olinda		Logged by: Michelle Hughson	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/23/17	Date Completed: 03/23/17




Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
43								
44								
45	BOTF-B1-45 08:53	X			Dark yellowish brown clay, stiff, and dry. No odor or staining.		0.1	
46								
47								
48								
49								
50	BOTF-B1-50 09:03	X			Dark yellowish brown clay with few silt and fine sand, stiff, and dry. No odor or staining.		0.0	
51				CL				
52								
53								
54								
55	BOTF-B1-55 09:12	X			Dark yellowish brown clay, stiff, dry, with calcification. No odor or staining.		0.0	
56								
57								
58								
59								
60	BOTF-B1-60 09:16	X			Dark yellowish brown clay, stiff, dry, with calcification. No odor or staining.		0.0	
61								
62					TD = 61', @ 09:20.			
63								
64								
65								

DRB-ENVIRO BORING 02077.01, 2017.03.23.GPJ 3/24/17

Trench Log

Project Number: 02077.01		Trench No.: BOTF-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/20/17	Date Completed: 03/20/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown


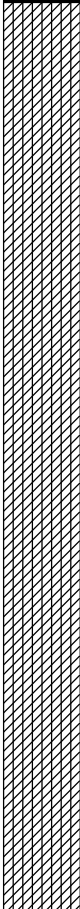
Remarks: 165 Acre Parcel

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
0				AF	Asphaltic Fill			
0-1				SC	Red clayey sand.			
1-2					Red-brown clay with silt, stiff, dry.			
5	BOTF-T1-5 13:15						0.6	
10	BOTF-T1-10 13:30			CL			0.1	
15	BOTF-T1-15 13:45				TD=15'		0.1	

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Trench No.: BOTF-T2	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/20/17	Date Completed: 03/20/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 165 Acre Parcel			


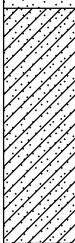




Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				AF	Asphaltic Fill			
2					Red-brown clay with very fine sand (<10%), stiff, dry.		18.2	
3								
4								
5	BOTF-T2-5 11:50							
6								
7								
8				CL/ML				
9								
10	BOTF-T2-10 12:00						0.4	
11								
12								
13								
14								
15	BOTF-T2-15 12:08							
16					TD=15'		0.1	
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Trench No.: DRU-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown

Remarks: 100 Acre Parcel

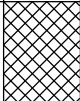
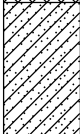











Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1					Tarsand with subangular pebbles and root			
2				SC	Red-brown clayey sand			
3					Clay, stiff, dry		10.4	
4	DRU-T1-5 07:44			CL			5.2	
5					Red-brown silty clay, medium stiff, dry.		0.3	
6	DRU-T1-10 07:54			CL				
7								
8								
9								
10								
11								
12								
13								
14								
15	DRU-T1-15 08:00				TD=15'			
16								
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Trench No.: H2-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/20/17	Date Completed: 03/20/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown




Remarks: 165 Acre Parcel

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				SP/AF	Asphaltic surface and tan fill.			
2				SC	Red sandy clay, stiff, dry.			
3								
4								
5	H2-T1-5 13:45				Red-brown clay, very stiff, dry. Some silt layers of 2" or less thick.		0.2	
6								
7								
8								
9				CL				
10	H2-T1-10 14:15						0.2	
11								
12								
13								
14								
15	H2-T1-15 14:35							
16					TD=15'		0.1	
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Boring No.: S3-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/29/17	Date Completed: 03/29/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 100 Acre Parcel			

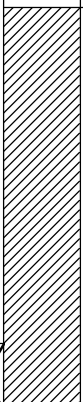
Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				CL	Reddish brown silty clay, occasional staining.		0.0	
2								
3								
4								
5	S3-T1-5 09:56							
6				ML/CL	Red-brown silt with some clay.		0.0	
7								
8								
9								
10	S3-T1-10 10:06							
11				TD=15'		0.0		
12								
13								
14								
15	S3-T1-15 10:12							
16								
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.29.GPJ 4/10/17

Boring Log

Project Number: 02077.01		Boring No.: S5-B1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/28/17	Date Completed: 03/28/17
Drilling Contractor: BC2 Environmental		Total Depth (ft bgs): 37.0	Depth to Water (ft bgs): ---
Drilling Method: Direct Push		Borehole Dia. (in): 2	Surface Elevation (ft MSL): UNK

Remarks:

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
0					See S5-T1 for log 0' - 15'.			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16					Reddish brown clay, stiff, and dry. No odor, no staining.			
17								
18				CL				
19								
20	S5-B1-20 09:48	X					3.7	

DRB-ENVIRO BORING_02077.01_2017.03.28.GPJ 4/10/17

Boring Log

Project Number: 02077.01

Boring No.: S5-B1

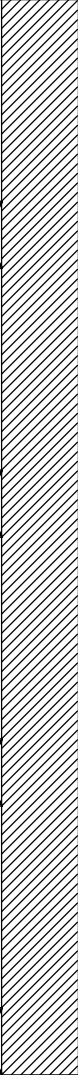
Project Name: Brea Olinda

Logged by: Frank Hagar

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/28/17



Date Completed: 03/28/17

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill	
22				CL	Reddish brown clay, stiff, and dry. No odor, no staining.				
23									
24	S5-B1-24 09:51	X							0.0
25									
26									
27									
28	S5-B1-28 09:58	X	0.0						
29									
30									
31									
32	S5-B1-32 09:59	X	0.0						
33									
34									
35									
36	S5-B1-36 10:05	X	0.0						
37									
38				TD = 37'					
39									
40									
41									
42									
43									

DRB-ENVIRO BORING_02077.01_2017.03.28.GPJ 4/10/17

Trench Log

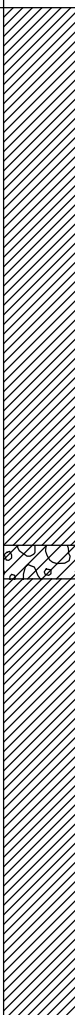

Project Number: 02077.01		Trench No.: S5-T1	
Project Name: Brea Olinda		Logged by: Michelle Hughson	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 17.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 100 Acre Parcel			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				CL	Brown sandy clay, medium stiff, dry. Trace gravel and coarse sand, very light hydrocarbon staining.			
2-3				CL	Dark brown sandy clay, medium stiff, dry. Light hydrocarbon staining and light odor. Heavier staining and stronger odor beginning at 8'.		18	
4-5	S5-T1-5 11:20			CL				
6-9								
10	S5-T1-10 11:32			ML	Clayey silt with sand, dry, lighter staining.		97	
11-14				ML				
15	S5-T1-15 11:42			ML	Red-brown clayey silt, dry, trace sand, medium stiff, and very light staining.		89	
16-17								
18					TD=17'			
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Boring No.: S7-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/29/17	Date Completed: 03/29/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 100 Acre Parcel			




Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				CL	Reddish brown dry clay.		10.4	
2								
3								
4								
5	DRU-T1-5 07:44							
6								
7							5.2	
8				GC	Gravel layer with clay.			
9					Reddish brown clay, stiff, and dry.			
10	DRU-T1-10 07:54						0.3	
11				CL				
12								
13								
14								
15	DRU-T1-15 08:00							
16					TD=15'			
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.29.GPJ 4/10/17

Boring Log

Project Number: 02077.01		Boring No.: S8-B1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/28/17	Date Completed: 03/28/17
Drilling Contractor: BC2 Environmental		Total Depth (ft bgs): 56.0	Depth to Water (ft bgs): ---
Drilling Method: Direct Push		Borehole Dia. (in): 2	Surface Elevation (ft MSL): UNK

Remarks:

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill	
2					See S8-T1 for log 0' - 15'.				
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15	S8-B1-15 07:50	X				Hydrocarbon stained clay, stiff, and dry. Hydrocarbon odor.			
16		X							
17									
18				CL					
19									
20	S8-B1-20 07:58	X							

DRB-ENVIRO BORING_02077.01_2017.03.28.GPJ 4/10/17

Boring Log

Project Number: 02077.01

Boring No.: S8-B1

Project Name: Brea Olinda

Logged by: Frank Hagar

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/28/17

Date Completed: 03/28/17

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
22					Hydrocarbon stained clay, stiff, and dry. Hydrocarbon odor.			
23	S8-B1-23 08:03	X						
24		X						
25				CL				
26								
27	S8-B1-27 08:06	X						
28		X						
29								
30								
31	S8-B1-31 08:08	X			Hydrocarbon saturated clay, damp, and plastic.	72		
32		X						
33								
34								
35	S8-B1-35 08:10	X				128		
36		X						
37				CL				
38								
39								
40	S8-B1-40 08:15	X					98	
41		X						
42								
43	S8-B1-43 08:20	X		SP/CL	Very fine sand with silt, no staining, hydrocarbon odor.		126	

DRB-ENVIRO BORING_02077.01_2017.03.28.GPJ 4/10/17

Boring Log

Project Number: 02077.01

Boring No.: S8-B1

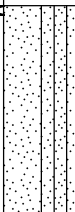

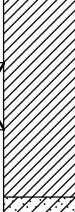
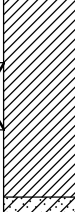


Project Name: Brea Olinda

Logged by: Frank Hagar

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/28/17

Date Completed: 03/28/17


Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
44		X			Very fine sand with silt, no staining, hydrocarbon odor.			
45				SP/CL				
46								
47	S8-B1-47 08:26	X			Silty sand with layer of green stain, and hydrocarbon odor.		75.8	
48				SM				
49								
50					Hydrocarbon stained clay, damp, and plastic.			
51	S8-B1-51 08:30	X		CL			69.1	
52								
53					Hydrocarbon stained sandy clay with hydrocarbon odor.			
54				SC				
55	S8-B1-55 08:45	X					89.4	
56					TD = 56'			
57								
58								
59								
60								
61								
62								
63								
64								
65								
66								

DRB-ENVIRO BORING 02077.01, 2017.03.28.GPJ 4/10/17

Trench Log

Project Number: 02077.01		Trench No.: S8-T1	
Project Name: Brea Olinda		Logged by: Michelle Hughson	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown

Remarks: 100 Acre Parcel

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				SC	Red-brown clayey sand, stiff, dry.			
2								
3								
4				CL	Dark brown sandy clay, medium stiff, damp and sticky, trace gravel and coarse sand		29.7	
5	S8-T1-5 10:20							
6								
7								
8	S8-T1-8 10:34			CL	Clay with few silt and sand, medium plasticity, damp, and stiff. Heavy hydrocarbon staining and strong odor.		12	
9								
10	S8-T1-10 10:43							
11								
12				ML	Clayey silt with few sand, low plasticity. Heavy hydrocarbon staining and strong odor.		142	
13								
14								
15	S8-T1-15 10:48							
16					TD=15'		121	
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Boring No.: S8-T2	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/29/17	Date Completed: 03/29/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown

Remarks: 100 Acre Parcel

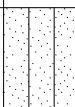
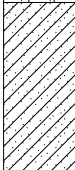


Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1					Dark brown silt with clay			
2								
3								
4								
5	S8-T2-5 09:00			ML/CL				
6								
7								
8								
9								
10	S8-T2-10 09:08			CL	Brown, moderately plastic clay, damp. Hydrocarbon staining and odor.		100	
11								
12								
13								
14								
15	S8-T2-15 09:15			ML/CL	Heavily stained silt with clay, strong hydrocarbon odor.			
16					TD=15'			
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.29.GPJ 4/10/17

Boring Log

Project Number: 02077.01		Boring No.: S20-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/20/17	Date Completed: 03/20/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown

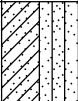


Remarks: 165 Acre Parcel

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				SM	Yellow-brown, fine grained silty sand.			
2				CL	Clayey sand with silt.			
3								
4								
5	S20-T1-5 08:00			ML	Silt with black staining, weathered and soft.		13.3	
6								
7								
8					Brown sandy lean clay, dry, stiff.			
9								
10	S20-T1-10 09:15			CL			0.0	
11								
12								
13								
14				CL	Brown silty lean clay.			
15	S20-T1-15 09:25						0.0	
16					TD=15'			
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 4/19/17

Trench Log

Project Number: 02077.01		Trench No.: S20-T2	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/20/17	Date Completed: 03/20/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 165 Acre Parcel			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1				SC/SM				
2				CL	Red-brown clay, interbedded with staining lens 3-6" thick.			
3								
4								
5	S20-T2-5 10:09				Red-brown sandy clay, with fine to very fine sand, very stiff, dry.		0.6	
6								
7								
8								
9								
10	S20-T2-10 10:19			CL			0.1	
11								
12								
13								
14								
15	S20-T2-15 10:32							
16					TD=15'		1.2	
17								
18								
19								

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Boring Log

Project Number: 02077.01

Boring No.: VRS-B1






Project Name: Brea Olinda

Logged by: Michelle Hughson

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/23/17

Date Completed: 03/23/17

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
21	VRS-B1-20 12:35	X			Dark yellowish brown clay, moderately plastic, medium stiff, and dry. Trace silt, no odor or staining.		0.0	
25	VRS-B1-25 12:41	X			Dark yellowish brown clay, moderately plastic, medium stiff, and dry. Some calcification, no odor or staining.		0.3	
30	VRS-B1-30 12:46	X		CL	Dark yellowish brown clay, moderately plastic, medium stiff, and dry. Some calcification, no odor or staining.		0.0	
35	VRS-B1-35 12:53	X			Dark yellowish brown clay, moderately plastic, medium stiff, and dry. Some calcification, no odor or staining.		0.8	
40	VRS-B1-40 13:07	X			Dark yellowish brown clay, low plasticity, stiff, and dry. Some calcification, no odor or staining.		0.1	

DRB-ENVIRO BORING_02077.01_2017.03.23.GPJ 3/24/17

Boring Log

Project Number: 02077.01

Boring No.: VRS-B1

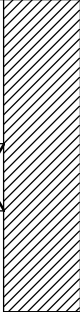



Project Name: Brea Olinda

Logged by: Michelle Hughson

Location: Valencia Avenue at Lambert Road, Brea, California

Date Started: 03/23/17

Date Completed: 03/23/17

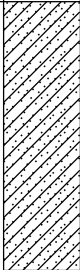

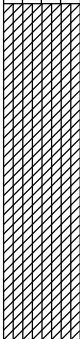
Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
43								
44								
45	VRS-B1-45 13:17	X		CL	Dark yellowish brown clay, moderately plastic, stiff, and dry. Some calcification, no odor or staining.		0.3	
46		X						
47					Contact inferred			
48								
49								
50	VRS-B1-50 13:27	X		ML	Yellowish brown silt, medium stiff, and dry. Some thin interbedded layers of clay.		0.0	
51		X						
52					Contact inferred			
53								
54								
55	VRS-B1-55 13:35	X			Dark yellowish brown clay, moderately plastic, medium stiff, and dry. Some calcification, no odor or staining.		0.1	
56		X		CL				
57								
58								
59								
60	VRS-B1-60 13:38	X			Dark yellowish brown clay, moderately plastic, stiff, and dry. Some calcification, no odor or staining.		0.0	
61		X						
62					TD = 61', at 13:40. Soil vapor probe installed at 15' at 14:40.			
63								
64								
65								

DRB-ENVIRO BORING 02077.01, 2017.03.23.GPJ 3/24/17

Trench Log

Project Number: 02077.01		Trench No.: VRS-T1	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown





Remarks: 100 Acre Parcel

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
1	VRS-T1-5 09:35			SC	Dark brown clayey sand with pebbles. Two inch hydrocarbon layer with strong odor at 2 feet bgs.		12.2	
2				CL	Red-Brown sandy clay, medium stiff, dry, hydrocarbon odor.			
3				ML	Red-Brown clayey silt, dry.			
4	VRS-T1-10 09:45			CL	Red-brown silt and silty clay, with interbedded medium stiff clay six inches thick every foot.		2.0	
5				CL/ML				
6	VRS-T1-15 09:55				TD=15'		2.0	

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

Trench Log

Project Number: 02077.01		Trench No.: VRS-T2	
Project Name: Brea Olinda		Logged by: Frank Hagar	
Location: Valencia Avenue at Lambert Road, Brea, California		Date Started: 03/21/17	Date Completed: 03/21/17
Drilling Contractor: American Integrated Services		Total Depth (ft bgs): 15.0	Depth to Water (ft bgs): ---
Drilling Method: Backhoe		Borehole Dia. (in): ---	Surface Elevation (ft MSL): Unknown
Remarks: 100 Acre Parcel			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Material Description	Water Level	10.6 ev PID (ppm)	Backfill
0-1				SP	Light brown poorly graded sand with pebbles			
1-3				ML/CL	Red-brown silty clay, medium plasticity, dry, no staining.			
3-5	VRS-T2-5 08:40			CL	Red-brown silty clay, medium plasticity, dry, no staining.	18.3		
5-10	VRS-T2-10 08:50			CL	Red-brown clayey silt, dry, no staining.	15.2		
10-15	VRS-T2-15 09:00				TD=15'		23.4	

DRB-ENVIRO BORING_02077.01_2017.03.22.GPJ 3/22/17

APPENDIX C
FIELD PROCEDURES



APPENDIX C – FIELD PROCEDURES

Soil Sample Collection Procedures – Trenching Program

Excavation of Trenches

Trenches and potholes were excavated by American Integrated Services, using a backhoe. The trenches measured approximately 18 feet in length and were excavated to an approximate depth of 15 feet bgs. Potholes were variable in length and depth, and were excavated only to a specific depth of interest.

Sample Identification

All soil samples were identified and labeled at the time of collection. Sample identification followed a specific format that contained the boring identification and sample depths to ensure that all sample numbers were unique.

Sampling Procedure

Representative soil samples were collected from each trench by manually placing soil from the backhoe bucket into laboratory-supplied sample jars, sealed with Teflon-lined lids. Soil samples were transferred to glass jars and/or Volatile Organic Analysis (VOA) 60 ml glass vials, depending on analytical requirements.

All samples analyzed for TPH-g/cc and Volatile Organic Constituents (VOCs) were collected using EnCore™ samplers, which were advanced into the undisturbed soils as per EPA Method 5035. The soil cores were placed in VOA containers pre-preserved with methanol and sodium bisulfate, and then sealed. The samples were labeled and stored in a chilled cooler pending delivery to the analytical laboratory. Strict chain-of-custody protocol was followed throughout all phases of the sample handling process.

Equipment Cleaning

To reduce the potential for cross contamination, all equipment and tools were cleaned before introduction borehole. Tools were scrubbed with a laboratory-grade detergent and double-rinsed with distilled water between sampling points.



Soil Sample Collection Procedures – Hand Auger

Advancing of Soil Borings

Soil borings were advanced using a hand-held auger. Soil samples were collected by driving a coring tube lined with stainless steel liners using a 20-lb slide hammer.

To reduce the potential for cross contamination between borings, the auger, coring tube, and sampling equipment were cleaned prior to use at each boring location.

Sample Identification

All soil samples were identified and labeled at the time of collection. Sample identification followed a specific format that contained the boring identification and sample depths to ensure that all sample numbers were unique.

Sampling Procedure

Glass jars were filled with soil collected from the auger. The samples were labeled and stored in a chilled cooler pending delivery to the analytical laboratory. Strict chain-of-custody protocol was followed throughout all phases of the sample handling process.

Equipment Cleaning

To reduce the potential for cross contamination, all equipment and tools were cleaned before introduction borehole. Tools were scrubbed with a laboratory-grade detergent and double-rinsed with distilled water between sampling points.



Soil Sample Collection Procedures – Geoprobe and Hollow Stem Auger Rig

Drilling of Soil Borings

Soil borings were advanced by BC2 Environmental, using a truck-mounted hollow stem auger rig and a truck-mounted Geoprobe™ direct push 6600 rig. The hollow stem auger borings were advanced using 8 inch diameter hollow rods. Continuous cores of soil were collected using a California Split Spoon sampler with brass sample rings. The direct push borings were advanced using 2.25 inch diameter hollow rods. The lead drilling rod contained a removable 1.5 inch core sampler that was retrieved at the end of each run. Acetate sleeves were used as liners for the core sampler to collect undisturbed soil samples as the rods were advanced.

Sample Identification

All soil samples were identified and labeled at the time of collection. Sample identification followed a specific format that contained the boring identification and sample depths to ensure that all sample numbers were unique.

Sampling Procedure

After retrieval of the hollow stem auger soil samples, the brass ring samples were sealed with Teflon-lined endcaps. After retrieval of the direct push soil samples, the acetate sleeve was cut for each desired sampling interval, capped with Teflon tape and plastic caps, and then sealed with Parafilm laboratory-grade tape. Soil samples were transferred to glass jars and/or VOA 60 ml glass vials, depending on analytical requirements.

All samples analyzed for TPH-g/cc and VOCs were collected using EnCore™ samplers, which were advanced into the undisturbed soils as per EPA Method 5035. The soil cores were placed in VOA containers pre-preserved with methanol and sodium bisulfate, and then sealed. The samples were labeled and stored in a chilled cooler pending delivery to the analytical laboratory. Strict chain-of-custody protocol was followed throughout all phases of the sample handling process.



Equipment Cleaning

To reduce the potential for cross contamination, all equipment and tools were cleaned before introduction borehole. Tools were scrubbed with a laboratory-grade detergent and double-rinsed with distilled water between sampling points.



Groundwater Sample Collection Procedures

Drilling of Soil Borings

Soil borings were advanced to groundwater using a truck-mounted Geoprobe rig. Following soil sample collection, temporary wells were installed in the borings.

To reduce the potential for cross contamination between borings, the Geoprobe rods and sampling equipment were cleaned prior to use at each drilling location.

Sample Identification

All groundwater samples were identified and labeled at the time of collection. Sample identification followed a specific format to ensure that all sample numbers were unique.

Sampling Equipment

A new disposable PVC screenpoint sampler was used for each sampling event. The Screen Point Sampler and associated assemblages were triple-rinsed prior to each installation using an approved non-phosphate detergent solution. Detergent was rinsed from the parts initially with tap water followed by a distilled-water rinse. The disposable microbailer was disposed of after its use.

A groundwater sample was collected by lowering a disposable microbailer through the drive rods to the Screen Point Sampler (or temporary well) using cotton or nylon string.

Groundwater samples were collected in VOA containers pre-preserved with hydrochloric acid (HCl) and sealed. The samples were labeled and stored in a chilled cooler pending delivery to the analytical laboratory. Strict chain-of-custody protocol was followed throughout all phases of the sample handling process.



Soil Vapor Sample Collection Procedures

Installation of Temporary Soil Vapor Monitoring Probes

Temporary soil vapor monitoring probes (VMPs) were constructed by Interphase Environmental Inc. in the same locations as soil borings. Borings were advanced using a track GeoProbe™ direct push rig equipped with hollow drill rods approximately 2.25 inches in diameter. The drill rods were sealed at the bottom end until the desired depth was reached, then the end cap was unlatched and retrieved to expose the native soils ahead of the drill steel. VMPs were constructed inside the drill rods which were retrieved as the annular fill materials were placed.

The VMPs consisted of a 6-inch long stainless steel implant at the desired probe depths. Nylaflow tubing (0.33 inch diameter) was connected from the implant to the ground surface, and terminated above the existing surface with a valve.

At the completion of vapor sampling, the borings were abandoned by removing the tubing and backfilling the borings with hydrated amorphous bentonite. The upper 6-inches of the borings were abandoned using cold-patch asphalt compacted and stained to match the existing surface.

Sample Identification

All soil vapor samples were identified and labeled at the time of collection. Sample identification followed a specific format to ensure that all sample numbers were unique and was recorded on laboratory supplied forms.

Sampling Equipment

After installation, each probe was allowed to stabilize two hours. Prior to sampling, each probe was purged of approximately three well volumes. A sample was collected from each probe using a summa canister and flow regulator that maintained a flow rate of 150 milliliters per minute. Each sample was transported to the analytical laboratory.

The samples were analyzed for VOCs using EPA Method 8260B and TPHs using EPA Method 8015. Strict chain-of-custody protocol was followed throughout all phases of the sample handling process.



APPENDIX D
LABORATORY ANALYTICAL REPORTS





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24 March 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/21/17 15:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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 949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 14:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DRU-T1-5	T170707-01	Soil	03/21/17 07:44	03/21/17 15:25
DRU-T1-10	T170707-02	Soil	03/21/17 07:54	03/21/17 15:25
DRU-T1-15	T170707-03	Soil	03/21/17 08:00	03/21/17 15:25
VRS-T2-5	T170707-04	Soil	03/21/17 08:40	03/21/17 15:25
VRS-T2-10	T170707-05	Soil	03/21/17 08:50	03/21/17 15:25
VRS-T2-15	T170707-06	Soil	03/21/17 09:00	03/21/17 15:25
VRS-T1-5	T170707-07	Soil	03/21/17 09:35	03/21/17 15:25
VRS-T1-10	T170707-08	Soil	03/21/17 09:45	03/21/17 15:25
VRS-T1-15	T170707-09	Soil	03/21/17 09:55	03/21/17 15:25
S8-T1-5	T170707-10	Soil	03/21/17 10:20	03/21/17 15:25
S8-T1-10	T170707-11	Soil	03/21/17 10:43	03/21/17 15:25
S8-T1-15	T170707-12	Soil	03/21/17 10:48	03/21/17 15:25
S5-T1-5	T170707-13	Soil	03/21/17 11:20	03/21/17 15:25
S5-T1-10	T170707-14	Soil	03/21/17 11:32	03/21/17 15:25
S5-T1-15	T170707-15	Soil	03/21/17 11:42	03/21/17 15:25
104-T1-5	T170707-16	Soil	03/21/17 12:10	03/21/17 15:25
104-T1-10	T170707-17	Soil	03/21/17 12:18	03/21/17 15:25
104-T1-15	T170707-18	Soil	03/21/17 12:25	03/21/17 15:25
DR-HA1-1.0	T170707-19	Soil	03/21/17 07:35	03/21/17 15:25
DR-HA1-5.0	T170707-20	Soil	03/21/17 07:43	03/21/17 15:25
DR-HA2-1.0	T170707-21	Soil	03/21/17 08:02	03/21/17 15:25
DR-HA2-5.0	T170707-22	Soil	03/21/17 08:15	03/21/17 15:25
DR-HA3-1.0	T170707-23	Soil	03/21/17 08:25	03/21/17 15:25
DR-HA3-5.0	T170707-24	Soil	03/21/17 08:46	03/21/17 15:25
DR-HA4-1.0	T170707-25	Soil	03/21/17 09:11	03/21/17 15:25
DR-HA4-5.0	T170707-26	Soil	03/21/17 09:41	03/21/17 15:25

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Rose Fasheh, Project Manager



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24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 14:41

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Rose Fasheh, Project Manager

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 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 14:41

DETECTIONS SUMMARY

Sample ID: DRU-T1-5 **Laboratory ID:** T170707-01

No Results Detected

Sample ID: DRU-T1-10 **Laboratory ID:** T170707-02

No Results Detected

Sample ID: DRU-T1-15 **Laboratory ID:** T170707-03

No Results Detected

Sample ID: VRS-T2-5 **Laboratory ID:** T170707-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	42	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	86	10	mg/kg	EPA 8015B	

Sample ID: VRS-T2-10 **Laboratory ID:** T170707-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	39	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	45	10	mg/kg	EPA 8015B	

Sample ID: VRS-T2-15 **Laboratory ID:** T170707-06

No Results Detected

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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Sample ID: VRS-T1-5 **Laboratory ID:** T170707-07

No Results Detected

Sample ID: VRS-T1-10 **Laboratory ID:** T170707-08

No Results Detected

Sample ID: VRS-T1-15 **Laboratory ID:** T170707-09

No Results Detected

Sample ID: S8-T1-5 **Laboratory ID:** T170707-10

No Results Detected

Sample ID: S8-T1-10 **Laboratory ID:** T170707-11

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	4900	10		mg/kg	EPA 8015B	
C13-C28 (DRO)	11000	1000		mg/kg	EPA 8015B	
C29-C40 (MORO)	19000	1000		mg/kg	EPA 8015B	

Sample ID: S8-T1-15 **Laboratory ID:** T170707-12

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	6300	10		mg/kg	EPA 8015B	
C13-C28 (DRO)	11000	1000		mg/kg	EPA 8015B	
C29-C40 (MORO)	14000	1000		mg/kg	EPA 8015B	

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Rose Fasheh, Project Manager

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 14:41

Sample ID: S5-T1-5

Laboratory ID: T170707-13

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	1700	10		mg/kg	EPA 8015B	
C13-C28 (DRO)	9200	1000		mg/kg	EPA 8015B	
C29-C40 (MORO)	22000	1000		mg/kg	EPA 8015B	

Sample ID: S5-T1-10

Laboratory ID: T170707-14

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	330	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	1500	10		mg/kg	EPA 8015B	

Sample ID: S5-T1-15

Laboratory ID: T170707-15

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	270	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	810	10		mg/kg	EPA 8015B	

Sample ID: 104-T1-5

Laboratory ID: T170707-16

No Results Detected

Sample ID: 104-T1-10

Laboratory ID: T170707-17

No Results Detected

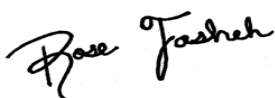
Sample ID: 104-T1-15

Laboratory ID: T170707-18

No Results Detected

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
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Sample ID: DR-HA1-1.0 Laboratory ID: T170707-19

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	57	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	230	10		mg/kg	EPA 8015B	

Sample ID: DR-HA1-5.0 Laboratory ID: T170707-20

No Results Detected

Sample ID: DR-HA2-1.0 Laboratory ID: T170707-21

No Results Detected

Sample ID: DR-HA2-5.0 Laboratory ID: T170707-22

No Results Detected

Sample ID: DR-HA3-1.0 Laboratory ID: T170707-23

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	75	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	220	10		mg/kg	EPA 8015B	

Sample ID: DR-HA3-5.0 Laboratory ID: T170707-24

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	16	10		mg/kg	EPA 8015B	

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
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Sample ID: DR-HA4-1.0

Laboratory ID: T170707-25

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	160	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	460	10	mg/kg	EPA 8015B	

Sample ID: DR-HA4-5.0

Laboratory ID: T170707-26

No Results Detected

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DRU-T1-5
T170707-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		84.2 %		65-135	"	"	"	"	

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DRU-T1-10
T170707-02 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		87.6 %		65-135	"	"	"	"	

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 14:41
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DRU-T1-15
T170707-03 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		87.3 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-153



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 14:41
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VRS-T2-5
T170707-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	42	10	"	"	"	"	"	"	
C29-C40 (MORO)	86	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		86.0 %		65-135					

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 14:41
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VRS-T2-10
T170707-05 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	39	10	"	"	"	"	"	"	
C29-C40 (MORO)	45	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		<i>88.4 %</i>		<i>65-135</i>					

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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VRS-T2-15
T170707-06 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		76.8 %		65-135	"	"	"	"	

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VRS-T1-5
T170707-07 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		85.4 %		65-135	"	"	"	"	

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VRS-T1-10
T170707-08 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		81.0 %		65-135	"	"	"	"	

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VRS-T1-15
T170707-09 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		75.2 %		65-135	"	"	"	"	

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S8-T1-5
T170707-10 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		83.9 %		65-135	"	"	"	"	

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S8-T1-10
T170707-11 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	4900	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	11000	1000	"	100	"	"	"	"	
C29-C40 (MORO)	19000	1000	"	"	"	"	"	"	
Surrogate: p-Terphenyl		102 %		65-135	"	"	"	"	

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S8-T1-15
T170707-12 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	6300	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	11000	1000	"	100	"	"	"	"	
C29-C40 (MORO)	14000	1000	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		113 %		65-135	"	"	"	"	

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S5-T1-5
T170707-13 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	1700	10	mg/kg	1	7032220	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	9200	1000	"	100	"	"	"	"	
C29-C40 (MORO)	22000	1000	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		106 %		65-135	"	"	"	"	

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S5-T1-10
T170707-14 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	330	10	"	"	"	"	"	"	
C29-C40 (MORO)	1500	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		<i>108 %</i>	<i>65-135</i>						

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S5-T1-15
T170707-15 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	270	10	"	"	"	"	"	"	
C29-C40 (MORO)	810	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		108 %	65-135		"	"	"	"	

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104-T1-5
T170707-16 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		105 %		65-135					

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104-T1-10
T170707-17 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		89.5 %		65-135					

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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104-T1-15
T170707-18 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		89.9 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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DR-HA1-1.0
T170707-19 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	57	10	"	"	"	"	"	"	
C29-C40 (MORO)	230	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		108 %	65-135		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-169



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DR-HA1-5.0
T170707-20 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032220	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		100 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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DR-HA2-1.0
T170707-21 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		100 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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DR-HA2-5.0
T170707-22 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		103 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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DR-HA3-1.0
T170707-23 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	75	10	"	"	"	"	"	"	
C29-C40 (MORO)	220	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		93.6 %	65-135		"	"	"	"	

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DR-HA3-5.0
T170707-24 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	16	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		99.7 %		65-135	"	"	"	"	

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DR-HA4-1.0
T170707-25 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	160	10	"	"	"	"	"	"	
C29-C40 (MORO)	460	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		100 %	65-135		"	"	"	"	

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DR-HA4-5.0
T170707-26 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032221	03/22/17	03/23/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		99.8 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-176



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 14:41

Extractable Petroleum Hydrocarbons by 8015B - 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 7032220 - EPA 3550B GC

Blank (7032220-BLK1)

Prepared & Analyzed: 03/22/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	133		"	150		88.5	65-135			

LCS (7032220-BS1)

Prepared: 03/22/17 Analyzed: 03/23/17

C13-C28 (DRO)	500	10	mg/kg	500		100	75-125			
Surrogate: p-Terphenyl	167		"	150		111	65-135			

LCS Dup (7032220-BSD1)

Prepared: 03/22/17 Analyzed: 03/23/17

C13-C28 (DRO)	500	10	mg/kg	500		100	75-125	0.220	20	
Surrogate: p-Terphenyl	159		"	150		106	65-135			

Batch 7032221 - EPA 3550B GC

Blank (7032221-BLK1)

Prepared: 03/22/17 Analyzed: 03/23/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	110		"	99.0		111	65-135			

LCS (7032221-BS1)

Prepared: 03/22/17 Analyzed: 03/23/17

C13-C28 (DRO)	510	10	mg/kg	495		103	75-125			
Surrogate: p-Terphenyl	106		"	99.0		107	65-135			

LCS Dup (7032221-BSD1)

Prepared: 03/22/17 Analyzed: 03/23/17

C13-C28 (DRO)	520	10	mg/kg	500		103	75-125	0.778	20	
Surrogate: p-Terphenyl	92.9		"	100		92.9	65-135			

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-177



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 14:41

Notes and Definitions

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.

Rose Fasheh, Project Manager

I-178

Page 35 of 35



Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commerce Centre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 2441 Ridge Route Drive #130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/21/17 Page: 1 of 3
Project Name: Brea-Olinda
Collector: E Hager Client Project #: 02077.01
Batch #: 710707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRD	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCBs	Laboratory ID #	Comments/Preservative	Total # of containers		
DRU-T1-5	3/21/17	0944	VBK	Soil	H											01				
DRU-T1-5	3/21/17	0944	40361	Soil	H											02				
DRU-T1-10	3/21/17	0754	40361	Soil	H											03				
DRU-T1-15	3/21/17	0800	40361	Soil	H											04				
VR5-T2-5	3/21/17	0840	Soil	VBK	H															
VR5-T2-5	3/21/17	0840	Soil	40361	H															
VR5-T2-10	3/21/17	0850	Soil	40361	H															
VR5-T2-15	3/21/17	0900	Soil	40361	H															
VR5-T1-5	3/21/17	0935	Soil	VBK	H															
VR5-T1-5	3/21/17	0935	Soil	40361	H															
VR5-T1-10	3/21/17	0945	Soil	40361	H															
VR5-T1-15	3/21/17	0955	Soil	40361	H															
VR5-T1-5	3/21/17	1020	Soil	VBK	H															
VR5-T1-5	3/21/17	1020	Soil	40361	H															
VR5-T1-10	3/21/17	1043	Soil	40361	H															
Relinquished by: (signature) <u>Fred Hager</u>			Date / Time <u>3/21/17 3:25</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/21/17 15:25</u>			Total # of containers <u>35</u>			Chain of Custody seals Y/N/NA Seals intact? Y/N/NA Received good condition/cold			Notes <u>949-689-9987</u>		
Relinquished by: (signature)			Date / Time			Received by: (signature)			Date / Time			Turn around time: <u>STD</u>								

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162514



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Boatright Environmental Management
Address: 24411 Ridge Route Drive Suite 130
Phone: 949-216-0050 Fax: 949-216-0055
Project Manager: Derrick Willis

Date: 3/21/17 Page: 2 of 3
Project Name: Brea-Olinda
Collector: Frank Heger Client Project #: 02077.01
Batch #: T170707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB's	Laboratory ID #	Comments/Preservative	Total # of containers
58-TI-15	3/21/17	1048	Soil	40391	H							A				12		
55-TI-5	3/21/17	1120	Soil	VDA	H							A				13		
55-TI-5	3/21/17	1132	Soil	40391	H							A				14	HIGH TPH	
55-TI-10	3/21/17	1142	Soil	40391	H							A				15	HIGH TPH	
55-TI-15	3/21/17	1210	Soil	VDA	H							A				16		
104-TI-5	3/21/17	1210	Soil	40391	H							A				17		
104-TI-10	3/21/17	1218	Soil	40391	H							A				18		
104-TI-15	3/21/17	1225	Soil	40391	H							A				19		
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Total # of containers										Notes		
Paul Heger			3/21/17 3:25	[Signature]	3/21/17 15:25	19												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Chain of Custody seals Y/N/NA												
Paul Heger			3/21/17 3:25	[Signature]	3/21/17 15:25	Seals intact? Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Received good condition/cold												
[Signature]				[Signature]		Turn around time: <u>STD</u>												

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162512



SunStar Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commcentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Management
Address: 2441 Ridge Route Drive, Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Debra Willis

Date: 3/21/2017 Page: 3 of 3
Project Name: Brea Olinda
Collector: Michelle Hugron Client Project #: 02077.01
Batch #: 1122707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270C	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	EPA 8081 Pesticides	8141 organophosphorus pesticides	8151 herbicides	Laboratory ID #	Comments/Preservative	Total # of containers			
DR-HA1-1.0	3/21/17	0735	Soil	NOAs+Core	H													19		5			
DR-HA1-5.0	3/21/17	0743	Soil	Core														20		5			
DR-HA2-1.0	3/21/17	0802	Soil	NOAs+Core	H													21		5			
DR-HA2-5.0	3/21/17	0815	Soil	Core														22		5			
DR-HA3-1.0	3/21/17	0825	Soil	NOAs+Core	H													23		5			
DR-HA3-5.0	3/21/17	0846	Soil	Core														24		5			
DR-HA4-1.0	3/21/17	0911	Soil	NOAs+Core	H													25		5			
DR-HA4-5.0	3/21/17	0941	Soil	Core														26		1			
Relinquished by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 1230</u>	Received by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 1230</u>	Total # of containers <u>24</u>														Chain of Custody seals Y/N/NA Seals intact? Y/N/NA <u>SH</u>		Notes <u>F. Hugron</u> <u>949-689-9987</u>	
Relinquished by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 3:25</u>	Received by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 15:25</u>	Turn around time: <u>STD</u>																	

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162513



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 117207

Client Name: NORWICH Project: BREA FLANDA DIG FIELD

Delivered by: Client SunStar Courier GSO FedEx Other

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

Lab Received by: BILIAN Date/Time Lab Received: 3/11/07 15:25

Total number of coolers received: _____

Temperature: Cooler #1 <u>5.0</u>	°C +/- the CF (-0.2°C) = <u>5.4</u>	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BL

Comments:

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/21/17 15:25

Logged In By: Brian Charon

Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	



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

26 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/21/17 15:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

03 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/21/17 15:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DRU-T1-5	T170707-01	Soil	03/21/17 07:44	03/21/17 15:25
VRS-T2-5	T170707-04	Soil	03/21/17 08:40	03/21/17 15:25
VRS-T1-5	T170707-07	Soil	03/21/17 09:35	03/21/17 15:25
S8-T1-5	T170707-10	Soil	03/21/17 10:20	03/21/17 15:25
S5-T1-5	T170707-13	Soil	03/21/17 11:20	03/21/17 15:25
104-T1-5	T170707-16	Soil	03/21/17 12:10	03/21/17 15:25
DR-HA1-1.0	T170707-19	Soil	03/21/17 07:35	03/21/17 15:25
DR-HA2-1.0	T170707-21	Soil	03/21/17 08:02	03/21/17 15:25
DR-HA3-1.0	T170707-23	Soil	03/21/17 08:25	03/21/17 15:25
DR-HA4-1.0	T170707-25	Soil	03/21/17 09:11	03/21/17 15:25

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.

Rose Fasheh, Project Manager

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:50

DETECTIONS SUMMARY

Sample ID: DRU-T1-5 Laboratory ID: T170707-01

No Results Detected

Sample ID: VRS-T2-5 Laboratory ID: T170707-04

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	67	1.0		mg/kg	EPA 6010B	
Chromium	6.6	2.0		mg/kg	EPA 6010B	
Cobalt	4.4	2.0		mg/kg	EPA 6010B	
Copper	7.4	1.0		mg/kg	EPA 6010B	
Nickel	7.8	2.0		mg/kg	EPA 6010B	
Vanadium	18	5.0		mg/kg	EPA 6010B	
Zinc	27	1.0		mg/kg	EPA 6010B	

Sample ID: VRS-T1-5 Laboratory ID: T170707-07

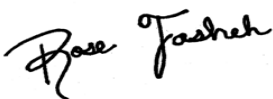
Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	41	1.0		mg/kg	EPA 6010B	
Chromium	3.2	2.0		mg/kg	EPA 6010B	
Cobalt	4.3	2.0		mg/kg	EPA 6010B	
Nickel	5.4	2.0		mg/kg	EPA 6010B	
Vanadium	6.3	5.0		mg/kg	EPA 6010B	
Zinc	11	1.0		mg/kg	EPA 6010B	

Sample ID: S8-T1-5 Laboratory ID: T170707-10

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	45	1.0		mg/kg	EPA 6010B	
Chromium	4.6	2.0		mg/kg	EPA 6010B	
Cobalt	3.5	2.0		mg/kg	EPA 6010B	
Copper	3.0	1.0		mg/kg	EPA 6010B	

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.



Rose Fasheh, Project Manager

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:50

Sample ID: S8-T1-5

Laboratory ID: T170707-10

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Nickel	3.8	2.0	mg/kg	EPA 6010B	
Vanadium	14	5.0	mg/kg	EPA 6010B	
Zinc	23	1.0	mg/kg	EPA 6010B	
Uranium, Total	0.76	0.50	mg/kg	EPA 6020A	

Sample ID: S5-T1-5

Laboratory ID: T170707-13

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C6-C12 (GRO)	6700	220	ug/kg	EPA 8015B	
Barium	34	1.0	mg/kg	EPA 6010B	
Chromium	3.2	2.0	mg/kg	EPA 6010B	
Cobalt	2.7	2.0	mg/kg	EPA 6010B	
Copper	3.6	1.0	mg/kg	EPA 6010B	
Nickel	6.5	2.0	mg/kg	EPA 6010B	
Vanadium	11	5.0	mg/kg	EPA 6010B	
Zinc	24	1.0	mg/kg	EPA 6010B	
n-Butylbenzene	10	5.7	ug/kg	EPA 8260B/5035	
sec-Butylbenzene	8.9	5.7	ug/kg	EPA 8260B/5035	
Isopropylbenzene	9.2	5.7	ug/kg	EPA 8260B/5035	
p-Isopropyltoluene	6.5	5.7	ug/kg	EPA 8260B/5035	
Naphthalene	150	5.7	ug/kg	EPA 8260B/5035	
n-Propylbenzene	11	5.7	ug/kg	EPA 8260B/5035	
1,3,5-Trimethylbenzene	10	5.7	ug/kg	EPA 8260B/5035	
1,2,4-Trimethylbenzene	28	5.7	ug/kg	EPA 8260B/5035	
Ethylbenzene	20	5.7	ug/kg	EPA 8260B/5035	
m,p-Xylene	27	11	ug/kg	EPA 8260B/5035	
o-Xylene	20	5.7	ug/kg	EPA 8260B/5035	
Uranium, Total	0.71	0.50	mg/kg	EPA 6020A	

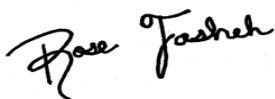
Sample ID: 104-T1-5

Laboratory ID: T170707-16

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Barium	47	1.0	mg/kg	EPA 6010B	
Chromium	4.7	2.0	mg/kg	EPA 6010B	
Cobalt	4.2	2.0	mg/kg	EPA 6010B	

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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
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Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:50

Sample ID: 104-T1-5

Laboratory ID: T170707-16

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Copper	4.9	1.0		mg/kg	EPA 6010B	
Nickel	10	2.0		mg/kg	EPA 6010B	
Vanadium	14	5.0		mg/kg	EPA 6010B	
Zinc	24	1.0		mg/kg	EPA 6010B	
Uranium, Total	1.3	0.50		mg/kg	EPA 6020A	

Sample ID: DR-HA1-1.0

Laboratory ID: T170707-19

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	65	1.0		mg/kg	EPA 6010B	
Chromium	7.0	2.0		mg/kg	EPA 6010B	
Cobalt	3.9	2.0		mg/kg	EPA 6010B	
Copper	8.8	1.0		mg/kg	EPA 6010B	
Nickel	8.2	2.0		mg/kg	EPA 6010B	
Vanadium	15	5.0		mg/kg	EPA 6010B	
Zinc	35	1.0		mg/kg	EPA 6010B	
Uranium, Total	1.0	0.50		mg/kg	EPA 6020A	

Sample ID: DR-HA2-1.0

Laboratory ID: T170707-21

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	27	1.0		mg/kg	EPA 6010B	
Chromium	2.8	2.0		mg/kg	EPA 6010B	
Cobalt	2.0	2.0		mg/kg	EPA 6010B	
Copper	2.4	1.0		mg/kg	EPA 6010B	
Nickel	4.4	2.0		mg/kg	EPA 6010B	
Vanadium	9.0	5.0		mg/kg	EPA 6010B	
Zinc	13	1.0		mg/kg	EPA 6010B	
Uranium, Total	0.73	0.50		mg/kg	EPA 6020A	

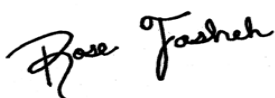
Sample ID: DR-HA3-1.0

Laboratory ID: T170707-23

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	80	1.0		mg/kg	EPA 6010B	

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Project Number: 02077.01
Project Manager: Derrick Willis

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Sample ID: DR-HA3-1.0

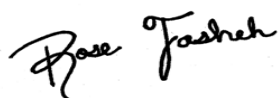
Laboratory ID: T170707-23

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Chromium	5.6	2.0		mg/kg	EPA 6010B	
Cobalt	5.0	2.0		mg/kg	EPA 6010B	
Copper	5.5	1.0		mg/kg	EPA 6010B	
Nickel	11	2.0		mg/kg	EPA 6010B	
Vanadium	16	5.0		mg/kg	EPA 6010B	
Zinc	34	1.0		mg/kg	EPA 6010B	
PCB-1260	19	10		ug/kg	EPA 8082	
Uranium, Total	1.2	0.50		mg/kg	EPA 6020A	

Sample ID: DR-HA4-1.0

Laboratory ID: T170707-25

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	50	1.0		mg/kg	EPA 6010B	
Chromium	6.4	2.0		mg/kg	EPA 6010B	
Cobalt	4.3	2.0		mg/kg	EPA 6010B	
Copper	4.1	1.0		mg/kg	EPA 6010B	
Nickel	7.5	2.0		mg/kg	EPA 6010B	
Vanadium	19	5.0		mg/kg	EPA 6010B	
Zinc	23	1.0		mg/kg	EPA 6010B	
Uranium, Total	0.93	0.50		mg/kg	EPA 6020A	





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DRU-T1-5
T170707-01 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	170	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		87.7 %	65-135		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	3.8	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	3.8	"	"	"	"	"	"	
Bromodichloromethane	ND	3.8	"	"	"	"	"	"	
Bromoform	ND	3.8	"	"	"	"	"	"	
Bromomethane	ND	3.8	"	"	"	"	"	"	
n-Butylbenzene	ND	3.8	"	"	"	"	"	"	
sec-Butylbenzene	ND	3.8	"	"	"	"	"	"	
tert-Butylbenzene	ND	3.8	"	"	"	"	"	"	
Carbon tetrachloride	ND	3.8	"	"	"	"	"	"	
Chlorobenzene	ND	3.8	"	"	"	"	"	"	
Chloroethane	ND	3.8	"	"	"	"	"	"	
Chloroform	ND	3.8	"	"	"	"	"	"	
Chloromethane	ND	3.8	"	"	"	"	"	"	
2-Chlorotoluene	ND	3.8	"	"	"	"	"	"	
4-Chlorotoluene	ND	3.8	"	"	"	"	"	"	
Dibromochloromethane	ND	3.8	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.6	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.8	"	"	"	"	"	"	
Dibromomethane	ND	3.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	3.8	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	3.8	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	3.8	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	3.8	"	"	"	"	"	"	
1,1-Dichloroethane	ND	3.8	"	"	"	"	"	"	
1,2-Dichloroethane	ND	3.8	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.8	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	3.8	"	"	"	"	"	"	

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DRU-T1-5
T170707-01 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

trans-1,2-Dichloroethene	ND	3.8	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
1,2-Dichloropropane	ND	3.8	"	"	"	"	"	"	
1,3-Dichloropropane	ND	3.8	"	"	"	"	"	"	
2,2-Dichloropropane	ND	3.8	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.8	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.8	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.8	"	"	"	"	"	"	
Isopropylbenzene	ND	3.8	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.8	"	"	"	"	"	"	
Methylene chloride	ND	3.8	"	"	"	"	"	"	
Naphthalene	ND	3.8	"	"	"	"	"	"	
n-Propylbenzene	ND	3.8	"	"	"	"	"	"	
Styrene	ND	3.8	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.8	"	"	"	"	"	"	
Tetrachloroethene	ND	3.8	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.8	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.8	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.8	"	"	"	"	"	"	
Trichloroethene	ND	3.8	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.8	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.8	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.8	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.8	"	"	"	"	"	"	
Vinyl chloride	ND	3.8	"	"	"	"	"	"	
Benzene	ND	3.8	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	3.8	"	"	"	"	"	"	
m,p-Xylene	ND	7.6	"	"	"	"	"	"	

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DRU-T1-5
T170707-01 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

o-Xylene	ND	3.8	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Toluene-d8		105 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		113 %	95.7-135		"	"	"	"	

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VRS-T2-5
T170707-04 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	170	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		116 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	67	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	6.6	2.0	"	"	"	"	"	"	
Cobalt	4.4	2.0	"	"	"	"	"	"	
Copper	7.4	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	7.8	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	18	5.0	"	"	"	"	"	"	
Zinc	27	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		75.0 %	35-140		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T2-5
T170707-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	79.3 %	35-140			7032719	03/27/17	03/28/17	EPA 8082	
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	4.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	4.0	"	"	"	"	"	"	
Bromodichloromethane	ND	4.0	"	"	"	"	"	"	
Bromoform	ND	4.0	"	"	"	"	"	"	
Bromomethane	ND	4.0	"	"	"	"	"	"	
n-Butylbenzene	ND	4.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	4.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	4.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.0	"	"	"	"	"	"	
Chloroethane	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.0	"	"	"	"	"	"	
Chloromethane	ND	4.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	4.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	4.0	"	"	"	"	"	"	
Dibromochloromethane	ND	4.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	4.0	"	"	"	"	"	"	
Dibromomethane	ND	4.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	4.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	4.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	4.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	4.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.0	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T2-5
T170707-04 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	4.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	4.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	4.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.0	"	"	"	"	"	"	
Isopropylbenzene	ND	4.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	4.0	"	"	"	"	"	"	
Methylene chloride	ND	4.0	"	"	"	"	"	"	
Naphthalene	ND	4.0	"	"	"	"	"	"	
n-Propylbenzene	ND	4.0	"	"	"	"	"	"	
Styrene	ND	4.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	4.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	4.0	"	"	"	"	"	"	
Tetrachloroethene	ND	4.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	4.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	4.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	4.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	4.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	4.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	4.0	"	"	"	"	"	"	
Vinyl chloride	ND	4.0	"	"	"	"	"	"	
Benzene	ND	4.0	"	"	"	"	"	"	
Toluene	ND	4.0	"	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	"	
m,p-Xylene	ND	7.9	"	"	"	"	"	"	
o-Xylene	ND	4.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		100 %		85.5-116		"	"	"	"

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T2-5
T170707-04 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	92.9 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	118 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T2-5
T170707-04 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Butyl benzyl phthalate	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T2-5
T170707-04 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	1000	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		57.1 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		59.7 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		51.6 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		92.0 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		100 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		124 %	29.1-130		"	"	"	"	

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VRS-T1-5
T170707-07 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	170	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		117 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	41	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	3.2	2.0	"	"	"	"	"	"	
Cobalt	4.3	2.0	"	"	"	"	"	"	
Copper	ND	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	5.4	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	6.3	5.0	"	"	"	"	"	"	
Zinc	11	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		75.2 %	35-140		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T1-5
T170707-07 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	78.7 %	35-140	7032719	03/27/17	03/28/17	EPA 8082
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	3.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035
Bromochloromethane	ND	3.7	"	"	"	"	"	"
Bromodichloromethane	ND	3.7	"	"	"	"	"	"
Bromoform	ND	3.7	"	"	"	"	"	"
Bromomethane	ND	3.7	"	"	"	"	"	"
n-Butylbenzene	ND	3.7	"	"	"	"	"	"
sec-Butylbenzene	ND	3.7	"	"	"	"	"	"
tert-Butylbenzene	ND	3.7	"	"	"	"	"	"
Carbon tetrachloride	ND	3.7	"	"	"	"	"	"
Chlorobenzene	ND	3.7	"	"	"	"	"	"
Chloroethane	ND	3.7	"	"	"	"	"	"
Chloroform	ND	3.7	"	"	"	"	"	"
Chloromethane	ND	3.7	"	"	"	"	"	"
2-Chlorotoluene	ND	3.7	"	"	"	"	"	"
4-Chlorotoluene	ND	3.7	"	"	"	"	"	"
Dibromochloromethane	ND	3.7	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	7.5	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	3.7	"	"	"	"	"	"
Dibromomethane	ND	3.7	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	3.7	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	3.7	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	3.7	"	"	"	"	"	"
Dichlorodifluoromethane	ND	3.7	"	"	"	"	"	"
1,1-Dichloroethane	ND	3.7	"	"	"	"	"	"
1,2-Dichloroethane	ND	3.7	"	"	"	"	"	"
1,1-Dichloroethene	ND	3.7	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"
1,2-Dichloropropane	ND	3.7	"	"	"	"	"	"

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

VRS-T1-5
T170707-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	3.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.7	"	"	"	"	"	"	
Isopropylbenzene	ND	3.7	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.7	"	"	"	"	"	"	
Methylene chloride	ND	3.7	"	"	"	"	"	"	
Naphthalene	ND	3.7	"	"	"	"	"	"	
n-Propylbenzene	ND	3.7	"	"	"	"	"	"	
Styrene	ND	3.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
Tetrachloroethene	ND	3.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.7	"	"	"	"	"	"	
Trichloroethene	ND	3.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.7	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
Vinyl chloride	ND	3.7	"	"	"	"	"	"	
Benzene	ND	3.7	"	"	"	"	"	"	
Toluene	ND	3.7	"	"	"	"	"	"	
Ethylbenzene	ND	3.7	"	"	"	"	"	"	
m,p-Xylene	ND	7.5	"	"	"	"	"	"	
o-Xylene	ND	3.7	"	"	"	"	"	"	
Surrogate: Toluene-d8		102 %		85.5-116		"	"	"	"

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VRS-T1-5
T170707-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	95.2 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	118 %	95.7-135			"	"	"	"	

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I-205



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S8-T1-5
T170707-10 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	190	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		129 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	45	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	4.6	2.0	"	"	"	"	"	"	
Cobalt	3.5	2.0	"	"	"	"	"	"	
Copper	3.0	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	3.8	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	14	5.0	"	"	"	"	"	"	
Zinc	23	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		89.3 %	35-140		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S8-T1-5
T170707-10 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	90.5 %	35-140	7032719	03/27/17	03/28/17	EPA 8082
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035
Bromochloromethane	ND	5.0	"	"	"	"	"	"
Bromodichloromethane	ND	5.0	"	"	"	"	"	"
Bromoform	ND	5.0	"	"	"	"	"	"
Bromomethane	ND	5.0	"	"	"	"	"	"
n-Butylbenzene	ND	5.0	"	"	"	"	"	"
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"
Chlorobenzene	ND	5.0	"	"	"	"	"	"
Chloroethane	ND	5.0	"	"	"	"	"	"
Chloroform	ND	5.0	"	"	"	"	"	"
Chloromethane	ND	5.0	"	"	"	"	"	"
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S8-T1-5
T170707-10 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		104 %		85.5-116		"	"	"	"

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S8-T1-5
T170707-10 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	93.0 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	117 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
Aniline	ND	300	"	"	"	"	"	"	
Phenol	ND	1000	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S8-T1-5
T170707-10 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Butyl benzyl phthalate	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
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S8-T1-5
T170707-10 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	1000	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		62.5 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		53.5 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		49.8 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		80.3 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		113 %	18.1-105		"	"	"	"	R-07
Surrogate: Terphenyl-d14		114 %	29.1-130		"	"	"	"	

Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.76	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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S5-T1-5
T170707-13 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	6700	220	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		101 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	34	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	3.2	2.0	"	"	"	"	"	"	
Cobalt	2.7	2.0	"	"	"	"	"	"	
Copper	3.6	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	6.5	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	11	5.0	"	"	"	"	"	"	
Zinc	24	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	50	ug/kg	5	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	50	"	"	"	"	"	"	R-07
PCB-1232	ND	50	"	"	"	"	"	"	R-07
PCB-1242	ND	50	"	"	"	"	"	"	R-07
PCB-1248	ND	50	"	"	"	"	"	"	R-07
PCB-1254	ND	50	"	"	"	"	"	"	R-07
PCB-1260	ND	50	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		79.6 %	35-140		"	"	"	"	R-07

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S5-T1-5
T170707-13 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl		105 %	35-140		7032719	03/27/17	03/28/17	EPA 8082	R-07
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	5.7	"	"	"	"	"	"	
Bromodichloromethane	ND	5.7	"	"	"	"	"	"	
Bromoform	ND	5.7	"	"	"	"	"	"	
Bromomethane	ND	5.7	"	"	"	"	"	"	
n-Butylbenzene	10	5.7	"	"	"	"	"	"	
sec-Butylbenzene	8.9	5.7	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.7	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.7	"	"	"	"	"	"	
Chlorobenzene	ND	5.7	"	"	"	"	"	"	
Chloroethane	ND	5.7	"	"	"	"	"	"	
Chloroform	ND	5.7	"	"	"	"	"	"	
Chloromethane	ND	5.7	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.7	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.7	"	"	"	"	"	"	
Dibromochloromethane	ND	5.7	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	11	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.7	"	"	"	"	"	"	
Dibromomethane	ND	5.7	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.7	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.7	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.7	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.7	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.7	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.7	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.7	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S5-T1-5
T170707-13 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	5.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	5.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.7	"	"	"	"	"	"	
Isopropylbenzene	9.2	5.7	"	"	"	"	"	"	
p-Isopropyltoluene	6.5	5.7	"	"	"	"	"	"	
Methylene chloride	ND	5.7	"	"	"	"	"	"	
Naphthalene	150	5.7	"	"	"	"	"	"	
n-Propylbenzene	11	5.7	"	"	"	"	"	"	
Styrene	ND	5.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.7	"	"	"	"	"	"	
Tetrachloroethene	ND	5.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.7	"	"	"	"	"	"	
Trichloroethene	ND	5.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.7	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	10	5.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	28	5.7	"	"	"	"	"	"	
Vinyl chloride	ND	5.7	"	"	"	"	"	"	
Benzene	ND	5.7	"	"	"	"	"	"	
Toluene	ND	5.7	"	"	"	"	"	"	
Ethylbenzene	20	5.7	"	"	"	"	"	"	
m,p-Xylene	27	11	"	"	"	"	"	"	
o-Xylene	20	5.7	"	"	"	"	"	"	
Surrogate: Toluene-d8		89.9 %		85.5-116	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		77.9 %		81.2-123	"	"	"	"	S-GC

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S5-T1-5
T170707-13 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: Dibromofluoromethane	105 %	95.7-135	7032736	03/27/17	03/27/17	EPA 8260B/5035
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Semivolatle Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Carbazole	ND	15000	ug/kg	50	7032720	03/27/17	03/30/17	EPA 8270C	R-07
Phenol	ND	50000	"	"	"	"	"	"	R-07
Aniline	ND	15000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	50000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	15000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	50000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	15000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	15000	"	"	"	"	"	"	R-07
Acenaphthene	ND	15000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	50000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	15000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	50000	"	"	"	"	"	"	R-07
Pyrene	ND	15000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	15000	"	"	"	"	"	"	R-07
Anthracene	ND	15000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	15000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	50000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	15000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	15000	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	15000	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	15000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	15000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	15000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	15000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	15000	"	"	"	"	"	"	R-07

SunStar Laboratories, Inc.

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

S5-T1-5
T170707-13 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
4-Chloroaniline	ND	15000	ug/kg	50	7032720	03/27/17	03/30/17	EPA 8270C	R-07
2-Chloronaphthalene	ND	15000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	15000	"	"	"	"	"	"	R-07
Chrysene	ND	15000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	15000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	15000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	15000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	15000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	50000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	15000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	50000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	50000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	50000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	15000	"	"	"	"	"	"	R-07
Fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Fluorene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	75000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	50000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	15000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	15000	"	"	"	"	"	"	R-07
Isophorone	ND	15000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	50000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	50000	"	"	"	"	"	"	R-07
Naphthalene	ND	15000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	50000	"	"	"	"	"	"	R-07

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 16:50
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S5-T1-5
T170707-13 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2-Nitrophenol	ND	50000	ug/kg	50	7032720	03/27/17	03/30/17	EPA 8270C	R-07
N-Nitrosodimethylamine	ND	15000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	15000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	R-07
Phenanthrene	ND	15000	"	"	"	"	"	"	R-07
Azobenzene	ND	15000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Pyridine	ND	15000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		55.0 %	15-121		"	"	"	"	R-07
Surrogate: Phenol-d6		28.5 %	24-113		"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		36.5 %	21.3-119		"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		74.5 %	32.4-102		"	"	"	"	R-07
Surrogate: 2,4,6-Tribromophenol		%	18.1-105		"	"	"	"	R-07, S-GC
Surrogate: Terphenyl-d14		113 %	29.1-130		"	"	"	"	R-07

Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.71	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

104-T1-5
T170707-16 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	220	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		96.2 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	47	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	4.7	2.0	"	"	"	"	"	"	
Cobalt	4.2	2.0	"	"	"	"	"	"	
Copper	4.9	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	10	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	14	5.0	"	"	"	"	"	"	
Zinc	24	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		55.9 %	35-140		"	"	"	"	

SunStar Laboratories, Inc.

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

104-T1-5
T170707-16 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	66.7 %	35-140	7032719	03/27/17	03/28/17	EPA 8082
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035
Bromochloromethane	ND	5.0	"	"	"	"	"	"
Bromodichloromethane	ND	5.0	"	"	"	"	"	"
Bromoform	ND	5.0	"	"	"	"	"	"
Bromomethane	ND	5.0	"	"	"	"	"	"
n-Butylbenzene	ND	5.0	"	"	"	"	"	"
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"
Chlorobenzene	ND	5.0	"	"	"	"	"	"
Chloroethane	ND	5.0	"	"	"	"	"	"
Chloroform	ND	5.0	"	"	"	"	"	"
Chloromethane	ND	5.0	"	"	"	"	"	"
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"

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104-T1-5
T170707-16 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		99.6 %		85.5-116		"	"	"	"

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Rose Fasheh, Project Manager

I-220



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

104-T1-5
T170707-16 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	92.3 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	113 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Aniline	ND	300	"	"	"	"	"	"	
Phenol	ND	1000	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

104-T1-5
T170707-16 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Butyl benzyl phthalate	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	

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 Project Manager: Derrick Willis

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104-T1-5
T170707-16 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	1000	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		32.3 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		41.0 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		44.9 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		67.6 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		92.4 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		119 %	29.1-130		"	"	"	"	

Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	1.3	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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DR-HA1-1.0
T170707-19 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	200	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		74.9 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	65	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	7.0	2.0	"	"	"	"	"	"	
Cobalt	3.9	2.0	"	"	"	"	"	"	
Copper	8.8	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	8.2	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	15	5.0	"	"	"	"	"	"	
Zinc	35	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	

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DR-HA1-1.0
T170707-19 (Soil)

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

Organochlorine Pesticides by EPA Method 8081A

alpha-Chlordane	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		82.0 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		59.6 %	35-140		"	"	"	"	

Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		76.6 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		76.8 %	35-140		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
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DR-HA1-1.0
T170707-19 (Soil)

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

Organophosphorus Pesticides by EPA Method 8141A

Dichlorvos	ND	5.0	ug/kg	1	7032420	03/27/17	03/28/17	8141a	
Mevinphos	ND	5.0	"	"	"	"	"	"	
Demeton-s	ND	10	"	"	"	"	"	"	
Ethoprophos	ND	5.0	"	"	"	"	"	"	
Phorate	ND	10	"	"	"	"	"	"	
Naled	ND	5.0	"	"	"	"	"	"	
Sulfotep	ND	10	"	"	"	"	"	"	
Diazinon	ND	5.0	"	"	"	"	"	"	
Disulfoton	ND	5.0	"	"	"	"	"	"	
Demeton-o	ND	10	"	"	"	"	"	"	
Dimethoate	ND	5.0	"	"	"	"	"	"	
Ronnel	ND	10	"	"	"	"	"	"	
Merphos	ND	10	"	"	"	"	"	"	
Chlorpyrifos	ND	5.0	"	"	"	"	"	"	
Fenthion	ND	5.0	"	"	"	"	"	"	
Trichloronate	ND	5.0	"	"	"	"	"	"	
Methyl parathion	ND	5.0	"	"	"	"	"	"	
Malathion	ND	10	"	"	"	"	"	"	
Tokuthion (Prothiofos)	ND	5.0	"	"	"	"	"	"	
Parathion	ND	5.0	"	"	"	"	"	"	
Stirophos (Tetrachlorvinphos)	ND	5.0	"	"	"	"	"	"	
Bolstar	ND	5.0	"	"	"	"	"	"	
Fensulfothion	ND	5.0	"	"	"	"	"	"	
EPN	ND	5.0	"	"	"	"	"	"	
Azinphos methyl	ND	10	"	"	"	"	"	"	
Coumaphos	ND	5.0	"	"	"	"	"	"	
Surrogate: Tributylphosphate		81.3 %	40-125		"	"	"	"	

SunStar Laboratories, Inc.

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DR-HA1-1.0
T170707-19 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032717	03/27/17	03/29/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: 2,4-DCAA</i>		<i>48.2 %</i>	<i>35-150</i>						

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	

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DR-HA1-1.0
T170707-19 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chlorotoluene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	

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DR-HA1-1.0
T170707-19 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichlorobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		87.8 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		75.2 %	81.2-123		"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		121 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	1500	ug/kg	5	7032720	03/27/17	03/31/17	EPA 8270C	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07

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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA1-1.0
T170707-19 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dinitrotoluene	ND	1500	ug/kg	5	7032720	03/27/17	03/31/17	EPA 8270C	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	5000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07

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DR-HA1-1.0
T170707-19 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,6-Dinitrotoluene	ND	5000	ug/kg	5	7032720	03/27/17	03/31/17	EPA 8270C	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	"	"	R-07
Fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Fluorene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	5000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	"	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
Nitrobenzene	ND	5000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	ND	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		89.5 %	15-121	"	"	"	"	"	R-07
Surrogate: Phenol-d6		72.6 %	24-113	"	"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		64.2 %	21.3-119	"	"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		107 %	32.4-102	"	"	"	"	"	R-07, S-GC
Surrogate: 2,4,6-Tribromophenol		104 %	18.1-105	"	"	"	"	"	R-07

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DR-HA1-1.0
T170707-19 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

<i>Surrogate: Terphenyl-d14</i>	173 %	29.1-130			7032720	03/27/17	03/31/17	EPA 8270C	R-07, S-GC
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Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	1.0	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA2-1.0
T170707-21 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	190	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		95.6 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	27	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	2.8	2.0	"	"	"	"	"	"	
Cobalt	2.0	2.0	"	"	"	"	"	"	
Copper	2.4	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	4.4	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	9.0	5.0	"	"	"	"	"	"	
Zinc	13	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	

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DR-HA2-1.0
T170707-21 (Soil)

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

Organochlorine Pesticides by EPA Method 8081A

alpha-Chlordane	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		71.1 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		48.3 %	35-140		"	"	"	"	

Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		77.6 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		78.2 %	35-140		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA2-1.0
T170707-21 (Soil)

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

Organophosphorus Pesticides by EPA Method 8141A

Dichlorvos	ND	5.0	ug/kg	1	7032420	03/27/17	03/28/17	8141a	
Mevinphos	ND	5.0	"	"	"	"	"	"	
Demeton-s	ND	10	"	"	"	"	"	"	
Ethoprophos	ND	5.0	"	"	"	"	"	"	
Phorate	ND	10	"	"	"	"	"	"	
Naled	ND	5.0	"	"	"	"	"	"	
Sulfotep	ND	10	"	"	"	"	"	"	
Diazinon	ND	5.0	"	"	"	"	"	"	
Disulfoton	ND	5.0	"	"	"	"	"	"	
Demeton-o	ND	10	"	"	"	"	"	"	
Dimethoate	ND	5.0	"	"	"	"	"	"	
Ronnel	ND	10	"	"	"	"	"	"	
Merphos	ND	10	"	"	"	"	"	"	
Chlorpyrifos	ND	5.0	"	"	"	"	"	"	
Fenthion	ND	5.0	"	"	"	"	"	"	
Trichloronate	ND	5.0	"	"	"	"	"	"	
Methyl parathion	ND	5.0	"	"	"	"	"	"	
Malathion	ND	10	"	"	"	"	"	"	
Tokuthion (Prothiofos)	ND	5.0	"	"	"	"	"	"	
Parathion	ND	5.0	"	"	"	"	"	"	
Stirophos (Tetrachlorvinphos)	ND	5.0	"	"	"	"	"	"	
Bolstar	ND	5.0	"	"	"	"	"	"	
Fensulfothion	ND	5.0	"	"	"	"	"	"	
EPN	ND	5.0	"	"	"	"	"	"	
Azinphos methyl	ND	10	"	"	"	"	"	"	
Coumaphos	ND	5.0	"	"	"	"	"	"	
Surrogate: Tributylphosphate		87.6 %	40-125		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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DR-HA2-1.0
T170707-21 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032717	03/27/17	03/29/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: 2,4-DCAA</i>		62.2 %	35-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	

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DR-HA2-1.0
T170707-21 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chlorotoluene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	"
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	"
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	5.0	"	"	"	"	"	"	"
Naphthalene	ND	5.0	"	"	"	"	"	"	"
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	"
Styrene	ND	5.0	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	"
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	"
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA2-1.0
T170707-21 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichlorobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		96.5 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.9 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		119 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	

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DR-HA2-1.0
T170707-21 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dinitrotoluene	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA2-1.0
T170707-21 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,6-Dinitrotoluene	ND	1000	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		46.7 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		53.7 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		56.6 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		68.4 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		117 %	18.1-105		"	"	"	"	S-GC

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DR-HA2-1.0
T170707-21 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

<i>Surrogate: Terphenyl-d14</i>	153 %	29.1-130			7032720	03/27/17	03/31/17	EPA 8270C	S-GC
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Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.73	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA3-1.0
T170707-23 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	200	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		46.4 %	65-135		"	"	"	"	S-03

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	80	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	5.6	2.0	"	"	"	"	"	"	
Cobalt	5.0	2.0	"	"	"	"	"	"	
Copper	5.5	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	11	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	16	5.0	"	"	"	"	"	"	
Zinc	34	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	

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 Project Manager: Derrick Willis

Reported:
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DR-HA3-1.0
T170707-23 (Soil)

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

Organochlorine Pesticides by EPA Method 8081A

alpha-Chlordane	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		58.7 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		49.3 %	35-140		"	"	"	"	

Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	19	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		82.6 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		78.2 %	35-140		"	"	"	"	

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DR-HA3-1.0
T170707-23 (Soil)

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

Organophosphorus Pesticides by EPA Method 8141A

Dichlorvos	ND	5.0	ug/kg	1	7032420	03/27/17	03/28/17	8141a	
Mevinphos	ND	5.0	"	"	"	"	"	"	
Demeton-s	ND	10	"	"	"	"	"	"	
Ethoprophos	ND	5.0	"	"	"	"	"	"	
Phorate	ND	10	"	"	"	"	"	"	
Naled	ND	5.0	"	"	"	"	"	"	
Sulfotep	ND	10	"	"	"	"	"	"	
Diazinon	ND	5.0	"	"	"	"	"	"	
Disulfoton	ND	5.0	"	"	"	"	"	"	
Demeton-o	ND	10	"	"	"	"	"	"	
Dimethoate	ND	5.0	"	"	"	"	"	"	
Ronnel	ND	10	"	"	"	"	"	"	
Merphos	ND	10	"	"	"	"	"	"	
Chlorpyrifos	ND	5.0	"	"	"	"	"	"	
Fenthion	ND	5.0	"	"	"	"	"	"	
Trichloronate	ND	5.0	"	"	"	"	"	"	
Methyl parathion	ND	5.0	"	"	"	"	"	"	
Malathion	ND	10	"	"	"	"	"	"	
Tokuthion (Prothiofos)	ND	5.0	"	"	"	"	"	"	
Parathion	ND	5.0	"	"	"	"	"	"	
Stirophos (Tetrachlorvinphos)	ND	5.0	"	"	"	"	"	"	
Bolstar	ND	5.0	"	"	"	"	"	"	
Fensulfothion	ND	5.0	"	"	"	"	"	"	
EPN	ND	5.0	"	"	"	"	"	"	
Azinphos methyl	ND	10	"	"	"	"	"	"	
Coumaphos	ND	5.0	"	"	"	"	"	"	
Surrogate: Tributylphosphate		86.1 %	40-125		"	"	"	"	

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DR-HA3-1.0
T170707-23 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032717	03/27/17	03/29/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: 2,4-DCAA</i>		<i>56.4 %</i>	<i>35-150</i>						

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA3-1.0
T170707-23 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chlorotoluene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	

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T170707-23 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichlorobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		87.6 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		72.9 %	81.2-123		"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		118 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	

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Reported:
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DR-HA3-1.0
T170707-23 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dinitrotoluene	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	

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DR-HA3-1.0
T170707-23 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,6-Dinitrotoluene	ND	1000	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		51.7 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		55.0 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		60.1 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		79.6 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		78.3 %	18.1-105		"	"	"	"	

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DR-HA3-1.0
T170707-23 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

<i>Surrogate: Terphenyl-d14</i>	148 %	29.1-130			7032720	03/27/17	03/31/17	EPA 8270C	S-GC
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Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	1.2	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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DR-HA4-1.0
T170707-25 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	200	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		56.5 %	65-135		"	"	"	"	S-03

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	50	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	6.4	2.0	"	"	"	"	"	"	
Cobalt	4.3	2.0	"	"	"	"	"	"	
Copper	4.1	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	7.5	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	19	5.0	"	"	"	"	"	"	
Zinc	23	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	

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DR-HA4-1.0
T170707-25 (Soil)

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

Organochlorine Pesticides by EPA Method 8081A

alpha-Chlordane	ND	5.0	ug/kg	1	7032718	03/27/17	03/27/17	EPA 8081A	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		83.3 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		59.4 %	35-140		"	"	"	"	

Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		87.7 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		84.7 %	35-140		"	"	"	"	

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DR-HA4-1.0
T170707-25 (Soil)

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

Organophosphorus Pesticides by EPA Method 8141A

Dichlorvos	ND	5.0	ug/kg	1	7032420	03/27/17	03/28/17	8141a	
Mevinphos	ND	5.0	"	"	"	"	"	"	
Demeton-s	ND	10	"	"	"	"	"	"	
Ethoprophos	ND	5.0	"	"	"	"	"	"	
Phorate	ND	10	"	"	"	"	"	"	
Naled	ND	5.0	"	"	"	"	"	"	
Sulfotep	ND	10	"	"	"	"	"	"	
Diazinon	ND	5.0	"	"	"	"	"	"	
Disulfoton	ND	5.0	"	"	"	"	"	"	
Demeton-o	ND	10	"	"	"	"	"	"	
Dimethoate	ND	5.0	"	"	"	"	"	"	
Ronnel	ND	10	"	"	"	"	"	"	
Merphos	ND	10	"	"	"	"	"	"	
Chlorpyrifos	ND	5.0	"	"	"	"	"	"	
Fenthion	ND	5.0	"	"	"	"	"	"	
Trichloronate	ND	5.0	"	"	"	"	"	"	
Methyl parathion	ND	5.0	"	"	"	"	"	"	
Malathion	ND	10	"	"	"	"	"	"	
Tokuthion (Prothiofos)	ND	5.0	"	"	"	"	"	"	
Parathion	ND	5.0	"	"	"	"	"	"	
Stirophos (Tetrachlorvinphos)	ND	5.0	"	"	"	"	"	"	
Bolstar	ND	5.0	"	"	"	"	"	"	
Fensulfothion	ND	5.0	"	"	"	"	"	"	
EPN	ND	5.0	"	"	"	"	"	"	
Azinphos methyl	ND	10	"	"	"	"	"	"	
Coumaphos	ND	5.0	"	"	"	"	"	"	
Surrogate: Tributylphosphate		87.8 %		40-125		"	"	"	"

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 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA4-1.0
T170707-25 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032717	03/27/17	03/29/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: 2,4-DCAA</i>		<i>53.1 %</i>	<i>35-150</i>						

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

DR-HA4-1.0
T170707-25 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chlorotoluene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	"
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	"
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	"
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	"
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	5.0	"	"	"	"	"	"	"
Naphthalene	ND	5.0	"	"	"	"	"	"	"
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	"
Styrene	ND	5.0	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	"
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	"
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	"

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DR-HA4-1.0
T170707-25 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichlorobenzene	ND	5.0	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		85.1 %	85.5-116		"	"	"	"	S-GC
Surrogate: 4-Bromofluorobenzene		68.1 %	81.2-123		"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		128 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	

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DR-HA4-1.0
T170707-25 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dinitrotoluene	ND	300	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	

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 Project Manager: Derrick Willis

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DR-HA4-1.0
T170707-25 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,6-Dinitrotoluene	ND	1000	ug/kg	1	7032720	03/27/17	03/31/17	EPA 8270C	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		58.6 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		57.4 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		62.0 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		83.5 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		109 %	18.1-105		"	"	"	"	S-GC

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DR-HA4-1.0
T170707-25 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

<i>Surrogate: Terphenyl-d14</i>	119 %	29.1-130			7032720	03/27/17	03/31/17	EPA 8270C	
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Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.93	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Purgeable Petroleum Hydrocarbons by EPA 8015B - 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 7032738 - EPA 5035 GC

Blank (7032738-BLK1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	ND	200	ug/kg							
Surrogate: 4-Bromofluorobenzene	104		"	100		104	65-135			

LCS (7032738-BS1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	10100	200	ug/kg	10900		93.0	75-125			
Surrogate: 4-Bromofluorobenzene	101		"	100		101	65-135			

LCS Dup (7032738-BS1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	10400	200	ug/kg	11000		94.6	75-125	2.89	20	
Surrogate: 4-Bromofluorobenzene	83.4		"	100		83.4	65-135			

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Metals by EPA 6010B - 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 7032739 - EPA 3051

Blank (7032739-BLK1)

Prepared: 03/27/17 Analyzed: 03/28/17

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (7032739-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

Arsenic	81.3	5.0	mg/kg	100		81.3	75-125			
Barium	83.0	1.0	"	100		83.0	75-125			
Cadmium	83.4	2.0	"	100		83.4	75-125			
Chromium	83.0	2.0	"	100		83.0	75-125			
Lead	89.0	3.0	"	100		89.0	75-125			

Matrix Spike (7032739-MS1)

Source: T170707-04

Prepared: 03/27/17 Analyzed: 03/28/17

Arsenic	77.1	5.0	mg/kg	99.0	1.25	76.6	75-125			
Barium	155	1.0	"	99.0	67.0	88.4	75-125			
Cadmium	75.0	2.0	"	99.0	0.420	75.3	75-125			
Chromium	82.1	2.0	"	99.0	6.60	76.2	75-125			
Lead	96.1	3.0	"	99.0	ND	97.0	75-125			

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Metals by EPA 6010B - 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 7032739 - EPA 3051

Matrix Spike Dup (7032739-MSD1)

Source: T170707-04

Prepared: 03/27/17 Analyzed: 03/28/17

Arsenic	78.4	5.0	mg/kg	100	1.25	77.2	75-125	1.75	20	
Barium	153	1.0	"	100	67.0	86.1	75-125	0.909	20	
Cadmium	78.3	2.0	"	100	0.420	77.9	75-125	4.33	20	
Chromium	84.2	2.0	"	100	6.60	77.6	75-125	2.58	20	
Lead	88.9	3.0	"	100	ND	88.9	75-125	7.73	20	QR-04

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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 7032743 - EPA 7471A Soil

Blank (7032743-BLK1)		Prepared: 03/27/17 Analyzed: 03/28/17								
Mercury	ND	0.10	mg/kg							
LCS (7032743-BS1)		Prepared: 03/27/17 Analyzed: 03/28/17								
Mercury	0.336	0.10	mg/kg	0.410		82.1	75-125			
Matrix Spike (7032743-MS1)		Source: T170707-04		Prepared: 03/27/17 Analyzed: 03/28/17						
Mercury	0.319	0.10	mg/kg	0.385	ND	83.0	75-125			
Matrix Spike Dup (7032743-MSD1)		Source: T170707-04		Prepared: 03/27/17 Analyzed: 03/28/17						
Mercury	0.329	0.10	mg/kg	0.397	ND	83.0	75-125	3.10	20	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Organochlorine Pesticides by EPA Method 8081A - 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 7032718 - EPA 3550 ECD/GCMS

Blank (7032718-BLK1)

Prepared & Analyzed: 03/27/17

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Surrogate: Tetrachloro-meta-xylene	6.05		"	9.80		61.8	35-140			
Surrogate: Decachlorobiphenyl	6.27		"	9.80		64.0	35-140			

LCS (7032718-BS1)

Prepared & Analyzed: 03/27/17

gamma-BHC (Lindane)	32.7	5.0	ug/kg	40.8		80.1	40-120			
Heptachlor	32.3	5.0	"	40.8		79.0	40-120			
Aldrin	26.0	5.0	"	40.8		63.7	40-120			
Dieldrin	36.4	5.0	"	40.8		89.3	40-120			
Endrin	37.6	5.0	"	40.8		92.1	40-120			
4,4'-DDT	41.3	5.0	"	40.8		101	33-147			
Surrogate: Tetrachloro-meta-xylene	7.09		"	10.2		69.5	35-140			
Surrogate: Decachlorobiphenyl	7.13		"	10.2		69.8	35-140			

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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Organochlorine Pesticides by EPA Method 8081A - 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 7032718 - EPA 3550 ECD/GCMS

LCS Dup (7032718-BSD1)

Prepared & Analyzed: 03/27/17

gamma-BHC (Lindane)	32.1	5.0	ug/kg	39.6		81.1	40-120	1.16	30	
Heptachlor	30.9	5.0	"	39.6		78.1	40-120	1.20	30	
Aldrin	26.0	5.0	"	39.6		65.7	40-120	3.08	30	
Dieldrin	34.5	5.0	"	39.6		87.0	40-120	2.55	30	
Endrin	36.3	5.0	"	39.6		91.6	40-120	0.513	30	
4,4'-DDT	38.6	5.0	"	39.6		97.4	33-147	3.66	30	
Surrogate: Tetrachloro-meta-xylene	7.46		"	9.90		75.3	35-140			
Surrogate: Decachlorobiphenyl	6.99		"	9.90		70.6	35-140			

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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Polychlorinated Biphenyls by EPA Method 8082 - 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 7032719 - EPA 3550 ECD/GCMS

Blank (7032719-BLK1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
Surrogate: Tetrachloro-meta-xylene	7.46		"	9.80		76.1	35-140			
Surrogate: Decachlorobiphenyl	8.07		"	9.80		82.3	35-140			

LCS (7032719-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	87.6	10	ug/kg	99.0		88.5	40-130			
PCB-1260	84.4	10	"	99.0		85.2	40-130			
Surrogate: Tetrachloro-meta-xylene	7.72		"	9.90		78.0	35-140			
Surrogate: Decachlorobiphenyl	7.97		"	9.90		80.5	35-140			

LCS Dup (7032719-BSD1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	90.0	10	ug/kg	101		89.1	40-130	2.68	30	
PCB-1260	88.6	10	"	101		87.7	40-130	4.89	30	
Surrogate: Tetrachloro-meta-xylene	8.39		"	10.1		83.0	35-140			
Surrogate: Decachlorobiphenyl	8.76		"	10.1		86.7	35-140			

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Organophosphorus Pesticides by EPA Method 8141A - 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 7032420 - EPA 3550 ECD/GCMS

Blank (7032420-BLK1)

Prepared: 03/24/17 Analyzed: 03/28/17

Dichlorvos	ND	5.0	ug/kg							
Mevinphos	ND	5.0	"							
Demeton-s	ND	10	"							
Ethoprophos	ND	5.0	"							
Phorate	ND	10	"							
Naled	ND	5.0	"							
Sulfotep	ND	10	"							
Diazinon	ND	5.0	"							
Disulfoton	ND	5.0	"							
Demeton-o	ND	10	"							
Dimethoate	ND	5.0	"							
Ronnel	ND	10	"							
Merphos	ND	10	"							
Chlorpyrifos	ND	5.0	"							
Fenthion	ND	5.0	"							
Trichloronate	ND	5.0	"							
Methyl parathion	ND	5.0	"							
Malathion	ND	10	"							
Tokuthion (Prothiofos)	ND	5.0	"							
Parathion	ND	5.0	"							
Stirophos (Tetrachlorvinphos)	ND	5.0	"							
Bolstar	ND	5.0	"							
Fensulfothion	ND	5.0	"							
EPN	ND	5.0	"							
Azinphos methyl	ND	10	"							
Coumaphos	ND	5.0	"							
Surrogate: Tributylphosphate	29.8		"	39.1		76.1	40-125			

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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Organophosphorus Pesticides by EPA Method 8141A - 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 7032420 - EPA 3550 ECD/GCMS

LCS (7032420-BS1)

Prepared: 03/24/17 Analyzed: 03/28/17

Diazinon	28.5	5.0	ug/kg	39.4		72.4	60-130			
Chlorpyrifos	26.9	5.0	"	39.4		68.4	60-130			
Methyl parathion	44.2	5.0	"	39.4		112	60-130			
Stirophos (Tetrachlorvinphos)	33.4	5.0	"	39.4		84.9	60-130			
Surrogate: Tributylphosphate	23.9		"	39.4		60.7	40-125			

LCS Dup (7032420-BS1)

Prepared: 03/24/17 Analyzed: 03/28/17

Diazinon	26.2	5.0	ug/kg	39.2		66.9	60-130	8.29	20	
Chlorpyrifos	28.4	5.0	"	39.2		72.3	60-130	5.15	20	
Methyl parathion	39.8	5.0	"	39.2		102	60-130	10.4	20	
Stirophos (Tetrachlorvinphos)	27.5	5.0	"	39.2		70.2	60-130	19.4	20	
Surrogate: Tributylphosphate	31.4		"	39.2		80.1	40-125			

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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 04/03/17 16:50

Chlorinated Herbicides by EPA Method 8151A - 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 7032717 - 8151 Prep

Blank (7032717-BLK1)

Prepared: 03/27/17 Analyzed: 03/29/17

2,4,5-T	ND	5.00	ug/kg							
2,4,5-TP (Silvex)	ND	5.00	"							
2,4-D	ND	5.00	"							
2,4-DB	ND	5.00	"							
3,5-Dichlorobenzoic acid	ND	5.00	"							
4-Nitrophenol	ND	5.00	"							
Acifluorfen	ND	5.00	"							
Bentazon	ND	5.00	"							
Chloramben	ND	5.00	"							
Dalapon	ND	30.0	"							
DCPA diacid	ND	5.00	"							
Dicamba	ND	5.00	"							
Dichloroprop	ND	5.00	"							
Dinoseb	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Picloram	ND	5.00	"							

Surrogate: 2,4-DCAA 238 " 396 60.0 35-150

LCS (7032717-BS1)

Prepared: 03/27/17 Analyzed: 03/29/17

2,4,5-T	69.6	5.00	ug/kg	99.4		70.1	20-150			
2,4,5-TP (Silvex)	94.8	5.00	"	99.6		95.1	20-150			
2,4-D	87.5	5.00	"	99.6		87.9	20-150			

Surrogate: 2,4-DCAA 255 " 398 64.1 35-150

LCS Dup (7032717-BSD1)

Prepared: 03/27/17 Analyzed: 03/29/17

2,4,5-T	66.5	5.00	ug/kg	98.0		67.8	20-150	4.65	30	
2,4,5-TP (Silvex)	92.7	5.00	"	98.2		94.4	20-150	2.21	30	
2,4-D	82.1	5.00	"	98.2		83.6	20-150	6.40	30	

Surrogate: 2,4-DCAA 215 " 393 54.7 35-150

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

Blank (7032736-BLK1)

Prepared & Analyzed: 03/27/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

Blank (7032736-BLK1)

Prepared & Analyzed: 03/27/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: Toluene-d8	41.8		"	39.5		106	85.5-116			
Surrogate: 4-Bromofluorobenzene	36.7		"	39.5		92.9	81.2-123			
Surrogate: Dibromofluoromethane	38.4		"	39.5		97.1	95.7-135			

LCS (7032736-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

Chlorobenzene	109	5.0	ug/kg	99.4		110	75-125			
1,1-Dichloroethene	107	5.0	"	99.4		108	75-125			
Trichloroethene	106	5.0	"	99.4		106	75-125			
Benzene	106	5.0	"	99.4		107	75-125			
Toluene	106	5.0	"	99.4		106	75-125			
Surrogate: Toluene-d8	38.9		"	39.8		97.9	85.5-116			
Surrogate: 4-Bromofluorobenzene	43.0		"	39.8		108	81.2-123			
Surrogate: Dibromofluoromethane	47.8		"	39.8		120	95.7-135			

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 Project Manager: Derrick Willis

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 04/03/17 16:50

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

LCS Dup (7032736-BSD1)

Prepared: 03/27/17 Analyzed: 03/28/17

Chlorobenzene	111	5.0	ug/kg	99.6	111	75-125	1.15	20		
1,1-Dichloroethene	105	5.0	"	99.6	106	75-125	1.82	20		
Trichloroethene	100	5.0	"	99.6	101	75-125	5.17	20		
Benzene	107	5.0	"	99.6	107	75-125	0.573	20		
Toluene	102	5.0	"	99.6	102	75-125	3.68	20		
Surrogate: Toluene-d8	37.8		"	39.8	95.0	85.5-116				
Surrogate: 4-Bromofluorobenzene	41.4		"	39.8	104	81.2-123				
Surrogate: Dibromofluoromethane	49.1		"	39.8	123	95.7-135				

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Carbazole	ND	300	ug/kg							
Aniline	ND	300	"							
Phenol	ND	1000	"							
2-Chlorophenol	ND	1000	"							
1,4-Dichlorobenzene	ND	300	"							
N-Nitrosodi-n-propylamine	ND	300	"							
1,2,4-Trichlorobenzene	ND	300	"							
4-Chloro-3-methylphenol	ND	1000	"							
1-Methylnaphthalene	ND	300	"							
2-Methylnaphthalene	ND	300	"							
Acenaphthene	ND	300	"							
4-Nitrophenol	ND	1000	"							
2,4-Dinitrotoluene	ND	300	"							
Pentachlorophenol	ND	1000	"							
Pyrene	ND	300	"							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Benzyl alcohol	ND	300	"							
Bis(2-chloroethoxy)methane	ND	300	"							
Bis(2-chloroethyl)ether	ND	300	"							
Bis(2-chloroisopropyl)ether	ND	300	"							
Bis(2-ethylhexyl)phthalate	ND	300	"							
4-Bromophenyl phenyl ether	ND	300	"							
Butyl benzyl phthalate	ND	300	"							
4-Chloroaniline	ND	300	"							
2-Chloronaphthalene	ND	300	"							
4-Chlorophenyl phenyl ether	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Dibenzofuran	ND	300	"							
Di-n-butyl phthalate	ND	300	"							

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.

Rose Fasheh, Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
Pyridine	ND	300	"							
2,4,6-Trichlorophenol	ND	1000	"							

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: 2-Fluorophenol	1510		ug/kg	3310		45.5	15-121			
Surrogate: Phenol-d6	1390		"	3310		42.0	24-113			
Surrogate: Nitrobenzene-d5	1510		"	3310		45.5	21.3-119			
Surrogate: 2-Fluorobiphenyl	1910		"	3310		57.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2630		"	3310		79.4	18.1-105			
Surrogate: Terphenyl-d14	2750		"	3310		83.1	29.1-130			

LCS (7032720-BS1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	3130	1000	ug/kg	3330		93.8	34-114			
2-Chlorophenol	3140	1000	"	3330		94.3	34-114			
1,4-Dichlorobenzene	2430	300	"	3330		72.9	34-114			
N-Nitrosodi-n-propylamine	3180	300	"	3330		95.5	30-110			
1,2,4-Trichlorobenzene	1930	300	"	3330		57.8	39-119			
4-Chloro-3-methylphenol	2270	1000	"	3330		68.1	50-130			
Acenaphthene	2070	300	"	3330		62.1	34-114			
Pentachlorophenol	2620	1000	"	3330		78.6	50-130			
Pyrene	2070	300	"	3330		62.0	30-110			
Surrogate: 2-Fluorophenol	3250		"	3330		97.4	15-121			
Surrogate: Phenol-d6	3750		"	3330		113	24-113			
Surrogate: Nitrobenzene-d5	3290		"	3330		98.6	21.3-119			
Surrogate: 2-Fluorobiphenyl	3620		"	3330		109	32.4-102			S-GC
Surrogate: 2,4,6-Tribromophenol	3670		"	3330		110	18.1-105			S-GC
Surrogate: Terphenyl-d14	3820		"	3330		115	29.1-130			

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	2650	1000	ug/kg	3300		80.2	34-114	16.7	42	
2-Chlorophenol	3110	1000	"	3300		94.3	34-114	0.953	40	
1,4-Dichlorobenzene	2000	300	"	3300		60.7	34-114	19.3	28	
N-Nitrosodi-n-propylamine	2200	300	"	3300		66.7	30-110	36.4	38	
1,2,4-Trichlorobenzene	1670	300	"	3300		50.5	39-119	14.5	28	
4-Chloro-3-methylphenol	2340	1000	"	3300		70.9	50-130	2.98	42	
Acenaphthene	1770	300	"	3300		53.5	34-114	15.8	31	
Pentachlorophenol	2220	1000	"	3300		67.3	50-130	16.4	50	
Pyrene	1700	300	"	3300		51.5	30-110	19.6	31	
Surrogate: 2-Fluorophenol	2460		"	3300		74.5	15-121			
Surrogate: Phenol-d6	2050		"	3300		62.1	24-113			

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.

Rose Fasheh, Project Manager

I-275



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: Nitrobenzene-d5	1750		ug/kg	3300		52.9	21.3-119			
Surrogate: 2-Fluorobiphenyl	2200		"	3300		66.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3170		"	3300		95.9	18.1-105			
Surrogate: Terphenyl-d14	3290		"	3300		99.8	29.1-130			

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.

Rose Fasheh, Project Manager

I-276



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:50

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods - Quality Control

Weck Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch W7C1566 - EPA 3050M-SCL

Blank (W7C1566-BLK1)

Prepared: 03/28/17 Analyzed: 04/03/17

Uranium, Total ND 0.50 mg/kg

LCS (W7C1566-BS1)

Prepared: 03/28/17 Analyzed: 04/03/17

Uranium, Total 47.3 0.50 mg/kg 50.0 95 80-120

Matrix Spike (W7C1566-MS1)

Source: 7C27032-01

Prepared: 03/28/17 Analyzed: 04/03/17

Uranium, Total 44.6 0.50 mg/kg 48.8 0.529 90 75-125

Matrix Spike Dup (W7C1566-MSD1)

Source: 7C27032-01

Prepared: 03/28/17 Analyzed: 04/03/17

Uranium, Total 46.1 0.50 mg/kg 48.1 0.529 95 75-125 3 20

SunStar Laboratories, Inc.

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

Rose Fasheh, Project Manager

I-277



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:50

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- S-03 The surrogate recovery was below acceptance criteria in the sample because of a possible matrix effect. The surrogate recovery was within acceptance criteria in the method blank and LCS.
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- QR-04 The percent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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**SunStar
Laboratories, Inc.**

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commerce Centre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 2441 Ridge Route Drive #130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/21/17 Page: 1 of 3
Project Name: Brea-Olinda
Collector: E. Heger Client Project #: 02077.01
Batch #: 710707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRD	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCBs	Laboratory ID #	Comments/Preservative	Total # of containers		
DRU-T1-5	3/21/17	0944	VBK	Soil	H											01				
DRU-T1-5	3/21/17	0944	40361	Soil	H											02				
DRU-T1-10	3/21/17	0754	40361	Soil	H											03				
DRU-T1-15	3/21/17	0800	40361	Soil	H											04				
VR5-T2-5	3/21/17	0840	Soil	VBK	H															
VR5-T2-5	3/21/17	0840	Soil	40361	H															
VR5-T2-10	3/21/17	0850	Soil	40361	H															
VR5-T2-15	3/21/17	0900	Soil	40361	H															
VR5-T1-5	3/21/17	0935	Soil	VBK	H															
VR5-T1-5	3/21/17	0935	Soil	40361	H															
VR5-T1-10	3/21/17	0945	Soil	40361	H															
VR5-T1-15	3/21/17	0955	Soil	40361	H															
VR5-T1-5	3/21/17	1020	Soil	VBK	H															
VR5-T1-5	3/21/17	1020	Soil	40361	H															
VR5-T1-10	3/21/17	1043	Soil	40361	H															
Relinquished by: (signature) <u>Fred Meyer</u>			Date / Time <u>3/21/17 3:25</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/21/17 15:25</u>			Total # of containers <u>35</u>			Chain of Custody seals Y/N/NA Seals intact? Y/N/NA Received good condition/cold			Notes <u>949-689-9987</u>		
Relinquished by: (signature)			Date / Time			Received by: (signature)			Date / Time			Turn around time: <u>STD</u>								

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162514



SunStar Laboratories, Inc.
 PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Boatright Environmental Management
 Address: 24411 Ridge Route Drive Suite 130
 Phone: 949-216-0050 Fax: 949-216-0055
 Project Manager: Derrick Willis

Date: 3/21/17 Page: 2 of 3
 Project Name: Brea-Olinda
 Collector: Frank Heger Client Project #: 02077.01
 Batch #: T170707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GPD	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB's	Laboratory ID #	Comments/Preservative	Total # of containers
58-TI-15	3/21/17	1048	Soil	40391	H							A				12		
55-TI-5	3/21/17	1120	Soil	VDA	H							A				13		
55-TI-5	3/21/17	1132	Soil	40391	H							A				14	HIGH TPH	
55-TI-10	3/21/17	1142	Soil	40391	H							A				15	HIGH TPH	
55-TI-15	3/21/17	1210	Soil	VDA	H							A				16		
104-TI-5	3/21/17	1210	Soil	40391	H							A				17		
104-TI-10	3/21/17	1218	Soil	40391	H							A				18		
104-TI-15	3/21/17	1225	Soil	40391	H							A				19		
Relinquished by: (signature) <u>Paul Heger</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Total # of containers										Notes		
Relinquished by: (signature)			3/21/17 3:25	Received by: (signature)	3/21/17 15:25	Chain of Custody seals Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Received good condition/cold												
Turn around time: <u>STD</u>																		

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162512

Chain of Custody Record

Client: Northgate Environmental Management
 Address: 2441 Ridge Route Drive, Suite 130
 Phone: 949-716-0050 Fax: 949-716-0055
 Project Manager: Debra Willis

Date: 3/21/2017 Page: 3 of 3
 Project Name: Brea Olinda
 Collector: Michelle Hugron Client Project #: 02017.01
 Batch #: 1122707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270C	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	EPA 8081 Pesticides	8141 organophosphorus pesticides	8151 herbicides	Laboratory ID #	Comments/Preservative	Total # of containers
DR-HA1-1.0	3/21/17	0735	Soil	NOAs+Core	H													19		5
DR-HA1-5.0	3/21/17	0743	Soil	Core														20		5
DR-HA2-1.0	3/21/17	0802	Soil	NOAs+Core	H													21		5
DR-HA2-5.0	3/21/17	0815	Soil	Core														22		5
DR-HA3-1.0	3/21/17	0825	Soil	NOAs+Core	H													23		5
DR-HA3-5.0	3/21/17	0846	Soil	Core														24		5
DR-HA4-1.0	3/21/17	0911	Soil	NOAs+Core	H													25		5
DR-HA4-5.0	3/21/17	0941	Soil	Core														26		1
Relinquished by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 1230</u>	Received by: (signature) <u>Michelle Hugron</u>	Date / Time <u>3/21/17 1230</u>																
Relinquished by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 3:25</u>	Received by: (signature) <u>Michelle Hugron</u>	Date / Time <u>3/21/17 15:25</u>																
Relinquished by: (signature) <u>Michelle Hugron</u>		Date / Time <u>3/21/17 3:25</u>	Received by: (signature) <u>Michelle Hugron</u>	Date / Time <u>3/21/17 15:25</u>																
Turn around time: <u>STD</u>					Total # of containers <u>24</u>		Chain of Custody seals Y/N/NA <u>Y/N/NA</u>		Seals intact? Y/N/NA <u>Y/N/NA</u>		Received good condition/cold <u>Y/N/NA</u>		Notes <u>F. Hugron</u> <u>949-689-9987</u>							

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162513



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 117207

Client Name: NORWICH Project: BREA FLANDA DIG FIELD

Delivered by: Client SunStar Courier GSO FedEx Other

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

Lab Received by: BILIAN Date/Time Lab Received: 3/11/07 15:25

Total number of coolers received: _____

Temperature: Cooler #1 ^{S.C.}	°C +/- the CF (- 0.2°C) = <u>5.4</u>	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BL

Comments:

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Friday, March 24, 2017 6:09 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Additional work order confirmation for Brea Olinda Oil Field (T170707)
Attachments: T170697_WKO_02.pdf; T170707_WKO_02.pdf

Derrick,

Please find attached work orders for confirmation of additionally requested analyses below. Please carefully review and let me know if you have any questions or concerns.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:38 PM
To: Rose Fasheh
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Standard TAT is fine, thanks Rose

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 5:36 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

What TAT are you looking for on these? Standard is a 5-day yielding results by COB Monday 4/3.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:11 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Hi Rose,
Please run the analyses for the samples shaded in green. Please let me know if you have any questions.
Thanks
Derrick



Derrick S. Willis
Principal

Northgate Environmental Management, Inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
phone (949) 716-0050 ext. 101; cell (949) 375-7004; fax (949) 315-3365
<http://www.ngem.com>

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From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 2:45 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Final Report for Brea Olinda Oil Field (T170707)

Hello Derrick and Frank,

Please see the attached final report for the following:

Project: Brea Olinda Oil Field
Project Number: 02077.01

Thank you for choosing SunStar Labs.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

	Date	Time	PID	Depth	EPH (EPA8015M)	Chlorinated					OP		
						8260 +GRO	SVOC (EPA8270)	CAM 17 (EPA6010)	Uranium	PCB (EPA8082)	Pesticides (EPA8081)	Pesticides (EPA8141)	Herbicides (EPA8151)
S20-T1	3/20/2017	8:00	13.3	5	A	1	1	1	1	1	x	x	x
	3/20/2017	9:15	0.0	10	A	x	H	H	H	H	x	x	x
	3/20/2017	9:25	0.0	15	A	x	H	H	H	H	x	x	x
S20-T2	3/20/2017	10:09	0.6	5	A	1	1	1	H	1	x	x	x
	3/20/2017	10:19	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	10:32	1.2	15	A	x	H	H	H	H	x	x	x
BOTF-T2	3/20/2017	11:50	18.2	5	A	1	1	1	H	1	x	x	x
	3/20/2017	12:00	0.4	10	A	x	H	H	H	H	x	x	x
	3/20/2017	12:08	0.1	15	A	x	H	H	H	H	x	x	x
BOTF-T1	3/20/2017	13:15	0.6	5	A	H	H	H	H	H	x	x	x
	3/20/2017	13:30	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	13:45	0.1	15	A	x	H	H	H	H	x	x	x
H2-T1	3/20/2017	13:45	0.2	5	A	H	H	H	H	H	x	x	x
	3/20/2017	14:15	0.2	10	A	x	H	H	H	H	x	x	x
	3/20/2017	14:35	0.1	15	A	x	H	H	H	H	x	x	x
DU-T1	3/21/2017	7:44	10.4	5	A	1	H	H	H	H	x	x	x
	3/21/2017	7:54	5.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	8:00	0.3	15	A	x	H	H	H	H	x	x	x
VRS-T2	3/21/2017	8:40	18.3	5	A	1	1	1	H	1	x	x	x
	3/21/2017	8:50	15.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:00	23.4	15	A	x	H	H	H	H	x	x	x
VRS-T1	3/21/2017	9:35	12.2	5	A	1	H	1	H	1	x	x	x
	3/21/2017	9:45	2.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:55	2.0	15	A	x	H	H	H	H	x	x	x
S8-T1	3/21/2017	10:20	29.7	5	A	1	1	1	1	1	x	x	x
	3/21/2017	10:34	142.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	10:48	121.0	15	A	x	H	H	H	H	x	x	x
S5-T1	3/21/2017	11:20	18.0	5	A	1	1	1	1	1	x	x	x
	3/21/2017	11:32	97.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	11:42	89.0	15	A	x	H	H	H	H	x	x	x
104-T1	3/21/2017	12:10	0.1	5	A	1	1	1	1	1	x	x	x
	3/21/2017	12:18	0.3	10	A	x	H	H	H	H	x	x	x
	3/21/2017	12:25	0.1	15	A	x	H	H	H	H	x	x	x
DR-HA1	3/21/2017	7:35	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	7:43	NA	5	A	x	H	H	H	H	H	H	H
DR-HA2	3/21/2017	8:02	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:15	NA	5	A	x	H	H	H	H	H	H	H
DR-HA3	3/21/2017	8:25	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:46	NA	5	A	x	H	H	H	H	H	H	H
DR-HA4	3/21/2017	9:11	NA	1	A	1	1	1	1	1	1	1	H
	3/21/2017	9:41	NA	5	A	x	H	H	H	H	H	H	H

13 11 12 8 12 4 4 3

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Brian Charon Date Received: 03/21/17 15:25
 Logged In By: Brian Charon Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Brian Charon Date Received: 03/21/17 15:25
 Logged In By: Brian Charon Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time 8260 and GRO added per client request (Derrick, US & 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:44	
8260 5035	04/03/17 15:00	5	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time 8260, GRO, 8270, metals, and 8082 added per client request (3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:40	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:40	
8082 PCB	04/03/17 15:00	5	04/04/17 08:40	
8260 5035	04/03/17 15:00	5	04/04/17 08:40	
8270C	04/03/17 15:00	5	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:35	
8082 PCB	04/03/17 15:00	5	04/04/17 09:35	
8260 5035	04/03/17 15:00	5	04/04/17 09:35	
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 10:20	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 10:20	
8082 PCB	04/03/17 15:00	5	04/04/17 10:20	
8260 5035	04/03/17 15:00	5	04/04/17 10:20	
8270C	04/03/17 15:00	5	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 11:20	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 11:20	
8082 PCB	04/03/17 15:00	5	04/04/17 11:20	
8260 5035	04/03/17 15:00	5	04/04/17 11:20	
8270C	04/03/17 15:00	5	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 12:10	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 12:10	
8082 PCB	04/03/17 15:00	5	04/04/17 12:10	
8260 5035	04/03/17 15:00	5	04/04/17 12:10	
8270C	04/03/17 15:00	5	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 07:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:35	
8081 Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8082 PCB	04/03/17 15:00	5	04/04/17 07:35	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8151 Herbicides	04/03/17 15:00	5	04/04/17 07:35	
8260 5035	04/03/17 15:00	5	04/04/17 07:35	
8270C	04/03/17 15:00	5	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:02	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:02	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8082 PCB	04/03/17 15:00	5	04/04/17 08:02	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:02	
8260 5035	04/03/17 15:00	5	04/04/17 08:02	
8270C	04/03/17 15:00	5	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:25	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:25	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8082 PCB	04/03/17 15:00	5	04/04/17 08:25	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:25	
8260 5035	04/03/17 15:00	5	04/04/17 08:25	
8270C	04/03/17 15:00	5	04/04/17 08:25	

T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	

T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:11	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:11	
8081 Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8082 PCB	04/03/17 15:00	5	04/04/17 09:11	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8151 Herbicides	04/03/17 15:00	5	04/04/17 09:11	
8260 5035	04/03/17 15:00	5	04/04/17 09:11	
8270C	04/03/17 15:00	5	04/04/17 09:11	

T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	

Weck Labs

T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 10:20	EPA 200.8 Uranium
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 11:20	EPA 200.8 Uranium

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Analysis	Due	TAT	Expires	Comments
Weck Labs				
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 12:10	EPA 200.8 Uranium
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 07:35	EPA 200.8 Uranium
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:02	EPA 200.8 Uranium
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:25	EPA 200.8 Uranium
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 09:11	EPA 200.8 Uranium

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg



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24411 Ridge Route Drive, Suite 130
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Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/26/17 10:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S8-T1-15	T170707-12	Soil	03/21/17 10:48	03/21/17 15:25

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

DETECTIONS SUMMARY

Sample ID: S8-T1-15

Laboratory ID: T170707-12

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	220	1.0		mg/kg	EPA 6010B	
Chromium	18	2.0		mg/kg	EPA 6010B	
Cobalt	5.2	2.0		mg/kg	EPA 6010B	
Copper	11	1.0		mg/kg	EPA 6010B	
Lead	31	3.0		mg/kg	EPA 6010B	
Nickel	14	2.0		mg/kg	EPA 6010B	
Vanadium	19	5.0		mg/kg	EPA 6010B	
Zinc	35	1.0		mg/kg	EPA 6010B	
n-Butylbenzene	16	5.0		ug/kg	EPA 8260B	I-02
sec-Butylbenzene	18	5.0		ug/kg	EPA 8260B	I-02
Isopropylbenzene	19	5.0		ug/kg	EPA 8260B	I-02
Naphthalene	130	5.0		ug/kg	EPA 8260B	I-02
n-Propylbenzene	29	5.0		ug/kg	EPA 8260B	I-02
Ethylbenzene	17	5.0		ug/kg	EPA 8260B	I-02
C6-C12 (GRO)	9400	500		ug/kg	EPA 8260B	I-02
1-Methylnaphthalene	23000	15000		ug/kg	EPA 8270C	O-05, R-07
2-Methylnaphthalene	32000	15000		ug/kg	EPA 8270C	O-05, R-07

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

S8-T1-15
T170707-12 (Soil)

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

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7041921	04/19/17	04/20/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	220	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	18	2.0	"	"	"	"	"	"	
Cobalt	5.2	2.0	"	"	"	"	"	"	
Copper	11	1.0	"	"	"	"	"	"	
Lead	31	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	14	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	19	5.0	"	"	"	"	"	"	
Zinc	35	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7041922	04/19/17	04/20/17	EPA 7471A Soil	
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7041920	04/19/17	04/19/17	EPA 8260B	I-02
Bromochloromethane	ND	5.0	"	"	"	"	"	"	I-02
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	I-02
Bromoform	ND	5.0	"	"	"	"	"	"	I-02
Bromomethane	ND	5.0	"	"	"	"	"	"	I-02
n-Butylbenzene	16	5.0	"	"	"	"	"	"	I-02
sec-Butylbenzene	18	5.0	"	"	"	"	"	"	I-02
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	I-02
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	I-02
Chlorobenzene	ND	5.0	"	"	"	"	"	"	I-02
Chloroethane	ND	5.0	"	"	"	"	"	"	I-02
Chloroform	ND	5.0	"	"	"	"	"	"	I-02

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 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

S8-T1-15
T170707-12 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Chloromethane	ND	5.0	ug/kg	1	7041920	04/19/17	04/19/17	EPA 8260B	I-02
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	I-02
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	I-02
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	I-02
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	I-02
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	I-02
Dibromomethane	ND	5.0	"	"	"	"	"	"	I-02
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	I-02
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	I-02
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	I-02
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	I-02
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	I-02
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	I-02
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	I-02
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	I-02
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	I-02
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	I-02
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	I-02
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	I-02
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	I-02
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	I-02
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	I-02
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	I-02
Isopropylbenzene	19	5.0	"	"	"	"	"	"	I-02
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	I-02
Methylene chloride	ND	5.0	"	"	"	"	"	"	I-02
Naphthalene	130	5.0	"	"	"	"	"	"	I-02
n-Propylbenzene	29	5.0	"	"	"	"	"	"	I-02
Styrene	ND	5.0	"	"	"	"	"	"	I-02
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	I-02
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	I-02
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	I-02

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

S8-T1-15
T170707-12 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichlorobenzene	ND	5.0	ug/kg	1	7041920	04/19/17	04/19/17	EPA 8260B	I-02
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	I-02
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	I-02
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	I-02
Trichloroethene	ND	5.0	"	"	"	"	"	"	I-02
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	I-02
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	I-02
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	I-02
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	I-02
Vinyl chloride	ND	5.0	"	"	"	"	"	"	I-02
Benzene	ND	5.0	"	"	"	"	"	"	I-02
Toluene	ND	5.0	"	"	"	"	"	"	I-02
Ethylbenzene	17	5.0	"	"	"	"	"	"	I-02
m,p-Xylene	ND	10	"	"	"	"	"	"	I-02
o-Xylene	ND	5.0	"	"	"	"	"	"	I-02
C6-C12 (GRO)	9400	500	"	"	"	"	"	"	I-02
Surrogate: 4-Bromofluorobenzene		106 %	81.2-123	"	"	"	"	"	I-02
Surrogate: Dibromofluoromethane		110 %	95.7-135	"	"	"	"	"	I-02
Surrogate: Toluene-d8		111 %	85.5-116	"	"	"	"	"	I-02

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	15000	ug/kg	10	7042028	04/20/17	04/21/17	EPA 8270C	O-05, R-07
Phenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Aniline	ND	15000	"	"	"	"	"	"	O-05, R-07
2-Chlorophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
1,4-Dichlorobenzene	ND	15000	"	"	"	"	"	"	O-05, R-07
N-Nitrosodi-n-propylamine	ND	15000	"	"	"	"	"	"	O-05, R-07
1,2,4-Trichlorobenzene	ND	15000	"	"	"	"	"	"	O-05, R-07
4-Chloro-3-methylphenol	ND	49000	"	"	"	"	"	"	O-05, R-07
1-Methylnaphthalene	23000	15000	"	"	"	"	"	"	O-05, R-07
2-Methylnaphthalene	32000	15000	"	"	"	"	"	"	O-05, R-07
Acenaphthene	ND	15000	"	"	"	"	"	"	O-05, R-07
4-Nitrophenol	ND	49000	"	"	"	"	"	"	R-07, O-05

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

S8-T1-15
T170707-12 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dinitrotoluene	ND	15000	ug/kg	10	7042028	04/20/17	04/21/17	EPA 8270C	O-05, R-07
Pentachlorophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Pyrene	ND	15000	"	"	"	"	"	"	O-05, R-07
Acenaphthylene	ND	15000	"	"	"	"	"	"	O-05, R-07
Anthracene	ND	15000	"	"	"	"	"	"	O-05, R-07
Benzo (a) anthracene	ND	15000	"	"	"	"	"	"	O-05, R-07
Benzo (b) fluoranthene	ND	15000	"	"	"	"	"	"	O-05, R-07
Benzo (k) fluoranthene	ND	15000	"	"	"	"	"	"	O-05, R-07
Benzo (g,h,i) perylene	ND	49000	"	"	"	"	"	"	R-07, O-05
Benzo (a) pyrene	ND	15000	"	"	"	"	"	"	O-05, R-07
Benzyl alcohol	ND	15000	"	"	"	"	"	"	O-05, R-07
Bis(2-chloroethoxy)methane	ND	15000	"	"	"	"	"	"	O-05, R-07
Bis(2-chloroethyl)ether	ND	15000	"	"	"	"	"	"	O-05, R-07
Bis(2-chloroisopropyl)ether	ND	15000	"	"	"	"	"	"	O-05, R-07
Bis(2-ethylhexyl)phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
4-Bromophenyl phenyl ether	ND	15000	"	"	"	"	"	"	O-05, R-07
Butyl benzyl phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
4-Chloroaniline	ND	15000	"	"	"	"	"	"	O-05, R-07
2-Chloronaphthalene	ND	15000	"	"	"	"	"	"	O-05, R-07
4-Chlorophenyl phenyl ether	ND	15000	"	"	"	"	"	"	O-05, R-07
Chrysene	ND	15000	"	"	"	"	"	"	O-05, R-07
Dibenz (a,h) anthracene	ND	15000	"	"	"	"	"	"	R-07, O-05
Dibenzofuran	ND	15000	"	"	"	"	"	"	O-05, R-07
Di-n-butyl phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
1,2-Dichlorobenzene	ND	15000	"	"	"	"	"	"	O-05, R-07
1,3-Dichlorobenzene	ND	15000	"	"	"	"	"	"	O-05, R-07
2,4-Dichlorophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Diethyl phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
2,4-Dimethylphenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Dimethyl phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
4,6-Dinitro-2-methylphenol	ND	49000	"	"	"	"	"	"	O-05, R-07
2,4-Dinitrophenol	ND	49000	"	"	"	"	"	"	O-05, R-07

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

S8-T1-15
T170707-12 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,6-Dinitrotoluene	ND	49000	ug/kg	10	7042028	04/20/17	04/21/17	EPA 8270C	O-05, R-07
Di-n-octyl phthalate	ND	15000	"	"	"	"	"	"	O-05, R-07
Fluoranthene	ND	15000	"	"	"	"	"	"	O-05, R-07
Fluorene	ND	15000	"	"	"	"	"	"	O-05, R-07
Hexachlorobenzene	ND	74000	"	"	"	"	"	"	O-05, R-07
Hexachlorobutadiene	ND	15000	"	"	"	"	"	"	O-05, R-07
Hexachlorocyclopentadiene	ND	49000	"	"	"	"	"	"	R-07, O-05
Hexachloroethane	ND	15000	"	"	"	"	"	"	O-05, R-07
Indeno (1,2,3-cd) pyrene	ND	15000	"	"	"	"	"	"	O-05, R-07
Isophorone	ND	15000	"	"	"	"	"	"	O-05, R-07
2-Methylphenol	ND	49000	"	"	"	"	"	"	O-05, R-07
4-Methylphenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Naphthalene	ND	15000	"	"	"	"	"	"	O-05, R-07
2-Nitroaniline	ND	15000	"	"	"	"	"	"	O-05, R-07
3-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07, O-05
4-Nitroaniline	ND	15000	"	"	"	"	"	"	O-05, R-07
Nitrobenzene	ND	49000	"	"	"	"	"	"	R-07, O-05
2-Nitrophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
N-Nitrosodimethylamine	ND	15000	"	"	"	"	"	"	O-05, R-07
N-Nitrosodiphenylamine	ND	15000	"	"	"	"	"	"	O-05, R-07
2,3,5,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	O-05, R-07
2,3,4,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	O-05, R-07
Phenanthrene	ND	15000	"	"	"	"	"	"	O-05, R-07
Azobenzene	ND	15000	"	"	"	"	"	"	O-05, R-07
Pyridine	ND	15000	"	"	"	"	"	"	O-05, R-07
2,4,5-Trichlorophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
2,4,6-Trichlorophenol	ND	49000	"	"	"	"	"	"	O-05, R-07
Surrogate: 2-Fluorophenol	38.5 %		15-121		"	"	"	"	O-05, R-07
Surrogate: Phenol-d6	%		24-113		"	"	"	"	O-05, R-07
Surrogate: Nitrobenzene-d5	102 %		21.3-119		"	"	"	"	O-05, R-07
Surrogate: 2-Fluorobiphenyl	110 %		32.4-102		"	"	"	"	O-05, R-07
Surrogate: 2,4,6-Tribromophenol	%		18.1-105		"	"	"	"	O-05, R-07

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S8-T1-15
T170707-12 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Surrogate: Terphenyl-d14	104 %	29.1-130			7042028	04/20/17	04/21/17	EPA 8270C	O-05, R-07
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Rose Fasheh, Project Manager

I-302



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Metals by EPA 6010B - 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 7041921 - EPA 3051

Blank (7041921-BLK1)

Prepared: 04/19/17 Analyzed: 04/20/17

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (7041921-BS1)

Prepared: 04/19/17 Analyzed: 04/20/17

Arsenic	105	5.0	mg/kg	100		105	75-125			
Barium	102	1.0	"	100		102	75-125			
Cadmium	102	2.0	"	100		102	75-125			
Chromium	102	2.0	"	100		102	75-125			
Lead	106	3.0	"	100		106	75-125			

Matrix Spike (7041921-MS1)

Source: T170929-12

Prepared: 04/19/17 Analyzed: 04/20/17

Arsenic	89.2	5.0	mg/kg	95.2	6.09	87.2	75-125			
Barium	236	1.0	"	95.2	132	108	75-125			
Cadmium	83.9	2.0	"	95.2	3.18	84.8	75-125			
Chromium	98.7	2.0	"	95.2	15.8	87.0	75-125			
Lead	87.1	3.0	"	95.2	ND	91.5	75-125			

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/26/17 10:30
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Metals by EPA 6010B - 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 7041921 - EPA 3051

Matrix Spike Dup (7041921-MSD1)

Source: T170929-12

Prepared: 04/19/17 Analyzed: 04/20/17

Arsenic	88.1	5.0	mg/kg	97.1	6.09	84.4	75-125	1.22	20	
Barium	202	1.0	"	97.1	132	71.2	75-125	15.6	20	QR-04
Cadmium	84.8	2.0	"	97.1	3.18	84.0	75-125	1.00	20	
Chromium	101	2.0	"	97.1	15.8	87.7	75-125	2.32	20	
Lead	87.7	3.0	"	97.1	ND	90.3	75-125	0.630	20	

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Rose Fasheh, Project Manager

I-304



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

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 7041922 - EPA 7471A Soil

Blank (7041922-BLK1)

Prepared: 04/19/17 Analyzed: 04/20/17

Mercury ND 0.10 mg/kg

LCS (7041922-BS1)

Prepared: 04/19/17 Analyzed: 04/20/17

Mercury 0.332 0.10 mg/kg 0.410 81.1 75-125

Matrix Spike (7041922-MS1)

Source: T170929-12

Prepared: 04/19/17 Analyzed: 04/20/17

Mercury 0.328 0.10 mg/kg 0.397 ND 82.7 75-125

Matrix Spike Dup (7041922-MSD1)

Source: T170929-12

Prepared: 04/19/17 Analyzed: 04/20/17

Mercury 0.338 0.10 mg/kg 0.410 ND 82.5 75-125 2.96 20

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Volatile Organic Compounds by EPA Method 8260B - 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 7041920 - EPA 5030 GCMS

Blank (7041920-BLK1)

Prepared & Analyzed: 04/19/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Volatile Organic Compounds by EPA Method 8260B - 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 7041920 - EPA 5030 GCMS

Blank (7041920-BLK1)

Prepared & Analyzed: 04/19/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
C6-C12 (GRO)	ND	500	"							
Surrogate: 4-Bromofluorobenzene	42.2		"	39.6		106	81.2-123			
Surrogate: Dibromofluoromethane	41.2		"	39.6		104	95.7-135			
Surrogate: Toluene-d8	42.6		"	39.6		108	85.5-116			

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Volatile Organic Compounds by EPA Method 8260B - 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 7041920 - EPA 5030 GCMS

LCS (7041920-BS1)

Prepared & Analyzed: 04/19/17

Chlorobenzene	94.3	5.0	ug/kg	99.6		94.6	75-125			
1,1-Dichloroethene	93.8	5.0	"	99.6		94.2	75-125			
Trichloroethene	96.9	5.0	"	99.6		97.2	75-125			
Benzene	95.5	5.0	"	99.6		95.9	75-125			
Toluene	99.3	5.0	"	99.6		99.7	75-125			
Surrogate: 4-Bromofluorobenzene	42.3		"	39.8		106	81.2-123			
Surrogate: Dibromofluoromethane	41.3		"	39.8		104	95.7-135			
Surrogate: Toluene-d8	41.8		"	39.8		105	85.5-116			

LCS Dup (7041920-BSD1)

Prepared & Analyzed: 04/19/17

Chlorobenzene	103	5.0	ug/kg	99.4		103	75-125	8.64	20	
1,1-Dichloroethene	92.0	5.0	"	99.4		92.6	75-125	1.86	20	
Trichloroethene	101	5.0	"	99.4		102	75-125	4.37	20	
Benzene	96.6	5.0	"	99.4		97.2	75-125	1.20	20	
Toluene	104	5.0	"	99.4		105	75-125	4.69	20	
Surrogate: 4-Bromofluorobenzene	42.0		"	39.8		106	81.2-123			
Surrogate: Dibromofluoromethane	40.2		"	39.8		101	95.7-135			
Surrogate: Toluene-d8	41.2		"	39.8		104	85.5-116			

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Semivolatile Organic Compounds by EPA Method 8270C - 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 7042028 - EPA 3550 ECD/GCMS

Blank (7042028-BLK1)

Prepared: 04/20/17 Analyzed: 04/21/17

Carbazole	ND	300	ug/kg							
Phenol	ND	1000	"							
Aniline	ND	300	"							
2-Chlorophenol	ND	1000	"							
1,4-Dichlorobenzene	ND	300	"							
N-Nitrosodi-n-propylamine	ND	300	"							
1,2,4-Trichlorobenzene	ND	300	"							
4-Chloro-3-methylphenol	ND	1000	"							
2-Methylnaphthalene	ND	300	"							
1-Methylnaphthalene	ND	300	"							
Acenaphthene	ND	300	"							
4-Nitrophenol	ND	1000	"							
2,4-Dinitrotoluene	ND	300	"							
Pentachlorophenol	ND	1000	"							
Pyrene	ND	300	"							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Benzyl alcohol	ND	300	"							
Bis(2-chloroethoxy)methane	ND	300	"							
Bis(2-chloroethyl)ether	ND	300	"							
Bis(2-chloroisopropyl)ether	ND	300	"							
Bis(2-ethylhexyl)phthalate	ND	300	"							
4-Bromophenyl phenyl ether	ND	300	"							
Butyl benzyl phthalate	ND	300	"							
4-Chloroaniline	ND	300	"							
2-Chloronaphthalene	ND	300	"							
4-Chlorophenyl phenyl ether	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Dibenzofuran	ND	300	"							
Di-n-butyl phthalate	ND	300	"							

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Semivolatile Organic Compounds by EPA Method 8270C - 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 7042028 - EPA 3550 ECD/GCMS

Blank (7042028-BLK1)

Prepared: 04/20/17 Analyzed: 04/21/17

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
Pyridine	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
2,4,6-Trichlorophenol	ND	1000	"							

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
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 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Semivolatile Organic Compounds by EPA Method 8270C - 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 7042028 - EPA 3550 ECD/GCMS

Blank (7042028-BLK1)

Prepared: 04/20/17 Analyzed: 04/21/17

Surrogate: 2-Fluorophenol	1960		ug/kg	3240		60.7	15-121			
Surrogate: Phenol-d6	1780		"	3240		55.1	24-113			
Surrogate: Nitrobenzene-d5	1720		"	3240		53.0	21.3-119			
Surrogate: 2-Fluorobiphenyl	2210		"	3240		68.3	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3590		"	3240		111	18.1-105			S-GC
Surrogate: Terphenyl-d14	2890		"	3240		89.3	29.1-130			

LCS (7042028-BS1)

Prepared: 04/20/17 Analyzed: 04/21/17

Phenol	1720	1000	ug/kg	3290		52.3	34-114			
2-Chlorophenol	1880	1000	"	3290		57.2	34-114			
1,4-Dichlorobenzene	1810	300	"	3290		55.2	34-114			
N-Nitrosodi-n-propylamine	1910	300	"	3290		58.0	30-110			
1,2,4-Trichlorobenzene	1720	300	"	3290		52.2	39-119			
4-Chloro-3-methylphenol	1800	1000	"	3290		54.6	50-130			
Acenaphthene	1670	300	"	3290		50.7	34-114			
Pentachlorophenol	2550	1000	"	3290		77.6	50-130			
Pyrene	1730	300	"	3290		52.5	30-110			
Surrogate: 2-Fluorophenol	2120		"	3290		64.5	15-121			
Surrogate: Phenol-d6	2200		"	3290		66.9	24-113			
Surrogate: Nitrobenzene-d5	1860		"	3290		56.5	21.3-119			
Surrogate: 2-Fluorobiphenyl	2310		"	3290		70.1	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3350		"	3290		102	18.1-105			
Surrogate: Terphenyl-d14	3060		"	3290		93.1	29.1-130			

LCS Dup (7042028-BS1)

Prepared: 04/20/17 Analyzed: 04/21/17

Phenol	2250	1000	ug/kg	3330		67.6	34-114	26.8	42	
2-Chlorophenol	1810	1000	"	3330		54.2	34-114	4.13	40	
1,4-Dichlorobenzene	1800	300	"	3330		53.9	34-114	1.04	28	
N-Nitrosodi-n-propylamine	1850	300	"	3330		55.6	30-110	2.99	38	
1,2,4-Trichlorobenzene	1730	300	"	3330		51.9	39-119	0.787	28	
4-Chloro-3-methylphenol	1910	1000	"	3330		57.2	50-130	5.87	42	
Acenaphthene	1680	300	"	3330		50.3	34-114	0.513	31	
Pentachlorophenol	2290	1000	"	3330		68.6	50-130	11.0	50	
Pyrene	1720	300	"	3330		51.5	30-110	0.675	31	
Surrogate: 2-Fluorophenol	2010		"	3330		60.4	15-121			
Surrogate: Phenol-d6	1890		"	3330		56.7	24-113			

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-311



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/26/17 10:30

Semivolatile Organic Compounds by EPA Method 8270C - 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 7042028 - EPA 3550 ECD/GCMS

LCS Dup (7042028-BSD1)

Prepared: 04/20/17 Analyzed: 04/21/17

Surrogate: Nitrobenzene-d5	1880		ug/kg	3330		56.4	21.3-119			
Surrogate: 2-Fluorobiphenyl	2340		"	3330		70.3	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3380		"	3330		102	18.1-105			
Surrogate: Terphenyl-d14	3380		"	3330		101	29.1-130			

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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.

Rose Fasheh, Project Manager

I-312



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/26/17 10:30

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- QR-04 The percent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
- O-05 This sample was extracted outside of the EPA recommended holding time.
- I-02 This result was analyzed outside of the EPA recommended holding time.
- 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.

Rose Fasheh, Project Manager

I-313

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**SunStar
Laboratories, Inc.**

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commerce Centre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 2441 Ridge Route Drive #130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/21/17 Page: 1 of 3
Project Name: Brea-Olinda
Collector: E. Heger Client Project #: 02077.01
Batch #: 710707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRD	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCBs	Laboratory ID #	Comments/Preservative	Total # of containers
DRU-T1-5	3/21/17	0944	VBK	Soil	H											01		
DRU-T1-5	3/21/17	0944	40361	Soil	H											02		
DRU-T1-10	3/21/17	0754	40361	Soil	H											03		
DRU-T1-15	3/21/17	0800	40361	Soil	H											04		
VR5-T2-5	3/21/17	0840	Soil	VBK	H													
VR5-T2-5	3/21/17	0840	Soil	40361	H													
VR5-T2-10	3/21/17	0850	Soil	40361	H													
VR5-T2-15	3/21/17	0900	Soil	40361	H													
VR5-T1-5	3/21/17	0935	Soil	VBK	H													
VR5-T1-5	3/21/17	0935	Soil	40361	H													
VR5-T1-10	3/21/17	0945	Soil	40361	H													
VR5-T1-15	3/21/17	0955	Soil	40361	H													
VR5-T1-5	3/21/17	1020	Soil	VBK	H													
VR5-T1-5	3/21/17	1020	Soil	40361	H													
VR5-T1-10	3/21/17	1043	Soil	40361	H													
Relinquished by: (signature) <u>Fred Heger</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/21/17 15:25</u>			Total # of containers <u>35</u>									
Relinquished by: (signature)			Received by: (signature)			Date / Time			Chain of Custody seals Y/N/NA Seals intact? Y/N/NA Received good condition/cold									
Relinquished by: (signature)			Received by: (signature)			Date / Time			Turn around time: <u>STD</u>									

Notes
949-689-9987

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162514



SunStar Laboratories, Inc.
 PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Boatright Environmental Management
 Address: 24411 Ridge Route Drive Suite 130
 Phone: 949-216-0050 Fax: 949-216-0055
 Project Manager: Derrick Willis

Date: 3/21/17 Page: 2 of 3
 Project Name: Brea-Olinda
 Collector: Frank Heger Client Project #: 0207.01
 Batch #: T170707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB's	Laboratory ID #	Comments/Preservative	Total # of containers
58-TI-15	3/21/17	1048	Soil	40391	H							A				12		
55-TI-5	3/21/17	1120	Soil	VDA	H							A				13		
55-TI-5	3/21/17	1132	Soil	40391	H							A				14	HIGH TPH	
55-TI-10	3/21/17	1142	Soil	40391	H							A				15	HIGH TPH	
55-TI-15	3/21/17	1210	Soil	VDA	H							A				16		
104-TI-5	3/21/17	1210	Soil	40391	H							A				17		
104-TI-10	3/21/17	1218	Soil	40391	H							A				18		
104-TI-15	3/21/17	1225	Soil	40391	H							A				18		
Relinquished by: (signature) <u>Paul Heger</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Total # of containers										Notes		
Relinquished by: (signature)			3/21/17 3:25	Received by: (signature)	3/21/17 15:25	19												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Chain of Custody seals Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Received good condition/cold												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Turn around time: <u>STD</u>												

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162512

Chain of Custody Record

Client: Northgate Environmental Management
 Address: 2441 Ridge Route Drive, Suite 130
 Phone: 949-716-0850 Fax: 949-716-0855
 Project Manager: Debra Willis

Date: 3/21/2017 Page: 3 of 3
 Project Name: Brea Olinda
 Collector: Michelle Hyman Client Project #: 02077.01
 Batch #: 1122707 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270C	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	EPA 8081 Pesticides	8141 organophosphorus pesticides	8151 herbicides	Laboratory ID #	Comments/Preservative	Total # of containers	
DR-HA1-1.0	3/21/17	0735	Soil	NOAs+Core	H													19		5	
DR-HA1-5.0	3/21/17	0743	Soil	Core														20		5	
DR-HA2-1.0	3/21/17	0802	Soil	NOAs+Core	H													21		5	
DR-HA2-5.0	3/21/17	0815	Soil	Core														22		5	
DR-HA3-1.0	3/21/17	0825	Soil	NOAs+Core	H													23		5	
DR-HA3-5.0	3/21/17	0846	Soil	Core														24		5	
DR-HA4-1.0	3/21/17	0911	Soil	NOAs+Core	H													25		5	
DR-HA4-5.0	3/21/17	0941	Soil	Core														26		1	
Relinquished by: (signature) <u>Michelle Hyman</u>		Date / Time <u>3/21/17 1230</u>	Received by: (signature) <u>Michelle Hyman</u>		Date / Time <u>3/21/17 1230</u>	Chain of Custody seals Y/N/NA Seals intact? Y/N/NA		Total # of containers <u>24</u>		Received good condition/cold		Turn around time: <u>STD</u>		Notes <u>F. Hyman</u> <u>949-689-9987</u>							
Relinquished by: (signature) <u>Michelle Hyman</u>		Date / Time <u>3/21/17 3:25</u>	Received by: (signature) <u>Michelle Hyman</u>		Date / Time <u>3/21/17 15:25</u>																

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162513



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 117207
 Client Name: NORWICH Project: BREA FLANDA DIG FIELD
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: BILIAN Date/Time Lab Received: 3/11/07 15:25
 Total number of coolers received: _____

Temperature: Cooler #1 <u>5.0</u>	°C +/- the CF (- 0.2°C) = <u>5.4</u>	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BL

Comments:

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Friday, March 24, 2017 6:09 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Additional work order confirmation for Brea Olinda Oil Field (T170707)
Attachments: T170697_WKO_02.pdf; T170707_WKO_02.pdf

Derrick,

Please find attached work orders for confirmation of additionally requested analyses below. Please carefully review and let me know if you have any questions or concerns.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:38 PM
To: Rose Fasheh
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Standard TAT is fine, thanks Rose

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 5:36 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

What TAT are you looking for on these? Standard is a 5-day yielding results by COB Monday 4/3.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:11 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Hi Rose,
Please run the analyses for the samples shaded in green. Please let me know if you have any questions.
Thanks
Derrick



Derrick S. Willis
Principal

Northgate Environmental Management, Inc.
24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
phone (949) 716-0050 ext. 101; cell (949) 375-7004; fax (949) 315-3365
<http://www.ngem.com>

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From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 2:45 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Final Report for Brea Olinda Oil Field (T170707)

Hello Derrick and Frank,

Please see the attached final report for the following:

Project: Brea Olinda Oil Field
Project Number: 02077.01

Thank you for choosing SunStar Labs.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

	Date	Time	PID	Depth	EPH (EPA8015M)	Chlorinated					OP		
						8260 +GRO	SVOC (EPA8270)	CAM 17 (EPA6010)	Uranium	PCB (EPA8082)	Pesticides (EPA8081)	Pesticides (EPA8141)	Herbicides (EPA8151)
S20-T1	3/20/2017	8:00	13.3	5	A	1	1	1	1	1	x	x	x
	3/20/2017	9:15	0.0	10	A	x	H	H	H	H	x	x	x
	3/20/2017	9:25	0.0	15	A	x	H	H	H	H	x	x	x
S20-T2	3/20/2017	10:09	0.6	5	A	1	1	1	H	1	x	x	x
	3/20/2017	10:19	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	10:32	1.2	15	A	x	H	H	H	H	x	x	x
BOTF-T2	3/20/2017	11:50	18.2	5	A	1	1	1	H	1	x	x	x
	3/20/2017	12:00	0.4	10	A	x	H	H	H	H	x	x	x
	3/20/2017	12:08	0.1	15	A	x	H	H	H	H	x	x	x
BOTF-T1	3/20/2017	13:15	0.6	5	A	H	H	H	H	H	x	x	x
	3/20/2017	13:30	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	13:45	0.1	15	A	x	H	H	H	H	x	x	x
H2-T1	3/20/2017	13:45	0.2	5	A	H	H	H	H	H	x	x	x
	3/20/2017	14:15	0.2	10	A	x	H	H	H	H	x	x	x
	3/20/2017	14:35	0.1	15	A	x	H	H	H	H	x	x	x
DU-T1	3/21/2017	7:44	10.4	5	A	1	H	H	H	H	x	x	x
	3/21/2017	7:54	5.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	8:00	0.3	15	A	x	H	H	H	H	x	x	x
VRS-T2	3/21/2017	8:40	18.3	5	A	1	1	1	H	1	x	x	x
	3/21/2017	8:50	15.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:00	23.4	15	A	x	H	H	H	H	x	x	x
VRS-T1	3/21/2017	9:35	12.2	5	A	1	H	1	H	1	x	x	x
	3/21/2017	9:45	2.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:55	2.0	15	A	x	H	H	H	H	x	x	x
S8-T1	3/21/2017	10:20	29.7	5	A	1	1	1	1	1	x	x	x
	3/21/2017	10:34	142.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	10:48	121.0	15	A	x	H	H	H	H	x	x	x
S5-T1	3/21/2017	11:20	18.0	5	A	1	1	1	1	1	x	x	x
	3/21/2017	11:32	97.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	11:42	89.0	15	A	x	H	H	H	H	x	x	x
104-T1	3/21/2017	12:10	0.1	5	A	1	1	1	1	1	x	x	x
	3/21/2017	12:18	0.3	10	A	x	H	H	H	H	x	x	x
	3/21/2017	12:25	0.1	15	A	x	H	H	H	H	x	x	x
DR-HA1	3/21/2017	7:35	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	7:43	NA	5	A	x	H	H	H	H	H	H	H
DR-HA2	3/21/2017	8:02	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:15	NA	5	A	x	H	H	H	H	H	H	H
DR-HA3	3/21/2017	8:25	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:46	NA	5	A	x	H	H	H	H	H	H	H
DR-HA4	3/21/2017	9:11	NA	1	A	1	1	1	1	1	1	1	H
	3/21/2017	9:41	NA	5	A	x	H	H	H	H	H	H	H

13 11 12 8 12 4 4 3

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/21/17 15:25

Logged In By: Brian Charon

Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Brian Charon Date Received: 03/21/17 15:25
 Logged In By: Brian Charon Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time				8260 and GRO added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:44	
8260 5035	04/03/17 15:00	5	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time				8260, GRO, 8270, metals, and 8082 added per client request (3/24)
6010 Title 22	04/03/17 15:00	5	09/17/17 08:40	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:40	
8082 PCB	04/03/17 15:00	5	04/04/17 08:40	
8260 5035	04/03/17 15:00	5	04/04/17 08:40	
8270C	04/03/17 15:00	5	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:35	
8082 PCB	04/03/17 15:00	5	04/04/17 09:35	
8260 5035	04/03/17 15:00	5	04/04/17 09:35	
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 10:20	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 10:20	
8082 PCB	04/03/17 15:00	5	04/04/17 10:20	
8260 5035	04/03/17 15:00	5	04/04/17 10:20	
8270C	04/03/17 15:00	5	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 11:20	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 11:20	
8082 PCB	04/03/17 15:00	5	04/04/17 11:20	
8260 5035	04/03/17 15:00	5	04/04/17 11:20	
8270C	04/03/17 15:00	5	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 12:10	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 12:10	
8082 PCB	04/03/17 15:00	5	04/04/17 12:10	
8260 5035	04/03/17 15:00	5	04/04/17 12:10	
8270C	04/03/17 15:00	5	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 07:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:35	
8081 Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8082 PCB	04/03/17 15:00	5	04/04/17 07:35	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8151 Herbicides	04/03/17 15:00	5	04/04/17 07:35	
8260 5035	04/03/17 15:00	5	04/04/17 07:35	
8270C	04/03/17 15:00	5	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:02	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:02	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8082 PCB	04/03/17 15:00	5	04/04/17 08:02	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:02	
8260 5035	04/03/17 15:00	5	04/04/17 08:02	
8270C	04/03/17 15:00	5	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:25	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:25	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8082 PCB	04/03/17 15:00	5	04/04/17 08:25	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:25	
8260 5035	04/03/17 15:00	5	04/04/17 08:25	
8270C	04/03/17 15:00	5	04/04/17 08:25	

T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	

T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:11	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:11	
8081 Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8082 PCB	04/03/17 15:00	5	04/04/17 09:11	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8151 Herbicides	04/03/17 15:00	5	04/04/17 09:11	
8260 5035	04/03/17 15:00	5	04/04/17 09:11	
8270C	04/03/17 15:00	5	04/04/17 09:11	

T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	

Weck Labs

T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 10:20	EPA 200.8 Uranium

T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 11:20	EPA 200.8 Uranium

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Analysis	Due	TAT	Expires	Comments
Weck Labs				
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 12:10	EPA 200.8 Uranium
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 07:35	EPA 200.8 Uranium
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:02	EPA 200.8 Uranium
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:25	EPA 200.8 Uranium
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 09:11	EPA 200.8 Uranium

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/21/17 15:25

Logged In By: Brian Charon

Date Logged In: 03/21/17 15:35

Samples Received at: **5.4°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170707-01 DRU-T1-5 [Soil] Sampled 03/21/17 07:44 (GMT-08:00) Pacific Time 8260 and GRO added per client request (Derrick, US & 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:44	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:44	
8260 5035	04/03/17 15:00	5	04/04/17 07:44	
T170707-02 DRU-T1-10 [Soil] Sampled 03/21/17 07:54 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:54	
T170707-03 DRU-T1-15 [Soil] Sampled 03/21/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:00	
T170707-04 VRS-T2-5 [Soil] Sampled 03/21/17 08:40 (GMT-08:00) Pacific Time 8260, GRO, 8270, metals, and 8082 added per client request (3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:40	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:40	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:40	
8082 PCB	04/03/17 15:00	5	04/04/17 08:40	
8260 5035	04/03/17 15:00	5	04/04/17 08:40	
8270C	04/03/17 15:00	5	04/04/17 08:40	
T170707-05 VRS-T2-10 [Soil] Sampled 03/21/17 08:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:50	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-06 VRS-T2-15 [Soil] Sampled 03/21/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:00	
T170707-07 VRS-T1-5 [Soil] Sampled 03/21/17 09:35 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:35	
8082 PCB	04/03/17 15:00	5	04/04/17 09:35	
8260 5035	04/03/17 15:00	5	04/04/17 09:35	
T170707-08 VRS-T1-10 [Soil] Sampled 03/21/17 09:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:45	
T170707-09 VRS-T1-15 [Soil] Sampled 03/21/17 09:55 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:55	
T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time 8260, GRO, metals, and 8082 added per client request (US & (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 10:20	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 10:20	
8082 PCB	04/03/17 15:00	5	04/04/17 10:20	
8260 5035	04/03/17 15:00	5	04/04/17 10:20	
8270C	04/03/17 15:00	5	04/04/17 10:20	
T170707-11 S8-T1-10 [Soil] Sampled 03/21/17 10:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:43	
T170707-12 S8-T1-15 [Soil] Sampled 03/21/17 10:48 (GMT-08:00) Pacific Time VOCs, SVOCs, and Title 22 metals added per client request (US & (Derrick, 4/19)				
6010 Title 22	04/26/17 15:00	5	09/17/17 10:48	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 10:48	
8260	04/26/17 15:00	5	04/04/17 10:48	+GRO
8270C	04/26/17 15:00	5	04/04/17 10:48	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 11:20	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:20	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 11:20	
8082 PCB	04/03/17 15:00	5	04/04/17 11:20	
8260 5035	04/03/17 15:00	5	04/04/17 11:20	
8270C	04/03/17 15:00	5	04/04/17 11:20	
T170707-14 S5-T1-10 [Soil] Sampled 03/21/17 11:32 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:32	
T170707-15 S5-T1-15 [Soil] Sampled 03/21/17 11:42 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 11:42	
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time				
(US &				
6010 Title 22	04/03/17 15:00	5	09/17/17 12:10	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:10	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 12:10	
8082 PCB	04/03/17 15:00	5	04/04/17 12:10	
8260 5035	04/03/17 15:00	5	04/04/17 12:10	
8270C	04/03/17 15:00	5	04/04/17 12:10	
T170707-17 104-T1-10 [Soil] Sampled 03/21/17 12:18 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:18	
T170707-18 104-T1-15 [Soil] Sampled 03/21/17 12:25 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 12:25	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 07:35	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:35	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 07:35	
8081 Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8082 PCB	04/03/17 15:00	5	04/04/17 07:35	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 07:35	
8151 Herbicides	04/03/17 15:00	5	04/04/17 07:35	
8260 5035	04/03/17 15:00	5	04/04/17 07:35	
8270C	04/03/17 15:00	5	04/04/17 07:35	
T170707-20 DR-HA1-5.0 [Soil] Sampled 03/21/17 07:43 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 07:43	
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:02	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:02	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:02	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8082 PCB	04/03/17 15:00	5	04/04/17 08:02	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:02	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:02	
8260 5035	04/03/17 15:00	5	04/04/17 08:02	
8270C	04/03/17 15:00	5	04/04/17 08:02	
T170707-22 DR-HA2-5.0 [Soil] Sampled 03/21/17 08:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:15	

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 08:25	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:25	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 08:25	
8081 Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8082 PCB	04/03/17 15:00	5	04/04/17 08:25	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 08:25	
8151 Herbicides	04/03/17 15:00	5	04/04/17 08:25	
8260 5035	04/03/17 15:00	5	04/04/17 08:25	
8270C	04/03/17 15:00	5	04/04/17 08:25	

T170707-24 DR-HA3-5.0 [Soil] Sampled 03/21/17 08:46 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 08:46	

T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
6010 Title 22	04/03/17 15:00	5	09/17/17 09:11	
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:11	
8015 m 5035-GRO	04/03/17 15:00	5	04/04/17 09:11	
8081 Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8082 PCB	04/03/17 15:00	5	04/04/17 09:11	
8141 OP Pesticides	04/03/17 15:00	5	04/04/17 09:11	
8151 Herbicides	04/03/17 15:00	5	04/04/17 09:11	
8260 5035	04/03/17 15:00	5	04/04/17 09:11	
8270C	04/03/17 15:00	5	04/04/17 09:11	

T170707-26 DR-HA4-5.0 [Soil] Sampled 03/21/17 09:41 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)				
8015 Carbon Chain	03/24/17 15:00	3	04/04/17 09:41	

Weck Labs

T170707-10 S8-T1-5 [Soil] Sampled 03/21/17 10:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 10:20	EPA 200.8 Uranium
T170707-13 S5-T1-5 [Soil] Sampled 03/21/17 11:20 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 11:20	EPA 200.8 Uranium

WORK ORDER

T170707

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Analysis	Due	TAT	Expires	Comments
Weck Labs				
T170707-16 104-T1-5 [Soil] Sampled 03/21/17 12:10 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 12:10	EPA 200.8 Uranium
T170707-19 DR-HA1-1.0 [Soil] Sampled 03/21/17 07:35 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 07:35	EPA 200.8 Uranium
T170707-21 DR-HA2-1.0 [Soil] Sampled 03/21/17 08:02 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:02	EPA 200.8 Uranium
T170707-23 DR-HA3-1.0 [Soil] Sampled 03/21/17 08:25 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 08:25	EPA 200.8 Uranium
T170707-25 DR-HA4-1.0 [Soil] Sampled 03/21/17 09:11 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, 8082, 8081, 8141, and 8151 added per client request (Derrick, 3/24)
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/17/17 09:11	EPA 200.8 Uranium

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg



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30 March 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/23/17 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



25712 Commercentre Drive
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 949.297.5020 Phone
 949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BOTF-B1-5	T170734-01	Soil	03/23/17 07:50	03/23/17 16:00
BOTF-B1-10	T170734-02	Soil	03/23/17 07:57	03/23/17 16:00
BOTF-B1-15	T170734-03	Soil	03/23/17 08:00	03/23/17 16:00
BOTF-B1-20	T170734-04	Soil	03/23/17 08:07	03/23/17 16:00
BOTF-B1-25	T170734-05	Soil	03/23/17 08:13	03/23/17 16:00
BOTF-B1-30	T170734-06	Soil	03/23/17 08:25	03/23/17 16:00
BOTF-B1-35	T170734-07	Soil	03/23/17 08:44	03/23/17 16:00
BOTF-B1-40	T170734-08	Soil	03/23/17 08:40	03/23/17 16:00
BOTF-B1-45	T170734-09	Soil	03/23/17 08:53	03/23/17 16:00
BOTF-B1-50	T170734-10	Soil	03/23/17 09:03	03/23/17 16:00
BOTF-B1-55	T170734-11	Soil	03/23/17 09:12	03/23/17 16:00
BOTF-B1-60	T170734-12	Soil	03/23/17 09:16	03/23/17 16:00
VRS-B1-20	T170734-13	Soil	03/23/17 12:35	03/23/17 16:00
VRS-B1-25	T170734-14	Soil	03/23/17 12:41	03/23/17 16:00
VRS-B1-30	T170734-15	Soil	03/23/17 12:46	03/23/17 16:00
VRS-B1-35	T170734-16	Soil	03/23/17 12:23	03/23/17 16:00
VRS-B1-40	T170734-17	Soil	03/23/17 13:07	03/23/17 16:00
VRS-B1-45	T170734-18	Soil	03/23/17 13:17	03/23/17 16:00
VRS-B1-50	T170734-19	Soil	03/23/17 13:27	03/23/17 16:00
VRS-B1-55	T170734-20	Soil	03/23/17 13:35	03/23/17 16:00
VRS-B1-60	T170734-21	Soil	03/23/17 13:38	03/23/17 16:00
S8-T1-1	T170734-22	Soil	03/23/17 14:15	03/23/17 16:00

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-337



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Sample ID: BOTF-B1-35 **Laboratory ID:** T170734-07

No Results Detected

Sample ID: BOTF-B1-40 **Laboratory ID:** T170734-08

No Results Detected

Sample ID: BOTF-B1-45 **Laboratory ID:** T170734-09

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	33	10		mg/kg	EPA 8015B	

Sample ID: BOTF-B1-50 **Laboratory ID:** T170734-10

No Results Detected

Sample ID: BOTF-B1-55 **Laboratory ID:** T170734-11

No Results Detected

Sample ID: BOTF-B1-60 **Laboratory ID:** T170734-12

No Results Detected

Sample ID: VRS-B1-20 **Laboratory ID:** T170734-13

No Results Detected

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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Sample ID: VRS-B1-60

Laboratory ID: T170734-21

No Results Detected

Sample ID: S8-T1-1

Laboratory ID: T170734-22

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	66	10		mg/kg	EPA 8015B	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-341



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BOTF-B1-5
T170734-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %	65-135		"	"	"	"	

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.

Rose Fasheh, Project Manager

I-342



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BOTF-B1-10
T170734-02 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		133 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-343



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-15
T170734-03 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-344



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BOTF-B1-20
T170734-04 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		126 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-345



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BOTF-B1-25
T170734-05 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-346



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BOTF-B1-30
T170734-06 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		144 %		65-135	"	"	"	"	<i>S-Hil</i>

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-347



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-35
T170734-07 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		142 %		65-135	"	"	"	"	<i>S-Hil</i>

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-348



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BOTF-B1-40
T170734-08 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		141 %		65-135	"	"	"	"	S-Hil

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-349



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-45
T170734-09 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	33	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		146 %		65-135	"	"	"	"	<i>S-Hil</i>

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.

Rose Fasheh, Project Manager

I-350



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-50
T170734-10 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		133 %	65-135		"	"	"	"	

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.

Rose Fasheh, Project Manager

I-351



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-55
T170734-11 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		153 %	65-135		"	"	"	"	<i>S-Hil</i>

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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BOTF-B1-60
T170734-12 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		141 %		65-135	"	"	"	"	S-Hil

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Rose Fasheh, Project Manager

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VRS-B1-20
T170734-13 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		145 %		65-135	"	"	"	"	S-Hil

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I-354



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VRS-B1-25
T170734-14 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		125 %		65-135	"	"	"	"	

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VRS-B1-30
T170734-15 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		150 %		65-135	"	"	"	"	S-Hil

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VRS-B1-35
T170734-16 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		136 %		65-135	"	"	"	"	<i>S-Hil</i>

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VRS-B1-40
T170734-17 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		146 %		65-135	"	"	"	"	S-Hil

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VRS-B1-45
T170734-18 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		150 %		65-135	"	"	"	"	S-Hil

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-359



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VRS-B1-50
T170734-19 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		167 %		65-135	"	"	"	"	S-Hil

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-360



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VRS-B1-55
T170734-20 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		121 %		65-135	"	"	"	"	

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VRS-B1-60
T170734-21 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032412	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		85.8 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-362



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

S8-T1-1
T170734-22 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032412	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	66	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		61.0 %	65-135		"	"	"	"	S-03

Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032419	03/24/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		67.4 %	35-140		"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		52.3 %	35-140		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-363



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S8-T1-1
T170734-22 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032425	03/24/17	03/28/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		37.1 %	35-150		"	"	"	"	

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I-364



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Extractable Petroleum Hydrocarbons by 8015B - 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 7032412 - EPA 3550B GC

Blank (7032412-BLK1)

Prepared & Analyzed: 03/24/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: <i>p</i> -Terphenyl	85.8		"	99.0		86.7	65-135			

LCS (7032412-BS1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	540	10	mg/kg	495		109	75-125			
Surrogate: <i>p</i> -Terphenyl	104		"	99.0		105	65-135			

LCS Dup (7032412-BSD1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	580	10	mg/kg	510		113	75-125	6.30	20	
Surrogate: <i>p</i> -Terphenyl	107		"	102		105	65-135			

Batch 7032421 - EPA 3550B GC

Blank (7032421-BLK1)

Prepared & Analyzed: 03/24/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: <i>p</i> -Terphenyl	133		"	99.0		135	65-135			

LCS (7032421-BS1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	560	10	mg/kg	500		113	75-125			
Surrogate: <i>p</i> -Terphenyl	162		"	100		162	65-135			S-Hil

LCS Dup (7032421-BSD1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	530	10	mg/kg	490		108	75-125	6.49	20	
Surrogate: <i>p</i> -Terphenyl	131		"	98.0		134	65-135			

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 24411 Ridge Route Drive, Suite 130
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Organochlorine Pesticides by EPA Method 8081A - 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 7032419 - EPA 3550 ECD/GCMS

Blank (7032419-BLK1)

Prepared: 03/24/17 Analyzed: 03/27/17

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Surrogate: Tetrachloro-meta-xylene	7.29		"	10.0		72.9	35-140			
Surrogate: Decachlorobiphenyl	8.36		"	10.0		83.6	35-140			

LCS (7032419-BS1)

Prepared: 03/24/17 Analyzed: 03/27/17

gamma-BHC (Lindane)	32.3	5.0	ug/kg	40.4		79.8	40-120			
Heptachlor	31.5	5.0	"	40.4		77.9	40-120			
Aldrin	26.7	5.0	"	40.4		66.1	40-120			
Dieldrin	34.5	5.0	"	40.4		85.3	40-120			
Endrin	36.0	5.0	"	40.4		89.1	40-120			
4,4'-DDT	41.6	5.0	"	40.4		103	33-147			
Surrogate: Tetrachloro-meta-xylene	7.96		"	10.1		78.8	35-140			
Surrogate: Decachlorobiphenyl	9.03		"	10.1		89.4	35-140			

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Organochlorine Pesticides by EPA Method 8081A - 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 7032419 - EPA 3550 ECD/GCMS

LCS Dup (7032419-BSD1)

Prepared: 03/24/17 Analyzed: 03/27/17

gamma-BHC (Lindane)	35.7	5.0	ug/kg	40.4		88.3	40-120	10.1	30	
Heptachlor	35.3	5.0	"	40.4		87.2	40-120	11.4	30	
Aldrin	28.5	5.0	"	40.4		70.6	40-120	6.58	30	
Dieldrin	38.5	5.0	"	40.4		95.3	40-120	11.1	30	
Endrin	40.3	5.0	"	40.4		99.8	40-120	11.3	30	
4,4'-DDT	47.0	5.0	"	40.4		116	33-147	12.1	30	
Surrogate: Tetrachloro-meta-xylene	8.67		"	10.1		85.8	35-140			
Surrogate: Decachlorobiphenyl	9.84		"	10.1		97.4	35-140			

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.

Rose Fasheh, Project Manager

I-367



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Chlorinated Herbicides by EPA Method 8151A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 7032425 - 8151 Prep

Blank (7032425-BLK1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	ND	5.00	ug/kg							
2,4,5-TP (Silvex)	ND	5.00	"							
2,4-D	ND	5.00	"							
2,4-DB	ND	5.00	"							
3,5-Dichlorobenzoic acid	ND	5.00	"							
4-Nitrophenol	ND	5.00	"							
Acifluorfen	ND	5.00	"							
Bentazon	ND	5.00	"							
Chloramben	ND	5.00	"							
Dalapon	ND	30.0	"							
DCPA diacid	ND	5.00	"							
Dicamba	ND	5.00	"							
Dichloroprop	ND	5.00	"							
Dinoseb	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Picloram	ND	5.00	"							
Surrogate: 2,4-DCAA	212		"	392		54.1	35-150			

LCS (7032425-BS1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	101	5.00	ug/kg	97.3		104	20-150			
2,4,5-TP (Silvex)	114	5.00	"	97.5		117	20-150			
2,4-D	112	5.00	"	97.5		115	20-150			
Surrogate: 2,4-DCAA	228		"	390		58.4	35-150			

LCS Dup (7032425-BSD1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	87.4	5.00	ug/kg	99.8		87.6	20-150	14.2	30	
2,4,5-TP (Silvex)	99.9	5.00	"	100		99.9	20-150	12.8	30	
2,4-D	98.1	5.00	"	100		98.1	20-150	12.9	30	
Surrogate: 2,4-DCAA	195		"	400		48.7	35-150			

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.

Rose Fasheh, Project Manager

I-368



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/30/17 08:49

Notes and Definitions

- S-Hi1 Surrogate recovery was high in QC and corresponding samples. Sample results were non-detect. Data was not negatively effected.
- S-03 The surrogate recovery was below acceptance criteria in the sample because of a possible matrix effect. The surrogate recovery was within acceptance criteria in the method blank and LCS.
- 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

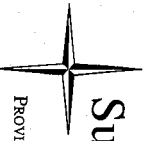
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Rose Fasheh, Project Manager

I-369

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SunStar Laboratories, Inc.

Chain of Custody Record

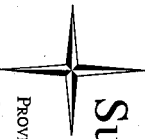
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
 25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Client: Northgate Environmental Mgmt Inc
 Address: 24411 Ridgecreek Pkwy - Suite 130
 Phone: 949-716-0050 Fax: 949-716-0055
 Project Manager: DEWARCK WILKINS

Date: 3/23/17 Page: 1 Of 2
 Project Name: Isnea-Olinda
 Collector: Frank Heeger Client Project #: 02077.01
 Batch #: T70734 EDF #: _____

Sample ID	Date		Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	PCB EPA 8082	Laboratory ID #	Comments/Preservative	Total # of containers
	Sampled	Time																
BOFE-B1-5	3/23/17	0750	Soil	Ring														01
BOFE-B1-10	3/23/17	0757	Soil	Ring+VDA H														02
BOFE-B1-15	3/23/17	0800	Soil	Ring														03
BOFE-B1-20	3/23/17	0807	Soil	Ring+VDA H														04
BOFE-B1-25	3/23/17	0813	Soil	Ring														05
BOFE-B1-30	3/23/17	0825	Soil	Ring+VDA H														06
BOFE-B1-35	3/23/17	0834	Soil	Ring														07
BOFE-B1-40	3/23/17	0840	Soil	Ring+VDA H														08
BOFE-B1-45	3/23/17	0853	Soil	Ring														09
BOFE-B1-50	3/23/17	0903	Soil	Ring+VDA H														10
BOFE-B1-55	3/23/17	0912	Soil	Ring														11
BOFE-B1-60	3/23/17	0914	Soil	Ring+VDA H														12
VR5-B1-20	3/23/17	1235	Soil	Ring+VDA H														13
VR5-B1-25	3/23/17	1241	Soil	Ring														14
VR5-B1-30	3/23/17	1244	Soil	Ring+VDA H														15
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Total # of containers												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Chain of Custody seals Y/N/NA												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Seals intact? Y/N/NA												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Received good condition/cold												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Turn around time: <u>STD</u>												

Notes
 Frank Heeger
 949-689-9987



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 21411 Ridge Route Dr Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/23/17 Page: 2 of 2
Project Name: Brea - Olinda
Collector: Frank Heger Client Project #: 02077.01
Batch #: T170734 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB	8081 Chlor PEST	8091 OP PEST	PEST HERBICIDES	Laboratory ID #	Comments/Preservative	Total # of containers
VRS-B1-35	3/23/17	1253	Soil	Rinc				H				A	H		16						
VRS-B1-40	3/23/17	1307	Soil	Rinc + VDA H				H				A	H		17						
VRS-B1-45	3/23/17	1317	Soil	Rinc				H				A	H		18						
VRS-B1-50	3/23/17	1327	Soil	Rinc + VDA H				H				A	H		19						
VRS-B1-55	3/23/17	1335	Soil	Rinc				H				A	H		20						
VRS-B1-60	3/23/17	1338	Soil	Rinc + VDA H				H				A	H		21						
SB-T1-1	3/23/17	1415	Soil	4oz Glass				H				A	H		22						
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p>																					
<p>Chain of Custody seals Y/N/NA Seals intact? Y/N/NA Received good condition/cold</p>															<p>Total # of containers</p>		<p>Notes</p> <p>Frank Heger 949-689-9987</p>				

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

Turn around time: STD

COC 162582



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T170734

Client Name: Northgate - Laguna Hills Project: Brea olinda

Delivered by: Client SunStar Courier GSO FedEx Other

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

Lab Received by: Brian Date/Time Lab Received: 3-23-17 1620

Total number of coolers received: 0

Temperature: Cooler #1	5.1	°C +/- the CF (- 0.2°C) =	4.9	°C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:				
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet		
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: DM 3-23-17

Comments: _____

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)
 Received By: Brian Charon Date Received: 03/23/17 16:00
 Logged In By: Dan Marteski Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8141 OP Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 03/23/17 16:00

Logged In By: Dan Marteski

Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	



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

07 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/23/17 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/07/17 12:50
--	---	------------------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VRS-B1-20	T170734-13	Soil	03/23/17 12:35	03/23/17 16:00
VRS-B1-60	T170734-21	Soil	03/23/17 13:38	03/23/17 16:00

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.

Rose Fasheh, Project Manager

I-380



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/07/17 12:50

DETECTIONS SUMMARY

Sample ID: VRS-B1-20

Laboratory ID: T170734-13

No Results Detected

Sample ID: VRS-B1-60

Laboratory ID: T170734-21

No Results Detected

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.

Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

VRS-B1-20
T170734-13 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	350	ug/kg	1	7040522	04/05/17	04/06/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		83.7 %	65-135		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7040431	04/04/17	04/05/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

VRS-B1-20
T170734-13 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

trans-1,2-Dichloroethene	ND	5.0	ug/kg	1	7040431	04/04/17	04/05/17	EPA 8260B/5035	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/07/17 12:50
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VRS-B1-20
T170734-13 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

o-Xylene	ND	5.0	ug/kg	1	7040431	04/04/17	04/05/17	EPA 8260B/5035	
Surrogate: Toluene-d8		99.4 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		110 %	95.7-135		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

VRS-B1-60
T170734-21 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	350	ug/kg	1	7040522	04/05/17	04/06/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		82.7 %	65-135		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	4.4	ug/kg	1	7040431	04/04/17	04/05/17	EPA 8260B/5035	
Bromochloromethane	ND	4.4	"	"	"	"	"	"	
Bromodichloromethane	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	4.4	"	"	"	"	"	"	
Bromomethane	ND	4.4	"	"	"	"	"	"	
n-Butylbenzene	ND	4.4	"	"	"	"	"	"	
sec-Butylbenzene	ND	4.4	"	"	"	"	"	"	
tert-Butylbenzene	ND	4.4	"	"	"	"	"	"	
Carbon tetrachloride	ND	4.4	"	"	"	"	"	"	
Chlorobenzene	ND	4.4	"	"	"	"	"	"	
Chloroethane	ND	4.4	"	"	"	"	"	"	
Chloroform	ND	4.4	"	"	"	"	"	"	
Chloromethane	ND	4.4	"	"	"	"	"	"	
2-Chlorotoluene	ND	4.4	"	"	"	"	"	"	
4-Chlorotoluene	ND	4.4	"	"	"	"	"	"	
Dibromochloromethane	ND	4.4	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	8.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	4.4	"	"	"	"	"	"	
Dibromomethane	ND	4.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	4.4	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.4	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.4	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.4	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

VRS-B1-60
T170734-21 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2-Dichloropropane	ND	4.4	ug/kg	1	7040431	04/04/17	04/05/17	EPA 8260B/5035	
1,3-Dichloropropane	ND	4.4	"	"	"	"	"	"	
2,2-Dichloropropane	ND	4.4	"	"	"	"	"	"	
1,1-Dichloropropene	ND	4.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.4	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.4	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.4	"	"	"	"	"	"	
Isopropylbenzene	ND	4.4	"	"	"	"	"	"	
p-Isopropyltoluene	ND	4.4	"	"	"	"	"	"	
Methylene chloride	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	4.4	"	"	"	"	"	"	
n-Propylbenzene	ND	4.4	"	"	"	"	"	"	
Styrene	ND	4.4	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	4.4	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	4.4	"	"	"	"	"	"	
Tetrachloroethene	ND	4.4	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.4	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	4.4	"	"	"	"	"	"	
Trichloroethene	ND	4.4	"	"	"	"	"	"	
Trichlorofluoromethane	ND	4.4	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	4.4	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	4.4	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	4.4	"	"	"	"	"	"	
Vinyl chloride	ND	4.4	"	"	"	"	"	"	
Benzene	ND	4.4	"	"	"	"	"	"	
Toluene	ND	4.4	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/07/17 12:50
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VRS-B1-60
T170734-21 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: Toluene-d8		102 %	85.5-116		7040431	04/04/17	04/05/17	EPA 8260B/5035	
Surrogate: 4-Bromofluorobenzene		100 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		110 %	95.7-135		"	"	"	"	

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/07/17 12:50
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Purgeable Petroleum Hydrocarbons by EPA 8015B - 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 7040522 - EPA 5035 GC

Blank (7040522-BLK1)

Prepared: 04/05/17 Analyzed: 04/07/17

C6-C12 (GRO)	ND	400	ug/kg							
Surrogate: 4-Bromofluorobenzene	99.3		"	100		99.3	65-135			

LCS (7040522-BS1)

Prepared: 04/05/17 Analyzed: 04/06/17

C6-C12 (GRO)	10200	400	ug/kg	10900		93.5	75-125			
Surrogate: 4-Bromofluorobenzene	89.9		"	100		89.9	65-135			

LCS Dup (7040522-BSD1)

Prepared: 04/05/17 Analyzed: 04/06/17

C6-C12 (GRO)	10300	400	ug/kg	10900		94.3	75-125	0.887	20	
Surrogate: 4-Bromofluorobenzene	98.0		"	100		98.0	65-135			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

Volatile Organic Compounds by EPA Method 8260B - 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 7040431 - EPA 5035 GCMS

Blank (7040431-BLK1)

Prepared: 04/04/17 Analyzed: 04/05/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

Volatile Organic Compounds by EPA Method 8260B - 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 7040431 - EPA 5035 GCMS

Blank (7040431-BLK1)

Prepared: 04/04/17 Analyzed: 04/05/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							

Surrogate: Toluene-d8	39.4		"	39.9		98.6	85.5-116			
Surrogate: 4-Bromofluorobenzene	39.4		"	39.9		98.8	81.2-123			
Surrogate: Dibromofluoromethane	38.4		"	39.9		96.2	95.7-135			

LCS (7040431-BS1)

Prepared: 04/04/17 Analyzed: 04/05/17

Chlorobenzene	88.0	5.0	ug/kg	99.4		88.5	75-125			
1,1-Dichloroethene	77.4	5.0	"	99.4		77.8	75-125			
Trichloroethene	77.2	5.0	"	99.4		77.7	75-125			
Benzene	78.9	5.0	"	99.4		79.4	75-125			
Toluene	80.5	5.0	"	99.4		81.0	75-125			
Surrogate: Toluene-d8	38.5		"	39.8		96.9	85.5-116			
Surrogate: 4-Bromofluorobenzene	41.4		"	39.8		104	81.2-123			
Surrogate: Dibromofluoromethane	44.3		"	39.8		111	95.7-135			

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 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/07/17 12:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 7040431 - EPA 5035 GCMS

LCS Dup (7040431-BSD1)

Prepared: 04/04/17 Analyzed: 04/05/17

Chlorobenzene	96.9	5.0	ug/kg	99.4	97.4	75-125	9.63	20		
1,1-Dichloroethene	75.3	5.0	"	99.4	75.8	75-125	2.73	20		
Trichloroethene	85.7	5.0	"	99.4	86.2	75-125	10.4	20		
Benzene	93.5	5.0	"	99.4	94.1	75-125	16.9	20		
Toluene	89.3	5.0	"	99.4	89.8	75-125	10.4	20		
Surrogate: Toluene-d8	40.7		"	39.8	102	85.5-116				
Surrogate: 4-Bromofluorobenzene	43.6		"	39.8	110	81.2-123				
Surrogate: Dibromofluoromethane	43.3		"	39.8	109	95.7-135				

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.

Rose Fasheh, Project Manager

I-391



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/07/17 12:50

Notes and Definitions

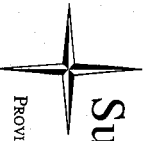
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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.

Rose Fasheh, Project Manager

I-392



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 24411 Ridgecreek Pkwy Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: DEWARCK WILLIS

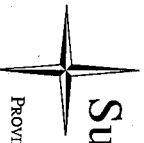
Date: 3/23/17 Page: 1 Of 2
Project Name: Isnea-Olinda
Collector: Frank Heeger Client Project #: 02077.01
Batch #: T170734 EDF #: _____

Sample ID	Date		Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	PCB EPA 8082	Laboratory ID #	Comments/Preservative	Total # of containers		
	Sampled	Time																		
BOFE-B1-5	3/23/17	0750	Soil	Ring																
BOFE-B1-10	3/23/17	0757	Soil	Ring+VDA H																
BOFE-B1-15	3/23/17	0800	Soil	Ring																
BOFE-B1-20	3/23/17	0807	Soil	Ring+VDA H																
BOFE-B1-25	3/23/17	0813	Soil	Ring																
BOFE-B1-30	3/23/17	0825	Soil	Ring+VDA H																
BOFE-B1-35	3/23/17	0834	Soil	Ring																
BOFE-B1-40	3/23/17	0840	Soil	Ring+VDA H																
BOFE-B1-45	3/23/17	0853	Soil	Ring																
BOFE-B1-50	3/23/17	0903	Soil	Ring+VDA H																
BOFE-B1-55	3/23/17	0912	Soil	Ring																
BOFE-B1-60	3/23/17	0914	Soil	Ring+VDA H																
VR5-B1-20	3/23/17	1235	Soil	Ring+VDA H																
VR5-B1-25	3/23/17	1241	Soil	Ring																
VR5-B1-30	3/23/17	1244	Soil	Ring+VDA H																
Relinquished by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Total # of containers			Chain of Custody seals Y/N/NA			Seals intact? Y/N/NA		
Relinquished by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Total # of containers			Chain of Custody seals Y/N/NA			Seals intact? Y/N/NA		
Relinquished by: (signature) _____			Date / Time _____			Received by: (signature) _____			Date / Time _____			Total # of containers			Chain of Custody seals Y/N/NA			Seals intact? Y/N/NA		

Notes
Frank Heeger
949-684-9987

Turn around time: STD

COC 162581



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 21411 Ridge Route Dr Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/23/17 Page: 2 of 2
Project Name: Brea - Olinda
Collector: Frank Heger Client Project #: 02077.01
Batch #: T170734 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB	8081 Chlor PEST	8091 OP PEST	PEST HERBICIDES	Laboratory ID #	Comments/Preservative	Total # of containers
VRS-B1-35	3/23/17	1253	Soil	Rinc				H				A	H		16						
VRS-B1-40	3/23/17	1307	Soil	Rinc+VDAH				H				A	H		17						
VRS-B1-45	3/23/17	1317	Soil	Rinc				H				A	H		18						
VRS-B1-50	3/23/17	1327	Soil	Rinc+VDAH				H				A	H		19						
VRS-B1-55	3/23/17	1335	Soil	Rinc				H				A	H		20						
VRS-B1-60	3/23/17	1338	Soil	Rinc+VDAH				H				A	H		21						
SB-T1-1	3/23/17	1415	Soil	4oz Glass				H				A	H		22						
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p>																					
<p>Chain of Custody seals Y/N/NA Seals intact? Y/N/NA Received good condition/cold</p>															<p>Total # of containers</p>		<p>Notes</p> <p>Frank Heger 949-689-9987</p>				

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

Turn around time: STD

COC 162582



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T170734

Client Name: Northgate - Laguna Hills Project: Brea olinda

Delivered by: Client SunStar Courier GSO FedEx Other

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

Lab Received by: Brian Date/Time Lab Received: 3-23-17 1620

Total number of coolers received: 0

Temperature: Cooler #1	<u>5.1</u> °C +/- the CF (- 0.2°C) =	<u>4.9</u> °C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers) Within criteria? Yes No

If NO:

Samples received on ice? Yes No → **Complete Non-Conformance Sheet**

If on ice, samples received same day collected? Yes → Acceptable No → **Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample Yes No* N/A

Sample containers intact Yes No*

Sample labels match Chain of Custody IDs Yes No*

Total number of containers received match COC Yes No*

Proper containers received for analyses requested on COC Yes No*

Proper preservative indicated on COC/containers for analyses requested Yes No* N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times Yes No*

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: DM 3-23-17

Comments: _____

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 12:10 PM
To: 'Frank Hagar'
Cc: 'Derrick Willis'
Subject: RE: The FINAL Word Additional request for Brea Olinda (T170734, T170759, T170788, and T170798)
Attachments: T170734_WKO_03.pdf; T170759_WKO_03.pdf; T170788_WKO_02.pdf; T170798_WKO_02.pdf

I believe I got it all coded in correctly gentlemen!

Please find attached work orders for confirmation. You will see in the comments section which analyses were added for each sample. It's a bit confusing since the samples were amongst several projects. All the samples that we did not receive 5035 kits for will be done by standard 8260 and 8015 Gas Purge as requested below. Please review and let me know if you have any questions or need anything else.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 11:22 AM
To: Rose Fasheh
Cc: Derrick Willis
Subject: The FINAL Word

Rose,

Per our call this morning, Back to the same samples without 5035 extractions – regular analyses.

Thanks

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.
24411 Ridge Route Drive
Suite 130
Laguna Hills, Ca 92653
phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055
www.ngem.com

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From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 10:14 AM
To: Rose Fasheh; Derrick Willis
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Rose,

Derrick is out of pocket a bit this morning so....

Please change the following samples for analysis of 8260 and GRO

SLA-B1-5 change to SLA-B1-10

SLA-B1-15 change to SLA-B1-20

S3-T1-5 change to S3-T1-10

S7-T1-5 change to S1-T1-10

I had a note on the COC for BB6P-B1-30 to lab extract a 5035 for that sample. GO ahead and do that please.

SLA-B1-15 no analysis as SLA-B1-10 and SLA-B1-20 will cover.

Let me know if there are any other issues with these samples.

Thanks
Frank

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.

24411 Ridge Route Drive

Suite 130

Laguna Hills, Ca 92653

phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055

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From: Rose Fasheh [mailto:Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 9:40 AM
To: 'Derrick Willis' <derrick.willis@ngem.com>

Cc: 'Frank Hagar' <frank.hagar@ngem.com>

Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Several of the samples you have requested 8260 and GRO for, we did not receive 5035 kits. We can run standard OR can make some kits using the jars or sleeves provided but it will be noted on the report that the kits were made in house, not a true 5035 prep. Specifically samples: SLA-B1-5 (T170759-01), SLA-B1-15 (T170759-03), BB6P-B1-30 (T170759-18), S3-T1-5 (T170798-07), and S7-T1-5 (T170798-10).

Also, sample SLA-B1-15 you have requested 8260 and GRO. This sample was on hold so no results were sent, did you mean for us to run another sample?

Please advise how you wish for me to proceed.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Wednesday, April 05, 2017 8:19 AM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,
Yes, please also report the GRO. Can I get prelims on the volatiles at the 3-day mark? Thanks
Derrick

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Wednesday, April 5, 2017 8:17 AM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Good morning Derrick,

For all the samples you requested VOCs by 8260 below, did you also need the GRO 5035 purgable?

Standard 5-day TAT okay?

Thank you,

Rose Fasheh
Project Manager



From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Tuesday, April 04, 2017 6:07 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,

I would like to request the following:

VRS-B1-20 - 8260

VRS-B1-60 – 8260

SLA-B1-5 – 8260

SLA-B1-15 – 8260

SLA-B1-60 – 8260

BBGP-B1-30 – 8260, Metals, Uranium

S8-B1-39 – Uranium, PCBs

S3-T1-5 - 8260, 8270, metals

S7-T1-5 - 8270

Thanks
Derrick

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Report To:
 Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due:	03/30/17 17:00 (5 day TAT)		
Received By:	Brian Charon	Date Received:	03/23/17 16:00
Logged In By:	Dan Marteski	Date Logged In:	03/24/17 09:19

Samples Received at:	4.9°C		
Custody Seals	No	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	Yes		

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8141 OP Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 03/23/17 16:00

Logged In By: Dan Marteski

Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)
 Received By: Brian Charon Date Received: 03/23/17 16:00
 Logged In By: Dan Marteski Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	8260 and GRO added per client request (Derrick, 4/5)
8015 m 5035-GRO	04/10/17 15:00	3	04/06/17 12:35	
8260 5035	04/10/17 15:00	3	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	8260 and GRO added per client request (Derrick, 4/5)
8015 m 5035-GRO	04/10/17 15:00	3	04/06/17 13:38	
8260 5035	04/10/17 15:00	3	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	



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06 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/28/17 16:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S8-B1-15	T170788-01	Soil	03/28/17 00:00	03/28/17 16:57
S8-B1-39	T170788-02	Soil	03/28/17 00:00	03/28/17 16:57
S8-B1-55	T170788-03	Soil	03/28/17 00:00	03/28/17 16:57
S5-B1-20	T170788-04	Soil	03/28/17 00:00	03/28/17 16:57
S5-B1-24	T170788-05	Soil	03/28/17 00:00	03/28/17 16:57
S5-B1-36	T170788-06	Soil	03/28/17 00:00	03/28/17 16:57
S8-T1-1	T170788-07	Soil	03/28/17 00:00	03/28/17 16:57

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/06/17 11:32

DETECTIONS SUMMARY

Sample ID: S8-B1-15

Laboratory ID: T170788-01

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	80	10		mg/kg	EPA 8015B	
C13-C28 (DRO)	2100	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	720	10		mg/kg	EPA 8015B	
Barium	71	0.86		mg/kg	EPA 6010B	
Chromium	7.8	1.7		mg/kg	EPA 6010B	
Cobalt	6.0	1.7		mg/kg	EPA 6010B	
Copper	5.3	0.86		mg/kg	EPA 6010B	
Nickel	8.2	1.7		mg/kg	EPA 6010B	
Vanadium	24	4.3		mg/kg	EPA 6010B	
Zinc	23	0.86		mg/kg	EPA 6010B	
Fluorene	480	300		ug/kg	EPA 8270C	

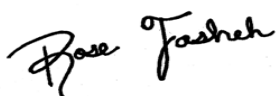
Sample ID: S8-B1-39

Laboratory ID: T170788-02

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	380000	16000		ug/kg	EPA 8015B	
C13-C28 (DRO)	13000	100		mg/kg	EPA 8015B	
C29-C40 (MORO)	4300	100		mg/kg	EPA 8015B	
Barium	56	1.0		mg/kg	EPA 6010B	
Chromium	5.8	2.0		mg/kg	EPA 6010B	
Cobalt	4.8	2.0		mg/kg	EPA 6010B	
Copper	5.2	1.0		mg/kg	EPA 6010B	
Nickel	11	2.0		mg/kg	EPA 6010B	
Vanadium	17	5.0		mg/kg	EPA 6010B	
Zinc	26	1.0		mg/kg	EPA 6010B	
n-Butylbenzene	18	5.0		ug/kg	EPA 8260B/5035	
sec-Butylbenzene	56	5.0		ug/kg	EPA 8260B/5035	
tert-Butylbenzene	5.9	5.0		ug/kg	EPA 8260B/5035	
Isopropylbenzene	57	5.0		ug/kg	EPA 8260B/5035	
Naphthalene	120	5.0		ug/kg	EPA 8260B/5035	
n-Propylbenzene	48	5.0		ug/kg	EPA 8260B/5035	
2-Methylnaphthalene	2800	1500		ug/kg	EPA 8270C	R-07

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Page 2 of 51

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/06/17 11:32

Sample ID: S8-B1-39

Laboratory ID: T170788-02

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
1-Methylnaphthalene	3500	1500		ug/kg	EPA 8270C	R-07
Phenanthrene	2800	1500		ug/kg	EPA 8270C	R-07

Sample ID: S8-B1-55

Laboratory ID: T170788-03

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C6-C12 (GRO)	180000	11000		ug/kg	EPA 8015B	
C13-C28 (DRO)	7900	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	1800	10		mg/kg	EPA 8015B	
Barium	57	1.0		mg/kg	EPA 6010B	
Chromium	8.9	2.0		mg/kg	EPA 6010B	
Cobalt	5.5	2.0		mg/kg	EPA 6010B	
Copper	6.7	1.0		mg/kg	EPA 6010B	
Nickel	14	2.0		mg/kg	EPA 6010B	
Vanadium	24	5.0		mg/kg	EPA 6010B	
Zinc	35	1.0		mg/kg	EPA 6010B	
n-Butylbenzene	18	3.7		ug/kg	EPA 8260B/5035	
sec-Butylbenzene	42	3.7		ug/kg	EPA 8260B/5035	
tert-Butylbenzene	4.2	3.7		ug/kg	EPA 8260B/5035	
Isopropylbenzene	28	3.7		ug/kg	EPA 8260B/5035	
p-Isopropyltoluene	13	3.7		ug/kg	EPA 8260B/5035	
Naphthalene	5.4	3.7		ug/kg	EPA 8260B/5035	
n-Propylbenzene	20	3.7		ug/kg	EPA 8260B/5035	
Fluorene	1600	1500		ug/kg	EPA 8270C	R-07
N-Nitrosodiphenylamine	2700	1500		ug/kg	EPA 8270C	R-07

Sample ID: S5-B1-20

Laboratory ID: T170788-04

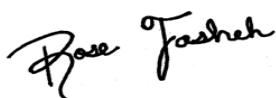
Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	11	10		mg/kg	EPA 8015B	

Sample ID: S5-B1-24

Laboratory ID: T170788-05

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/06/17 11:32

Sample ID: S5-B1-24

Laboratory ID: T170788-05

No Results Detected

Sample ID: S5-B1-36

Laboratory ID: T170788-06

No Results Detected

Sample ID: S8-T1-1

Laboratory ID: T170788-07

No Results Detected

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-413

Page 4 of 51



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-15
T170788-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	80	10	mg/kg	1	7032913	03/29/17	03/30/17	EPA 8015B	
C13-C28 (DRO)	2100	10	"	"	"	"	"	"	
C29-C40 (MORO)	720	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		110 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	2.6	mg/kg	1	7032921	03/29/17	03/30/17	EPA 6010B	
Silver	ND	1.7	"	"	"	"	"	"	
Arsenic	ND	4.3	"	"	"	"	"	"	
Barium	71	0.86	"	"	"	"	"	"	
Beryllium	ND	0.86	"	"	"	"	"	"	
Cadmium	ND	1.7	"	"	"	"	"	"	
Chromium	7.8	1.7	"	"	"	"	"	"	
Cobalt	6.0	1.7	"	"	"	"	"	"	
Copper	5.3	0.86	"	"	"	"	"	"	
Lead	ND	2.6	"	"	"	"	"	"	
Molybdenum	ND	4.3	"	"	"	"	"	"	
Nickel	8.2	1.7	"	"	"	"	"	"	
Selenium	ND	4.3	"	"	"	"	"	"	
Thallium	ND	1.7	"	"	"	"	"	"	
Vanadium	24	4.3	"	"	"	"	"	"	
Zinc	23	0.86	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032920	03/29/17	03/30/17	EPA 7471A Soil	
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SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-15
T170788-01 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
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 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-15
T170788-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

Semivolatile Organic Compounds by EPA Method 8270C

Chrysene	ND	300	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	480	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/06/17 11:32
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S8-B1-15
T170788-01 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,3,5,6-Tetrachlorophenol	ND	300	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		49.1 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		47.6 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		62.4 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		89.1 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		88.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-dl4		144 %	29.1-130		"	"	"	"	S-GC

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-39
T170788-02 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	380000	16000	ug/kg	50	7032938	03/29/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		111 %	65-135		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015B

C13-C28 (DRO)	13000	100	mg/kg	10	7032913	03/29/17	03/30/17	EPA 8015B	
C29-C40 (MORO)	4300	100	"	"	"	"	"	"	
Surrogate: p-Terphenyl		111 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032921	03/29/17	03/30/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	56	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	5.8	2.0	"	"	"	"	"	"	
Cobalt	4.8	2.0	"	"	"	"	"	"	
Copper	5.2	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	11	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	17	5.0	"	"	"	"	"	"	
Zinc	26	1.0	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-39
T170788-02 (Soil)

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

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032920	03/29/17	03/30/17	EPA 7471A Soil	
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	18	5.0	"	"	"	"	"	"	
sec-Butylbenzene	56	5.0	"	"	"	"	"	"	
tert-Butylbenzene	5.9	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-39
T170788-02 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloropropane	ND	5.0	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	57	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	120	5.0	"	"	"	"	"	"	
n-Propylbenzene	48	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	

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S8-B1-39
T170788-02 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Toluene-d8	112 %	85.5-116			7032939	03/29/17	04/01/17	EPA 8260B/5035	
Surrogate: 4-Bromofluorobenzene	198 %	81.2-123			"	"	"	"	S-GC
Surrogate: Dibromofluoromethane	119 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Carbazole	ND	1500	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	2800	1500	"	"	"	"	"	"	R-07
1-Methylnaphthalene	3500	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	1500	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-39
T170788-02 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

4-Bromophenyl phenyl ether	ND	1500	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Butyl benzyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	5000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	5000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	"	"	R-07
Fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Fluorene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	5000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	"	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07

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S8-B1-39
T170788-02 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

4-Nitroaniline	ND	1500	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Nitrobenzene	ND	5000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	2800	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		57.6 %	15-121		"	"	"	"	R-07
Surrogate: Phenol-d6		37.1 %	24-113		"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		73.5 %	21.3-119		"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		97.5 %	32.4-102		"	"	"	"	R-07
Surrogate: 2,4,6-Tribromophenol		112 %	18.1-105		"	"	"	"	S-GC, R-07
Surrogate: Terphenyl-d14		148 %	29.1-130		"	"	"	"	R-07, S-GC

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-55
T170788-03 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	180000	11000	ug/kg	50	7032938	03/29/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		109 %	65-135		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015B

C13-C28 (DRO)	7900	10	mg/kg	1	7032913	03/29/17	03/30/17	EPA 8015B	
C29-C40 (MORO)	1800	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		121 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032921	03/29/17	03/30/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	57	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	8.9	2.0	"	"	"	"	"	"	
Cobalt	5.5	2.0	"	"	"	"	"	"	
Copper	6.7	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	14	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	24	5.0	"	"	"	"	"	"	
Zinc	35	1.0	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

I-424



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-55
T170788-03 (Soil)

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

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032920	03/29/17	03/30/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032932	03/29/17	03/30/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		73.3 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		38.0 %	35-140		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	3.7	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Bromochloromethane	ND	3.7	"	"	"	"	"	"	
Bromodichloromethane	ND	3.7	"	"	"	"	"	"	
Bromoform	ND	3.7	"	"	"	"	"	"	
Bromomethane	ND	3.7	"	"	"	"	"	"	
n-Butylbenzene	18	3.7	"	"	"	"	"	"	
sec-Butylbenzene	42	3.7	"	"	"	"	"	"	
tert-Butylbenzene	4.2	3.7	"	"	"	"	"	"	
Carbon tetrachloride	ND	3.7	"	"	"	"	"	"	
Chlorobenzene	ND	3.7	"	"	"	"	"	"	
Chloroethane	ND	3.7	"	"	"	"	"	"	
Chloroform	ND	3.7	"	"	"	"	"	"	
Chloromethane	ND	3.7	"	"	"	"	"	"	
2-Chlorotoluene	ND	3.7	"	"	"	"	"	"	
4-Chlorotoluene	ND	3.7	"	"	"	"	"	"	
Dibromochloromethane	ND	3.7	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.7	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-55
T170788-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organic Compounds by EPA Method 8260B

Dibromomethane	ND	3.7	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
1,2-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloroethane	ND	3.7	"	"	"	"	"	"	
1,2-Dichloroethane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.7	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"	
1,2-Dichloropropane	ND	3.7	"	"	"	"	"	"	
1,3-Dichloropropane	ND	3.7	"	"	"	"	"	"	
2,2-Dichloropropane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.7	"	"	"	"	"	"	
Isopropylbenzene	28	3.7	"	"	"	"	"	"	
p-Isopropyltoluene	13	3.7	"	"	"	"	"	"	
Methylene chloride	ND	3.7	"	"	"	"	"	"	
Naphthalene	5.4	3.7	"	"	"	"	"	"	
n-Propylbenzene	20	3.7	"	"	"	"	"	"	
Styrene	ND	3.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
Tetrachloroethene	ND	3.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.7	"	"	"	"	"	"	
Trichloroethene	ND	3.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.7	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-55
T170788-03 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,2,3-Trichloropropane	ND	3.7	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
1,3,5-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
Vinyl chloride	ND	3.7	"	"	"	"	"	"	
Benzene	ND	3.7	"	"	"	"	"	"	
Toluene	ND	3.7	"	"	"	"	"	"	
Ethylbenzene	ND	3.7	"	"	"	"	"	"	
m,p-Xylene	ND	7.4	"	"	"	"	"	"	
o-Xylene	ND	3.7	"	"	"	"	"	"	
Surrogate: Toluene-d8		109 %	85.5-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		200 %	81.2-123		"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		112 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	1500	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	1500	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07

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Rose Fasheh, Project Manager

I-427



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-B1-55
T170788-03 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Benzo (b) fluoranthene	ND	1500	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	5000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	5000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	"	"	R-07
Fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Fluorene	1600	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07

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Rose Fasheh, Project Manager

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S8-B1-55
T170788-03 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Hexachlorocyclopentadiene	ND	5000	ug/kg	5	7032720	03/29/17	03/31/17	EPA 8270C	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	"	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
Nitrobenzene	ND	5000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	2700	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	ND	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		72.1 %	15-121	"	"	"	"	"	R-07
Surrogate: Phenol-d6		68.9 %	24-113	"	"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		94.4 %	21.3-119	"	"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		102 %	32.4-102	"	"	"	"	"	R-07
Surrogate: 2,4,6-Tribromophenol		102 %	18.1-105	"	"	"	"	"	R-07
Surrogate: Terphenyl-dl4		137 %	29.1-130	"	"	"	"	"	R-07, S-GC

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S5-B1-20
T170788-04 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032913	03/29/17	03/30/17	EPA 8015B	
C13-C28 (DRO)	11	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		97.7 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-430



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S5-B1-24
T170788-05 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	500	ug/kg	1	7032938	03/29/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		79.8 %	65-135		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015B

C13-C28 (DRO)	ND	10	mg/kg	1	7032913	03/29/17	03/30/17	EPA 8015B	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		101 %	65-135		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	3.9	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Bromochloromethane	ND	3.9	"	"	"	"	"	"	
Bromodichloromethane	ND	3.9	"	"	"	"	"	"	
Bromoform	ND	3.9	"	"	"	"	"	"	
Bromomethane	ND	3.9	"	"	"	"	"	"	
n-Butylbenzene	ND	3.9	"	"	"	"	"	"	
sec-Butylbenzene	ND	3.9	"	"	"	"	"	"	
tert-Butylbenzene	ND	3.9	"	"	"	"	"	"	
Carbon tetrachloride	ND	3.9	"	"	"	"	"	"	
Chlorobenzene	ND	3.9	"	"	"	"	"	"	
Chloroethane	ND	3.9	"	"	"	"	"	"	
Chloroform	ND	3.9	"	"	"	"	"	"	
Chloromethane	ND	3.9	"	"	"	"	"	"	
2-Chlorotoluene	ND	3.9	"	"	"	"	"	"	
4-Chlorotoluene	ND	3.9	"	"	"	"	"	"	
Dibromochloromethane	ND	3.9	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.9	"	"	"	"	"	"	
Dibromomethane	ND	3.9	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	3.9	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	3.9	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	3.9	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	3.9	"	"	"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S5-B1-24
T170788-05 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,1-Dichloroethane	ND	3.9	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
1,2-Dichloroethane	ND	3.9	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.9	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	3.9	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	3.9	"	"	"	"	"	"	
1,2-Dichloropropane	ND	3.9	"	"	"	"	"	"	
1,3-Dichloropropane	ND	3.9	"	"	"	"	"	"	
2,2-Dichloropropane	ND	3.9	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.9	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.9	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.9	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.9	"	"	"	"	"	"	
Isopropylbenzene	ND	3.9	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.9	"	"	"	"	"	"	
Methylene chloride	ND	3.9	"	"	"	"	"	"	
Naphthalene	ND	3.9	"	"	"	"	"	"	
n-Propylbenzene	ND	3.9	"	"	"	"	"	"	
Styrene	ND	3.9	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.9	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.9	"	"	"	"	"	"	
Tetrachloroethene	ND	3.9	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.9	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.9	"	"	"	"	"	"	
Trichloroethene	ND	3.9	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.9	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.9	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.9	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.9	"	"	"	"	"	"	
Vinyl chloride	ND	3.9	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/06/17 11:32
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S5-B1-24
T170788-05 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Benzene	ND	3.9	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Toluene	ND	3.9	"	"	"	"	"	"	"
Ethylbenzene	ND	3.9	"	"	"	"	"	"	"
m,p-Xylene	ND	7.7	"	"	"	"	"	"	"
o-Xylene	ND	3.9	"	"	"	"	"	"	"
Surrogate: Toluene-d8		102 %		85.5-116	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		101 %		81.2-123	"	"	"	"	"
Surrogate: Dibromofluoromethane		105 %		95.7-135	"	"	"	"	"

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S5-B1-36
T170788-06 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	290	ug/kg	1	7032938	03/29/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		75.4 %	65-135		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015B

C13-C28 (DRO)	ND	10	mg/kg	1	7032913	03/29/17	03/30/17	EPA 8015B	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		97.9 %	65-135		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	3.2	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Bromochloromethane	ND	3.2	"	"	"	"	"	"	
Bromodichloromethane	ND	3.2	"	"	"	"	"	"	
Bromoform	ND	3.2	"	"	"	"	"	"	
Bromomethane	ND	3.2	"	"	"	"	"	"	
n-Butylbenzene	ND	3.2	"	"	"	"	"	"	
sec-Butylbenzene	ND	3.2	"	"	"	"	"	"	
tert-Butylbenzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	3.2	"	"	"	"	"	"	
Chlorobenzene	ND	3.2	"	"	"	"	"	"	
Chloroethane	ND	3.2	"	"	"	"	"	"	
Chloroform	ND	3.2	"	"	"	"	"	"	
Chloromethane	ND	3.2	"	"	"	"	"	"	
2-Chlorotoluene	ND	3.2	"	"	"	"	"	"	
4-Chlorotoluene	ND	3.2	"	"	"	"	"	"	
Dibromochloromethane	ND	3.2	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	6.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.2	"	"	"	"	"	"	
Dibromomethane	ND	3.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	3.2	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	3.2	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S5-B1-36
T170788-06 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,1-Dichloroethane	ND	3.2	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
1,2-Dichloroethane	ND	3.2	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	3.2	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	3.2	"	"	"	"	"	"	
1,2-Dichloropropane	ND	3.2	"	"	"	"	"	"	
1,3-Dichloropropane	ND	3.2	"	"	"	"	"	"	
2,2-Dichloropropane	ND	3.2	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.2	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.2	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.2	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.2	"	"	"	"	"	"	
Isopropylbenzene	ND	3.2	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.2	"	"	"	"	"	"	
Methylene chloride	ND	3.2	"	"	"	"	"	"	
Naphthalene	ND	3.2	"	"	"	"	"	"	
n-Propylbenzene	ND	3.2	"	"	"	"	"	"	
Styrene	ND	3.2	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.2	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.2	"	"	"	"	"	"	
Tetrachloroethene	ND	3.2	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.2	"	"	"	"	"	"	
Trichloroethene	ND	3.2	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.2	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.2	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.2	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.2	"	"	"	"	"	"	
Vinyl chloride	ND	3.2	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-435



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S5-B1-36
T170788-06 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Benzene	ND	3.2	ug/kg	1	7032939	03/29/17	04/01/17	EPA 8260B/5035	
Toluene	ND	3.2	"	"	"	"	"	"	
Ethylbenzene	ND	3.2	"	"	"	"	"	"	
m,p-Xylene	ND	6.4	"	"	"	"	"	"	
o-Xylene	ND	3.2	"	"	"	"	"	"	
Surrogate: Toluene-d8		105 %		85.5-116	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		81.2-123	"	"	"	"	
Surrogate: Dibromofluoromethane		104 %		95.7-135	"	"	"	"	

SunStar Laboratories, Inc.

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-T1-1
T170788-07 (Soil)

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

Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032831	03/29/17	03/31/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	04/01/17	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	03/31/17	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	04/01/17	"	
Endrin	ND	5.0	"	"	"	"	03/31/17	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	04/01/17	"	
Endrin aldehyde	ND	5.0	"	"	"	"	03/31/17	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		77.6 %		35-140	"	"	04/01/17	"	
Surrogate: Decachlorobiphenyl		75.2 %		35-140	"	"	"	"	

Organophosphorus Pesticides by EPA Method 8141A

Dichlorvos	ND	5.0	ug/kg	1	7033020	03/30/17	03/31/17	8141a	
Mevinphos	ND	5.0	"	"	"	"	"	"	
Demeton-s	ND	10	"	"	"	"	"	"	
Ethoprophos	ND	5.0	"	"	"	"	"	"	
Phorate	ND	10	"	"	"	"	"	"	
Naled	ND	5.0	"	"	"	"	"	"	
Sulfotep	ND	10	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-T1-1
T170788-07 (Soil)

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

Organophosphorus Pesticides by EPA Method 8141A

Diazinon	ND	5.0	ug/kg	1	7033020	03/30/17	03/31/17	8141a	
Disulfoton	ND	5.0	"	"	"	"	"	"	
Demeton-o	ND	10	"	"	"	"	"	"	
Dimethoate	ND	5.0	"	"	"	"	"	"	
Ronnel	ND	10	"	"	"	"	"	"	
Merphos	ND	10	"	"	"	"	"	"	
Chlorpyrifos	ND	5.0	"	"	"	"	"	"	
Fenthion	ND	5.0	"	"	"	"	"	"	
Trichloronate	ND	5.0	"	"	"	"	"	"	
Methyl parathion	ND	5.0	"	"	"	"	"	"	
Malathion	ND	10	"	"	"	"	"	"	
Tokuthion (Prothiofos)	ND	5.0	"	"	"	"	"	"	
Parathion	ND	5.0	"	"	"	"	"	"	
Stirophos (Tetrachlorvinphos)	ND	5.0	"	"	"	"	"	"	
Bolstar	ND	5.0	"	"	"	"	"	"	
Fensulfothion	ND	5.0	"	"	"	"	"	"	
EPN	ND	5.0	"	"	"	"	"	"	
Azinphos methyl	ND	10	"	"	"	"	"	"	
Coumaphos	ND	5.0	"	"	"	"	"	"	

Surrogate: Tributylphosphate 93.5 % 40-125 " " " "

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032915	03/29/17	03/31/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-T1-1
T170788-07 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

DCPA diacid	ND	5.00	ug/kg	1	7032915	03/29/17	03/31/17	8151	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		52.8 %	35-150		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
Aniline	ND	300	"	"	"	"	"	"	
Phenol	ND	1000	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-T1-1
T170788-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

S8-T1-1
T170788-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

4-Methylphenol	ND	1000	ug/kg	1	7032720	03/29/17	03/31/17	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		49.3 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		44.6 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		53.1 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		73.0 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		90.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-dl4		127 %	29.1-130		"	"	"	"	

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Purgeable Petroleum Hydrocarbons by EPA 8015B - 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 7032938 - EPA 5035 GC

Blank (7032938-BLK1)

Prepared: 03/29/17 Analyzed: 04/03/17

C6-C12 (GRO)	ND	400	ug/kg							
Surrogate: 4-Bromofluorobenzene	118		"	100		118	65-135			

LCS (7032938-BS1)

Prepared: 03/29/17 Analyzed: 04/03/17

C6-C12 (GRO)	10600	400	ug/kg	11000		97.2	75-125			
Surrogate: 4-Bromofluorobenzene	97.4		"	100		97.4	65-135			

LCS Dup (7032938-BSD1)

Prepared: 03/29/17 Analyzed: 04/03/17

C6-C12 (GRO)	10800	400	ug/kg	10900		98.6	75-125	1.25	20	
Surrogate: 4-Bromofluorobenzene	96.5		"	100		96.5	65-135			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Extractable Petroleum Hydrocarbons by 8015B - 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 7032913 - EPA 3550B GC

Blank (7032913-BLK1)

Prepared: 03/29/17 Analyzed: 03/30/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	104		"	99.0		105	65-135			
Surrogate: p-Terphenyl	103		"	99.0		104	65-135			

LCS (7032913-BS1)

Prepared: 03/29/17 Analyzed: 03/30/17

C13-C28 (DRO)	520	10	mg/kg	495		104	75-125			
C13-C28 (DRO)	520	10	"	495		105	75-125			
Surrogate: p-Terphenyl	102		"	99.0		103	65-135			
Surrogate: p-Terphenyl	101		"	99.0		102	65-135			

LCS Dup (7032913-BSD1)

Prepared: 03/29/17 Analyzed: 03/30/17

C13-C28 (DRO)	530	10	mg/kg	490		108	75-125	2.90	20	
C13-C28 (DRO)	540	10	"	490		110	75-125	3.88	20	
Surrogate: p-Terphenyl	87.9		"	98.0		89.6	65-135			
Surrogate: p-Terphenyl	86.1		"	98.0		87.9	65-135			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Metals by EPA 6010B - 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 7032921 - EPA 3051

Blank (7032921-BLK1)

Prepared: 03/29/17 Analyzed: 03/30/17

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (7032921-BS1)

Prepared: 03/29/17 Analyzed: 03/30/17

Arsenic	112	5.0	mg/kg	100		112	75-125			
Barium	109	1.0	"	100		109	75-125			
Cadmium	108	2.0	"	100		108	75-125			
Chromium	108	2.0	"	100		108	75-125			
Lead	113	3.0	"	100		113	75-125			

Matrix Spike (7032921-MS1)

Source: T170765-17

Prepared: 03/29/17 Analyzed: 03/30/17

Arsenic	99.8	5.0	mg/kg	100	1.15	98.7	75-125			
Barium	124	1.0	"	100	31.3	92.8	75-125			
Cadmium	96.5	2.0	"	100	0.434	96.1	75-125			
Chromium	102	2.0	"	100	3.64	98.1	75-125			
Lead	99.1	3.0	"	100	2.12	96.9	75-125			

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Metals by EPA 6010B - 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 7032921 - EPA 3051

Matrix Spike Dup (7032921-MSD1)	Source: T170765-17			Prepared: 03/29/17 Analyzed: 03/30/17						
Arsenic	105	5.0	mg/kg	100	1.15	103	75-125	4.57	20	
Barium	129	1.0	"	100	31.3	97.3	75-125	3.58	20	
Cadmium	95.9	2.0	"	100	0.434	95.5	75-125	0.632	20	
Chromium	100	2.0	"	100	3.64	96.7	75-125	1.39	20	
Lead	103	3.0	"	100	2.12	101	75-125	4.11	20	

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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 7032920 - EPA 7471A Soil

Blank (7032920-BLK1)		Prepared: 03/29/17 Analyzed: 03/30/17								
Mercury	ND	0.10	mg/kg							
LCS (7032920-BS1)		Prepared: 03/29/17 Analyzed: 03/30/17								
Mercury	0.336	0.10	mg/kg	0.410		82.1	75-125			
Matrix Spike (7032920-MS1)		Source: T170788-01		Prepared: 03/29/17 Analyzed: 03/30/17						
Mercury	0.324	0.10	mg/kg	0.391	ND	82.9	75-125			
Matrix Spike Dup (7032920-MSD1)		Source: T170788-01		Prepared: 03/29/17 Analyzed: 03/30/17						
Mercury	0.332	0.10	mg/kg	0.391	ND	84.9	75-125	2.41	20	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Organochlorine Pesticides by EPA Method 8081A - 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 7032831 - EPA 3550 ECD/GCMS

Blank (7032831-BLK1)

Prepared: 03/29/17 Analyzed: 04/01/17

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Surrogate: Tetrachloro-meta-xylene	11.2		"	10.0		112	35-140			
Surrogate: Decachlorobiphenyl	11.5		"	10.0		115	35-140			

LCS (7032831-BS1)

Prepared: 03/29/17 Analyzed: 04/01/17

gamma-BHC (Lindane)	10.7	5.0	ug/kg	10.1		106	40-120			
Heptachlor	10.1	5.0	"	10.1		99.7	40-120			
Aldrin	10.3	5.0	"	10.1		102	40-120			
Dieldrin	10.9	5.0	"	10.1		108	40-120			
Endrin	9.85	5.0	"	10.1		97.5	40-120			
4,4'-DDT	8.51	5.0	"	10.1		84.2	33-147			
Surrogate: Tetrachloro-meta-xylene	10.4		"	10.1		103	35-140			
Surrogate: Decachlorobiphenyl	10.5		"	10.1		104	35-140			

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Rose Fasheh, Project Manager

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 Project Number: 02077.01
 Project Manager: Derrick Willis

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Organochlorine Pesticides by EPA Method 8081A - 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 7032831 - EPA 3550 ECD/GCMS

LCS Dup (7032831-BSD1)

Prepared: 03/29/17 Analyzed: 04/01/17

gamma-BHC (Lindane)	10.4	5.0	ug/kg	10.2		102	40-120	4.28	30	
Heptachlor	9.55	5.0	"	10.2		93.6	40-120	6.31	30	
Aldrin	9.81	5.0	"	10.2		96.2	40-120	6.00	30	
Dieldrin	11.3	5.0	"	10.2		110	40-120	2.33	30	
Endrin	9.66	5.0	"	10.2		94.7	40-120	2.95	30	
4,4'-DDT	8.09	5.0	"	10.2		79.3	33-147	6.06	30	
Surrogate: Tetrachloro-meta-xylene	10.2		"	10.2		99.9	35-140			
Surrogate: Decachlorobiphenyl	9.98		"	10.2		97.8	35-140			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Polychlorinated Biphenyls by EPA Method 8082 - 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 7032932 - EPA 3550 ECD/GCMS

Blank (7032932-BLK1)

Prepared: 03/29/17 Analyzed: 03/30/17

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
Surrogate: Tetrachloro-meta-xylene	6.90		"	10.0		69.0	35-140			
Surrogate: Decachlorobiphenyl	6.96		"	10.0		69.6	35-140			

LCS (7032932-BS1)

Prepared: 03/29/17 Analyzed: 03/30/17

PCB-1016	85.8	10	ug/kg	98.0		87.5	40-130			
PCB-1260	82.9	10	"	98.0		84.6	40-130			
Surrogate: Tetrachloro-meta-xylene	6.90		"	9.80		70.4	35-140			
Surrogate: Decachlorobiphenyl	6.72		"	9.80		68.6	35-140			

LCS Dup (7032932-BSD1)

Prepared: 03/29/17 Analyzed: 03/30/17

PCB-1016	77.4	10	ug/kg	101		76.6	40-130	10.3	30	
PCB-1260	72.9	10	"	101		72.2	40-130	12.8	30	
Surrogate: Tetrachloro-meta-xylene	6.02		"	10.1		59.6	35-140			
Surrogate: Decachlorobiphenyl	6.00		"	10.1		59.4	35-140			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
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Organophosphorus Pesticides by EPA Method 8141A - 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 7033020 - EPA 3550 ECD/GCMS

Blank (7033020-BLK1)

Prepared: 03/30/17 Analyzed: 03/31/17

Dichlorvos	ND	5.0	ug/kg							
Mevinphos	ND	5.0	"							
Demeton-s	ND	10	"							
Ethoprophos	ND	5.0	"							
Phorate	ND	10	"							
Naled	ND	5.0	"							
Sulfotep	ND	10	"							
Diazinon	ND	5.0	"							
Disulfoton	ND	5.0	"							
Demeton-o	ND	10	"							
Dimethoate	ND	5.0	"							
Ronnel	ND	10	"							
Merphos	ND	10	"							
Chlorpyrifos	ND	5.0	"							
Fenthion	ND	5.0	"							
Trichloronate	ND	5.0	"							
Methyl parathion	ND	5.0	"							
Malathion	ND	10	"							
Tokuthion (Prothiofos)	ND	5.0	"							
Parathion	ND	5.0	"							
Stirophos (Tetrachlorvinphos)	ND	5.0	"							
Bolstar	ND	5.0	"							
Fensulfothion	ND	5.0	"							
EPN	ND	5.0	"							
Azinphos methyl	ND	10	"							
Coumaphos	ND	5.0	"							
Surrogate: Tributylphosphate	35.1		"	39.3		89.4	40-125			

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Organophosphorus Pesticides by EPA Method 8141A - 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 7033020 - EPA 3550 ECD/GCMS

LCS (7033020-BS1)

Prepared: 03/30/17 Analyzed: 03/31/17

Diazinon	34.5	5.0	ug/kg	40.0		86.1	60-130			
Chlorpyrifos	35.9	5.0	"	40.0		89.8	60-130			
Methyl parathion	42.4	5.0	"	40.0		106	60-130			
Stirophos (Tetrachlorvinphos)	35.1	5.0	"	40.0		87.7	60-130			
Surrogate: Tributylphosphate	37.1		"	40.0		92.7	40-125			

LCS Dup (7033020-BSD1)

Prepared: 03/30/17 Analyzed: 03/31/17

Diazinon	32.6	5.0	ug/kg	39.5		82.4	60-130	5.62	20	
Chlorpyrifos	32.6	5.0	"	39.5		82.4	60-130	9.79	20	
Methyl parathion	41.1	5.0	"	39.5		104	60-130	3.20	20	
Stirophos (Tetrachlorvinphos)	42.0	5.0	"	39.5		106	60-130	18.0	20	
Surrogate: Tributylphosphate	32.9		"	39.5		83.2	40-125			

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Rose Fasheh, Project Manager

I-451



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Chlorinated Herbicides by EPA Method 8151A - 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 7032915 - 8151 Prep

Blank (7032915-BLK1)

Prepared: 03/29/17 Analyzed: 03/31/17

2,4,5-T	ND	5.00	ug/kg							
2,4,5-TP (Silvex)	ND	5.00	"							
2,4-D	ND	5.00	"							
2,4-DB	ND	5.00	"							
3,5-Dichlorobenzoic acid	ND	5.00	"							
4-Nitrophenol	ND	5.00	"							
Acifluorfen	ND	5.00	"							
Bentazon	ND	5.00	"							
Chloramben	ND	5.00	"							
Dalapon	ND	30.0	"							
DCPA diacid	ND	5.00	"							
Dicamba	ND	5.00	"							
Dichloroprop	ND	5.00	"							
Dinoseb	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Picloram	ND	5.00	"							
Surrogate: 2,4-DCAA	221		"	400		55.2	35-150			

LCS (7032915-BS1)

Prepared: 03/29/17 Analyzed: 03/31/17

2,4,5-T	78.8	5.00	ug/kg	99.0		79.6	20-150			
2,4,5-TP (Silvex)	93.3	5.00	"	99.2		94.0	20-150			
2,4-D	86.8	5.00	"	99.2		87.5	20-150			
Surrogate: 2,4-DCAA	257		"	397		64.8	35-150			

LCS Dup (7032915-BSD1)

Prepared: 03/29/17 Analyzed: 03/31/17

2,4,5-T	84.6	5.00	ug/kg	99.6		84.9	20-150	7.12	30	
2,4,5-TP (Silvex)	100	5.00	"	99.8		100	20-150	7.19	30	
2,4-D	94.1	5.00	"	99.8		94.2	20-150	8.02	30	
Surrogate: 2,4-DCAA	270		"	399		67.7	35-150			

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Volatile Organic Compounds by EPA Method 8260B - 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 7032939 - EPA 5035 GCMS

Blank (7032939-BLK1)

Prepared: 03/29/17 Analyzed: 03/31/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Volatile Organic Compounds by EPA Method 8260B - 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 7032939 - EPA 5035 GCMS

Blank (7032939-BLK1)

Prepared: 03/29/17 Analyzed: 03/31/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: Toluene-d8	37.4		"	39.8		94.1	85.5-116			
Surrogate: 4-Bromofluorobenzene	39.1		"	39.8		98.4	81.2-123			
Surrogate: Dibromofluoromethane	39.8		"	39.8		100	95.7-135			

LCS (7032939-BS1)

Prepared: 03/29/17 Analyzed: 03/31/17

Chlorobenzene	92.4	5.0	ug/kg	99.0		93.3	75-125			
1,1-Dichloroethene	79.2	5.0	"	99.0		80.0	75-125			
Trichloroethene	85.5	5.0	"	99.0		86.4	75-125			
Benzene	83.5	5.0	"	99.0		84.3	75-125			
Toluene	81.0	5.0	"	99.0		81.9	75-125			
Surrogate: Toluene-d8	38.5		"	39.6		97.1	85.5-116			
Surrogate: 4-Bromofluorobenzene	42.3		"	39.6		107	81.2-123			
Surrogate: Dibromofluoromethane	41.9		"	39.6		106	95.7-135			

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Rose Fasheh, Project Manager

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 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Volatile Organic Compounds by EPA Method 8260B - 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 7032939 - EPA 5035 GCMS

LCS Dup (7032939-BSD1)

Prepared: 03/29/17 Analyzed: 04/01/17

Chlorobenzene	84.6	5.0	ug/kg	99.6		84.9	75-125	8.83	20	
1,1-Dichloroethene	74.8	5.0	"	99.6		75.1	75-125	5.72	20	
Trichloroethene	83.8	5.0	"	99.6		84.1	75-125	2.10	20	
Benzene	86.5	5.0	"	99.6		86.9	75-125	3.52	20	
Toluene	76.5	5.0	"	99.6		76.8	75-125	5.77	20	
Surrogate: Toluene-d8	39.6		"	39.8		99.5	85.5-116			
Surrogate: 4-Bromofluorobenzene	37.1		"	39.8		93.1	81.2-123			
Surrogate: Dibromofluoromethane	38.9		"	39.8		97.7	95.7-135			

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Carbazole	ND	300	ug/kg
Phenol	ND	1000	"
Aniline	ND	300	"
2-Chlorophenol	ND	1000	"
1,4-Dichlorobenzene	ND	300	"
N-Nitrosodi-n-propylamine	ND	300	"
1,2,4-Trichlorobenzene	ND	300	"
4-Chloro-3-methylphenol	ND	1000	"
1-Methylnaphthalene	ND	300	"
2-Methylnaphthalene	ND	300	"
Acenaphthene	ND	300	"
4-Nitrophenol	ND	1000	"
2,4-Dinitrotoluene	ND	300	"
Pentachlorophenol	ND	1000	"
Pyrene	ND	300	"
Acenaphthylene	ND	300	"
Anthracene	ND	300	"
Benzo (a) anthracene	ND	300	"
Benzo (b) fluoranthene	ND	300	"
Benzo (k) fluoranthene	ND	300	"
Benzo (g,h,i) perylene	ND	1000	"
Benzo (a) pyrene	ND	300	"
Benzyl alcohol	ND	300	"
Bis(2-chloroethoxy)methane	ND	300	"
Bis(2-chloroethyl)ether	ND	300	"
Bis(2-chloroisopropyl)ether	ND	300	"
Bis(2-ethylhexyl)phthalate	ND	300	"
4-Bromophenyl phenyl ether	ND	300	"
Butyl benzyl phthalate	ND	300	"
4-Chloroaniline	ND	300	"
2-Chloronaphthalene	ND	300	"
4-Chlorophenyl phenyl ether	ND	300	"
Chrysene	ND	300	"
Dibenz (a,h) anthracene	ND	300	"
Dibenzofuran	ND	300	"
Di-n-butyl phthalate	ND	300	"

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
Pyridine	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
2,4,6-Trichlorophenol	ND	1000	"							

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: 2-Fluorophenol	1510		ug/kg	3310		45.5	15-121			
Surrogate: Phenol-d6	1390		"	3310		42.0	24-113			
Surrogate: Nitrobenzene-d5	1510		"	3310		45.5	21.3-119			
Surrogate: 2-Fluorobiphenyl	1910		"	3310		57.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2630		"	3310		79.4	18.1-105			
Surrogate: Terphenyl-d14	2750		"	3310		83.1	29.1-130			

LCS (7032720-BS1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	3130	1000	ug/kg	3330		93.8	34-114			
2-Chlorophenol	3140	1000	"	3330		94.3	34-114			
1,4-Dichlorobenzene	2430	300	"	3330		72.9	34-114			
N-Nitrosodi-n-propylamine	3180	300	"	3330		95.5	30-110			
1,2,4-Trichlorobenzene	1930	300	"	3330		57.8	39-119			
4-Chloro-3-methylphenol	2270	1000	"	3330		68.1	50-130			
Acenaphthene	2070	300	"	3330		62.1	34-114			
Pentachlorophenol	2620	1000	"	3330		78.6	50-130			
Pyrene	2070	300	"	3330		62.0	30-110			
Surrogate: 2-Fluorophenol	3250		"	3330		97.4	15-121			
Surrogate: Phenol-d6	3750		"	3330		113	24-113			
Surrogate: Nitrobenzene-d5	3290		"	3330		98.6	21.3-119			
Surrogate: 2-Fluorobiphenyl	3620		"	3330		109	32.4-102			S-GC
Surrogate: 2,4,6-Tribromophenol	3670		"	3330		110	18.1-105			S-GC
Surrogate: Terphenyl-d14	3820		"	3330		115	29.1-130			

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	2650	1000	ug/kg	3300		80.2	34-114	16.7	42	
2-Chlorophenol	3110	1000	"	3300		94.3	34-114	0.953	40	
1,4-Dichlorobenzene	2000	300	"	3300		60.7	34-114	19.3	28	
N-Nitrosodi-n-propylamine	2200	300	"	3300		66.7	30-110	36.4	38	
1,2,4-Trichlorobenzene	1670	300	"	3300		50.5	39-119	14.5	28	
4-Chloro-3-methylphenol	2340	1000	"	3300		70.9	50-130	2.98	42	
Acenaphthene	1770	300	"	3300		53.5	34-114	15.8	31	
Pentachlorophenol	2220	1000	"	3300		67.3	50-130	16.4	50	
Pyrene	1700	300	"	3300		51.5	30-110	19.6	31	
Surrogate: 2-Fluorophenol	2460		"	3300		74.5	15-121			
Surrogate: Phenol-d6	2050		"	3300		62.1	24-113			

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Rose Fasheh, Project Manager

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 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/06/17 11:32

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: Nitrobenzene-d5	1750		ug/kg	3300		52.9	21.3-119			
Surrogate: 2-Fluorobiphenyl	2200		"	3300		66.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3170		"	3300		95.9	18.1-105			
Surrogate: Terphenyl-d14	3290		"	3300		99.8	29.1-130			

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/06/17 11:32

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- 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

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 25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc
 Address: 24411 Ridge Route Drive
 Phone: 949-716-0050 Fax: 949-216-0055
 Project Manager: Derrick Willis

Date: 3/28/17 Page: 1 of 1
 Project Name: Breen, Olinda
 Collector: Frank Hagar Client Project #: 02077.01
 Batch #: 170788 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GPO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals - EPA8082	EPA8081	EPA8141	EPA8151	Laboratory ID #	Comments/Preservative	Total # of containers
58-BI-15	3/28/17		Soil	Sleeve				A										01		
58-BI-39	3/28/17		Soil	Sleeve SBT A				A										02		
58-BI-55	3/28/17		Soil	Sleeve SBT A				A										03		
55-BI-20	3/28/17		Soil	Sleeve				H										04		
55-BI-24	3/28/17		Soil	SI + VOA A				H										05		
55-BI-36	3/28/17		Soil	SI + VOA A				H										06		
58-TI-1	3/28/17		Soil	Log Glass				A										07		
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) <u>Carmen Guzman</u> 3/28/17 1240 Received by: (signature) <u>Carmen Guzman</u> 3/28/17 1240</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) <u>Carmen Guzman</u> 3/28/17 1617 Received by: (signature) _____ Date / Time 3-28-17 1617</p>																				
<p>Chain of Custody seals Y/N/A</p> <p>Seals intact? Y/N/A</p> <p>Received good condition/cold</p> <p>Total # of containers: <u>38</u></p>															<p>Turn around time: <u>STD</u></p> <p>Notes: <u>Frank Hagar</u> <u>949-689-9987</u></p>					

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162583



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 7170788

Client Name: NORTHGATE ENV. Project: BREA OLINDA

Delivered by: Client SunStar Courier GSO FedEx Other

If Courier, Received by: DAN Date/Time Courier Received: 3-28-17 / 16:17

Lab Received by: SUNNY Date/Time Lab Received: 3-28-17 / 16:57

Total number of coolers received: 0

Temperature: Cooler #1	2.4	°C +/- the CF (- 0.2°C) = 2.2	°C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:			
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No →	Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: SL 3-28-17

Comments:

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 12:10 PM
To: 'Frank Hagar'
Cc: 'Derrick Willis'
Subject: RE: The FINAL Word Additional request for Brea Olinda (T170734, T170759, T170788, and T170798)
Attachments: T170734_WKO_03.pdf; T170759_WKO_03.pdf; T170788_WKO_02.pdf; T170798_WKO_02.pdf

I believe I got it all coded in correctly gentlemen!

Please find attached work orders for confirmation. You will see in the comments section which analyses were added for each sample. It's a bit confusing since the samples were amongst several projects. All the samples that we did not receive 5035 kits for will be done by standard 8260 and 8015 Gas Purge as requested below. Please review and let me know if you have any questions or need anything else.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 11:22 AM
To: Rose Fasheh
Cc: Derrick Willis
Subject: The FINAL Word

Rose,

Per our call this morning, Back to the same samples without 5035 extractions – regular analyses.

Thanks

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.
24411 Ridge Route Drive
Suite 130
Laguna Hills, Ca 92653
phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055
www.ngem.com

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From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 10:14 AM
To: Rose Fasheh; Derrick Willis
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Rose,

Derrick is out of pocket a bit this morning so....

Please change the following samples for analysis of 8260 and GRO

SLA-B1-5 change to SLA-B1-10

SLA-B1-15 change to SLA-B1-20

S3-T1-5 change to S3-T1-10

S7-T1-5 change to S1-T1-10

I had a note on the COC for BB6P-B1-30 to lab extract a 5035 for that sample. GO ahead and do that please.

SLA-B1-15 no analysis as SLA-B1-10 and SLA-B1-20 will cover.

Let me know if there are any other issues with these samples.

Thanks
Frank

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.

24411 Ridge Route Drive

Suite 130

Laguna Hills, Ca 92653

phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055

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From: Rose Fasheh [mailto:Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 9:40 AM
To: 'Derrick Willis' <derrick.willis@ngem.com>

Cc: 'Frank Hagar' <frank.hagar@ngem.com>

Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Several of the samples you have requested 8260 and GRO for, we did not receive 5035 kits. We can run standard OR can make some kits using the jars or sleeves provided but it will be noted on the report that the kits were made in house, not a true 5035 prep. Specifically samples: SLA-B1-5 (T170759-01), SLA-B1-15 (T170759-03), BB6P-B1-30 (T170759-18), S3-T1-5 (T170798-07), and S7-T1-5 (T170798-10).

Also, sample SLA-B1-15 you have requested 8260 and GRO. This sample was on hold so no results were sent, did you mean for us to run another sample?

Please advise how you wish for me to proceed.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Wednesday, April 05, 2017 8:19 AM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,
Yes, please also report the GRO. Can I get prelims on the volatiles at the 3-day mark? Thanks
Derrick

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Wednesday, April 5, 2017 8:17 AM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Good morning Derrick,

For all the samples you requested VOCs by 8260 below, did you also need the GRO 5035 purgable?

Standard 5-day TAT okay?

Thank you,

Rose Fasheh
Project Manager



From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Tuesday, April 04, 2017 6:07 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,

I would like to request the following:

VRS-B1-20 - 8260

VRS-B1-60 – 8260

SLA-B1-5 – 8260

SLA-B1-15 – 8260

SLA-B1-60 – 8260

BBGP-B1-30 – 8260, Metals, Uranium

S8-B1-39 – Uranium, PCBs

S3-T1-5 - 8260, 8270, metals

S7-T1-5 - 8270

Thanks
Derrick

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/05/17 17:00 (5 day TAT)
 Received By: Sunny Lounethone Date Received: 03/28/17 16:57
 Logged In By: Sunny Lounethone Date Logged In: 03/28/17 17:00

Samples Received at: **2.2°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170788-01 S8-B1-15 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 Carbon Chain	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	
T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	
T170788-03 S8-B1-55 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8082 PCB	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170788-04 S5-B1-20 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/05/17 15:00	5	04/11/17 00:00	
T170788-05 S5-B1-24 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-06 S5-B1-36 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-07 S8-T1-1 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8141 OP Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8151 Herbicides	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/05/17 17:00 (5 day TAT)

Received By: Sunny Lounethone

Date Received: 03/28/17 16:57

Logged In By: Sunny Lounethone

Date Logged In: 03/28/17 17:00

Samples Received at: **2.2°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
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T170788-01 S8-B1-15 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 Carbon Chain	04/03/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US & 8082 and Uranium added per client request (Derrick, 4/5)

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8082 PCB	04/12/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

T170788-03 S8-B1-55 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8082 PCB	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170788-04 S5-B1-20 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	5	04/11/17 00:00	
T170788-05 S5-B1-24 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-06 S5-B1-36 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-07 S8-T1-1 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8141 OP Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8151 Herbicides	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

Weck Labs

T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
Misc. Subcontract (see notes)	04/12/17 15:00	5	09/24/17 00:00	8082 and Uranium added per client request (Derrick, 4/5) 6020 Uranium

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg



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

10 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/28/17 16:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/10/17 14:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S8-B1-39	T170788-02	Soil	03/28/17 00:00	03/28/17 16:57

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.

Rose Fasheh, Project Manager

I-472



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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/10/17 14:08

DETECTIONS SUMMARY

Sample ID: S8-B1-39

Laboratory ID: T170788-02

No Results Detected

Uranium, Total

0.67

0.50

mg/kg

EPA 6020A

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.

Rose Fasheh, Project Manager

I-473



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/10/17 14:08
--	---	-----------------------------

S8-B1-39
T170788-02 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7040523	04/05/17	04/06/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		72.9 %	35-140		"	"	"	"	
Surrogate: Decachlorobiphenyl		25.5 %	35-140		"	"	"	"	S-GC

Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.67	0.50	mg/kg	1	W7D0297	04/06/17	04/10/17	EPA 6020A	
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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.

Rose Fasheh, Project Manager

I-474



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/10/17 14:08

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 7040523 - EPA 3550 ECD/GCMS

Blank (7040523-BLK1)

Prepared: 04/05/17 Analyzed: 04/06/17

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
Surrogate: Tetrachloro-meta-xylene	8.04		"	9.80		82.0	35-140			
Surrogate: Decachlorobiphenyl	8.22		"	9.80		83.8	35-140			

LCS (7040523-BS1)

Prepared: 04/05/17 Analyzed: 04/06/17

PCB-1016	115	10	ug/kg	100		115	40-130			
PCB-1260	108	10	"	100		108	40-130			
Surrogate: Tetrachloro-meta-xylene	7.75		"	10.0		77.5	35-140			
Surrogate: Decachlorobiphenyl	8.03		"	10.0		80.3	35-140			

LCS Dup (7040523-BSD1)

Prepared: 04/05/17 Analyzed: 04/06/17

PCB-1016	99.9	10	ug/kg	99.0		101	40-130	14.3	30	
PCB-1260	98.4	10	"	99.0		99.4	40-130	9.29	30	
Surrogate: Tetrachloro-meta-xylene	8.24		"	9.90		83.2	35-140			
Surrogate: Decachlorobiphenyl	8.30		"	9.90		83.9	35-140			

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.

Rose Fasheh, Project Manager

I-475



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/10/17 14:08

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods - Quality Control

Weck Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch W7D0297 - EPA 3050M-SCL

Blank (W7D0297-BLK1)

Prepared: 04/06/17 Analyzed: 04/10/17

Uranium, Total ND 0.50 mg/kg

LCS (W7D0297-BS1)

Prepared: 04/06/17 Analyzed: 04/10/17

Uranium, Total 47.0 0.50 mg/kg 50.0 94 80-120

Matrix Spike (W7D0297-MS1)

Source: 7D06016-01

Prepared: 04/06/17 Analyzed: 04/10/17

Uranium, Total 48.7 0.50 mg/kg 48.2 5.13 90 75-125

Matrix Spike Dup (W7D0297-MSD1)

Source: 7D06016-01

Prepared: 04/06/17 Analyzed: 04/10/17

Uranium, Total 50.0 0.50 mg/kg 47.9 5.13 94 75-125 3 20

SunStar Laboratories, Inc.

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

Rose Fasheh, Project Manager

I-476



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/10/17 14:08

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- 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.

Rose Fasheh, Project Manager

I-477



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 24411 Ridge Route Drive
Phone: 949-716-0050 Fax: 949-216-0055
Project Manager: Derrick Willis

Date: 3/28/17 Page: 1 of 1
Project Name: Breen, Olinda
Collector: Frank Hagar Client Project #: 02077.01
Batch #: 170788 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals - EPA8082	EPA8081	EPA8141	EPA8151	Laboratory ID #	Comments/Preservative	Total # of containers
58-BI-15	3/28/17		Soil	Sleeve				A										01		
58-BI-39	3/28/17		Soil	Sleeve SBT A				A										02		
58-BI-55	3/28/17		Soil	Sleeve SBT A				A										03		
55-BI-20	3/28/17		Soil	Sleeve				H										04		
55-BI-24	3/28/17		Soil	SI + VOA A				H										05		
55-BI-36	3/28/17		Soil	SI + VOA A				H										06		
58-TI-1	3/28/17		Soil	Log Glass				A										07		
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) <u>Carmen Guzman</u> 3/28/17 1240 Received by: (signature) <u>Carmen Guzman</u> 3/28/17 1240</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) <u>Carmen Guzman</u> 3/28/17 1617 Received by: (signature) _____ Date / Time 3-28-17 1617</p>																				
<p>Chain of Custody seals Y/N/A</p> <p>Seals intact? Y/N/A</p> <p>Received good condition/cold</p> <p>Turn around time: <u>STD</u></p>															<p>Total # of containers</p> <p><u>38</u></p>		<p>Notes</p> <p><u>Frank Hagar</u></p> <p><u>949-689-9987</u></p>			

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162583



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 7170788

Client Name: NORTHGATE ENV. Project: BREA OLINDA

Delivered by: Client SunStar Courier GSO FedEx Other

If Courier, Received by: DAN Date/Time Courier Received: 3-28-17 / 16:17

Lab Received by: SUNNY Date/Time Lab Received: 3-28-17 / 16:57

Total number of coolers received: 0

Temperature: Cooler #1	2.4	°C +/- the CF (- 0.2°C) =	2.2	°C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If NO:				
Samples received on ice?	<input type="checkbox"/> Yes		<input type="checkbox"/> No → Complete Non-Conformance Sheet	
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable		<input type="checkbox"/> 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: SL 3-28-17

Comments:

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 12:10 PM
To: 'Frank Hagar'
Cc: 'Derrick Willis'
Subject: RE: The FINAL Word Additional request for Brea Olinda (T170734, T170759, T170788, and T170798)
Attachments: T170734_WKO_03.pdf; T170759_WKO_03.pdf; T170788_WKO_02.pdf; T170798_WKO_02.pdf

I believe I got it all coded in correctly gentlemen!

Please find attached work orders for confirmation. You will see in the comments section which analyses were added for each sample. It's a bit confusing since the samples were amongst several projects. All the samples that we did not receive 5035 kits for will be done by standard 8260 and 8015 Gas Purge as requested below. Please review and let me know if you have any questions or need anything else.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 11:22 AM
To: Rose Fasheh
Cc: Derrick Willis
Subject: The FINAL Word

Rose,

Per our call this morning, Back to the same samples without 5035 extractions – regular analyses.

Thanks

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.
24411 Ridge Route Drive
Suite 130
Laguna Hills, Ca 92653
phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055
www.ngem.com

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From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 10:14 AM
To: Rose Fasheh; Derrick Willis
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Rose,

Derrick is out of pocket a bit this morning so....

Please change the following samples for analysis of 8260 and GRO

SLA-B1-5 change to SLA-B1-10

SLA-B1-15 change to SLA-B1-20

S3-T1-5 change to S3-T1-10

S7-T1-5 change to S1-T1-10

I had a note on the COC for BB6P-B1-30 to lab extract a 5035 for that sample. GO ahead and do that please.

SLA-B1-15 no analysis as SLA-B1-10 and SLA-B1-20 will cover.

Let me know if there are any other issues with these samples.

Thanks
Frank

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.

24411 Ridge Route Drive

Suite 130

Laguna Hills, Ca 92653

phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055

www.ngem.com

CONFIDENTIALITY NOTICE:

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From: Rose Fasheh [mailto:Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 9:40 AM
To: 'Derrick Willis' <derrick.willis@ngem.com>

Cc: 'Frank Hagar' <frank.hagar@ngem.com>

Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Several of the samples you have requested 8260 and GRO for, we did not receive 5035 kits. We can run standard OR can make some kits using the jars or sleeves provided but it will be noted on the report that the kits were made in house, not a true 5035 prep. Specifically samples: SLA-B1-5 (T170759-01), SLA-B1-15 (T170759-03), BB6P-B1-30 (T170759-18), S3-T1-5 (T170798-07), and S7-T1-5 (T170798-10).

Also, sample SLA-B1-15 you have requested 8260 and GRO. This sample was on hold so no results were sent, did you mean for us to run another sample?

Please advise how you wish for me to proceed.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Wednesday, April 05, 2017 8:19 AM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,
Yes, please also report the GRO. Can I get prelims on the volatiles at the 3-day mark? Thanks
Derrick

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Wednesday, April 5, 2017 8:17 AM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Good morning Derrick,

For all the samples you requested VOCs by 8260 below, did you also need the GRO 5035 purgable?

Standard 5-day TAT okay?

Thank you,

Rose Fasheh
Project Manager



From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Tuesday, April 04, 2017 6:07 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,

I would like to request the following:

VRS-B1-20 - 8260

VRS-B1-60 – 8260

SLA-B1-5 – 8260

SLA-B1-15 – 8260

SLA-B1-60 – 8260

BBGP-B1-30 – 8260, Metals, Uranium

S8-B1-39 – Uranium, PCBs

S3-T1-5 - 8260, 8270, metals

S7-T1-5 - 8270

Thanks

Derrick

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/05/17 17:00 (5 day TAT)
 Received By: Sunny Lounethone Date Received: 03/28/17 16:57
 Logged In By: Sunny Lounethone Date Logged In: 03/28/17 17:00

Samples Received at: **2.2°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
----------	-----	-----	---------	----------

T170788-01 S8-B1-15 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 Carbon Chain	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

T170788-03 S8-B1-55 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &

6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8082 PCB	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170788-04 S5-B1-20 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/05/17 15:00	5	04/11/17 00:00	
T170788-05 S5-B1-24 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-06 S5-B1-36 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/05/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-07 S8-T1-1 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8141 OP Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8151 Herbicides	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:
 Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/05/17 17:00 (5 day TAT)
 Received By: Sunny Lounethone Date Received: 03/28/17 16:57
 Logged In By: Sunny Lounethone Date Logged In: 03/28/17 17:00

Samples Received at: 2.2°C
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170788-01 S8-B1-15 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 Carbon Chain	04/03/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	
T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8082 and Uranium added per client request (Derrick, 4/5)				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8082 PCB	04/12/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	
T170788-03 S8-B1-55 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/05/17 15:00	5	09/24/17 00:00	
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8082 PCB	04/05/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

WORK ORDER

T170788

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170788-04 S5-B1-20 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	5	04/11/17 00:00	
T170788-05 S5-B1-24 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-06 S5-B1-36 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8015 CC (D/MO)	04/03/17 15:00	5	04/11/17 00:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/11/17 00:00	
8260 5035	04/05/17 15:00	5	04/11/17 00:00	
T170788-07 S8-T1-1 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8141 OP Pesticides	04/05/17 15:00	5	04/11/17 00:00	
8151 Herbicides	04/05/17 15:00	5	04/11/17 00:00	
8270C	04/05/17 15:00	5	04/11/17 00:00	

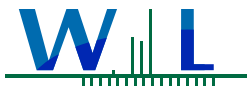
Weck Labs

T170788-02 S8-B1-39 [Soil] Sampled 03/28/17 00:00 (GMT-08:00) Pacific Time (US &				
Misc. Subcontract (see notes)	04/12/17 15:00	5	09/24/17 00:00	8082 and Uranium added per client request (Derrick, 4/5) 6020 Uranium

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg



WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 7D06018

Report Date: 4/10/2017

Project: T170788

Received Date: 4/6/2017

Turnaround Time: 4 workdays

Phones: (949) 297-5020

Fax: (949) 297-5027

Attn: Rose Fasheh

P.O. #:

Client: SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630

Billing Code:

Dear Rose Fasheh,

Enclosed are the results of analyses for samples received 4/06/17 with the Chain-of-Custody document. The samples were received in good condition, at 14.5 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

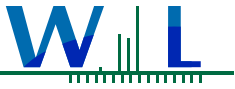
Sample Results

Sample: T170788-02

Sampled: 03/28/17 0:00 by Client

7D06018-01 (Solid)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 6020A	Batch ID: W7D0297	Instr: ICPMS02	Prepared: 04/06/17 15:05	Analyst: mtt		
Uranium, Total	0.67	0.50	mg/kg	1	04/10/17 12:36	



WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Quality Control Results

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W7D0297 - EPA 3050M-SCL										
Blank (W7D0297-BLK1)				Prepared: 04/06/17 Analyzed: 04/10/17						
Uranium, Total	ND	0.50	mg/kg							
LCS (W7D0297-BS1)				Prepared: 04/06/17 Analyzed: 04/10/17						
Uranium, Total	47.0	0.50	mg/kg	50.0		94	80-120			
Matrix Spike (W7D0297-MS1)				Source: 7D06016-01			Prepared: 04/06/17 Analyzed: 04/10/17			
Uranium, Total	48.7	0.50	mg/kg	48.2	5.13	90	75-125			
Matrix Spike Dup (W7D0297-MSD1)				Source: 7D06016-01			Prepared: 04/06/17 Analyzed: 04/10/17			
Uranium, Total	50.0	0.50	mg/kg	47.9	5.13	94	75-125	3	20	

Notes and Definitions

Item	Definition
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

Reviewed by:

Kim G. Tu
Project Manager



ELAP-CA #1132 • EPA-UCMR #CA00211 • LACSD #10143 • NJ-DEP #CA015 • NV-DEP #NAC 445A

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.



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

03 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/29/17 13:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 11:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FFTA-T1- 5	T170798-01	Soil	03/29/17 07:42	03/29/17 13:30
FFTA-T1- 10	T170798-02	Soil	03/29/17 07:50	03/29/17 13:30
FFTA-T1- 15	T170798-03	Soil	03/29/17 08:00	03/29/17 13:30
S8-T2- 5	T170798-04	Soil	03/29/17 09:00	03/29/17 13:30
S8-T2- 10	T170798-05	Soil	03/29/17 09:08	03/29/17 13:30
S8-T2- 15	T170798-06	Soil	03/29/17 09:15	03/29/17 13:30
S3-T1- 5	T170798-07	Soil	03/29/17 09:56	03/29/17 13:30
S3-T1- 10	T170798-08	Soil	03/29/17 10:06	03/29/17 13:30
S3-T1- 15	T170798-09	Soil	03/29/17 10:12	03/29/17 13:30
S7-T1- 5	T170798-10	Soil	03/29/17 10:35	03/29/17 13:30
S7-T1- 10	T170798-11	Soil	03/29/17 10:45	03/29/17 13:30
S7-T1- 15	T170798-12	Soil	03/29/17 11:02	03/29/17 13:30

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Rose Fasheh, Project Manager

I-492

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 11:55

DETECTIONS SUMMARY

Sample ID: FFTA-T1- 5 **Laboratory ID:** T170798-01

No Results Detected

Sample ID: FFTA-T1- 10 **Laboratory ID:** T170798-02

No Results Detected

Sample ID: FFTA-T1- 15 **Laboratory ID:** T170798-03

No Results Detected

Sample ID: S8-T2- 5 **Laboratory ID:** T170798-04

No Results Detected

Sample ID: S8-T2- 10 **Laboratory ID:** T170798-05

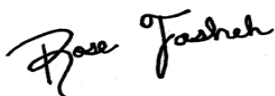
No Results Detected

Sample ID: S8-T2- 15 **Laboratory ID:** T170798-06

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	3200	100		mg/kg	EPA 8015B	
C29-C40 (MORO)	2500	100		mg/kg	EPA 8015B	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-493

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 11:55

Sample ID: S3-T1- 5

Laboratory ID: T170798-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	790	100	mg/kg	EPA 8015B	
C29-C40 (MORO)	1100	100	mg/kg	EPA 8015B	

Sample ID: S3-T1- 10

Laboratory ID: T170798-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	44	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	85	10	mg/kg	EPA 8015B	

Sample ID: S3-T1- 15

Laboratory ID: T170798-09

No Results Detected

Sample ID: S7-T1- 5

Laboratory ID: T170798-10

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C29-C40 (MORO)	33	10	mg/kg	EPA 8015B	

Sample ID: S7-T1- 10

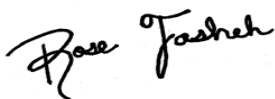
Laboratory ID: T170798-11

No Results Detected

Sample ID: S7-T1- 15

Laboratory ID: T170798-12

No Results Detected





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949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 11:55

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

FFTA-T1- 5
T170798-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		108 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-496



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

FFTA-T1- 10
T170798-02 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		95.7 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-497



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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FFTA-T1- 15
T170798-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		103 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-498



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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S8-T2- 5
T170798-04 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		105 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-499



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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S8-T2- 10
T170798-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		92.9 %		65-135	"	"	"	"	

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I-500



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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S8-T2- 15
T170798-06 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	100	mg/kg	10	7032934	03/29/17	03/31/17	EPA 8015B	R-07
C13-C28 (DRO)	3200	100	"	"	"	"	"	"	
C29-C40 (MORO)	2500	100	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		<i>107 %</i>	<i>65-135</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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Rose Fasheh, Project Manager

I-501



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

S3-T1- 5
T170798-07 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	100	mg/kg	10	7032934	03/29/17	03/31/17	EPA 8015B	R-07
C13-C28 (DRO)	790	100	"	"	"	"	"	"	
C29-C40 (MORO)	1100	100	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		96.6 %		65-135	"	"	"	"	

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I-502



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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S3-T1- 10
T170798-08 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	44	10	"	"	"	"	"	"	
C29-C40 (MORO)	85	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		98.2 %	65-135		"	"	"	"	

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Rose Fasheh, Project Manager

I-503



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 949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

S3-T1- 15
T170798-09 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		102 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-504



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 949.297.5020 Phone
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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

S7-T1- 5
T170798-10 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	33	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		105 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-505



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
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S7-T1- 10
T170798-11 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		85.5 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

I-506



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 11:55
--	---	-----------------------------

S7-T1- 15
T170798-12 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032934	03/29/17	03/31/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		103 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-507



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 11:55

Extractable Petroleum Hydrocarbons by 8015B - 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 7032934 - EPA 3550B GC

Blank (7032934-BLK1)

Prepared: 03/29/17 Analyzed: 03/31/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	101		"	98.0	103		65-135			

LCS (7032934-BS1)

Prepared: 03/29/17 Analyzed: 03/31/17

C13-C28 (DRO)	550	10	mg/kg	510	108		75-125			
Surrogate: p-Terphenyl	92.9		"	102	91.0		65-135			

LCS Dup (7032934-BSD1)

Prepared: 03/29/17 Analyzed: 03/31/17

C13-C28 (DRO)	530	10	mg/kg	495	108		75-125	3.58	20	
Surrogate: p-Terphenyl	106		"	99.0	107		65-135			

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Rose Fasheh, Project Manager

I-508



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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 11:55

Notes and Definitions

- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- 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

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Rose Fasheh, Project Manager

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SunStar
Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commerce Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc
Address: 2441 Ridge Route Drive #130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/25/17 Page: 1 of 1
Project Name: Brea-Orinda
Collector: Frank Hager Client Project #: 02077.01
Batch #: T170798 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260+4620	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB	Laboratory ID #	Comments/Preservative	Total # of containers
FFTA-TI-5	3/24/17	0442	Soil	4oz VDA H														
FFTA-TI-40	3/24/17	0750	Soil	4oz														
FFTA-TI-15	3/24/17	0800	Soil	4oz														
58-T2-5	3/24/17	0900	Soil	4oz														
58-T2-10	3/24/17	0908	Soil	4oz														
58-T2-15	3/24/17	0915	Soil	4oz + VDA H														
53-T1-5	3/24/17	0956	Soil	4oz														
53-T1-10	3/24/17	0956	Soil	4oz + VDA H														
53-T1-15	3/24/17	1012	Soil	4oz + VDA H														
53-T1-5	3/24/17	1035	Soil	4oz														
53-T1-10	3/24/17	1045	Soil	4oz + VDA H														
53-T1-15	3/24/17	1102	Soil	4oz + VDA H														
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Total # of containers												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Chain of Custody seals Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Received good condition/cold												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Turn around time: <u>STD</u>												

Notes
Frank Hager
949-689-9987

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162643



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: TI70798
 Client Name: NORTHGATE Project: BREA OLIMPIA
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: BRIAN Date/Time Lab Received: 3/29/17 13:50
 Total number of coolers received: 1

Temperature: Cooler #1	6.0 °C +/- the CF (- 0.2°C) = 5.8	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BC 3/29/17

Comments: _____

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/03/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/29/17 13:30

Logged In By: Brian Charon

Date Logged In: 03/29/17 13:38

Samples Received at: **5.8°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170798-01 FFTA-T1- 5 [Soil] Sampled 03/29/17 07:42 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:42	
T170798-02 FFTA-T1- 10 [Soil] Sampled 03/29/17 07:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:50	
T170798-03 FFTA-T1- 15 [Soil] Sampled 03/29/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 08:00	
T170798-04 S8-T2- 5 [Soil] Sampled 03/29/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:00	
T170798-05 S8-T2- 10 [Soil] Sampled 03/29/17 09:08 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:08	
T170798-06 S8-T2- 15 [Soil] Sampled 03/29/17 09:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:15	
T170798-07 S3-T1- 5 [Soil] Sampled 03/29/17 09:56 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:56	

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170798-08 S3-T1- 10 [Soil] Sampled 03/29/17 10:06 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:06	
T170798-09 S3-T1- 15 [Soil] Sampled 03/29/17 10:12 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:12	
T170798-10 S7-T1- 5 [Soil] Sampled 03/29/17 10:35 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:35	
T170798-11 S7-T1- 10 [Soil] Sampled 03/29/17 10:45 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:45	
T170798-12 S7-T1- 15 [Soil] Sampled 03/29/17 11:02 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 11:02	



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11 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/29/17 13:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/11/17 17:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S3-T1-5	T170798-07	Soil	03/29/17 09:56	03/29/17 13:30
S7-T1-5	T170798-10	Soil	03/29/17 10:35	03/29/17 13:30

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.

Rose Fasheh, Project Manager

I-515



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

DETECTIONS SUMMARY

Sample ID: S3-T1- 5

Laboratory ID: T170798-07

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	88	1.0		mg/kg	EPA 6010B	
Chromium	8.6	2.0		mg/kg	EPA 6010B	
Cobalt	5.3	2.0		mg/kg	EPA 6010B	
Copper	6.0	1.0		mg/kg	EPA 6010B	
Nickel	10	2.0		mg/kg	EPA 6010B	
Vanadium	23	5.0		mg/kg	EPA 6010B	
Zinc	34	1.0		mg/kg	EPA 6010B	

Sample ID: S7-T1- 5

Laboratory ID: T170798-10

No Results Detected

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S3-T1- 5
T170798-07 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	500	ug/kg	1	7040530	04/05/17	04/05/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		74.5 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7040438	04/05/17	04/05/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	88	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	8.6	2.0	"	"	"	"	"	"	
Cobalt	5.3	2.0	"	"	"	"	"	"	
Copper	6.0	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	10	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	23	5.0	"	"	"	"	"	"	
Zinc	34	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7040439	04/05/17	04/05/17	EPA 7471A Soil	
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Volatile Organic Compounds by EPA Method 8260B

Bromobenzene	ND	5.0	ug/kg	1	7040529	04/05/17	04/05/17	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-517



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S3-T1- 5
T170798-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Carbon tetrachloride	ND	5.0	ug/kg	1	7040529	04/05/17	04/05/17	EPA 8260B	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-518



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S3-T1- 5
T170798-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Styrene	ND	5.0	ug/kg	1	7040529	04/05/17	04/05/17	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		79.1 %	81.2-123		"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		127 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		106 %	85.5-116		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	1500	ug/kg	5	7040524	04/05/17	04/06/17	EPA 8270C	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S3-T1- 5
T170798-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

1-Methylnaphthalene	ND	1500	ug/kg	5	7040524	04/05/17	04/06/17	EPA 8270C	R-07
2-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	1500	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S3-T1- 5
T170798-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,4-Dimethylphenol	ND	5000	ug/kg	5	7040524	04/05/17	04/06/17	EPA 8270C	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	5000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	"	"	R-07
Fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Fluorene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	5000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	"	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
Nitrobenzene	ND	5000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	ND	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		90.4 %	15-121		"	"	"	"	R-07

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/11/17 17:02
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S3-T1- 5
T170798-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Surrogate: Phenol-d6	54.1 %	24-113			7040524	04/05/17	04/06/17	EPA 8270C	R-07
Surrogate: Nitrobenzene-d5	81.8 %	21.3-119			"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl	103 %	32.4-102			"	"	"	"	R-07, S-GC
Surrogate: 2,4,6-Tribromophenol	100 %	18.1-105			"	"	"	"	R-07
Surrogate: Terphenyl-d14	141 %	29.1-130			"	"	"	"	R-07, S-GC

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S7-T1- 5
T170798-10 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7040524	04/05/17	04/06/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	

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Rose Fasheh, Project Manager



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

S7-T1- 5
T170798-10 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Chrysene	ND	300	ug/kg	1	7040524	04/05/17	04/06/17	EPA 8270C	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	

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Rose Fasheh, Project Manager

I-524



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/11/17 17:02
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S7-T1- 5
T170798-10 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

2,3,5,6-Tetrachlorophenol	ND	300	ug/kg	1	7040524	04/05/17	04/06/17	EPA 8270C	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		75.5 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		63.3 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		59.9 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		80.9 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		94.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-dl4		113 %	29.1-130		"	"	"	"	

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Purgeable Petroleum Hydrocarbons by EPA 8015B - 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 7040530 - EPA 5030 GC

Blank (7040530-BLK1)

Prepared: 04/05/17 Analyzed: 04/07/17

C6-C12 (GRO)	ND	500	ug/kg							
Surrogate: 4-Bromofluorobenzene	91.7		"	100		91.7	65-135			

LCS (7040530-BS1)

Prepared & Analyzed: 04/05/17

C6-C12 (GRO)	10600	500	ug/kg	10900		97.7	75-125			
Surrogate: 4-Bromofluorobenzene	96.1		"	100		96.1	65-135			

LCS Dup (7040530-BSD1)

Prepared & Analyzed: 04/05/17

C6-C12 (GRO)	10600	500	ug/kg	10900		97.9	75-125	0.182	20	
Surrogate: 4-Bromofluorobenzene	92.5		"	100		92.5	65-135			

SunStar Laboratories, Inc.

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Metals by EPA 6010B - 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 7040438 - EPA 3051

Blank (7040438-BLK1)

Prepared: 04/04/17 Analyzed: 04/05/17

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (7040438-BS1)

Prepared: 04/04/17 Analyzed: 04/05/17

Arsenic	102	5.0	mg/kg	100		102	75-125
Barium	104	1.0	"	100		104	75-125
Cadmium	104	2.0	"	100		104	75-125
Chromium	104	2.0	"	100		104	75-125
Lead	104	3.0	"	100		104	75-125

Matrix Spike (7040438-MS1)

Source: T170862-04

Prepared: 04/04/17 Analyzed: 04/05/17

Arsenic	89.6	5.0	mg/kg	96.2	1.63	91.5	75-125
Barium	209	1.0	"	96.2	125	87.6	75-125
Cadmium	83.8	2.0	"	96.2	0.582	86.5	75-125
Chromium	100	2.0	"	96.2	16.5	87.0	75-125
Lead	88.2	3.0	"	96.2	ND	91.7	75-125

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Metals by EPA 6010B - 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 7040438 - EPA 3051

Matrix Spike Dup (7040438-MSD1)

Source: T170862-04

Prepared: 04/04/17 Analyzed: 04/05/17

Arsenic	109	5.0	mg/kg	92.6	1.63	116	75-125	19.4	20	
Barium	198	1.0	"	92.6	125	79.1	75-125	5.36	20	
Cadmium	76.9	2.0	"	92.6	0.582	82.4	75-125	8.51	20	
Chromium	95.0	2.0	"	92.6	16.5	84.9	75-125	5.17	20	
Lead	103	3.0	"	92.6	ND	112	75-125	16.0	20	

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

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 7040439 - EPA 7471A Soil

Blank (7040439-BLK1)

Prepared: 04/04/17 Analyzed: 04/05/17

Mercury ND 0.10 mg/kg

LCS (7040439-BS1)

Prepared: 04/04/17 Analyzed: 04/05/17

Mercury 0.336 0.10 mg/kg 0.397 84.6 75-125

Matrix Spike (7040439-MS1)

Source: T170862-04

Prepared: 04/04/17 Analyzed: 04/05/17

Mercury 0.356 0.10 mg/kg 0.391 ND 91.0 75-125

Matrix Spike Dup (7040439-MSD1)

Source: T170862-04

Prepared: 04/04/17 Analyzed: 04/05/17

Mercury 0.368 0.10 mg/kg 0.397 ND 92.8 75-125 3.55 20

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Rose Fasheh, Project Manager

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 Project Manager: Derrick Willis

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Volatile Organic Compounds by EPA Method 8260B - 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 7040529 - EPA 5030 GCMS

Blank (7040529-BLK1)

Prepared & Analyzed: 04/05/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Volatile Organic Compounds by EPA Method 8260B - 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 7040529 - EPA 5030 GCMS

Blank (7040529-BLK1)

Prepared & Analyzed: 04/05/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: 4-Bromofluorobenzene	34.8		"	40.0		86.9	81.2-123			
Surrogate: Dibromofluoromethane	41.3		"	40.0		103	95.7-135			
Surrogate: Toluene-d8	41.6		"	40.0		104	85.5-116			

LCS (7040529-BS1)

Prepared & Analyzed: 04/05/17

Chlorobenzene	98.9	5.0	ug/kg	100		98.9	75-125			
1,1-Dichloroethene	90.0	5.0	"	100		90.0	75-125			
Trichloroethene	90.4	5.0	"	100		90.4	75-125			
Benzene	93.6	5.0	"	100		93.6	75-125			
Toluene	91.8	5.0	"	100		91.8	75-125			
Surrogate: 4-Bromofluorobenzene	44.4		"	40.0		111	81.2-123			
Surrogate: Dibromofluoromethane	50.4		"	40.0		126	95.7-135			
Surrogate: Toluene-d8	39.0		"	40.0		97.5	85.5-116			

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
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Volatile Organic Compounds by EPA Method 8260B - 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 7040529 - EPA 5030 GCMS

LCS Dup (7040529-BSD1)

Prepared & Analyzed: 04/05/17

Chlorobenzene	92.4	5.0	ug/kg	100		92.4	75-125	6.85	20	
1,1-Dichloroethene	83.2	5.0	"	100		83.2	75-125	7.85	20	
Trichloroethene	81.4	5.0	"	100		81.4	75-125	10.4	20	
Benzene	86.4	5.0	"	100		86.4	75-125	8.00	20	
Toluene	82.6	5.0	"	100		82.6	75-125	10.5	20	
Surrogate: 4-Bromofluorobenzene	43.7		"	40.0		109	81.2-123			
Surrogate: Dibromofluoromethane	47.8		"	40.0		119	95.7-135			
Surrogate: Toluene-d8	39.1		"	40.0		97.8	85.5-116			

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Rose Fasheh, Project Manager

I-532



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Semivolatile Organic Compounds by EPA Method 8270C - 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 7040524 - EPA 3550 ECD/GCMS

Blank (7040524-BLK1)

Prepared: 04/05/17 Analyzed: 04/06/17

Carbazole	ND	300	ug/kg							
Aniline	ND	300	"							
Phenol	ND	1000	"							
2-Chlorophenol	ND	1000	"							
1,4-Dichlorobenzene	ND	300	"							
N-Nitrosodi-n-propylamine	ND	300	"							
1,2,4-Trichlorobenzene	ND	300	"							
4-Chloro-3-methylphenol	ND	1000	"							
2-Methylnaphthalene	ND	300	"							
1-Methylnaphthalene	ND	300	"							
Acenaphthene	ND	300	"							
4-Nitrophenol	ND	1000	"							
2,4-Dinitrotoluene	ND	300	"							
Pentachlorophenol	ND	1000	"							
Pyrene	ND	300	"							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Benzyl alcohol	ND	300	"							
Bis(2-chloroethoxy)methane	ND	300	"							
Bis(2-chloroethyl)ether	ND	300	"							
Bis(2-chloroisopropyl)ether	ND	300	"							
Bis(2-ethylhexyl)phthalate	ND	300	"							
4-Bromophenyl phenyl ether	ND	300	"							
Butyl benzyl phthalate	ND	300	"							
4-Chloroaniline	ND	300	"							
2-Chloronaphthalene	ND	300	"							
4-Chlorophenyl phenyl ether	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Dibenzofuran	ND	300	"							
Di-n-butyl phthalate	ND	300	"							

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.

Rose Fasheh, Project Manager

I-533



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Semivolatile Organic Compounds by EPA Method 8270C - 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 7040524 - EPA 3550 ECD/GCMS

Blank (7040524-BLK1)

Prepared: 04/05/17 Analyzed: 04/06/17

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
Pyridine	ND	300	"							
2,4,6-Trichlorophenol	ND	1000	"							

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-534



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/11/17 17:02

Semivolatile Organic Compounds by EPA Method 8270C - 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 7040524 - EPA 3550 ECD/GCMS

Blank (7040524-BLK1)

Prepared: 04/05/17 Analyzed: 04/06/17

Surrogate: 2-Fluorophenol	1980		ug/kg	3360		58.9	15-121			
Surrogate: Phenol-d6	1700		"	3360		50.7	24-113			
Surrogate: Nitrobenzene-d5	1720		"	3360		51.2	21.3-119			
Surrogate: 2-Fluorobiphenyl	2220		"	3360		66.2	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2930		"	3360		87.3	18.1-105			
Surrogate: Terphenyl-d14	2810		"	3360		83.8	29.1-130			

LCS (7040524-BS1)

Prepared: 04/05/17 Analyzed: 04/06/17

Phenol	1980	1000	ug/kg	3290		60.3	34-114			
2-Chlorophenol	2670	1000	"	3290		81.2	34-114			
1,4-Dichlorobenzene	1810	300	"	3290		55.1	34-114			
N-Nitrosodi-n-propylamine	1960	300	"	3290		59.6	30-110			
1,2,4-Trichlorobenzene	1850	300	"	3290		56.2	39-119			
4-Chloro-3-methylphenol	1920	1000	"	3290		58.3	50-130			
Acenaphthene	1760	300	"	3290		53.6	34-114			
Pentachlorophenol	2530	1000	"	3290		76.9	50-130			
Pyrene	1840	300	"	3290		55.9	30-110			
Surrogate: 2-Fluorophenol	1820		"	3290		55.2	15-121			
Surrogate: Phenol-d6	1860		"	3290		56.7	24-113			
Surrogate: Nitrobenzene-d5	1950		"	3290		59.3	21.3-119			
Surrogate: 2-Fluorobiphenyl	2450		"	3290		74.5	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3060		"	3290		93.1	18.1-105			
Surrogate: Terphenyl-d14	2900		"	3290		88.3	29.1-130			

LCS Dup (7040524-BSD1)

Prepared: 04/05/17 Analyzed: 04/06/17

Phenol	1870	1000	ug/kg	3330		56.1	34-114	5.89	42	
2-Chlorophenol	2610	1000	"	3330		78.2	34-114	2.45	40	
1,4-Dichlorobenzene	1830	300	"	3330		54.8	34-114	0.851	28	
N-Nitrosodi-n-propylamine	2080	300	"	3330		62.3	30-110	5.81	38	
1,2,4-Trichlorobenzene	1850	300	"	3330		55.6	39-119	0.197	28	
4-Chloro-3-methylphenol	1910	1000	"	3330		57.4	50-130	0.250	42	
Acenaphthene	1860	300	"	3330		55.8	34-114	5.26	31	
Pentachlorophenol	2600	1000	"	3330		77.9	50-130	2.55	50	
Pyrene	2140	300	"	3330		64.1	30-110	15.0	31	
Surrogate: 2-Fluorophenol	1780		"	3330		53.4	15-121			
Surrogate: Phenol-d6	1610		"	3330		48.2	24-113			

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.

Rose Fasheh, Project Manager

I-535



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/11/17 17:02
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Semivolatile Organic Compounds by EPA Method 8270C - 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 7040524 - EPA 3550 ECD/GCMS

LCS Dup (7040524-BSD1)

Prepared: 04/05/17 Analyzed: 04/06/17

Surrogate: Nitrobenzene-d5	1900		ug/kg	3330		57.0	21.3-119			
Surrogate: 2-Fluorobiphenyl	2440		"	3330		73.1	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3190		"	3330		95.8	18.1-105			
Surrogate: Terphenyl-d14	3060		"	3330		91.8	29.1-130			

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.

Rose Fasheh, Project Manager

I-536



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/11/17 17:02

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- 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.

Rose Fasheh, Project Manager

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Page 23 of 23



SunStar Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commerce Centre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 2441 Ridge Route Drive #130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/25/17 Page: 1 of 1
Project Name: Brea-Orinda
Collector: Frank Hager Client Project #: 02077.01
Batch #: T170798 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260+4620	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB	Laboratory ID #	Comments/Preservative	Total # of containers
FFTA-TI-5	3/24/17	0442	Soil	4oz VDA H														
FFTA-TI-40	3/24/17	0750	Soil	4oz														
FFTA-TI-15	3/24/17	0800	Soil	4oz														
58-T2-5	3/24/17	0900	Soil	4oz														
58-T2-10	3/24/17	0908	Soil	4oz														
58-T2-15	3/24/17	0915	Soil	4oz + VDA H														
53-T1-5	3/24/17	0956	Soil	4oz														
53-T1-10	3/24/17	0956	Soil	4oz + VDA H														
53-T1-15	3/24/17	1012	Soil	4oz + VDA H														
53-T1-5	3/24/17	1035	Soil	4oz														
53-T1-10	3/24/17	1045	Soil	4oz + VDA H														
53-T1-15	3/24/17	1102	Soil	4oz + VDA H														
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Total # of containers												
Relinquished by: (signature) <u>[Signature]</u>			Date / Time	Received by: (signature) <u>[Signature]</u>	Date / Time	Chain of Custody seals Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N/NA												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Received good condition/cold												
Relinquished by: (signature)			Date / Time	Received by: (signature)	Date / Time	Turn around time: <u>STD</u>												

Notes
Frank Hager
949-689-9987

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____
COC 162643



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: TI70798
 Client Name: NORTHGATE Project: BREA OLINDA
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: BRIAN Date/Time Lab Received: 3/29/17 13:50
 Total number of coolers received: 1

Temperature: Cooler #1	6.0 °C +/- the CF (- 0.2°C) = 5.8	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BC 3/29/17

Comments: _____

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 12:10 PM
To: 'Frank Hagar'
Cc: 'Derrick Willis'
Subject: RE: The FINAL Word Additional request for Brea Olinda (T170734, T170759, T170788, and T170798)
Attachments: T170734_WKO_03.pdf; T170759_WKO_03.pdf; T170788_WKO_02.pdf; T170798_WKO_02.pdf

I believe I got it all coded in correctly gentlemen!

Please find attached work orders for confirmation. You will see in the comments section which analyses were added for each sample. It's a bit confusing since the samples were amongst several projects. All the samples that we did not receive 5035 kits for will be done by standard 8260 and 8015 Gas Purge as requested below. Please review and let me know if you have any questions or need anything else.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 11:22 AM
To: Rose Fasheh
Cc: Derrick Willis
Subject: The FINAL Word

Rose,

Per our call this morning, Back to the same samples without 5035 extractions – regular analyses.

Thanks

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.
24411 Ridge Route Drive
Suite 130
Laguna Hills, Ca 92653
phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055
www.ngem.com

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From: Frank Hagar [mailto:frank.hagar@ngem.com]
Sent: Wednesday, April 05, 2017 10:14 AM
To: Rose Fasheh; Derrick Willis
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Rose,

Derrick is out of pocket a bit this morning so....

Please change the following samples for analysis of 8260 and GRO

SLA-B1-5 change to SLA-B1-10

SLA-B1-15 change to SLA-B1-20

S3-T1-5 change to S3-T1-10

S7-T1-5 change to S1-T1-10

I had a note on the COC for BB6P-B1-30 to lab extract a 5035 for that sample. GO ahead and do that please.

SLA-B1-15 no analysis as SLA-B1-10 and SLA-B1-20 will cover.

Let me know if there are any other issues with these samples.

Thanks
Frank

Frank Hagar PG, CHg, CEG
Associate



Northgate Environmental Management, Inc.

24411 Ridge Route Drive

Suite 130

Laguna Hills, Ca 92653

phone (949)716-0050 **mobile (949) 689-9987**; fax (949) 716-0055

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From: Rose Fasheh [mailto:Rose@sunstarlabs.com]
Sent: Wednesday, April 05, 2017 9:40 AM
To: 'Derrick Willis' <derrick.willis@ngem.com>

Cc: 'Frank Hagar' <frank.hagar@ngem.com>

Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Several of the samples you have requested 8260 and GRO for, we did not receive 5035 kits. We can run standard OR can make some kits using the jars or sleeves provided but it will be noted on the report that the kits were made in house, not a true 5035 prep. Specifically samples: SLA-B1-5 (T170759-01), SLA-B1-15 (T170759-03), BB6P-B1-30 (T170759-18), S3-T1-5 (T170798-07), and S7-T1-5 (T170798-10).

Also, sample SLA-B1-15 you have requested 8260 and GRO. This sample was on hold so no results were sent, did you mean for us to run another sample?

Please advise how you wish for me to proceed.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Wednesday, April 05, 2017 8:19 AM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,
Yes, please also report the GRO. Can I get prelims on the volatiles at the 3-day mark? Thanks
Derrick

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Wednesday, April 5, 2017 8:17 AM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Good morning Derrick,

For all the samples you requested VOCs by 8260 below, did you also need the GRO 5035 purgable?

Standard 5-day TAT okay?

Thank you,

Rose Fasheh
Project Manager



From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Tuesday, April 04, 2017 6:07 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Additional Reports for Brea Olinda Oil Field (T170697 and T170707)

Hi Rose,

I would like to request the following:

VRS-B1-20 - 8260

VRS-B1-60 – 8260

SLA-B1-5 – 8260

SLA-B1-15 – 8260

SLA-B1-60 – 8260

BBGP-B1-30 – 8260, Metals, Uranium

S8-B1-39 – Uranium, PCBs

S3-T1-5 - 8260, 8270, metals

S7-T1-5 - 8270

Thanks

Derrick

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/03/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/29/17 13:30

Logged In By: Brian Charon

Date Logged In: 03/29/17 13:38

Samples Received at: **5.8°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170798-01 FFTA-T1- 5 [Soil] Sampled 03/29/17 07:42 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:42	
T170798-02 FFTA-T1- 10 [Soil] Sampled 03/29/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:50	
T170798-03 FFTA-T1- 15 [Soil] Sampled 03/29/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 08:00	
T170798-04 S8-T2- 5 [Soil] Sampled 03/29/17 09:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:00	
T170798-05 S8-T2- 10 [Soil] Sampled 03/29/17 09:08 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:08	
T170798-06 S8-T2- 15 [Soil] Sampled 03/29/17 09:15 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:15	
T170798-07 S3-T1- 5 [Soil] Sampled 03/29/17 09:56 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:56	

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170798-08 S3-T1- 10 [Soil] Sampled 03/29/17 10:06 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:06	
T170798-09 S3-T1- 15 [Soil] Sampled 03/29/17 10:12 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:12	
T170798-10 S7-T1- 5 [Soil] Sampled 03/29/17 10:35 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:35	
T170798-11 S7-T1- 10 [Soil] Sampled 03/29/17 10:45 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:45	
T170798-12 S7-T1- 15 [Soil] Sampled 03/29/17 11:02 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 11:02	

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 04/03/17 17:00 (3 day TAT)

Received By: Brian Charon

Date Received: 03/29/17 13:30

Logged In By: Brian Charon

Date Logged In: 03/29/17 13:38

Samples Received at: **5.8°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170798-01 FFTA-T1- 5 [Soil] Sampled 03/29/17 07:42 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:42	
T170798-02 FFTA-T1- 10 [Soil] Sampled 03/29/17 07:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 07:50	
T170798-03 FFTA-T1- 15 [Soil] Sampled 03/29/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 08:00	
T170798-04 S8-T2- 5 [Soil] Sampled 03/29/17 09:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:00	
T170798-05 S8-T2- 10 [Soil] Sampled 03/29/17 09:08 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:08	
T170798-06 S8-T2- 15 [Soil] Sampled 03/29/17 09:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:15	

WORK ORDER

T170798

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Analysis	Due	TAT	Expires	Comments
T170798-07 S3-T1- 5 [Soil] Sampled 03/29/17 09:56 (GMT-08:00) Pacific Time				
(US & 8260, GRO, 8270 and metals added per client request (Derrick, 4/5)				
6010 Title 22	04/12/17 15:00	5	09/25/17 09:56	
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 09:56	
8015 m Gas Purge	04/10/17 15:00	3	04/12/17 09:56	
8260	04/10/17 15:00	3	04/12/17 09:56	
8270C	04/12/17 15:00	5	04/12/17 09:56	
T170798-08 S3-T1- 10 [Soil] Sampled 03/29/17 10:06 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:06	
T170798-09 S3-T1- 15 [Soil] Sampled 03/29/17 10:12 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:12	
T170798-10 S7-T1- 5 [Soil] Sampled 03/29/17 10:35 (GMT-08:00) Pacific Time				
(US & 8270 added per client request (Derrick, 4/5)				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:35	
8270C	04/12/17 15:00	5	04/12/17 10:35	
T170798-11 S7-T1- 10 [Soil] Sampled 03/29/17 10:45 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 10:45	
T170798-12 S7-T1- 15 [Soil] Sampled 03/29/17 11:02 (GMT-08:00) Pacific Time				
(US &				
8015 Carbon Chain	04/03/17 15:00	3	04/12/17 11:02	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg



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24 March 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/20/17 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



25712 Commercentre Drive
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 949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 09:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S20-T1-5	T170697-01	Soil	03/20/17 08:00	03/20/17 17:10
S20-T1-10	T170697-02	Soil	03/20/17 09:15	03/20/17 17:10
S20-T1-15	T170697-03	Soil	03/20/17 09:25	03/20/17 17:10
S20-T2-5	T170697-04	Soil	03/20/17 10:09	03/20/17 17:10
S20-T2-10	T170697-05	Soil	03/20/17 10:19	03/20/17 17:10
S20-T2-15	T170697-06	Soil	03/20/17 10:32	03/20/17 17:10
BOTF-T2-5	T170697-07	Soil	03/20/17 11:50	03/20/17 17:10
BOTF-T2-10	T170697-08	Soil	03/20/17 12:00	03/20/17 17:10
BOTF-T2-15	T170697-09	Soil	03/20/17 12:08	03/20/17 17:10
BOTF-T1-5	T170697-10	Soil	03/20/17 13:15	03/20/17 17:10
BOTF-T1-10	T170697-11	Soil	03/20/17 13:30	03/20/17 17:10
BOTF-T1-15	T170697-12	Soil	03/20/17 13:45	03/20/17 17:10
H2-T1-5	T170697-13	Soil	03/20/17 13:45	03/20/17 17:10
H2-T1-10	T170697-14	Soil	03/20/17 14:15	03/20/17 17:10
H2-T1-15	T170697-15	Soil	03/20/17 14:15	03/20/17 17:10

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.

Rose Fasheh, Project Manager

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 09:55

DETECTIONS SUMMARY

Sample ID: S20-T1-5 **Laboratory ID:** T170697-01

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	100	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	390	10	mg/kg	EPA 8015B	

Sample ID: S20-T1-10 **Laboratory ID:** T170697-02

No Results Detected

Sample ID: S20-T1-15 **Laboratory ID:** T170697-03

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C29-C40 (MORO)	22	10	mg/kg	EPA 8015B	

Sample ID: S20-T2-5 **Laboratory ID:** T170697-04

No Results Detected

Sample ID: S20-T2-10 **Laboratory ID:** T170697-05

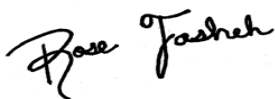
Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	51	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	120	10	mg/kg	EPA 8015B	

Sample ID: S20-T2-15 **Laboratory ID:** T170697-06

No Results Detected

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-550



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 09:55

Sample ID: BOTF-T2-5 **Laboratory ID:** T170697-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	52	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	83	10	mg/kg	EPA 8015B	

Sample ID: BOTF-T2-10 **Laboratory ID:** T170697-08

No Results Detected

Sample ID: BOTF-T2-15 **Laboratory ID:** T170697-09

No Results Detected

Sample ID: BOTF-T1-5 **Laboratory ID:** T170697-10

No Results Detected

Sample ID: BOTF-T1-10 **Laboratory ID:** T170697-11

No Results Detected

Sample ID: BOTF-T1-15 **Laboratory ID:** T170697-12

No Results Detected

Sample ID: H2-T1-5 **Laboratory ID:** T170697-13

SunStar Laboratories, Inc.

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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 09:55

Sample ID: H2-T1-5

Laboratory ID: T170697-13

No Results Detected

Sample ID: H2-T1-10

Laboratory ID: T170697-14

No Results Detected

Sample ID: H2-T1-15

Laboratory ID: T170697-15

No Results Detected

SunStar Laboratories, Inc.

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S20-T1-5
T170697-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	100	10	"	"	"	"	"	"	
C29-C40 (MORO)	390	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		113 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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S20-T1-10
T170697-02 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		96.3 %		65-135	"	"	"	"	

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Rose Fasheh, Project Manager

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S20-T1-15
T170697-03 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	22	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		97.9 %		65-135	"	"	"	"	

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S20-T2-5
T170697-04 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		101 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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S20-T2-10
T170697-05 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	51	10	"	"	"	"	"	"	
C29-C40 (MORO)	120	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		101 %		65-135		"	"	"	"

SunStar Laboratories, Inc.

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S20-T2-15
T170697-06 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		91.3 %		65-135					

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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BOTF-T2-5
T170697-07 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/22/17	EPA 8015B	
C13-C28 (DRO)	52	10	"	"	"	"	"	"	
C29-C40 (MORO)	83	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		107 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-559



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BOTF-T2-10
T170697-08 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		101 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-560



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BOTF-T2-15
T170697-09 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		95.8 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-561



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BOTF-T1-5
T170697-10 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		104 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-562



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 09:55
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BOTF-T1-10
T170697-11 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		104 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-563



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 09:55
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BOTF-T1-15
T170697-12 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		95.1 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-564



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 09:55
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H2-T1-5
T170697-13 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		97.8 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-565



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 09:55
--	---	-----------------------------

H2-T1-10
T170697-14 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		84.9 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-566



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/24/17 09:55
--	---	-----------------------------

H2-T1-15
T170697-15 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032129	03/21/17	03/21/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		108 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-567



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/24/17 09:55

Extractable Petroleum Hydrocarbons by 8015B - 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 7032129 - EPA 3550B GC

Blank (7032129-BLK1)

Prepared & Analyzed: 03/21/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	77.7		"	99.0		78.5	65-135			

LCS (7032129-BS1)

Prepared: 03/21/17 Analyzed: 03/22/17

C13-C28 (DRO)	530	10	mg/kg	495		108	75-125			
Surrogate: p-Terphenyl	120		"	99.0		122	65-135			

LCS Dup (7032129-BSD1)

Prepared: 03/21/17 Analyzed: 03/22/17

C13-C28 (DRO)	490	10	mg/kg	490		100	75-125	8.45	20	
Surrogate: p-Terphenyl	96.6		"	98.0		98.5	65-135			

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-568



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/24/17 09:55

Notes and Definitions

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.

Rose Fasheh, Project Manager

I-569

Page 21 of 21



SunStar Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
 25712 Commence Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc
 Address: 24411 Ridge Route Dr Suite 130
 Phone: 949-716-0050 Fax: 949-716-0055
 Project Manager: Derrick Wallis

Date: 3/20/17 Page: 1 of 2
 Project Name: Brea - Orinda Oil Field
 Collector: Frank Hesser Client Project #: 02077.01
 Batch #: 7170697 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + G RD	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers
S20-T1-5	3/20/17	0800	Grab	4oz glass				H				X	X		01	Hold all except 8015M	1
S20-T1-5	3/20/17	0800	Grab	4ozal VOA H								X	X		02		1
S20-T1-10	3/20/17	0915	Grab	4oz glass				H				X	X		03		1
S20-T1-15	3/20/17	0925	Grab	4oz glass				H				X	X		04		1
S20-T2-5	3/20/17	1009	Soil	4oz al				H				X	X		05		1
S20-T2-5	3/20/17	1069	Soil	4ozal VOA H								X	X		06		1
S20-T2-10	3/20/17	1019	Soil	4oz al				H				X	X		07		1
S20-T2-15	3/20/17	1032	Soil	4oz al				H				X	X		08		1
B80-T2-15	3/20/17	1032	Soil	4ozal VOA H								X	X		09		1
B0TE-T2-5	3/20/17	1150	Soil	4oz al				H				X	X		07		1
B0TE-T2-5	3/20/17	1150	Soil	4ozal VOA H								X	X		08		1
B0TE-T2-10	3/20/17	1200	Soil	4oz al				H				X	X		09		1
B0TE-T2-15	3/20/17	1208	Soil	4oz al				H				X	X		09		1
Relinquished by: (signature) _____ Date / Time <u>3/20/17 17:10</u> Received by: (signature) _____ Date / Time <u>3/20/17 17:10</u> Relinquished by: (signature) _____ Date / Time <u>3/20/17 07:16</u> Received by: (signature) _____ Date / Time <u>3/20/17 07:16</u> Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																	

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____
 Turn around time: STD
 Chain of Custody seals Y/N/NA NA
 Seals intact? Y/N/NA NA
 Received good condition/cold 5.1
COC 162516



SunStar Laboratories, Inc.
 PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
 949-297-5020

Chain of Custody Record

Client: Northgate Environmental Management Inc
 Address: 24411 Ridge Route Drive Suite 130
 Phone: 949-716-0050 Fax: 949-716-0035
 Project Manager: DERRICK WILLIS

Date: 3/20/17 Page: 2 of 2
 Project Name: Brea - Olinda 01 Field
 Collector: Frank Heger Client Project #: 02077.01
 Batch #: T170697 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers
BOFE-TI-5	3/20/17	1315	Soil	400G1	X			H				X	H		10		
BOFE-TI-5	3/20/17	1315	Soil	400G1	X			H				X	H		10		
BOFE-TI-10	3/20/17	1330	Soil	400G1	X			H				X	H		11		
BOFE-TI-10	3/20/17	1330	Soil	400G1	X			H				X	H		11		
BOFE-TI-15	3/20/17	1345	Soil	400G1	X			H				X	H		12		
BOFE-TI-15	3/20/17	1345	Soil	400G1	X			H				X	H		12		
H2-TI-5	3/20/17	1345	Soil	400G1	X			H				X	H		13		
H2-TI-5	3/20/17	1345	Soil	400G1	X			H				X	H		13		
H2-TI-10	3/20/17	1415	Soil	400G1	X			H				X	H		14		
H2-TI-10	3/20/17	1415	Soil	400G1	X			H				X	H		14		
H2-TI-15	3/20/17	1435	Soil	400G1	X			H				X	H		15		
H2-TI-15	3/20/17	1435	Soil	400G1	X			H				X	H		15		
Relinquished by: (signature) <u>[Signature]</u> Date / Time <u>3/20/17 17:10</u> Received by: (signature) <u>[Signature]</u> Date / Time <u>3/20/17 17:10</u> Relinquished by: (signature) <u>[Signature]</u> Date / Time <u>3/20/17 07:16</u> Received by: (signature) <u>[Signature]</u> Date / Time <u>3/20/17 07:16</u> Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____ Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____ Turn around time: <u>51</u>																	

Notes
 Call F. Heger
 Question
 949 689-9987

COC 162515



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T170697
 Client Name: NOBTINGATE Project: BREA QUINDA OIL FIELD
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: JOEY Date/Time Lab Received: 3/20/17 1710
 Total number of coolers received: _____

Temperature: Cooler #1	5.3 °C +/- the CF (-0.2°C) = 5.1	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes <input type="checkbox"/> No →	Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable <input type="checkbox"/> 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: BC 3/21/17

Comments:



SAMPLE NON-CONFORMANCE SHEET

Batch/Work Order # T110697

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

Comments: SAMPLE 12 NO 5035 KITS RECEIVED

Sample fractioning only if broken container compromises other samples or if out of temp reading impacts more than one cooler

Fraction																						Preser.	
VOA																							

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Brian Charon Date Received: 03/21/17 07:16
 Logged In By: Brian Charon Date Logged In: 03/21/17 07:32

Samples Received at: **5.1°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170697-01 S20-T1-5 [Soil] Sampled 03/20/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 08:00	
T170697-02 S20-T1-10 [Soil] Sampled 03/20/17 09:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:15	
T170697-03 S20-T1-15 [Soil] Sampled 03/20/17 09:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:25	
T170697-04 S20-T2-5 [Soil] Sampled 03/20/17 10:09 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:09	
T170697-05 S20-T2-10 [Soil] Sampled 03/20/17 10:19 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:19	
T170697-06 S20-T2-15 [Soil] Sampled 03/20/17 10:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:32	
T170697-07 BOTF-T2-5 [Soil] Sampled 03/20/17 11:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 11:50	

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170697-08 BOTF-T2-10 [Soil] Sampled 03/20/17 12:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:00	
T170697-09 BOTF-T2-15 [Soil] Sampled 03/20/17 12:08 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:08	
T170697-10 BOTF-T1-5 [Soil] Sampled 03/20/17 13:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:15	
T170697-11 BOTF-T1-10 [Soil] Sampled 03/20/17 13:30 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:30	
T170697-12 BOTF-T1-15 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	
T170697-13 H2-T1-5 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	
T170697-14 H2-T1-10 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	
T170697-15 H2-T1-15 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	



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

03 April 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/20/17 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S20-T1-5	T170697-01	Soil	03/20/17 08:00	03/20/17 17:10
S20-T2-5	T170697-04	Soil	03/20/17 10:09	03/20/17 17:10
BOTF-T2-5	T170697-07	Soil	03/20/17 11:50	03/20/17 17:10

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.

Rose Fasheh, Project Manager

I-577

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:45

DETECTIONS SUMMARY

Sample ID: S20-T1-5

Laboratory ID: T170697-01

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	55	1.0		mg/kg	EPA 6010B	
Chromium	6.4	2.0		mg/kg	EPA 6010B	
Cobalt	4.1	2.0		mg/kg	EPA 6010B	
Copper	4.0	1.0		mg/kg	EPA 6010B	
Nickel	6.5	2.0		mg/kg	EPA 6010B	
Vanadium	16	5.0		mg/kg	EPA 6010B	
Zinc	22	1.0		mg/kg	EPA 6010B	
Uranium, Total	0.53	0.50		mg/kg	EPA 6020A	

Sample ID: S20-T2-5

Laboratory ID: T170697-04

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	88	1.0		mg/kg	EPA 6010B	
Chromium	7.7	2.0		mg/kg	EPA 6010B	
Cobalt	5.2	2.0		mg/kg	EPA 6010B	
Copper	5.1	1.0		mg/kg	EPA 6010B	
Nickel	10	2.0		mg/kg	EPA 6010B	
Vanadium	22	5.0		mg/kg	EPA 6010B	
Zinc	24	1.0		mg/kg	EPA 6010B	

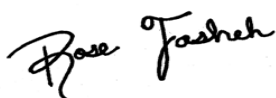
Sample ID: BOTF-T2-5

Laboratory ID: T170697-07

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	120	1.0		mg/kg	EPA 6010B	
Chromium	9.5	2.0		mg/kg	EPA 6010B	
Cobalt	6.8	2.0		mg/kg	EPA 6010B	
Copper	7.8	1.0		mg/kg	EPA 6010B	
Molybdenum	5.3	5.0		mg/kg	EPA 6010B	
Nickel	8.8	2.0		mg/kg	EPA 6010B	
Vanadium	24	5.0		mg/kg	EPA 6010B	
Zinc	31	1.0		mg/kg	EPA 6010B	

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.



Rose Fasheh, Project Manager

I-578



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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:45

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.

Rose Fasheh, Project Manager

I-579

Page 3 of 35



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 949.297.5020 Phone
 949.297.5027 Fax

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T1-5
T170697-01 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	180	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		61.9 %	65-135		"	"	"	"	S-03

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	55	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	6.4	2.0	"	"	"	"	"	"	
Cobalt	4.1	2.0	"	"	"	"	"	"	
Copper	4.0	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	6.5	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	16	5.0	"	"	"	"	"	"	
Zinc	22	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		79.6 %	35-140		"	"	"	"	

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Rose Fasheh, Project Manager

I-580



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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T1-5
T170697-01 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	78.2 %	35-140			7032719	03/27/17	03/28/17	EPA 8082	
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	2.7	ug/kg	1	7032736	03/27/17	03/28/17	EPA 8260B/5035	
Bromochloromethane	ND	2.7	"	"	"	"	"	"	
Bromodichloromethane	ND	2.7	"	"	"	"	"	"	
Bromoform	ND	2.7	"	"	"	"	"	"	
Bromomethane	ND	2.7	"	"	"	"	"	"	
n-Butylbenzene	ND	2.7	"	"	"	"	"	"	
sec-Butylbenzene	ND	2.7	"	"	"	"	"	"	
tert-Butylbenzene	ND	2.7	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.7	"	"	"	"	"	"	
Chlorobenzene	ND	2.7	"	"	"	"	"	"	
Chloroethane	ND	2.7	"	"	"	"	"	"	
Chloroform	ND	2.7	"	"	"	"	"	"	
Chloromethane	ND	2.7	"	"	"	"	"	"	
2-Chlorotoluene	ND	2.7	"	"	"	"	"	"	
4-Chlorotoluene	ND	2.7	"	"	"	"	"	"	
Dibromochloromethane	ND	2.7	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.7	"	"	"	"	"	"	
Dibromomethane	ND	2.7	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.7	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.7	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.7	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	2.7	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.7	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.7	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.7	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.7	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.7	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.7	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T1-5
T170697-01 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	2.7	ug/kg	1	7032736	03/27/17	03/28/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	2.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	2.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	2.7	"	"	"	"	"	"	
Isopropylbenzene	ND	2.7	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.7	"	"	"	"	"	"	
Methylene chloride	ND	2.7	"	"	"	"	"	"	
Naphthalene	ND	2.7	"	"	"	"	"	"	
n-Propylbenzene	ND	2.7	"	"	"	"	"	"	
Styrene	ND	2.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.7	"	"	"	"	"	"	
Tetrachloroethene	ND	2.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	2.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.7	"	"	"	"	"	"	
Trichloroethene	ND	2.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.7	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	2.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	2.7	"	"	"	"	"	"	
Vinyl chloride	ND	2.7	"	"	"	"	"	"	
Benzene	ND	2.7	"	"	"	"	"	"	
Toluene	ND	2.7	"	"	"	"	"	"	
Ethylbenzene	ND	2.7	"	"	"	"	"	"	
m,p-Xylene	ND	5.4	"	"	"	"	"	"	
o-Xylene	ND	2.7	"	"	"	"	"	"	
Surrogate: Toluene-d8		104 %		85.5-116		"	"	"	"

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Rose Fasheh, Project Manager

I-582



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T1-5
T170697-01 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene		101 %	81.2-123		7032736	03/27/17	03/28/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane		113 %	95.7-135		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	1500	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	1500	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07

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S20-T1-5
T170697-01 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Butyl benzyl phthalate	ND	1500	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	5000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	5000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	"	"	R-07
Fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Fluorene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	5000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	"	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07

SunStar Laboratories, Inc.

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S20-T1-5
T170697-01 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	5000	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	ND	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		67.8 %	15-121		"	"	"	"	R-07
Surrogate: Phenol-d6		68.8 %	24-113		"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		83.6 %	21.3-119		"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		89.3 %	32.4-102		"	"	"	"	R-07
Surrogate: 2,4,6-Tribromophenol		96.5 %	18.1-105		"	"	"	"	R-07
Surrogate: Terphenyl-d14		137 %	29.1-130		"	"	"	"	R-07, S-GC

Weck Laboratories, Inc.

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Uranium, Total	0.53	0.50	mg/kg	1	W7C1566	03/28/17	04/03/17	EPA 6020A	
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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T2-5
T170697-04 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	120	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		84.8 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	88	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	7.7	2.0	"	"	"	"	"	"	
Cobalt	5.2	2.0	"	"	"	"	"	"	
Copper	5.1	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	10	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	22	5.0	"	"	"	"	"	"	
Zinc	24	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		69.8 %	35-140		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T2-5
T170697-04 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	76.3 %	35-140	7032719	03/27/17	03/28/17	EPA 8082
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	3.2	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035
Bromochloromethane	ND	3.2	"	"	"	"	"	"
Bromodichloromethane	ND	3.2	"	"	"	"	"	"
Bromoform	ND	3.2	"	"	"	"	"	"
Bromomethane	ND	3.2	"	"	"	"	"	"
n-Butylbenzene	ND	3.2	"	"	"	"	"	"
sec-Butylbenzene	ND	3.2	"	"	"	"	"	"
tert-Butylbenzene	ND	3.2	"	"	"	"	"	"
Carbon tetrachloride	ND	3.2	"	"	"	"	"	"
Chlorobenzene	ND	3.2	"	"	"	"	"	"
Chloroethane	ND	3.2	"	"	"	"	"	"
Chloroform	ND	3.2	"	"	"	"	"	"
Chloromethane	ND	3.2	"	"	"	"	"	"
2-Chlorotoluene	ND	3.2	"	"	"	"	"	"
4-Chlorotoluene	ND	3.2	"	"	"	"	"	"
Dibromochloromethane	ND	3.2	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	6.4	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	3.2	"	"	"	"	"	"
Dibromomethane	ND	3.2	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	3.2	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	3.2	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	3.2	"	"	"	"	"	"
Dichlorodifluoromethane	ND	3.2	"	"	"	"	"	"
1,1-Dichloroethane	ND	3.2	"	"	"	"	"	"
1,2-Dichloroethane	ND	3.2	"	"	"	"	"	"
1,1-Dichloroethene	ND	3.2	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	3.2	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	3.2	"	"	"	"	"	"
1,2-Dichloropropane	ND	3.2	"	"	"	"	"	"

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Rose Fasheh, Project Manager

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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T2-5
T170697-04 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	3.2	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	3.2	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.2	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.2	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.2	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.2	"	"	"	"	"	"	
Isopropylbenzene	ND	3.2	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.2	"	"	"	"	"	"	
Methylene chloride	ND	3.2	"	"	"	"	"	"	
Naphthalene	ND	3.2	"	"	"	"	"	"	
n-Propylbenzene	ND	3.2	"	"	"	"	"	"	
Styrene	ND	3.2	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.2	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.2	"	"	"	"	"	"	
Tetrachloroethene	ND	3.2	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.2	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.2	"	"	"	"	"	"	
Trichloroethene	ND	3.2	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.2	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.2	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.2	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.2	"	"	"	"	"	"	
Vinyl chloride	ND	3.2	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Toluene	ND	3.2	"	"	"	"	"	"	
Ethylbenzene	ND	3.2	"	"	"	"	"	"	
m,p-Xylene	ND	6.4	"	"	"	"	"	"	
o-Xylene	ND	3.2	"	"	"	"	"	"	
Surrogate: Toluene-d8		108 %		85.5-116		"	"	"	"

SunStar Laboratories, Inc.

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S20-T2-5
T170697-04 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	96.8 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	119 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	300	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

S20-T2-5
T170697-04 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Butyl benzyl phthalate	ND	300	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
4-Chloroaniline	ND	300	"	"	"	"	03/30/17	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	
4-Methylphenol	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-590



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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 16:45
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S20-T2-5
T170697-04 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	1000	ug/kg	1	7032720	03/27/17	03/30/17	EPA 8270C	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		51.9 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		44.7 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		42.8 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		58.4 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		89.2 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		111 %	29.1-130		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

BOTF-T2-5
T170697-07 (Soil)

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

Purgeable Petroleum Hydrocarbons by EPA 8015B

C6-C12 (GRO)	ND	160	ug/kg	1	7032738	03/27/17	04/03/17	EPA 8015B	
Surrogate: 4-Bromofluorobenzene		94.1 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	7032739	03/27/17	03/28/17	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	120	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	9.5	2.0	"	"	"	"	"	"	
Cobalt	6.8	2.0	"	"	"	"	"	"	
Copper	7.8	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	5.3	5.0	"	"	"	"	"	"	
Nickel	8.8	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	24	5.0	"	"	"	"	"	"	
Zinc	31	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	7032743	03/27/17	03/28/17	EPA 7471A Soil	
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Polychlorinated Biphenyls by EPA Method 8082

PCB-1016	ND	10	ug/kg	1	7032719	03/27/17	03/28/17	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		78.6 %	35-140		"	"	"	"	

SunStar Laboratories, Inc.

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I-592



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Project: Brea Olinda Oil Field
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BOTF-T2-5
T170697-07 (Soil)

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

Polychlorinated Biphenyls by EPA Method 8082

Surrogate: Decachlorobiphenyl	79.6 %	35-140			7032719	03/27/17	03/28/17	EPA 8082	
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	3.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
Bromochloromethane	ND	3.7	"	"	"	"	"	"	
Bromodichloromethane	ND	3.7	"	"	"	"	"	"	
Bromoform	ND	3.7	"	"	"	"	"	"	
Bromomethane	ND	3.7	"	"	"	"	"	"	
n-Butylbenzene	ND	3.7	"	"	"	"	"	"	
sec-Butylbenzene	ND	3.7	"	"	"	"	"	"	
tert-Butylbenzene	ND	3.7	"	"	"	"	"	"	
Carbon tetrachloride	ND	3.7	"	"	"	"	"	"	
Chlorobenzene	ND	3.7	"	"	"	"	"	"	
Chloroethane	ND	3.7	"	"	"	"	"	"	
Chloroform	ND	3.7	"	"	"	"	"	"	
Chloromethane	ND	3.7	"	"	"	"	"	"	
2-Chlorotoluene	ND	3.7	"	"	"	"	"	"	
4-Chlorotoluene	ND	3.7	"	"	"	"	"	"	
Dibromochloromethane	ND	3.7	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.7	"	"	"	"	"	"	
Dibromomethane	ND	3.7	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	3.7	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloroethane	ND	3.7	"	"	"	"	"	"	
1,2-Dichloroethane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloroethene	ND	3.7	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	3.7	"	"	"	"	"	"	
1,2-Dichloropropane	ND	3.7	"	"	"	"	"	"	

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BOTF-T2-5
T170697-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

1,3-Dichloropropane	ND	3.7	ug/kg	1	7032736	03/27/17	03/27/17	EPA 8260B/5035	
2,2-Dichloropropane	ND	3.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	3.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	3.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	3.7	"	"	"	"	"	"	
Isopropylbenzene	ND	3.7	"	"	"	"	"	"	
p-Isopropyltoluene	ND	3.7	"	"	"	"	"	"	
Methylene chloride	ND	3.7	"	"	"	"	"	"	
Naphthalene	ND	3.7	"	"	"	"	"	"	
n-Propylbenzene	ND	3.7	"	"	"	"	"	"	
Styrene	ND	3.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	3.7	"	"	"	"	"	"	
Tetrachloroethene	ND	3.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	3.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	3.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	3.7	"	"	"	"	"	"	
Trichloroethene	ND	3.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	3.7	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	3.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	3.7	"	"	"	"	"	"	
Vinyl chloride	ND	3.7	"	"	"	"	"	"	
Benzene	ND	3.7	"	"	"	"	"	"	
Toluene	ND	3.7	"	"	"	"	"	"	
Ethylbenzene	ND	3.7	"	"	"	"	"	"	
m,p-Xylene	ND	7.4	"	"	"	"	"	"	
o-Xylene	ND	3.7	"	"	"	"	"	"	
Surrogate: Toluene-d8		98.6 %		85.5-116	"	"	"	"	

SunStar Laboratories, Inc.

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 Project Number: 02077.01
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Reported:
 04/03/17 16:45

BOTF-T2-5
T170697-07 (Soil)

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

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	84.8 %	81.2-123			7032736	03/27/17	03/27/17	EPA 8260B/5035	
Surrogate: Dibromofluoromethane	120 %	95.7-135			"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270C

Carbazole	ND	1500	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
Aniline	ND	1500	"	"	"	"	"	"	R-07
Phenol	ND	5000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	5000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	1500	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	5000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthene	ND	1500	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	1500	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyrene	ND	1500	"	"	"	"	"	"	R-07
Acenaphthylene	ND	1500	"	"	"	"	"	"	R-07
Anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	1500	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	1500	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	5000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	1500	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethoxy)methane	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroethyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	1500	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	1500	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

BOTF-T2-5
T170697-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Butyl benzyl phthalate	ND	1500	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
4-Chloroaniline	ND	1500	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	1500	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	1500	"	"	"	"	"	"	R-07
Chrysene	ND	1500	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	1500	"	"	"	"	"	"	R-07
Dibenzofuran	ND	1500	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	1500	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	5000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	1500	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	5000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	5000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	5000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	1500	"	"	"	"	03/30/17	"	R-07
Fluoranthene	ND	1500	"	"	"	"	03/30/17	"	R-07
Fluorene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	7500	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	1500	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	5000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	1500	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	1500	"	"	"	"	"	"	R-07
Isophorone	ND	1500	"	"	"	"	03/30/17	"	R-07
2-Methylphenol	ND	5000	"	"	"	"	03/30/17	"	R-07
4-Methylphenol	ND	5000	"	"	"	"	"	"	R-07
Naphthalene	ND	1500	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	1500	"	"	"	"	"	"	R-07

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

BOTF-T2-5
T170697-07 (Soil)

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

Semivolatile Organic Compounds by EPA Method 8270C

Nitrobenzene	ND	5000	ug/kg	5	7032720	03/27/17	03/30/17	EPA 8270C	R-07
2-Nitrophenol	ND	5000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	1500	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	1500	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	1500	"	"	"	"	"	"	R-07
Phenanthrene	ND	1500	"	"	"	"	"	"	R-07
Azobenzene	ND	1500	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Pyridine	ND	1500	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	5000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		49.9 %	15-121		"	"	"	"	R-07
Surrogate: Phenol-d6		52.2 %	24-113		"	"	"	"	R-07
Surrogate: Nitrobenzene-d5		55.8 %	21.3-119		"	"	"	"	R-07
Surrogate: 2-Fluorobiphenyl		106 %	32.4-102		"	"	"	"	R-07, S-GC
Surrogate: 2,4,6-Tribromophenol		98.6 %	18.1-105		"	"	"	"	R-07
Surrogate: Terphenyl-d14		132 %	29.1-130		"	"	"	"	R-07, S-GC

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Rose Fasheh, Project Manager

I-597



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Purgeable Petroleum Hydrocarbons by EPA 8015B - 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 7032738 - EPA 5035 GC

Blank (7032738-BLK1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	ND	200	ug/kg							
Surrogate: 4-Bromofluorobenzene	104		"	100		104	65-135			

LCS (7032738-BS1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	10100	200	ug/kg	10900		93.0	75-125			
Surrogate: 4-Bromofluorobenzene	101		"	100		101	65-135			

LCS Dup (7032738-BS1)

Prepared: 03/27/17 Analyzed: 04/03/17

C6-C12 (GRO)	10400	200	ug/kg	11000		94.6	75-125	2.89	20	
Surrogate: 4-Bromofluorobenzene	83.4		"	100		83.4	65-135			

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Rose Fasheh, Project Manager

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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Metals by EPA 6010B - 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 7032739 - EPA 3051

Blank (7032739-BLK1)

Prepared: 03/27/17 Analyzed: 03/28/17

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (7032739-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

Arsenic	81.3	5.0	mg/kg	100		81.3	75-125
Barium	83.0	1.0	"	100		83.0	75-125
Cadmium	83.4	2.0	"	100		83.4	75-125
Chromium	83.0	2.0	"	100		83.0	75-125
Lead	89.0	3.0	"	100		89.0	75-125

Matrix Spike (7032739-MS1)

Source: T170707-04

Prepared: 03/27/17 Analyzed: 03/28/17

Arsenic	77.1	5.0	mg/kg	99.0	1.25	76.6	75-125
Barium	155	1.0	"	99.0	67.0	88.4	75-125
Cadmium	75.0	2.0	"	99.0	0.420	75.3	75-125
Chromium	82.1	2.0	"	99.0	6.60	76.2	75-125
Lead	96.1	3.0	"	99.0	ND	97.0	75-125

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Metals by EPA 6010B - 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 7032739 - EPA 3051

Matrix Spike Dup (7032739-MSD1)	Source: T170707-04			Prepared: 03/27/17		Analyzed: 03/28/17				
Arsenic	78.4	5.0	mg/kg	100	1.25	77.2	75-125	1.75	20	
Barium	153	1.0	"	100	67.0	86.1	75-125	0.909	20	
Cadmium	78.3	2.0	"	100	0.420	77.9	75-125	4.33	20	
Chromium	84.2	2.0	"	100	6.60	77.6	75-125	2.58	20	
Lead	88.9	3.0	"	100	ND	88.9	75-125	7.73	20	QR-04

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Rose Fasheh, Project Manager

I-600



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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 7032743 - EPA 7471A Soil

Blank (7032743-BLK1)		Prepared: 03/27/17 Analyzed: 03/28/17								
Mercury	ND	0.10	mg/kg							
LCS (7032743-BS1)		Prepared: 03/27/17 Analyzed: 03/28/17								
Mercury	0.336	0.10	mg/kg	0.410		82.1	75-125			
Matrix Spike (7032743-MS1)		Source: T170707-04		Prepared: 03/27/17 Analyzed: 03/28/17						
Mercury	0.319	0.10	mg/kg	0.385	ND	83.0	75-125			
Matrix Spike Dup (7032743-MSD1)		Source: T170707-04		Prepared: 03/27/17 Analyzed: 03/28/17						
Mercury	0.329	0.10	mg/kg	0.397	ND	83.0	75-125	3.10	20	

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Rose Fasheh, Project Manager

I-601



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Polychlorinated Biphenyls by EPA Method 8082 - 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 7032719 - EPA 3550 ECD/GCMS

Blank (7032719-BLK1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
Surrogate: Tetrachloro-meta-xylene	7.46		"	9.80		76.1	35-140			
Surrogate: Decachlorobiphenyl	8.07		"	9.80		82.3	35-140			

LCS (7032719-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	87.6	10	ug/kg	99.0		88.5	40-130			
PCB-1260	84.4	10	"	99.0		85.2	40-130			
Surrogate: Tetrachloro-meta-xylene	7.72		"	9.90		78.0	35-140			
Surrogate: Decachlorobiphenyl	7.97		"	9.90		80.5	35-140			

LCS Dup (7032719-BSD1)

Prepared: 03/27/17 Analyzed: 03/28/17

PCB-1016	90.0	10	ug/kg	101		89.1	40-130	2.68	30	
PCB-1260	88.6	10	"	101		87.7	40-130	4.89	30	
Surrogate: Tetrachloro-meta-xylene	8.39		"	10.1		83.0	35-140			
Surrogate: Decachlorobiphenyl	8.76		"	10.1		86.7	35-140			

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Rose Fasheh, Project Manager

I-602



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

Blank (7032736-BLK1)

Prepared & Analyzed: 03/27/17

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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Rose Fasheh, Project Manager

I-603



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

Blank (7032736-BLK1)

Prepared & Analyzed: 03/27/17

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: Toluene-d8	41.8		"	39.5		106	85.5-116			
Surrogate: 4-Bromofluorobenzene	36.7		"	39.5		92.9	81.2-123			
Surrogate: Dibromofluoromethane	38.4		"	39.5		97.1	95.7-135			

LCS (7032736-BS1)

Prepared: 03/27/17 Analyzed: 03/28/17

Chlorobenzene	109	5.0	ug/kg	99.4		110	75-125			
1,1-Dichloroethene	107	5.0	"	99.4		108	75-125			
Trichloroethene	106	5.0	"	99.4		106	75-125			
Benzene	106	5.0	"	99.4		107	75-125			
Toluene	106	5.0	"	99.4		106	75-125			
Surrogate: Toluene-d8	38.9		"	39.8		97.9	85.5-116			
Surrogate: 4-Bromofluorobenzene	43.0		"	39.8		108	81.2-123			
Surrogate: Dibromofluoromethane	47.8		"	39.8		120	95.7-135			

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Rose Fasheh, Project Manager

I-604



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Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Volatile Organic Compounds by EPA Method 8260B - 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 7032736 - EPA 5035 GCMS

LCS Dup (7032736-BSD1)

Prepared: 03/27/17 Analyzed: 03/28/17

Chlorobenzene	111	5.0	ug/kg	99.6	111	75-125	1.15	20		
1,1-Dichloroethene	105	5.0	"	99.6	106	75-125	1.82	20		
Trichloroethene	100	5.0	"	99.6	101	75-125	5.17	20		
Benzene	107	5.0	"	99.6	107	75-125	0.573	20		
Toluene	102	5.0	"	99.6	102	75-125	3.68	20		
Surrogate: Toluene-d8	37.8		"	39.8	95.0	85.5-116				
Surrogate: 4-Bromofluorobenzene	41.4		"	39.8	104	81.2-123				
Surrogate: Dibromofluoromethane	49.1		"	39.8	123	95.7-135				

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.

Rose Fasheh, Project Manager

I-605



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Carbazole	ND	300	ug/kg							
Aniline	ND	300	"							
Phenol	ND	1000	"							
2-Chlorophenol	ND	1000	"							
1,4-Dichlorobenzene	ND	300	"							
N-Nitrosodi-n-propylamine	ND	300	"							
1,2,4-Trichlorobenzene	ND	300	"							
4-Chloro-3-methylphenol	ND	1000	"							
2-Methylnaphthalene	ND	300	"							
1-Methylnaphthalene	ND	300	"							
Acenaphthene	ND	300	"							
4-Nitrophenol	ND	1000	"							
2,4-Dinitrotoluene	ND	300	"							
Pentachlorophenol	ND	1000	"							
Pyrene	ND	300	"							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Benzyl alcohol	ND	300	"							
Bis(2-chloroethoxy)methane	ND	300	"							
Bis(2-chloroethyl)ether	ND	300	"							
Bis(2-chloroisopropyl)ether	ND	300	"							
Bis(2-ethylhexyl)phthalate	ND	300	"							
4-Bromophenyl phenyl ether	ND	300	"							
Butyl benzyl phthalate	ND	300	"							
4-Chloroaniline	ND	300	"							
2-Chloronaphthalene	ND	300	"							
4-Chlorophenyl phenyl ether	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Dibenzofuran	ND	300	"							
Di-n-butyl phthalate	ND	300	"							

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.

Rose Fasheh, Project Manager

I-606



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
Pyridine	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
2,4,6-Trichlorophenol	ND	1000	"							

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.

Rose Fasheh, Project Manager

I-607



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

Blank (7032720-BLK1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: 2-Fluorophenol	1510		ug/kg	3310		45.5	15-121			
Surrogate: Phenol-d6	1390		"	3310		42.0	24-113			
Surrogate: Nitrobenzene-d5	1510		"	3310		45.5	21.3-119			
Surrogate: 2-Fluorobiphenyl	1910		"	3310		57.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2630		"	3310		79.4	18.1-105			
Surrogate: Terphenyl-d14	2750		"	3310		83.1	29.1-130			

LCS (7032720-BS1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	3130	1000	ug/kg	3330		93.8	34-114			
2-Chlorophenol	3140	1000	"	3330		94.3	34-114			
1,4-Dichlorobenzene	2430	300	"	3330		72.9	34-114			
N-Nitrosodi-n-propylamine	3180	300	"	3330		95.5	30-110			
1,2,4-Trichlorobenzene	1930	300	"	3330		57.8	39-119			
4-Chloro-3-methylphenol	2270	1000	"	3330		68.1	50-130			
Acenaphthene	2070	300	"	3330		62.1	34-114			
Pentachlorophenol	2620	1000	"	3330		78.6	50-130			
Pyrene	2070	300	"	3330		62.0	30-110			
Surrogate: 2-Fluorophenol	3250		"	3330		97.4	15-121			
Surrogate: Phenol-d6	3750		"	3330		113	24-113			
Surrogate: Nitrobenzene-d5	3290		"	3330		98.6	21.3-119			
Surrogate: 2-Fluorobiphenyl	3620		"	3330		109	32.4-102			S-GC
Surrogate: 2,4,6-Tribromophenol	3670		"	3330		110	18.1-105			S-GC
Surrogate: Terphenyl-d14	3820		"	3330		115	29.1-130			

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Phenol	2650	1000	ug/kg	3300		80.2	34-114	16.7	42	
2-Chlorophenol	3110	1000	"	3300		94.3	34-114	0.953	40	
1,4-Dichlorobenzene	2000	300	"	3300		60.7	34-114	19.3	28	
N-Nitrosodi-n-propylamine	2200	300	"	3300		66.7	30-110	36.4	38	
1,2,4-Trichlorobenzene	1670	300	"	3300		50.5	39-119	14.5	28	
4-Chloro-3-methylphenol	2340	1000	"	3300		70.9	50-130	2.98	42	
Acenaphthene	1770	300	"	3300		53.5	34-114	15.8	31	
Pentachlorophenol	2220	1000	"	3300		67.3	50-130	16.4	50	
Pyrene	1700	300	"	3300		51.5	30-110	19.6	31	
Surrogate: 2-Fluorophenol	2460		"	3300		74.5	15-121			
Surrogate: Phenol-d6	2050		"	3300		62.1	24-113			

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.

Rose Fasheh, Project Manager

I-608



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 04/03/17 16:45

Semivolatile Organic Compounds by EPA Method 8270C - 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 7032720 - EPA 3550 ECD/GCMS

LCS Dup (7032720-BSD1)

Prepared: 03/27/17 Analyzed: 03/30/17

Surrogate: Nitrobenzene-d5	1750		ug/kg	3300		52.9	21.3-119			
Surrogate: 2-Fluorobiphenyl	2200		"	3300		66.7	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3170		"	3300		95.9	18.1-105			
Surrogate: Terphenyl-d14	3290		"	3300		99.8	29.1-130			

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.

Rose Fasheh, Project Manager

I-609



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 04/03/17 16:45
--	---	-----------------------------

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods - Quality Control

Weck Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch W7C1566 - EPA 3050M-SCL

Blank (W7C1566-BLK1)		Prepared: 03/28/17 Analyzed: 04/03/17								
Uranium, Total	ND	0.50	mg/kg							
LCS (W7C1566-BS1)		Prepared: 03/28/17 Analyzed: 04/03/17								
Uranium, Total	47.3	0.50	mg/kg	50.0		95	80-120			
Matrix Spike (W7C1566-MS1)		Source: T170697-01		Prepared: 03/28/17 Analyzed: 04/03/17						
Uranium, Total	44.6	0.50	mg/kg	48.8	0.529	90	75-125			
Matrix Spike Dup (W7C1566-MSD1)		Source: T170697-01		Prepared: 03/28/17 Analyzed: 04/03/17						
Uranium, Total	46.1	0.50	mg/kg	48.1	0.529	95	75-125	3	20	

SunStar Laboratories, Inc.

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

Rose Fasheh, Project Manager

I-610



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

Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
04/03/17 16:45

Notes and Definitions

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- S-03 The surrogate recovery was below acceptance criteria in the sample because of a possible matrix effect. The surrogate recovery was within acceptance criteria in the method blank and LCS.
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- QR-04 The percent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
- 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.

Rose Fasheh, Project Manager

I-611



**SunStar
Laboratories, Inc.**

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commence Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northgate Environmental Mgmt Inc
Address: 24411 Ridge Route Dr Suite 130
Phone: 949-316-0050 Fax: 949-316-0055
Project Manager: Derrick Wallis

Date: 3/20/17 Page: 1 of 2
Project Name: Brea - Orinda Oil Field
Collector: Frank Hesser Client Project #: 02077.01
Batch #: 7170697 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers
S20-T1-5	3/20/17	0800	Grab	4oz glass				H				X	X		01	Hold all except 8015M	1
S20-T1-5	3/20/17	0800	Grab	4ozalVOAH				H				X	X		02		1
S20-T1-10	3/20/17	0915	Grab	4oz glass				H				X	X		03		1
S20-T1-15	3/20/17	0925	Grab	4oz glass				H				X	X		04		1
S20-T2-5	3/20/17	1009	Soil	4oz GI				H				X	X		05		1
S20-T2-5	3/20/17	1069	Soil	4ozalVOAH				H				X	X		06		1
S20-T2-10	3/20/17	1019	Soil	4oz GI				H				X	X		05		1
S20-T2-15	3/20/17	1032	Soil	4oz GI				H				X	X		06		1
B80-T2-15	3/20/17	1032	Soil	4ozalVOAH				H				X	X		07		1
B0TE-T2-5	3/20/17	1150	Soil	4oz GI				H				X	X		08		1
B0TE-T2-5	3/20/17	1150	Soil	4ozalVOAH				H				X	X		08		1
B0TE-T2-10	3/20/17	1200	Soil	4oz GI				H				X	X		09		1
B0TE-T2-15	3/20/17	1208	Soil	4oz GI				H				X	X		09		1
Relinquished by: (signature) _____ Date / Time <u>3/20/17 17:10</u> Received by: (signature) _____ Date / Time <u>3/20/17 17:10</u> Relinquished by: (signature) _____ Date / Time <u>3/20/17 07:16</u> Received by: (signature) _____ Date / Time <u>3/20/17 07:16</u> Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																	
Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____ Turn around time: <u>STD</u>																	

COC 162516



SunStar
Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northgate Environmental Management Inc
Address: 24411 Ridge Route Drive Suite 130
Phone: 949-716-0050 Fax: 949-716-0035
Project Manager: DERRICK WILLIS

Date: 3/20/17 Page: 2 of 2
Project Name: Brea - Olinda 01 Field
Collector: Frank Heger Client Project #: 02077.01
Batch #: T170697 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	Laboratory ID #	Comments/Preservative	Total # of containers
BOFE-TI-5	3/20/17	1315	Soil	400G1				H				X	H		10		
BOFE-TI-5	3/20/17	1315	Soil	400G1				H				X	H		10		
BOFE-TI-10	3/20/17	1330	Soil	400G1				H				X	H		11		
BOFE-TI-10	3/20/17	1330	Soil	400G1				H				X	H		11		
BOFE-TI-15	3/20/17	1345	Soil	400G1				H				X	H		12		
BOFE-TI-15	3/20/17	1345	Soil	400G1				H				X	H		12		
H2-TI-5	3/20/17	1345	Soil	400G1				H				X	H		13		
H2-TI-5	3/20/17	1345	Soil	400G1				H				X	H		13		
H2-TI-10	3/20/17	1415	Soil	400G1				H				X	H		14		
H2-TI-10	3/20/17	1415	Soil	400G1				H				X	H		14		
H2-TI-15	3/20/17	1435	Soil	400G1				H				X	H		15		
H2-TI-15	3/20/17	1435	Soil	400G1				H				X	H		15		
Relinquished by: (signature) <u>[Signature]</u>					Date / Time	Received by: (signature) <u>[Signature]</u>					Date / Time	Total # of containers					
Relinquished by: (signature) <u>[Signature]</u>					3/20/17 17:10	Received by: (signature) <u>[Signature]</u>					3/20/17 17:10	Chain of Custody seals Y/N/N/A					
Relinquished by: (signature) <u>[Signature]</u>					3/20/17 07:16	Received by: (signature) <u>[Signature]</u>					3/20/17 07:16	Seals intact? Y/N/A					
Relinquished by: (signature) <u>[Signature]</u>					Date / Time	Received by: (signature) <u>[Signature]</u>					Date / Time	Received good condition/cold					
Relinquished by: (signature) <u>[Signature]</u>					Date / Time	Received by: (signature) <u>[Signature]</u>					Date / Time	Turn around time: <u>51</u>					

Notes
Call F. Heger
Question
949 689-9987

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162515



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T170697
 Client Name: NOBTINGATE Project: BREA QUINDA OIL FIELD
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: JOEY Date/Time Lab Received: 3/20/17 1710
 Total number of coolers received: _____

Temperature: Cooler #1	5.3 °C +/- the CF (-0.2°C) = 5.1	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (-0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> 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: BC 3/21/17

Comments:



SAMPLE NON-CONFORMANCE SHEET

Batch/Work Order # T110697

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

Comments: SAMPLE 12 NO SOSS KITS RECEIVED

Sample fractioning only if broken container compromises other samples or if out of temp reading impacts more than one cooler

Fraction													Preser.
VOA													

Rose Fasheh

From: Rose Fasheh [Rose@sunstarlabs.com]
Sent: Friday, March 24, 2017 6:09 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Additional work order confirmation for Brea Olinda Oil Field (T170707)
Attachments: T170697_WKO_02.pdf; T170707_WKO_02.pdf

Derrick,

Please find attached work orders for confirmation of additionally requested analyses below. Please carefully review and let me know if you have any questions or concerns.

Thank you,

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:38 PM
To: Rose Fasheh
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Standard TAT is fine, thanks Rose

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 5:36 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

What TAT are you looking for on these? Standard is a 5-day yielding results by COB Monday 4/3.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

From: Derrick Willis [<mailto:derrick.willis@ngem.com>]
Sent: Friday, March 24, 2017 5:11 PM
To: Rose Fasheh
Cc: Frank Hagar
Subject: RE: Final Report for Brea Olinda Oil Field (T170707)

Hi Rose,
Please run the analyses for the samples shaded in green. Please let me know if you have any questions.
Thanks
Derrick



Derrick S. Willis
Principal

Northgate Environmental Management, Inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653
phone (949) 716-0050 ext. 101; cell (949) 375-7004; fax (949) 315-3365
<http://www.ngem.com>

CONFIDENTIALITY NOTICE:

This e-mail and its attachments from Northgate Environmental Management, Inc. contain information that is confidential and/or privileged and is intended for the sole use of the individual or entity named above. Any disclosure, copying, distribution, dissemination, or use of this information by any other person than the intended recipient is prohibited. If you have received this e-mail in error, please notify the sender via e-mail or by calling us at 510-839-0688.

From: Rose Fasheh [<mailto:Rose@sunstarlabs.com>]
Sent: Friday, March 24, 2017 2:45 PM
To: 'Derrick Willis'
Cc: 'Frank Hagar'
Subject: Final Report for Brea Olinda Oil Field (T170707)

Hello Derrick and Frank,

Please see the attached final report for the following:

Project: Brea Olinda Oil Field
Project Number: 02077.01

Thank you for choosing SunStar Labs.

Rose Fasheh
Project Manager



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

	Date	Time	PID	Depth	EPH (EPA8015M)	Chlorinated					OP		
						8260 +GRO	SVOC (EPA8270)	CAM 17 (EPA6010)	Uranium	PCB (EPA8082)	Pesticides (EPA8081)	Pesticides (EPA8141)	Herbicides (EPA8151)
S20-T1	3/20/2017	8:00	13.3	5	A	1	1	1	1	1	x	x	x
	3/20/2017	9:15	0.0	10	A	x	H	H	H	H	x	x	x
	3/20/2017	9:25	0.0	15	A	x	H	H	H	H	x	x	x
S20-T2	3/20/2017	10:09	0.6	5	A	1	1	1	H	1	x	x	x
	3/20/2017	10:19	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	10:32	1.2	15	A	x	H	H	H	H	x	x	x
BOTF-T2	3/20/2017	11:50	18.2	5	A	1	1	1	H	1	x	x	x
	3/20/2017	12:00	0.4	10	A	x	H	H	H	H	x	x	x
	3/20/2017	12:08	0.1	15	A	x	H	H	H	H	x	x	x
BOTF-T1	3/20/2017	13:15	0.6	5	A	H	H	H	H	H	x	x	x
	3/20/2017	13:30	0.1	10	A	x	H	H	H	H	x	x	x
	3/20/2017	13:45	0.1	15	A	x	H	H	H	H	x	x	x
H2-T1	3/20/2017	13:45	0.2	5	A	H	H	H	H	H	x	x	x
	3/20/2017	14:15	0.2	10	A	x	H	H	H	H	x	x	x
	3/20/2017	14:35	0.1	15	A	x	H	H	H	H	x	x	x
DU-T1	3/21/2017	7:44	10.4	5	A	1	H	H	H	H	x	x	x
	3/21/2017	7:54	5.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	8:00	0.3	15	A	x	H	H	H	H	x	x	x
VRS-T2	3/21/2017	8:40	18.3	5	A	1	1	1	H	1	x	x	x
	3/21/2017	8:50	15.2	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:00	23.4	15	A	x	H	H	H	H	x	x	x
VRS-T1	3/21/2017	9:35	12.2	5	A	1	H	1	H	1	x	x	x
	3/21/2017	9:45	2.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	9:55	2.0	15	A	x	H	H	H	H	x	x	x
S8-T1	3/21/2017	10:20	29.7	5	A	1	1	1	1	1	x	x	x
	3/21/2017	10:34	142.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	10:48	121.0	15	A	x	H	H	H	H	x	x	x
S5-T1	3/21/2017	11:20	18.0	5	A	1	1	1	1	1	x	x	x
	3/21/2017	11:32	97.0	10	A	x	H	H	H	H	x	x	x
	3/21/2017	11:42	89.0	15	A	x	H	H	H	H	x	x	x
104-T1	3/21/2017	12:10	0.1	5	A	1	1	1	1	1	x	x	x
	3/21/2017	12:18	0.3	10	A	x	H	H	H	H	x	x	x
	3/21/2017	12:25	0.1	15	A	x	H	H	H	H	x	x	x
DR-HA1	3/21/2017	7:35	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	7:43	NA	5	A	x	H	H	H	H	H	H	H
DR-HA2	3/21/2017	8:02	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:15	NA	5	A	x	H	H	H	H	H	H	H
DR-HA3	3/21/2017	8:25	NA	1	A	1	1	1	1	1	1	1	1
	3/21/2017	8:46	NA	5	A	x	H	H	H	H	H	H	H
DR-HA4	3/21/2017	9:11	NA	1	A	1	1	1	1	1	1	1	H
	3/21/2017	9:41	NA	5	A	x	H	H	H	H	H	H	H

13 11 12 8 12 4 4 3

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Brian Charon Date Received: 03/21/17 07:16
 Logged In By: Brian Charon Date Logged In: 03/21/17 07:32

Samples Received at: **5.1°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170697-01 S20-T1-5 [Soil] Sampled 03/20/17 08:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 08:00	
T170697-02 S20-T1-10 [Soil] Sampled 03/20/17 09:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:15	
T170697-03 S20-T1-15 [Soil] Sampled 03/20/17 09:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:25	
T170697-04 S20-T2-5 [Soil] Sampled 03/20/17 10:09 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:09	
T170697-05 S20-T2-10 [Soil] Sampled 03/20/17 10:19 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:19	
T170697-06 S20-T2-15 [Soil] Sampled 03/20/17 10:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:32	
T170697-07 BOTF-T2-5 [Soil] Sampled 03/20/17 11:50 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 11:50	

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170697-08 BOTF-T2-10 [Soil] Sampled 03/20/17 12:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:00	
T170697-09 BOTF-T2-15 [Soil] Sampled 03/20/17 12:08 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:08	
T170697-10 BOTF-T1-5 [Soil] Sampled 03/20/17 13:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:15	
T170697-11 BOTF-T1-10 [Soil] Sampled 03/20/17 13:30 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:30	
T170697-12 BOTF-T1-15 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	
T170697-13 H2-T1-5 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	
T170697-14 H2-T1-10 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	
T170697-15 H2-T1-15 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/24/17 17:00 (3 day TAT)
 Received By: Joey Himes Date Received: 03/20/17 17:10
 Logged In By: Brian Charon Date Logged In: 03/21/17 07:32

Samples Received at: **5.1°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170697-01 S20-T1-5 [Soil] Sampled 03/20/17 08:00 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
6010 Title 22	04/03/17 15:00	5	09/16/17 08:00	
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 08:00	
8015 m 5035-GRO	04/03/17 15:00	5	04/03/17 08:00	
8082 PCB	04/03/17 15:00	5	04/03/17 08:00	
8260 5035	04/03/17 15:00	5	04/03/17 08:00	
8270C	04/03/17 15:00	5	04/03/17 08:00	
T170697-02 S20-T1-10 [Soil] Sampled 03/20/17 09:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:15	
T170697-03 S20-T1-15 [Soil] Sampled 03/20/17 09:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 09:25	
T170697-04 S20-T2-5 [Soil] Sampled 03/20/17 10:09 (GMT-08:00) Pacific Time (US &				8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
6010 Title 22	04/03/17 15:00	5	09/16/17 10:09	
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:09	
8015 m 5035-GRO	04/03/17 15:00	5	04/03/17 10:09	
8082 PCB	04/03/17 15:00	5	04/03/17 10:09	
8260 5035	04/03/17 15:00	5	04/03/17 10:09	
8270C	04/03/17 15:00	5	04/03/17 10:09	

WORK ORDER

T170697

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170697-05 S20-T2-10 [Soil] Sampled 03/20/17 10:19 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:19	
T170697-06 S20-T2-15 [Soil] Sampled 03/20/17 10:32 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 10:32	
T170697-07 BOTF-T2-5 [Soil] Sampled 03/20/17 11:50 (GMT-08:00) Pacific Time (US &				
6010 Title 22	04/03/17 15:00	5	09/16/17 11:50	8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 11:50	
8015 m 5035-GRO	04/03/17 15:00	5	04/03/17 11:50	
8082 PCB	04/03/17 15:00	5	04/03/17 11:50	
8260 5035	04/03/17 15:00	5	04/03/17 11:50	
8270C	04/03/17 15:00	5	04/03/17 11:50	
T170697-08 BOTF-T2-10 [Soil] Sampled 03/20/17 12:00 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:00	
T170697-09 BOTF-T2-15 [Soil] Sampled 03/20/17 12:08 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 12:08	
T170697-10 BOTF-T1-5 [Soil] Sampled 03/20/17 13:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:15	
T170697-11 BOTF-T1-10 [Soil] Sampled 03/20/17 13:30 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:30	
T170697-12 BOTF-T1-15 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	
T170697-13 H2-T1-5 [Soil] Sampled 03/20/17 13:45 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 13:45	

WORK ORDER

T170697

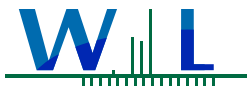
Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170697-14 H2-T1-10 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	
T170697-15 H2-T1-15 [Soil] Sampled 03/20/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/24/17 15:00	3	04/03/17 14:15	

Weck Labs

T170697-01 S20-T1-5 [Soil] Sampled 03/20/17 08:00 (GMT-08:00) Pacific Time (US &				
8260, GRO, 8270, metals, and 8082 added per client request (Derrick, 3/24)				
Misc. Subcontract (see notes)	04/03/17 15:00	5	09/16/17 08:00	EPA 200.8 Uranium

Analysis groups included in this work order	
<i>6010 Title 22</i>	
subgroup 6010B T22	7470/71 Hg



WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 7C27032

Report Date: 4/03/2017

Project: T170697

Received Date: 3/27/2017

Turnaround Time: 5 workdays

Phones: (949) 297-5020

Fax: (949) 297-5027

Attn: Rose Fasheh

P.O. #:

Client: SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630

Billing Code:

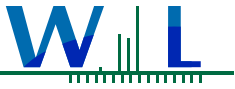
Dear Rose Fasheh,

Enclosed are the results of analyses for samples received 3/27/17 with the Chain-of-Custody document. The samples were received in good condition, at 3.5 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: T170697-01 Sampled: 03/20/17 8:00 by Client
7C27032-01 (Solid)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 6020A	Batch ID: W7C1566	Instr: ICPMS02	Prepared: 03/28/17 12:39		Analyst: mtt	
Uranium, Total	0.53	0.50	mg/kg	1	04/03/17 11:34	



WECK LABORATORIES, INC.

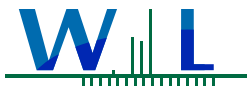
Certificate of Analysis

FINAL REPORT

Quality Control Results

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W7C1566 - EPA 3050M-SCL										
Blank (W7C1566-BLK1)										
				Prepared: 03/28/17 Analyzed: 04/03/17						
Uranium, Total	ND	0.50	mg/kg							
LCS (W7C1566-BS1)										
				Prepared: 03/28/17 Analyzed: 04/03/17						
Uranium, Total	47.3	0.50	mg/kg	50.0		95	80-120			
Matrix Spike (W7C1566-MS1)										
				Source: 7C27032-01			Prepared: 03/28/17 Analyzed: 04/03/17			
Uranium, Total	44.6	0.50	mg/kg	48.8	0.529	90	75-125			
Matrix Spike Dup (W7C1566-MSD1)										
				Source: 7C27032-01			Prepared: 03/28/17 Analyzed: 04/03/17			
Uranium, Total	46.1	0.50	mg/kg	48.1	0.529	95	75-125	3	20	



WECK LABORATORIES, INC.

Notes and Definitions

Item	Definition
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

Reviewed by:

Kim G. Tu
Project Manager



ELAP-CA #1132 • EPA-UCMR #CA00211 • LACSD #10143 • NJ-DEP #CA015 • NV-DEP #NAC 445A

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.



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

30 March 2017

Derrick Willis
Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills, CA 92653
RE: Brea Olinda Oil Field

Enclosed are the results of analyses for samples received by the laboratory on 03/23/17 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager



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

Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BOTF-B1-5	T170734-01	Soil	03/23/17 07:50	03/23/17 16:00
BOTF-B1-10	T170734-02	Soil	03/23/17 07:57	03/23/17 16:00
BOTF-B1-15	T170734-03	Soil	03/23/17 08:00	03/23/17 16:00
BOTF-B1-20	T170734-04	Soil	03/23/17 08:07	03/23/17 16:00
BOTF-B1-25	T170734-05	Soil	03/23/17 08:13	03/23/17 16:00
BOTF-B1-30	T170734-06	Soil	03/23/17 08:25	03/23/17 16:00
BOTF-B1-35	T170734-07	Soil	03/23/17 08:44	03/23/17 16:00
BOTF-B1-40	T170734-08	Soil	03/23/17 08:40	03/23/17 16:00
BOTF-B1-45	T170734-09	Soil	03/23/17 08:53	03/23/17 16:00
BOTF-B1-50	T170734-10	Soil	03/23/17 09:03	03/23/17 16:00
BOTF-B1-55	T170734-11	Soil	03/23/17 09:12	03/23/17 16:00
BOTF-B1-60	T170734-12	Soil	03/23/17 09:16	03/23/17 16:00
VRS-B1-20	T170734-13	Soil	03/23/17 12:35	03/23/17 16:00
VRS-B1-25	T170734-14	Soil	03/23/17 12:41	03/23/17 16:00
VRS-B1-30	T170734-15	Soil	03/23/17 12:46	03/23/17 16:00
VRS-B1-35	T170734-16	Soil	03/23/17 12:23	03/23/17 16:00
VRS-B1-40	T170734-17	Soil	03/23/17 13:07	03/23/17 16:00
VRS-B1-45	T170734-18	Soil	03/23/17 13:17	03/23/17 16:00
VRS-B1-50	T170734-19	Soil	03/23/17 13:27	03/23/17 16:00
VRS-B1-55	T170734-20	Soil	03/23/17 13:35	03/23/17 16:00
VRS-B1-60	T170734-21	Soil	03/23/17 13:38	03/23/17 16:00
S8-T1-1	T170734-22	Soil	03/23/17 14:15	03/23/17 16:00

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.

Rose Fasheh, Project Manager

I-628



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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DETECTIONS SUMMARY

Sample ID: BOTF-B1-5 **Laboratory ID:** T170734-01

No Results Detected

Sample ID: BOTF-B1-10 **Laboratory ID:** T170734-02

No Results Detected

Sample ID: BOTF-B1-15 **Laboratory ID:** T170734-03

No Results Detected

Sample ID: BOTF-B1-20 **Laboratory ID:** T170734-04

No Results Detected

Sample ID: BOTF-B1-25 **Laboratory ID:** T170734-05

No Results Detected

Sample ID: BOTF-B1-30 **Laboratory ID:** T170734-06

No Results Detected

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Rose Fasheh, Project Manager



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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/30/17 08:49

Sample ID: VRS-B1-25

Laboratory ID: T170734-14

No Results Detected

Sample ID: VRS-B1-30

Laboratory ID: T170734-15

No Results Detected

Sample ID: VRS-B1-35

Laboratory ID: T170734-16

No Results Detected

Sample ID: VRS-B1-40

Laboratory ID: T170734-17

No Results Detected

Sample ID: VRS-B1-45

Laboratory ID: T170734-18

No Results Detected

Sample ID: VRS-B1-50

Laboratory ID: T170734-19

No Results Detected

Sample ID: VRS-B1-55

Laboratory ID: T170734-20

No Results Detected

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Rose Fasheh, Project Manager

I-631



25712 Commercentre Drive
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Sample ID: VRS-B1-60

Laboratory ID: T170734-21

No Results Detected

Sample ID: S8-T1-1

Laboratory ID: T170734-22

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	66	10		mg/kg	EPA 8015B	

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Rose Fasheh, Project Manager

I-632



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BOTF-B1-5
T170734-01 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %		65-135	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-633



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BOTF-B1-10
T170734-02 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		133 %		65-135	"	"	"	"	

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BOTF-B1-15
T170734-03 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %		65-135	"	"	"	"	

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BOTF-B1-20
T170734-04 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		126 %		65-135	"	"	"	"	

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BOTF-B1-25
T170734-05 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		124 %		65-135	"	"	"	"	

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BOTF-B1-30
T170734-06 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		144 %		65-135	"	"	"	"	S-Hil

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BOTF-B1-35
T170734-07 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		142 %		65-135	"	"	"	"	<i>S-Hil</i>

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BOTF-B1-40
T170734-08 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		141 %		65-135	"	"	"	"	<i>S-Hil</i>

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BOTF-B1-45
T170734-09 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	33	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		146 %		65-135	"	"	"	"	<i>S-Hil</i>

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BOTF-B1-50
T170734-10 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		133 %		65-135	"	"	"	"	

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I-642



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BOTF-B1-55
T170734-11 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		153 %		65-135	"	"	"	"	S-Hil

SunStar Laboratories, Inc.

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I-643



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BOTF-B1-60
T170734-12 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		141 %		65-135	"	"	"	"	<i>S-Hil</i>

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VRS-B1-20
T170734-13 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		145 %	65-135		"	"	"	"	S-Hil

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I-645



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VRS-B1-25
T170734-14 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		125 %		65-135	"	"	"	"	

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I-646



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VRS-B1-30
T170734-15 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		150 %		65-135	"	"	"	"	S-Hil

SunStar Laboratories, Inc.

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VRS-B1-35
T170734-16 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		136 %		65-135	"	"	"	"	S-Hil

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Rose Fasheh, Project Manager

I-648



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VRS-B1-40
T170734-17 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		146 %		65-135	"	"	"	"	<i>S-Hil</i>

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VRS-B1-45
T170734-18 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		150 %		65-135	"	"	"	"	S-Hil

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I-650



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VRS-B1-50
T170734-19 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		167 %		65-135	"	"	"	"	S-Hil

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.

Rose Fasheh, Project Manager

I-651



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
--	---	------------------------------------

VRS-B1-55
T170734-20 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032421	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		121 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-652



25712 Commercentre Drive
 Lake Forest, California 92630
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Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
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VRS-B1-60
T170734-21 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032412	03/24/17	03/24/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		85.8 %		65-135	"	"	"	"	

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.

Rose Fasheh, Project Manager

I-653



25712 Commercentre Drive
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

S8-T1-1
T170734-22 (Soil)

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

Extractable Petroleum Hydrocarbons by 8015B

C6-C12 (GRO)	ND	10	mg/kg	1	7032412	03/24/17	03/25/17	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	66	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		61.0 %	65-135		"	"	"	"	S-03

Organochlorine Pesticides by EPA Method 8081A

alpha-BHC	ND	5.0	ug/kg	1	7032419	03/24/17	03/27/17	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		67.4 %	35-140		"	"	"	"	
<i>Surrogate: Decachlorobiphenyl</i>		52.3 %	35-140		"	"	"	"	

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.

Rose Fasheh, Project Manager

I-654



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

Northgate Environmental Management -- Laguna Hills 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Brea Olinda Oil Field Project Number: 02077.01 Project Manager: Derrick Willis	Reported: 03/30/17 08:49
--	---	-----------------------------

S8-T1-1
T170734-22 (Soil)

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

Chlorinated Herbicides by EPA Method 8151A

2,4,5-T	ND	5.00	ug/kg	1	7032425	03/24/17	03/28/17	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		37.1 %	35-150		"	"	"	"	

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.

Rose Fasheh, Project Manager

I-655



25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Extractable Petroleum Hydrocarbons by 8015B - 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 7032412 - EPA 3550B GC

Blank (7032412-BLK1)

Prepared & Analyzed: 03/24/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: <i>p</i> -Terphenyl	85.8		"	99.0		86.7	65-135			

LCS (7032412-BS1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	540	10	mg/kg	495		109	75-125			
Surrogate: <i>p</i> -Terphenyl	104		"	99.0		105	65-135			

LCS Dup (7032412-BSD1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	580	10	mg/kg	510		113	75-125	6.30	20	
Surrogate: <i>p</i> -Terphenyl	107		"	102		105	65-135			

Batch 7032421 - EPA 3550B GC

Blank (7032421-BLK1)

Prepared & Analyzed: 03/24/17

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: <i>p</i> -Terphenyl	133		"	99.0		135	65-135			

LCS (7032421-BS1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	560	10	mg/kg	500		113	75-125			
Surrogate: <i>p</i> -Terphenyl	162		"	100		162	65-135			S-Hil

LCS Dup (7032421-BSD1)

Prepared: 03/24/17 Analyzed: 03/25/17

C13-C28 (DRO)	530	10	mg/kg	490		108	75-125	6.49	20	
Surrogate: <i>p</i> -Terphenyl	131		"	98.0		134	65-135			

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-656



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 Lake Forest, California 92630
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Organochlorine Pesticides by EPA Method 8081A - 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 7032419 - EPA 3550 ECD/GCMS

Blank (7032419-BLK1)

Prepared: 03/24/17 Analyzed: 03/27/17

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Surrogate: Tetrachloro-meta-xylene	7.29		"	10.0		72.9	35-140			
Surrogate: Decachlorobiphenyl	8.36		"	10.0		83.6	35-140			

LCS (7032419-BS1)

Prepared: 03/24/17 Analyzed: 03/27/17

gamma-BHC (Lindane)	32.3	5.0	ug/kg	40.4		79.8	40-120			
Heptachlor	31.5	5.0	"	40.4		77.9	40-120			
Aldrin	26.7	5.0	"	40.4		66.1	40-120			
Dieldrin	34.5	5.0	"	40.4		85.3	40-120			
Endrin	36.0	5.0	"	40.4		89.1	40-120			
4,4'-DDT	41.6	5.0	"	40.4		103	33-147			
Surrogate: Tetrachloro-meta-xylene	7.96		"	10.1		78.8	35-140			
Surrogate: Decachlorobiphenyl	9.03		"	10.1		89.4	35-140			

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.

Rose Fasheh, Project Manager

I-657



25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Organochlorine Pesticides by EPA Method 8081A - 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 7032419 - EPA 3550 ECD/GCMS

LCS Dup (7032419-BSD1)

Prepared: 03/24/17 Analyzed: 03/27/17

gamma-BHC (Lindane)	35.7	5.0	ug/kg	40.4		88.3	40-120	10.1	30	
Heptachlor	35.3	5.0	"	40.4		87.2	40-120	11.4	30	
Aldrin	28.5	5.0	"	40.4		70.6	40-120	6.58	30	
Dieldrin	38.5	5.0	"	40.4		95.3	40-120	11.1	30	
Endrin	40.3	5.0	"	40.4		99.8	40-120	11.3	30	
4,4'-DDT	47.0	5.0	"	40.4		116	33-147	12.1	30	
Surrogate: Tetrachloro-meta-xylene	8.67		"	10.1		85.8	35-140			
Surrogate: Decachlorobiphenyl	9.84		"	10.1		97.4	35-140			

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.

Rose Fasheh, Project Manager

I-658



25712 Commercentre Drive
 Lake Forest, California 92630
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Northgate Environmental Management -- Laguna Hills
 24411 Ridge Route Drive, Suite 130
 Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
 Project Number: 02077.01
 Project Manager: Derrick Willis

Reported:
 03/30/17 08:49

Chlorinated Herbicides by EPA Method 8151A - 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 7032425 - 8151 Prep

Blank (7032425-BLK1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	ND	5.00	ug/kg							
2,4,5-TP (Silvex)	ND	5.00	"							
2,4-D	ND	5.00	"							
2,4-DB	ND	5.00	"							
3,5-Dichlorobenzoic acid	ND	5.00	"							
4-Nitrophenol	ND	5.00	"							
Acifluorfen	ND	5.00	"							
Bentazon	ND	5.00	"							
Chloramben	ND	5.00	"							
Dalapon	ND	30.0	"							
DCPA diacid	ND	5.00	"							
Dicamba	ND	5.00	"							
Dichloroprop	ND	5.00	"							
Dinoseb	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Picloram	ND	5.00	"							
Surrogate: 2,4-DCAA	212		"	392		54.1	35-150			

LCS (7032425-BS1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	101	5.00	ug/kg	97.3		104	20-150			
2,4,5-TP (Silvex)	114	5.00	"	97.5		117	20-150			
2,4-D	112	5.00	"	97.5		115	20-150			
Surrogate: 2,4-DCAA	228		"	390		58.4	35-150			

LCS Dup (7032425-BSD1)

Prepared: 03/24/17 Analyzed: 03/28/17

2,4,5-T	87.4	5.00	ug/kg	99.8		87.6	20-150	14.2	30	
2,4,5-TP (Silvex)	99.9	5.00	"	100		99.9	20-150	12.8	30	
2,4-D	98.1	5.00	"	100		98.1	20-150	12.9	30	
Surrogate: 2,4-DCAA	195		"	400		48.7	35-150			

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-659



25712 Commercentre Drive
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949.297.5020 Phone
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Northgate Environmental Management -- Laguna Hills
24411 Ridge Route Drive, Suite 130
Laguna Hills CA, 92653

Project: Brea Olinda Oil Field
Project Number: 02077.01
Project Manager: Derrick Willis

Reported:
03/30/17 08:49

Notes and Definitions

- S-Hi1 Surrogate recovery was high in QC and corresponding samples. Sample results were non-detect. Data was not negatively effected.
- S-03 The surrogate recovery was below acceptance criteria in the sample because of a possible matrix effect. The surrogate recovery was within acceptance criteria in the method blank and LCS.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

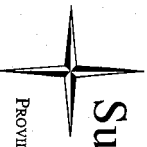
SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

I-660

Page 33 of 33



SunStar Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

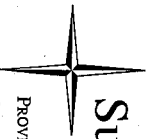
Client: Northgate Environmental Mgmt Inc
Address: 24411 Ridgecreek Pkwy - Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: DEWARICK WILLIS

Date: 3/23/17 Page: 1 Of 2
Project Name: Irona-Olinda
Collector: Frank Heeger Client Project #: 02037.01
Batch #: T70734 EDF #: _____

Sample ID	Date		Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	PCB EPA 8082	Laboratory ID #	Comments/Preservative	Total # of containers
	Sampled	Time																
BOFE-B1-5	3/23/17	0750	Soil	Ring														
BOFE-B1-10	3/23/17	0757	Soil	Ring+VDA H														
BOFE-B1-15	3/23/17	0800	Soil	Ring														
BOFE-B1-20	3/23/17	0807	Soil	Ring+VDA H														
BOFE-B1-25	3/23/17	0813	Soil	Ring														
BOFE-B1-30	3/23/17	0825	Soil	Ring+VDA H														
BOFE-B1-35	3/23/17	0834	Soil	Ring														
BOFE-B1-40	3/23/17	0840	Soil	Ring+VDA H														
BOFE-B1-45	3/23/17	0853	Soil	Ring														
BOFE-B1-50	3/23/17	0903	Soil	Ring+VDA H														
BOFE-B1-55	3/23/17	0912	Soil	Ring														
BOFE-B1-60	3/23/17	0914	Soil	Ring+VDA H														
VRS-B1-20	3/23/17	1235	Soil	Ring+VDA H														
VRS-B1-25	3/23/17	1241	Soil	Ring														
VRS-B1-30	3/23/17	1244	Soil	Ring+VDA H														
Relinquished by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Received by: (signature) <u>[Signature]</u>			Date / Time <u>3/23/17 1600</u>			Total # of containers			Notes <u>Frank Heeger</u> <u>949-689-9987</u>			
Relinquished by: (signature)			Date / Time			Received by: (signature)			Date / Time			Chain of Custody seals Y/N/NA			Seals intact? Y/N/NA			
Relinquished by: (signature)			Date / Time			Received by: (signature)			Date / Time			Received good condition/cold			Turn around time: <u>STD</u>			

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

COC 162581



SunStar
Laboratories, Inc.

Chain of Custody Record

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Northgate Environmental Mgmt Inc
Address: 24411 Ridge Route Dr Suite 130
Phone: 949-716-0050 Fax: 949-716-0055
Project Manager: Derrick Willis

Date: 3/23/17 Page: 2 of 2
Project Name: Brea - Olinda
Collector: Frank Heger Client Project #: 02077.01
Batch #: T170734 EDF #: _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 + GRO	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	8082 PCB	8081 Chlor PEST	8091 OP PEST	PEST HERBICIDES	Laboratory ID #	Comments/Preservative	Total # of containers
VRS-B1-35	3/23/17	1253	Soil	Rinc				H				A	H		16						
VRS-B1-40	3/23/17	1307	Soil	Rinc + VDA H				H				A	H		17						
VRS-B1-45	3/23/17	1317	Soil	Rinc				H				A	H		18						
VRS-B1-50	3/23/17	1327	Soil	Rinc + VDA H				H				A	H		19						
VRS-B1-55	3/23/17	1335	Soil	Rinc				H				A	H		20						
VRS-B1-60	3/23/17	1338	Soil	Rinc + VDA H				H				A	H		21						
SR-T1-1	3/23/17	1415	Soil	4oz Glass				H				A	H		22						
<p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p> <p>Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____</p>																					
<p>Chain of Custody seals Y/N/N/A Seals intact? Y/N/N/A Received good condition/cold</p>															<p>Total # of containers</p>		<p>Notes</p> <p>Frank Heger 949-689-9987</p>				

Sample disposal instructions: Disposal @ \$2.00 each _____ Return to client _____ Pickup _____

Turn around time: STD

COC 162582



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T170734

Client Name: Northgate - Laguna Hills Project: Brea olinda

Delivered by: Client SunStar Courier GSO FedEx Other

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

Lab Received by: Brian Date/Time Lab Received: 3-23-17 1620

Total number of coolers received: 0

Temperature:	Cooler #1	5.1	°C +/- the CF (- 0.2°C) =	4.9	°C corrected temperature
Temperature:	Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature:	Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers) Within criteria? Yes No

If NO:

Samples received on ice? Yes No → **Complete Non-Conformance Sheet**

If on ice, samples received same day collected? Yes → Acceptable No → **Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample Yes No* N/A

Sample containers intact Yes No*

Sample labels match Chain of Custody IDs Yes No*

Total number of containers received match COC Yes No*

Proper containers received for analyses requested on COC Yes No*

Proper preservative indicated on COC/containers for analyses requested Yes No* N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times Yes No*

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: DM 3-23-17

Comments: _____

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager: Rose Fasheh**
Project: Brea Olinda Oil Field **Project Number: 02077.01**

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)
 Received By: Brian Charon Date Received: 03/23/17 16:00
 Logged In By: Dan Marteski Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8141 OP Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna **Project Manager:** Rose Fasheh
Project: Brea Olinda Oil Field **Project Number:** 02077.01

Report To:

Northgate Environmental Management -- Laguna Hills
 Derrick Willis
 24411 Ridge Route Drive, Suite 130
 Laguna Hills, CA 92653

Date Due: 03/30/17 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 03/23/17 16:00

Logged In By: Dan Marteski

Date Logged In: 03/24/17 09:19

Samples Received at: **4.9°C**
 Custody Seals No Received On Ice Yes
 Containers Intact Yes
 COC/Labels Agree Yes
 Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T170734-01 BOTF-B1-5 [Soil] Sampled 03/23/17 07:50 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:50	
T170734-02 BOTF-B1-10 [Soil] Sampled 03/23/17 07:57 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 07:57	
T170734-03 BOTF-B1-15 [Soil] Sampled 03/23/17 08:00 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:00	
T170734-04 BOTF-B1-20 [Soil] Sampled 03/23/17 08:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:07	
T170734-05 BOTF-B1-25 [Soil] Sampled 03/23/17 08:13 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:13	
T170734-06 BOTF-B1-30 [Soil] Sampled 03/23/17 08:25 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:25	
T170734-07 BOTF-B1-35 [Soil] Sampled 03/23/17 08:44 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:44	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-08 BOTF-B1-40 [Soil] Sampled 03/23/17 08:40 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:40	
T170734-09 BOTF-B1-45 [Soil] Sampled 03/23/17 08:53 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 08:53	
T170734-10 BOTF-B1-50 [Soil] Sampled 03/23/17 09:03 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:03	
T170734-11 BOTF-B1-55 [Soil] Sampled 03/23/17 09:12 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:12	
T170734-12 BOTF-B1-60 [Soil] Sampled 03/23/17 09:16 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 09:16	
T170734-13 VRS-B1-20 [Soil] Sampled 03/23/17 12:35 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:35	
T170734-14 VRS-B1-25 [Soil] Sampled 03/23/17 12:41 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:41	
T170734-15 VRS-B1-30 [Soil] Sampled 03/23/17 12:46 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:46	
T170734-16 VRS-B1-35 [Soil] Sampled 03/23/17 12:23 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 12:23	
T170734-17 VRS-B1-40 [Soil] Sampled 03/23/17 13:07 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:07	
T170734-18 VRS-B1-45 [Soil] Sampled 03/23/17 13:17 (GMT-08:00) Pacific Time (US & 8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:17	

WORK ORDER

T170734

Client: Northgate Environmental Management -- Laguna	Project Manager: Rose Fasheh
Project: Brea Olinda Oil Field	Project Number: 02077.01

Analysis	Due	TAT	Expires	Comments
T170734-19 VRS-B1-50 [Soil] Sampled 03/23/17 13:27 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:27	
T170734-20 VRS-B1-55 [Soil] Sampled 03/23/17 13:35 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:35	
T170734-21 VRS-B1-60 [Soil] Sampled 03/23/17 13:38 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 13:38	
T170734-22 S8-T1-1 [Soil] Sampled 03/23/17 14:15 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	03/30/17 15:00	5	04/06/17 14:15	
8081 Pesticides	03/30/17 15:00	5	04/06/17 14:15	
8151 Herbicides	03/30/17 15:00	5	04/06/17 14:15	