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CALICO SOLAR

Applicant's Supplement to the Calico Solar (formerly Solar One) Application for Certification

Application for Certification (08-AFC-13)

May 2010

Submitted to:
Bureau of Land Management
2601 Barstow Road
Barstow, CA 92311

Submitted to:
California Energy Commission
1516 9th Street, MS 15
Sacramento, CA 95814-5504

Submitted by:
SES Solar Three, LLC
SES Solar Six, LLC

Stirling Energy Systems
4800 N. Scottsdale Road, Suite 5500
Scottsdale, AZ 85251

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May 14, 2010

Mr. Christopher Meyer
CEC Project Manager
Attn: Docket No. 08-AFC-13
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Mr. Jim Stobaugh
BLM Project Manager
Attn: Docket No. 08-AFC-13
Bureau of Land Management
P.O. Box 12000
Reno, NV 89520

RE: Calico Solar (formerly Solar One) Project (08-AFC-13)
Applicant's Submittal of Supplement to the Calico Solar (formerly Solar One) Application for Certification

Dear Mr. Meyer and Mr. Stobaugh,

Tessera Solar hereby submits the Applicant's Supplement to the Calico Solar (formerly Solar One) Application for Certification. This Supplement provides a description and environmental assessment of Project updates, including modifications to the Project water supply, Project boundary, and hydrogen supply system. I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge.

Sincerely,

Felicia L. Bellows

Felicia L. Bellows
Vice President of Development

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AFC	Application for Certification
APN	Assessor's Parcel Number
Applicant	Calico Solar, LLC
BLM	Bureau of Land Management
BNSF	Burlington Northern Santa Fe
CalARP	California Accidental Release Prevention Program
CCR	California Code of Regulations
CEC	California Energy Commission
CNPS	California Native Plant Society
EPA	Environmental Protection Agency
HDPE	High Density Polyethylene
k-bottle	hydrogen gas cylinder
LORS	Laws, Ordinances, Regulations and Standards
m/s	meter per second
mJ	millijoule
MW	mega watts
N.A.P.	Not A Part
OCA	offsite consequence analysis
PCC	Portland Cement Concrete
PCUs	Power Conversion Units
Project	Calico Solar (formerly Solar One) Project
psi	pound per square inch
RMP	Risk Management Plan
RO	reverse osmosis
ROW	right-of-way
SA/DEIS	Staff Assessment and Draft Environmental Impact Statement
SCE	Stirling Cycle Engine
scf	standard cubic feet
scfh	standard cubic feet hydrogen per hour
U.S. DOE	United States Department of Energy
URS	URS Corporation
USFWS	United States Fish and Wildlife Service

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SECTION 1 SUPPLEMENTAL PROJECT DESCRIPTION

1.1 INTRODUCTION

Calico Solar, LLC (Applicant), formerly SES Solar Six, LLC and SES Solar Three, LLC filed an Application for Certification (AFC) with the California Energy Commission (CEC) and Bureau of Land Management (BLM) for its proposed Calico Solar (formerly Solar One) Project (Project) on December 1, 2008. The Application was deemed adequate on May 6, 2009. Since then, the Applicant has continued to work with agencies and the public to assess potential Project improvements.

This Supplement describes three items: a change to the primary water supply to onsite wells, modification of the Project boundary to reduce biological resource impacts, and an updated assessment of the hydrogen system.

Water Supply

The preferred primary Project water supply in the AFC was onsite wells drawing water from the Lavic Groundwater Basin. The AFC included an extensive discussion of the groundwater basin and the expected water characteristics and impacts as a result of using this source of water. Due to permitting difficulties, these wells were not able to be drilled and the Applicant sought other water sources, including reclaimed water. As described in a supplement to the AFC submitted in January 2010, the Applicant requested the Energy Commission to consider the Cadiz Burlington Northern Santa Fe (BNSF) well, located approximately 64 miles from the Calico Solar Site as the preferred source of water for the Project. It noted that the Applicant was drilling and evaluating test wells on private land within the Project area that:

> "The groundwater source could serve as an emergency back-up supply if required in the future, or to supply water to the Project, pending the results of test well development." Supplement to the AFC, page 1-3.

Although, the Cadiz BNSF well was the water supply analyzed in the joint CEC and BLM Staff Assessment and Draft Environmental Impact Statement (SA/DEIS) released in March 2010, the Applicant has continued to inform the Commission of its progress evaluating the adjacent water wells and state its intent, that if these wells proved to be adequate, they would be used as back-up or the preferred source of water for the Project. This supplement describes a change in the primary water supply to groundwater from a well located adjacent to the Project site (Figure 1-1) and provides an environmental assessment of the use of groundwater and transport of water from the well to the Project via an underground waterline. The reason for this change is both environmental and economic. Use of the wells eliminates the emissions associated with transporting water to the site, eliminates the need to unload the water at the rail siding, and uses water of a lower quality for plant operations. It is also more accessible and less expensive.

Project Boundary

This supplement also describes and provides an environmental assessment of a modification to the Project boundary (Figure 1-1). The boundary modification was requested by the fish and wildlife agencies as a means to reduce the biological resource impacts from the Project, particularly to desert tortoise and desert tortoise movement. It also results in the avoidance of several sensitive plant species and distances the Project further south from bighorn sheep habitat in the Cady Mountains. The modification moves the northern boundary south approximately 0.55 mile and eliminates approximately 1,100 acres of the Project site. As a result of changes in the layout of the SunCatchers, the Applicant was able to retain the 850 MW generating capacity required by the power purchase agreement.

Hydrogen System

Lastly, this supplement provides more detail on two alternate hydrogen supply systems: a centralized hydrogen system in which hydrogen is generated onsite and distributed to each SunCatcher via storage tanks and pipelines, and a distributed system in which hydrogen is stored at the SunCatchers in hydrogen gas cylinders (k-bottles). The Project analyzed in the SA/DEIS utilized a centralized hydrogen distribution system. The Applicant presents both systems as viable options for the Project; however, each system has evolved since the SA/DEIS was published due to lessons learned from the commercial Maricopa Solar project. This Supplement presents the environmental assessments of each potential hydrogen system.

1.2 WATER SUPPLY

1.2.1 Background

According to the original filing of the AFC in December 2009, potential water sources for the Project included reclaimed water, surface water, groundwater, and obtaining water from a service provider. Operational water use is only required for SunCatcher equipment washing, potable water, dust control water, and fire protection water. Construction water uses include dust control, road development and others described in Section 3.0 of the AFC. It described onsite ground water provided by production well(s) as the preferred Project water supply.

A supplement to the AFC, filed in January 2010, provided additional information on the reliability of the Calico Solar water supply from the Cadiz BNSF well. An in-depth evaluation of the various Calico Solar water supply options in terms of reliability, cost, and environmental impact was performed. After evaluating the currently available water supply options, Calico Solar concluded that the primary source of water for the Project would be furnished by the BNSF well within the Cadiz Valley Groundwater Basin. The Cadiz BNSF well was the primary water supply evaluated in the SA/DEIS published in March 2010.

In December 2010, the Applicant began drilling groundwater test wells on private lands immediately adjacent to the Project. The first two wells (Well #1 and Well #2) proved not to be adequate. Since January 2010, a well (Well #3) has been installed and tested on private land previously identified as Not A Part (N.A.P.) of the Project, adjacent to the Project site (Figure 1-1) on Assessor's Parcel Number 0529-281-34. Although previously identified as Not A Part (N.A.P.) of the Project, Tessera Solar has purchased and now owns the property. Appendix A provides proof of purchase documentation. Based on the favorable results of the evaluation of the well that demonstrate it can support water demands for the Calico Solar site during construction and the lifespan of its operations, and that pumping of the well at the prescribed rates will have no significant impact to water levels or water quality in the area, the Applicant submits Well #3 as the primary water supply for the Project.

1.2.2 Well #3 Water Supply Description

Well #3 was installed and tested on private land previously identified as N.A.P. of the Project, adjacent to the Project site (Figure 1-1) on Assessor's Parcel Number (APN) 0529-281-34. Tessera Solar owns the property. Evaluations were conducted to determine the well's suitability as a water supply for the Project.

An investigation of Well #3 evaluated the feasibility of the aquifer underlying the site to serve as a viable water supply for the Project and evaluate the potential effects of pumping on water quality and other potential users of groundwater in the basin. Results of the study will also be used to support the design of a proposed water treatment facility. Detailed results of the investigation of this well are provided in Appendix B.

1.2.2.1 Water Quality

Analysis of the water quality at Well #3 determined that the groundwater is not suitable for drinking without treatment. The water will be treated at an onsite facility prior to use. Aquifer testing indicated that it is likely that groundwater extraction for the Project will not adversely affect water quality during construction or operation.

1.2.2.2 Water Quantity

Pumping tests at Well #3 indicate that the aquifer penetrated by the well can support water demands for the Calico Solar site during construction and the lifespan of its operations, and pumping of the well at the prescribed rates will have no significant impact to water levels in the area.

1.2.2.3 Water Supply Transport

Water from the well would be transported from the well to the Main Services Complex via an underground waterline six inches in diameter, buried 34 inches below the surface. The waterline would cross APNs 0529-281-34 and 0529-281-23 (Figure 1-1) before entering the Project site. Tessera Solar currently owns and/or has an executed purchase agreement with each of these parcels, respectively (Appendix A). The construction right-of-way (ROW) for the waterline is 10 feet from the centerline. The total length of the waterline will be 0.51 mile, and 990 feet will traverse non-BLM land on the private parcels.

1.3 PROJECT BOUNDARY MODIFICATIONS

At the request of agency representatives and interested parties and to help lessen potential impacts to biological resources, the Applicant is proposing a modification to the current Project boundary as shown in Figure 1-1. The northern boundary has been moved south approximately 0.55 miles, allowing an approximate 0.65 mile corridor between the revised northern project boundary and the toe of slope of the Cady Mountains. The intent of the boundary modification is to reduce the environmental impacts associated with bighorn sheep and desert tortoise movement corridor and use of this area and to help avoid potential impacts to occurrences of two known sensitive plant species (three crucifixion thorn locations and four undescribed lupine species locations).

The Project boundary modification results in a reduction of the Project area from approximately 8,230 acres to approximately 7,130 acres. Other details of the Project layout remain the same as those evaluated in the SA/DEIS (Figure 1-1). It should be noted that the original project area of 8,230 acres was more than enough acreage to build the 850 mega watts (MW) project. Additional acreage was maintained to accommodate for the need to adjust or build around areas due to slope, flood areas or avoidance of sensitive resources, if necessary. The elimination of the 1,103 acres will not change the number of SunCatchers, spacing between SunCatchers or location of major project facilities (e.g., Main Services Complex, staging area (other than slight lessening of roads and fencing).

1.4 HYDROGEN SYSTEM MODIFICATIONS

1.4.1 Background

The Applicant described the hydrogen use, supply and storage in the AFC, filed in December 2008. In the original design, it was proposed that hydrogen would be supplied to the SunCatchers through a distributed system. Each of the Stirling Cycle Engine (SCE), within the SunCatcher unit, would contain 14 cubic feet of hydrogen gas, and each SunCatcher unit would be equipped with a 196-standard cubic feet (scf) k-bottle to replenish hydrogen gas lost within the gas circuit. K-bottles would be provided by a commercial hydrogen supplier. Section 4, Alternatives in the AFC described an alternative centralized hydrogen system.

The Applicant responded to CEC and BLM Data Requests 57-60 in July 2009, updating the hydrogen system to include a centralized hydrogen gas supply, storage and distribution system. The system included onsite generation of hydrogen through electrolysis and the storage of that hydrogen in a 36,400 scf steel storage tank. From the storage tank, the hydrogen would be piped to 95 individual compressor groups that include a compressor, a high pressure supply tank and a low pressure dump tank used to recover hydrogen from non operational Power Conversion Units (PCUs) through a return line. This centralized hydrogen distribution system was the system analyzed in the SA/DEIS.

At this time, the Applicant is evaluating the relative economic and efficiency advantages between the centralized hydrogen distribution system and a distributed system that utilizes k-bottles on the PCUs of all SunCatchers. This supplement describes both systems and provides an environmental assessment of each. The details of both the centralized hydrogen system and the distributed system have evolved over time, and this supplement to the AFC presents modifications to each system.

1.4.2 Centralized Hydrogen System

If a centralized hydrogen system is used at the Calico Solar site, the hydrogen gas will be produced through electrolysis by two redundant hydrogen generators. Each proposed hydrogen generator will be capable of producing 1,820 standard cubic feet hydrogen per hour (scfh). Although the hydrogen generators could run full time if needed to supply sufficient amount of hydrogen to the SunCatchers, the generators will be operated at off-peak electric hours using grid power and generated hydrogen will be stored onsite. Hydrogen gas produced by the onsite generators will be stored in a steel storage tank. The hydrogen tank, at approximately nine feet in diameter by 30 feet long, will be capable of storing approximately two-day supply of hydrogen (i.e., approximately 36,400 scf).

The hydrogen storage tank will distribute hydrogen to 95 individual compressor groups. Each compressor group will be electrically operated and will consist of a compressor and a high pressure supply tank with a 29,333 scf capacity, delivering gas at approximately 2,760 pound per square inch (psi). Each compressor group will also be equipped with a low pressure dump tank with the same 9,900 scf capacity and used to recover hydrogen from non-operational PCUs through a ¼” and ½” stainless steel return line. In this option there are no other holding tanks or storage tanks in the compressor groups. Delivery of hydrogen is through pipelines.

The details of the centralized hydrogen system have been refined as a result of experience from the Applicant’s Maricopa Solar Project and as a result of design having progressed to final engineering. To maximize efficiency, the amount of hydrogen stored for each SunCatcher would be increased from 3.4 to 11 scf which would accommodate two full charges of the PCU. In order to support this increased hydrogen storage at each SunCatcher, the high pressure supply tanks and low pressure dump tanks at each compressor group would accommodate 29,333 scf and 9,900 scf, respectively. In the July 2009 responses CEC and BLM Data Requests 57-60, each high pressure supply tank was anticipated to be 648 scf and each low pressure dump tank was also reported to be 648 scf.

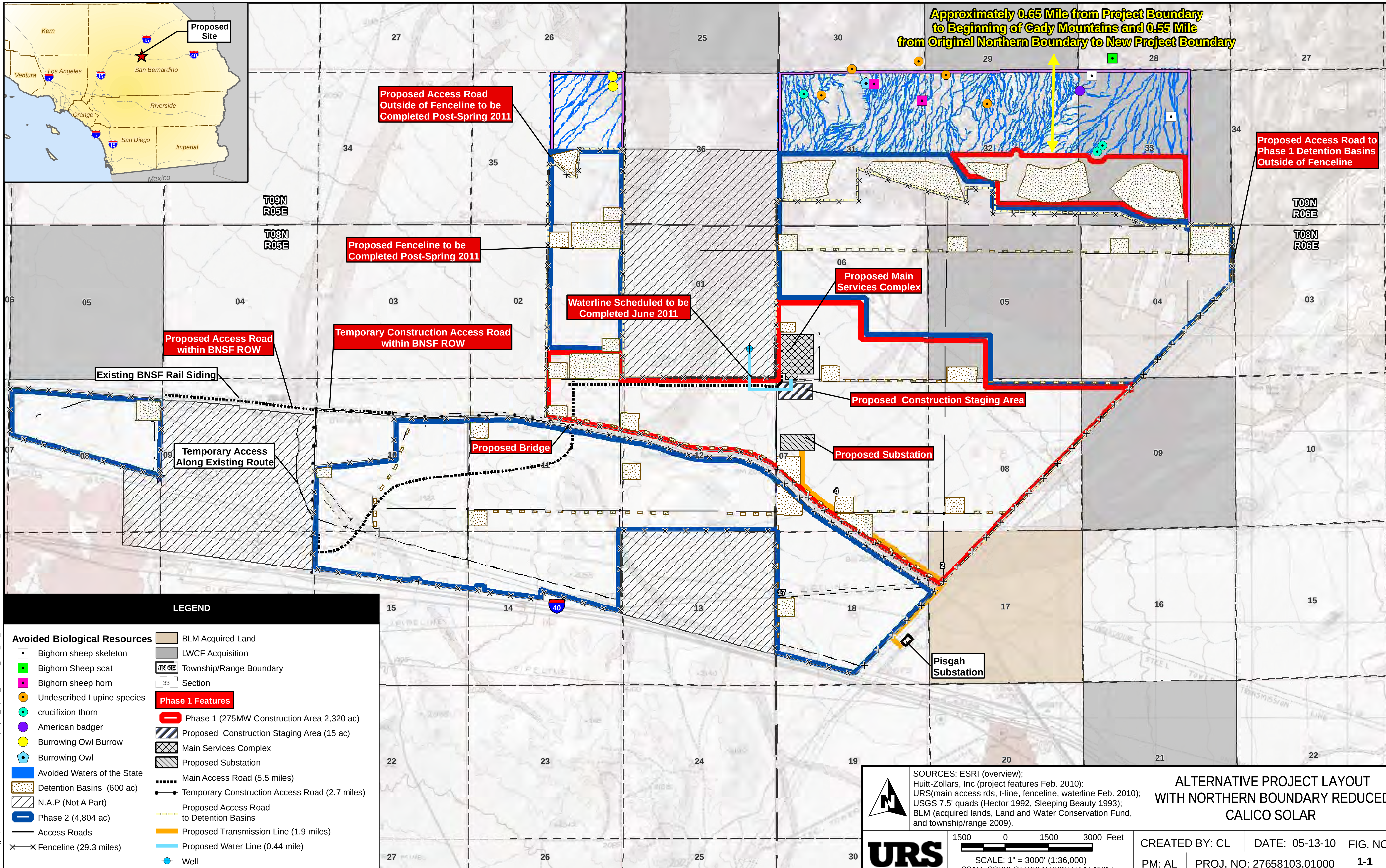
1.4.3 Distributed Hydrogen System

If the distributed hydrogen supply system utilizing k-bottles at each SunCatcher PCU is utilized at the Calico Solar site, the system will use two redundant hydrogen generators and one steel storage tank located at the Main Services Complex as described in the centralized system to produce hydrogen. However, the system would not deliver hydrogen through pipelines. In lieu of the distribution equipment, hydrogen will be filled from the hydrogen storage tank to each individual SunCatcher through trucks. Each SunCatcher will include an 82-scf high pressure supply tank, 28-scf low pressure dump tank, and a 489-scf local storage tank. In addition, each SunCatcher unit will contain a minimum of 11-scf of hydrogen at 580 psi at all times, resulting in a total of around 610-scf of hydrogen in each SunCatcher.

The k-bottles will be delivered back to each SunCatcher, utilizing the mirror-washing truck trips included in the SA/DEIS analysis. Hydrogen refilling and replacement trips are expected occur approximately three times per year. Table 1-1 presents a summary of differences between each hydrogen supply system.

Table 1-1
Potential Hydrogen Supply Systems

Feature	Centralized Hydrogen System	Distributed Hydrogen System
Storing hydrogen in main service complex	36,400 scf x 1 tank	36,400 scf x 1 tank
High-pressure supply tank	29,333 scf x 95 compressor groups	82 scf x 34,000 SunCatchers
Low-pressure supply tank	9,900 scf x 95 compressor groups	28 scf x 34,000 SunCatchers
Local Storage Tank	--	489 scf x 34,000 SunCatchers
Single SunCatcher	11 scf	11 scf
Total amount onsite	4,140,000 scf (23,000 lbs)	20,800,000 scf (116,000 lbs)



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SECTION 2 ENVIRONMENTAL INFORMATION

2.1 INTRODUCTION

This section presents a discussion of the potential impacts from the modifications to the primary Project water supply, the Project boundaries, and to the onsite hydrogen system.

The discussion for each resource area includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable Laws, Ordinances, Regulations, and Standards (LORS).

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2.2 AIR QUALITY

This section presents a discussion of the potential impacts related to air quality from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.2.1 Affected Environment

The affected environment for air quality was originally discussed in Section 5.2 of the AFC, and it was updated in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2, in August 2009, and Section 2.2 of the Supplement to the AFC, submitted in January 2010. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in Section C.1 of the SA/DEIS.

2.2.2 Environmental Consequences

The environmental consequences for air quality during Project construction and operation remain unchanged from Section 5.2 of the AFC, as it was updated in the Applicant's Response to CEC and BLM Data Requests 1-48, in August 2009, and as described in Section C-1 of the SA/DEIS.

2.2.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply would result in less air emissions than calculated for the rail delivery of water from the Cadiz BNSF well, as described in the SA/DEIS. The air quality analysis provided as the Applicant's Response to CEC and BLM Requests 1-48 in August 2009 stated:

> "The source of water for the site is still being determined, so to ensure emissions from the construction phase were not underestimated, it was assumed all water would be delivered to the site in 7,500 gallons trucks."

The changed water supply and associated activities will result in reduced impacts to air quality compared to those presented in Section 5.2 of the Project AFC, as updated in the Applicant's Response to CEC and BLM Data Requests 1-48, in August 2009, and as described in the Supplement to the AFC filed in January 2010 and in Section C.1 of the SA/DEIS.

2.2.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to air quality considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to air quality beyond those presented in Section 5.2 of the Project AFC, as updated in the Applicant's Response to CEC and BLM Data Requests 1-48, in August 2009, and as described in Section C.1 of the SA/DEIS.

2.2.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to air quality considerations, regardless of whether the centralized or distributed hydrogen system is utilized. Under the distributed hydrogen supply system scenario, k-bottle re-filling and replacement would occur approximately three times per year, utilizing mirror-washing and maintenance truck trips. The modifications will result in minor changes that do not create additional construction or operation related impacts to air quality beyond those presented in Section 5.2 of the Project AFC, as updated in the Applicant's Response to CEC and BLM Data Requests 1-48, in August 2009, and as described in Section C.1 of the SA/DEIS. The hydrogen system modifications would not result in any additional air quality impacts.

2.2.3 Cumulative Impacts

No additional cumulative impacts to air quality have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.2 of the Project AFC, as updated in the Applicant's Response to CEC and BLM Data Requests 1-48, in August 2009, and as described in Section C.1 of the SA/DEIS.

2.2.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.1 of the SA/DEIS are applicable to the proposed Project changes.

2.2.5 LORS Compliance

The federal, state, and local LORS presented in Section C.1 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.2.6 References

No additional references beyond those presented in Section 5.2 of the Project AFC, Applicant's Response to CEC and BLM Data Requests 1-48 were used for this supplemental analysis.

2.3 GEOLOGIC HAZARDS AND RESOURCES

This section presents a discussion of the potential impacts related to geologic hazards and resources from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.3.1 Affected Environment

The affected environment for geologic hazards and resources was originally discussed in Section 5.3 of the AFC and section 2.3 of the Supplement to the AFC, submitted in January 2010. Geology and Paleontology are discussed in Section C.4 of the SA/DEIS, and Geologic Stability is discussed in Section D.2 of the SA/DEIS. The affected environment includes two private parcels previously identified as N.A.P. of the Project, and a Project layout with a modified northern boundary. The affected environment resulting from the modifications to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement, and Sections C.4 and D.2 of the SA/DEIS.

2.3.2 Environmental Consequences

The environmental consequences for geologic hazards and resources during Project construction and operation remain unchanged from the AFC section 5.3 and Section 2.3 of the Supplement to the AFC submitted in January 2010, as described in Sections C.4 and D.2 of the SA/DEIS.

2.3.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to geologic hazards and resource considerations. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to geologic hazards and resources beyond those presented in Section 5.3 of the Project AFC, as supplemented in January 2010, and as described in Sections C.4 and D.2 of the SA/DEIS.

2.3.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to geologic hazards and resource considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to geologic hazards and resources beyond those presented in Section 5.3 of the Project AFC, as supplemented in January 2010, and as described in Sections C.4 and D.2 of the SA/DEIS.

2.3.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to geologic hazards and resource considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to geologic hazards and resources beyond those presented in Section 5.3 of the Project AFC, as supplemented in January 2010, and as described in Sections C.4 and D.2 of the SA/DEIS.

2.3.3 Cumulative Impacts

No additional cumulative impacts to geologic hazards and resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.3 of the Project AFC, Section 2.3 of the Supplement to the AFC, and Section C.4 and D.2 of the SA/DEIS are applicable to the proposed Project changes.

2.3.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Sections C.4 and D.2 of the SA/DEIS are applicable to the proposed Project changes.

2.3.5 LORS Compliance

The federal, state, and local LORS presented in Sections C.4 and D.2 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.3.6 References

No additional references beyond those presented in Section 5.3 of the Project AFC and Section 2.3 of the Supplement to the AFC were used for this supplemental analysis.

2.4 SOIL RESOURCES

This section presents a discussion of the potential impacts related to soil resources from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.4.1 Affected Environment

The affected environment for soil resources was originally discussed in Section 5.4 of the AFC, Section 2.4 of the Supplement to the AFC, submitted in January 2010, and in Section C.7 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.4.2 Environmental Consequences

The environmental consequences for soil resources during Project construction and operation remain unchanged from the AFC section 5.4, Section 2.4 of the Supplement to the AFC submitted in January 2010, and Section C.7 of the SA/DEIS.

2.4.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to soil resource considerations. The waterline construction ROW is a 20-foot wide corridor, and the waterline will be 0.51 mile in length, 990 feet of which will occur on two private parcels (Figure 1-1). The two private parcels occur on the Carrizo-Rosita-Gunsight soil map unit, consistent with nearly all of the Project site north of the railroad. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to soil resources beyond those presented in Section 5.4 of the Project AFC, as supplemented in January 2010, and in Section C.7 of the SA/DEIS.

2.4.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to soil resource considerations. The boundary modifications will result in a decrease in the overall disturbance area and therefore will not create additional construction or operation related impacts to soil resources beyond those presented in Section 5.4 of the Project AFC, as supplemented in January 2010, and in Section C.7 of the SA/DEIS.

2.4.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to soil resource considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to soil resources beyond those presented in Section 5.4 of the Project AFC, as supplemented in January 2010, and described in Section C.7 of the SA/DEIS.

2.4.3 Cumulative Impacts

No additional cumulative impacts to soil resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.4 of the Project AFC, Section 2.4 of the Supplement to the AFC, and Section C.7 of the SA/DEIS are applicable to the proposed Project changes.

2.4.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.7 of the SA/DEIS are applicable to the proposed Project changes.

2.4.5 LORS Compliance

The federal, state, and local LORS presented in Section C.7 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will comply with all LORS.

2.4.6 References

No additional references beyond those presented in Section 5.4 of the Project AFC and Section 2.4 of the Supplement to the AFC were used for this supplemental analysis.

2.5 WATER RESOURCES

This section presents a discussion of the potential impacts related to water resources from the modifications to the primary Project water supply, the Project boundaries, and to the onsite hydrogen system. The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.5.1 Affected Environment

No changes to the affected environment described in the AFC, applicable amendments, or the SA/DEIS are included in the supplement in regards to the following existing conditions: hydrologic setting, neighboring groundwater basins and quality, surface water quality, climate and precipitation, water supply and use, wastewater streams, stormwater runoff, or flooding hazards.

2.5.2 Environmental Consequences

This supplement describes a change in the primary water supply to groundwater from a well located adjacent to the Project site (Figure 1-1) and provides an environmental assessment of the use of groundwater and transport of water from the well to the Project via an underground waterline.

This supplement also describes and provides an environmental assessment of a modification to the Project boundary (Figure 1-1). The boundary modification is a change in the Project layout from that analyzed in the SA/DEIS. The modification moves the northern boundary south approximately 0.55 mile in order to reduce potential impacts to biological resources.

Lastly, this supplement describes two alternate hydrogen systems: a centralized hydrogen system in which hydrogen is generated onsite and distributed to each SunCatcher via storage tanks and pipelines, and a distributed system in which hydrogen is stored at the SunCatchers in k-bottles. The Project analyzed in the SA/DEIS utilized a centralized hydrogen distribution system. The Applicant presents both systems as viable options for the Project; however, each system has evolved since the SA/DEIS was published. This supplement presents the modifications and environmental assessments of each potential hydrogen system.

2.5.2.1 Well #3 Water Supply

Well #3 was installed and tested on private land previously identified as N.A.P. of the Project, adjacent to the Project site (Figure 1-1) on APN 0529-28-134. Tessera Solar currently owns the property, and the escrow closing statements are provided as Appendix A.

Evaluations were conducted to determine the well’s suitability as a water supply for the Project. An investigation of Well #3 evaluated the feasibility of the aquifer underlying the site to serve as a viable water supply for the Project and evaluate the potential effects of pumping on water quality and other potential users of groundwater in the basin. Detailed results of the investigation of this well are provided in Appendix B including: map of well locations, boring logs, description of drilling methods used, well construction details, measured depth of water, description and results of aquifer tests, description of water bearing unit, modeled cone of depression, water quality, expected rate of extraction, and well viability.

2.5.2.1.1 Water Supply Reliability

Pumping tests at Well #3 indicate that the aquifer penetrated by the well can support water demands for the Calico Solar site during construction and the lifespan of its operations, and pumping of the well at the prescribed rates will have no significant impact to water levels in the area. See Appendix B for the results of the groundwater pump tests and drawdown analysis.

2.5.2.1.2 Water Supply and Use

Water Supply

Water from Well #3 would be transported from the well to the Main Services Complex via an underground waterline six inches in diameter, buried 34 inches below the surface. The waterline would cross APNs 0529-28-134 and 0529-28-123 (Figure 1-1), traversing approximately 990 feet before entering the Project site. Tessera Solar currently owns and has an executed purchase agreement with each of these parcels, respectively (Appendix A). The construction ROW for the waterline is 10 feet from centerline. The water will be used for a variety of uses during construction and operation including dust control, concrete, fire storage, and mirror washing.

Water Use

The estimated average annual operational use for the 275MW plant (Phase I) is approximately 6.5 acre-feet-per year (174,000 gallons per month). The estimated average annual operational water use for the 850MW plant (Phases 1 and 2) is approximately 20 acre-feet per year (533,000 gallons per month). The estimated monthly volume of water required for all phases of construction is provided as Table 1 in Appendix B. The maximum expected rate of pumping extraction during construction is expected to be in August 2013, when 4,045,921 gallons of water (12.4 acre-feet) will be required (see Appendix B).

2.5.2.1.3 Water Quality

Analysis of the water quality at Well #3 determined that the groundwater is not suitable for drinking without treatment (see Appendix A). The water will be treated at an onsite facility prior to use. The proposed method of treatment is to process the well water through a reverse osmosis (RO) system to remove the majority of the dissolved solids. A de-mineralization stage may be required for the mirror washing water and hydrogen generator. To prevent bacteria build up in the Plant raw water storage tank chlorine will be added. Aquifer testing indicated that groundwater extraction for the Project will not adversely affect water quality during construction or operation. Use of Well #3 as the Project's water supply is not anticipated to affect water quality of the basin because pumping at the rates needed will result in limited drawdown over the duration of operations and the Zone of Influence is relatively small. Therefore, pumping at Well #3 would have a low probability of causing movement of water that could be of poorer quality to replenish the Zone of Influence.

Evaporation Ponds

The Project descriptions in the Project AFC and the SA/DEIS included discussions of the evaporation ponds utilized by the Project. Additional details about the evaporation ponds are included below and in

Figure 2.5-1. It is assumed that the wastewater quality will be worse than the quality of the first-encountered groundwater at the site, and that the wastewater will be classified as a “designated waste” and that the lined evaporation ponds will need to comply with the requirements for a Class II surface impoundment set forth in California Code of Regulations (CCR) Title 27. The on-site facility will include two evaporation ponds, each covering approximately a half an acre in surface area (See Figure 2.5-1). The engineered evaporation pond system is currently being designed with a layer of 20-mil High Density Polyethylene (HDPE) geomembrane as the bottom layer with a 6-inch thick Portland Cement Concrete (PCC) slab section with a rebar mat. Each evaporation pond will be designed to contain one year of wastewater discharge and alternated each year accordingly. After undergoing the evaporation process, the accumulated bottom solids will be tested and disposed in an appropriate waste disposal facility as nonhazardous waste in accordance with applicable laws and regulations.

The proposed engineered liner system currently consists of the following components from the top down:

a. Estimated depth 5.3 feet in depth (based on surface area).
b. A primary 20-mil-thick HDPE geomembrane;
c. A six-inch thick PCC slab section with rebar mat;
d. Additive will be mixed with concrete to provide an impervious concrete lining surface;
e. Flexible epoxy joint filler coating will be used to fill all sawcut joints;
f. A 18”x18”x18” deep sump pit for wastewater sampling;
g. Earthen berms and access roads with native material compacted to 90 percent maximum density.

The above liner system will be installed on the side slopes and bottom of the pond. The inboard side slope will be at a slope of two-feet horizontally for every vertical foot (or flatter). The outboard side slope will be at a slope of three-feet horizontally for every 1 vertical foot (or flatter). The berm width at the crest will be approximately 20-feet. The horizontal interior dimensions of the evaporation pond(s) at the top of the berm will be approximately 70-feet by 316-feet (0.5 acre).

Additional information on the evaporation pond design, construction, operation, and maintenance will be provided in a Report of Waste Discharge to be submitted to CEC/BLM and the Lahontan RWQCB in May 2010.

2.5.2.1.4 Storm Water Runoff and Flooding Hazards

The use of Well #3 as a primary water supply, is not a significant change with regard to storm water runoff and flooding hazards. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to storm water runoff and flooding hazards beyond those presented in Section 5.5 of the Project AFC and Section C.7 of the SA/DEIS.

2.5.2.2 Project Boundary Modifications

The Project boundary modification results in a reduction of the Project area from approximately 8,230 acres to approximately 7,110 acres (Figure 1-1). Other details of the Project layout remain the same as those evaluated in the SA/DEIS. The elimination of the 1,103 acres will not change the number of SunCatchers, spacing between suncatchers or location of major project facilities (e.g., Main Services

Complex, staging area (other than slight lessening of roads and fencing). Minor changes to the detention basin configurations along the northern boundary may be required to accommodate the revised project boundary.

The Project boundary modifications are not considered a significant change with regard to water resources related impacts, and is not anticipated to create additional construction or operation related impacts to water resources beyond those presented in Section 5.5 of the Project AFC and Section C.7 of the SA/DEIS.

2.5.2.3 Hydrogen System Modifications

The hydrogen system modifications are not considered a significant change with regard to water resources related impacts. The hydrogen system modification will result in minor changes that do not create additional construction or operation related impacts to water resources beyond those presented in Section 5.5 of the Project AFC and the SA/DEIS.

2.5.3 Cumulative Impacts

There are no anticipated projects within the estimated Zone of Influence for Well #3 at the rate and duration of pumping needed for the project. It is not anticipated that the Project would contribute to cumulative impacts beyond those analyzed in Section 5.5 of the Project AFC and subsequent filings, and the SA/DEIS.

2.5.4 Mitigation Measures

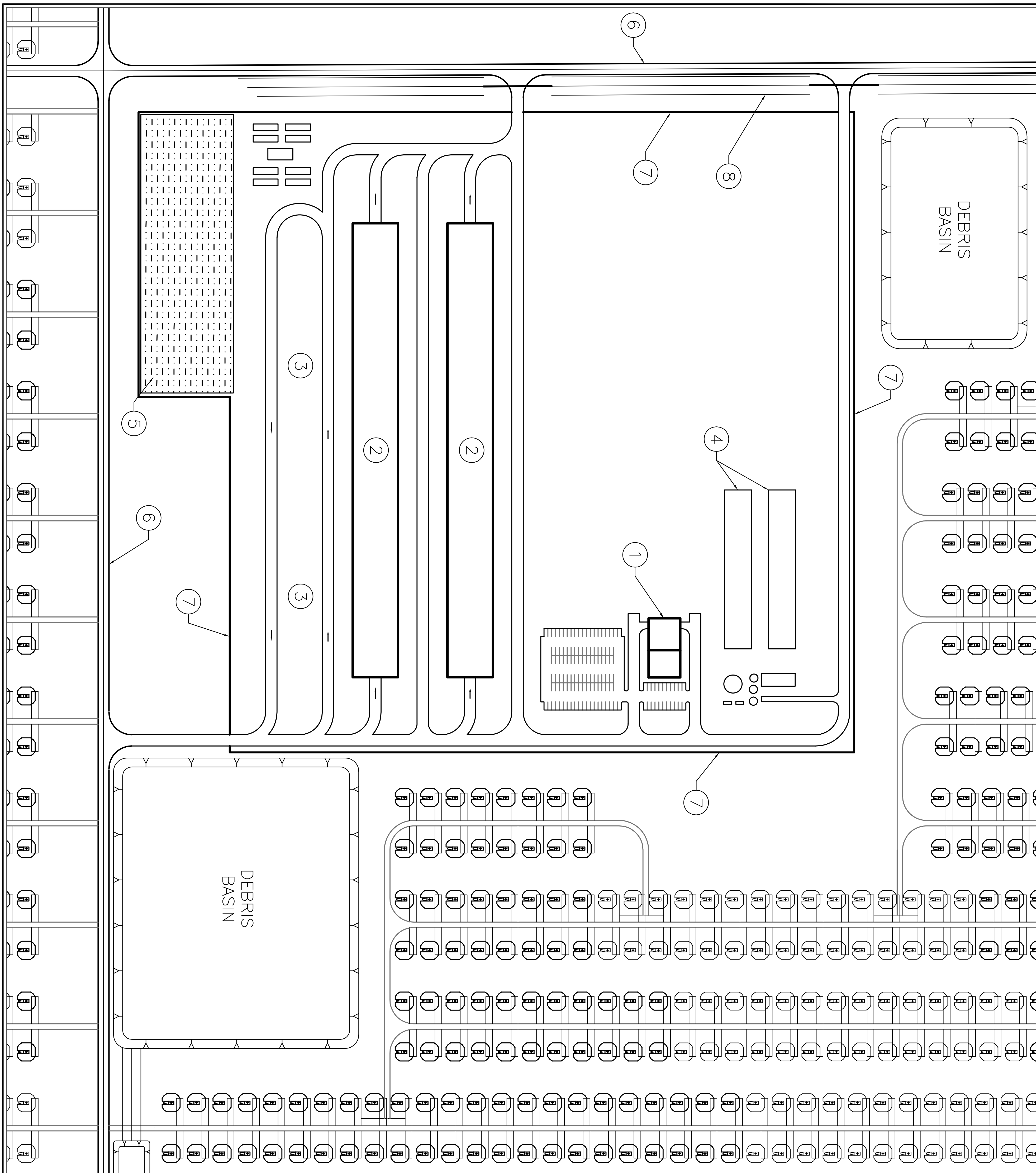
Additional mitigation measures include the preparation of a groundwater monitoring program for the water supply well (Well #3) in accordance with San Bernardino County requirements County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5 (Desert Groundwater Management Ordinance) similar to SA/DEIS Condition of Certification SOIL&WATER-8. The Groundwater Level Monitoring and Reporting Plan will provide detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and project operation water use. The primary objective for the monitoring is to establish pre-construction and project related groundwater level trends that can be quantitatively compared against observed and simulated trends near the project pumping well and existing wells.

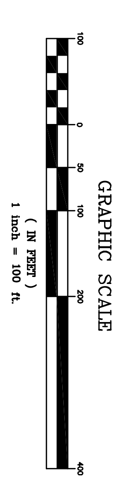
2.5.5 LORS Compliance

The SA/DEIS includes County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5 (Desert Groundwater Management Ordinance) as an applicable LORS. No additional federal, state, or local LORS are applicable beyond what is presented in Section C.7 of the SA/DEIS. The Project will comply with all LORS.

2.5.6 References

No additional references beyond those presented in Section 5.5 of the Project AFC and Section 2.5 of the Supplement to the AFC were used for this supplemental analysis.





NOTES

1. ADMINISTRATON AND MAINTENANCE BUILDING
2. ASSEMBLY BUILDING (100,000 SQ. FT.)
3. CONSTRUCTION LAYDOWN AREA
4. CONCRETE EVAPORATION BASIN (0.5 ACRES)
5. RETENTION BASIN
6. 24' ARTERIAL ROAD
7. PERIMETER FENCE
8. DRAINAGE CHANNEL

NO.	DATE		BY	APP.
REVISIONS				

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 N. 44TH ST.* SUITE 300 * PHOENIX, ARIZONA 85008
PHONE (602) 952-9123 * FAX (602) 952-9124

Figure 2.5-1

CLIENT: Tessera Solar
4800 N. SCOTTSDALE ROAD * SUITE 5500
SCOTTSDALE, ARIZONA 85251
PHONE (602) 443-4537 * FAX (602) 421-5519

TITLE: CALICO SOLAR PROJECT
MAIN SERVICES COMPLEX AND
CONSTRUCTION LAYDOWN AREA

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24"x36"	D. SEYBOLD	D. SEYBOLD	B. CLEMENS	05159501	--

SHEET 1 OF 1

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2.6 BIOLOGICAL RESOURCES

This section presents a discussion of the potential impacts related to biological resources from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.6.1 Affected Environment

The affected environment for biological resources was discussed in Section 5.6 of the AFC, Section 2.6 of the Supplement to the AFC, submitted in January 2010, and in Section C.2 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply is changed to include two private parcels that were previously N.A.P. of the Project. The Project boundary modifications change the affected environment by excluding approximately 1,100 acres from the Project footprint. The modifications to the hydrogen system do not change the affected environment for biological resources.

2.6.2 Environmental Consequences

The environmental consequences for biological resources due to the modified Project water supply and the Project boundary are presented below. The modifications to the hydrogen supply system do not change the environmental consequences for biological resources.

2.6.2.1 Well #3 Water Supply

In April 2010, botanical surveys and desert tortoise surveys were conducted for the two private (non-BLM) parcels intersected by Well #3 and the waterline that will deliver the groundwater to the Main Services Complex (Figure 2.6-1). The waterline construction ROW is a 20-foot wide corridor, and the waterline will be 0.51 mile in length, of which approximately 990 feet will occur on two private parcels. Together, these two parcels total 15 acres. Surveys were conducted to record desert tortoise locations, to assess the habitat for desert tortoise suitability, and to record the presence of any detected special status plant species.

Desert Tortoise

Desert tortoise surveys conducted in April 2010 implemented the 2010 United States Fish and Wildlife Service (USFWS) survey protocol (USFWS 1992), consisting of 10-meter transect surveys. These surveys resulted in the detection of no desert tortoises, burrows or desert tortoise sign. The habitat was determined to be similar to the adjacent habitat on BLM land, composed primarily of Mojave creosote bush scrub, with high habitat suitability for desert tortoise.

Based on the results of desert tortoise surveys for the parcels intersected by Well #3 and the waterline, the Project would not result in any additional impacts to desert tortoise, beyond those described in Section C.2 of the SA/DEIS.

Special Status Plant Species

The 15 acres of private land were surveyed for special status plant species implementing survey protocol published by the BLM (BLM 1996a, BLM 1996b, BLM 2001, and BLM 2009). A population of small-flowered androstephium (*Androsephium breviflorum*) identified on BLM land within the Project site extends onto the sandy soils of the two private parcels that will be intersected by the well and waterline (Figure 2.6-1). Small-flowered androstephium is a California Native Plant Society (CNPS) List 2.2 species. No other special status plant species were detected on these private parcels. The SA/DEIS concluded that Project impacts to small-flowered androstephium would be less than significant. The impacts associated with the 990-foot extent of the waterline on private land would remain less than significant. A botanical inventory of the private parcels is included as Table 2.6-1 below.

Table 2.6-1
Botanical Species Detected on the Well and Waterline Parcels

Scientific Name	Common Name
Asteraceae	Sunflower Family
Ambrosia dumosa	bursage
Chaenactis stevoides	desert pincushion
Geraea canescens	desert sunflower
Malacothrix glabrata	desert dandelion
Palafoxia arida	desert Spanish-needle
Rafinesquia neomexicana	desert chicory
Boraginaceae	Borage Family
Amsinckia tesselata	fiddleneck
Cryptantha angustifolia	narrow-leaf cryptantha
Cryptantha maritima	cryptantha
Cryptantha micrantha	cryptantha
Crypthantha pterocarya	pectocarya
Pectocarya platycarpa	pectocarya
Brassicaceae	Mustard Family
*Brassica tournefortii**	wild turnip
Streptanthella longirostris	streptanthella
Cactaceae	Cactus family
Cylindropuntia echinocarpa	silver cholla
Fabaceae	Legume Family
Astragalus didymocarpus	dwarf white milkvetch
Astragalus lentiginosus var. *variabilis*	freckled milkvetch
Geraniaceae	Geranium Family
Erodium cicutarium	red-stemmed filaree
Krameriaceae	Rhatany Family
Karmeria grayi	white rhatany
Lillaceae	Lily Family
Androstephium breviflorum!	small-flowered androstephium
Herperocallis undulata	desert lily
Loasaceae	Loasa Family
Mentzelia obscura	Pacific blazing star

Table 2.6-1
Botanical Species Detected on the Well and Waterline Parcels
(Continued)

Scientific Name	Common Name
Malvaceae	Mallow Family
Eremalche exilis	white mallow
Nyctaginaceae	Four O-clock Family
Abronia villosa var. *villosa*	hairy sand-verbena
Onagraceae	Evening-Primrose Family
Camissonia boothii	bottlebrush primrose
Camissonia claviformis	brown-eyed evening primrose
Papaveraceae	Poppy Family
Eschscholzia minutiflora	pygmy goldenpoppy
Poaceae	Grass family
Pleuraphis rigida	galleta grass
*Schismus barbata**	Mediterranean grass
Polemoniaceae	Phlox Family
Gilia latiflora	broad-leaved gilia
Polygonaceae	Buckwheat Family
Chorizanthe brevicornu	brittle spineflower
Zygophyllaceae	Caltrop Family
Larrea tridentata	creosote

! = assumed present based on habitat and known, mapped occurrence within the immediate vicinity
* = Non-native, naturalized plant

2.6.2.2 Project Boundary Modifications

At the request of agency representatives and interested parties and to lessen potential impacts to biological resources, the Applicant is modifying the current Project boundary. The northern boundary has been moved south approximately 0.55 miles, allowing an approximate 0.65 mile corridor between the revised northern project boundary and the toe of slope of the Cady Mountains (Figure 2.6-2). This change to the Project avoids impacts to wildlife and plant species and impacts to waters of the State.

Wildlife and Plant Species

The modified Project layout excludes approximately 1,100 acres that were previously part of the Project, and allows for an improved east-west wildlife movement corridor. The modified Project boundary avoids direct impacts to occupied habitats for tortoise and other species of concern (e.g., special status plants, burrowing owls, and bighorn sheep) (Figure 2.6-2). Additionally, the boundary modifications further distance between the Project and the nearest known golden eagle nest site, from approximately 2.5 miles from the previously proposed boundary to three miles from the modified Project boundary (URS 2010a).

Desert Tortoise

Modifying the Project boundary avoids approximately 25 percent of the desert tortoise found on the project site. Of the 104 total tortoise found during 2010 surveys, 26 desert tortoise (*Gopherus agassizii*) would now be avoided (URS 2010b; Figure 2.6-3). In addition, 86 desert tortoise burrows will also be avoided by the project boundary change. Of the 425 total burrow locations on site, this Project modification will result in approximately a 20 percent reduction of impacts. Using the USFWS formula to estimate tortoise population based on 10-meter transect survey data, it is estimated that direct impacts to approximately 49 individuals may be avoided due to the Project boundary modifications.

With the previously proposed northern Project boundary, these 49 tortoises would have required translocation. The Project boundary modifications reduce the estimate of desert tortoises requiring translocation for the Project from 176 to 127 individual (URS 2010). These 49 excluded desert tortoise will be indirectly affected due to being adjacent to the Project perimeter, though direct impacts to habitat will be substantially reduced.

Movement of desert tortoise in the vicinity of the Project, north of the railroad, is expected to be mostly in the east-west directions, and mostly in the northern area near the base of the Cady Mountains where tortoise densities are greater (Figure 2.6-3). Movement corridors are not necessarily areas where animals spend most of their time, but are areas they periodically use to move between areas of preferred habitat. The modifications to the Project boundary would expand the east-west movement corridor by about 2,900 feet and allow for tortoise and other wildlife to move past the steeper topography that may hinder regular movement through this area.

Based on the results of desert tortoise surveys conducted for the Project, and the quality of habitat that would be excluded from the Project layout, the modifications to the Project boundary will reduce impacts to desert tortoise.

Bighorn Sheep

The Cady Mountains to the north of the Project site are known to support a population of bighorn sheep (*Ovis Canadensis nelsoni*). Within the approximately 1,100 acres excluded by the Project boundary modifications, two bighorn sheep horns, two bighorn sheep skeletons and one occurrence of bighorn sheep scat have been detected during surveys conducted for desert tortoises and botanical resources between April 5 and April 15, 2010 (Figure 2.6-2). These observations indicate that bighorn sheep are utilizing the area, potentially as winter/early spring foraging habitat and/or as a movement corridor.

The Project boundary modifications move the northern Project boundary 0.55 mile south from its previously proposed location, providing a distance of approximately 0.65 mile from the modified Project boundary to the base of the Cady Mountains. This change to the Project layout will decrease the direct impacts to bighorn sheep due to potential habitat loss and restriction of movement. The modified Project boundary will also reduce indirect impacts to bighorn sheep, by increasing the distance from their preferred habitat in the Cady Mountains to the human presence/activity, and the noise, dust, and lighting associated with Project construction and operation.

Burrowing Owl

During focused burrowing owl surveys conducted in the winter of 2010, three Western burrowing owls (*Athene cunicularia*) were detected within the approximately 1,100-acre area that will be excluded from the Project with the modifications to the northern Project boundary (URS 2010c). During 2008 surveys for desert tortoises, one burrowing owl was detected in this area (Figure 2.6-2). Based on these observations, by reducing the Project footprint, the Project boundary modifications will reduce direct and indirect impacts to burrowing owls.

American Badger

During desert tortoise surveys conducted in 2008, one American badger (*Taxidea taxus*) occurrence was detected within the area that would be excluded from the Project by the modified boundary (Figure 2.6-2). This observation indicates that the Project vicinity supports suitable habitat for American badger, and that by reducing the Project footprint, the Project boundary modifications will reduce direct and indirect impacts to American badgers.

Special Status Plant Species

In response to above average rainfall events that occurred in 2010, botanical surveys were conducted on the Project site. These surveys incorporated survey protocols published by the BLM (BLM 1996a, BLM 1996b, BLM 2001, and BLM 2009). Within the approximately 1,100-acre area that will be excluded from the Project with the modifications to the northern Project boundary, three occurrences of Emory's crucifixion thorn (*Castela emoryi*; CNPS List 2.3) were detected. All of these occurrences will be avoided with the Project boundary modifications (Figure 2.6-2).

Additionally, an un-described lupine species was detected in five locations during the 2010 botanical surveys. All of these locations will be avoided with the modifications to the Project boundary (Figure 2.6-2). The unnamed lupine species does have some taxonomic precedent. Mr. Jim Andre previously vouchered this unnamed taxon from the eastern Cady Mountains, and its detection in the Project vicinity is a new locality. Mr. Andre believes this form merits taxonomic recognition, either as a new species, or as a new variety under *L. concinnus* (J. Andre, pers. comm.).

Based on the results of botanical surveys conducted for the Project, the modifications to the Project boundary will reduce impacts to special status plant species.

Waters of the State

In addition to avoiding impacts to wildlife and plant species, the modified Project boundary would avoid direct and indirect impacts to ephemeral streams and washes that occur within the floodplain of the Cady Mountains. Direct impacts to State waters are associated with facility structures such as SunCatcher pedestals, roads, detention basins and other Project components. Indirect impacts include alterations to topographical and hydrological conditions of the area.

By excluding approximately 1,100 acres from the Project layout, the modified Project boundaries avoid approximately 109.7 acres of State waters, reducing both direct and indirect impacts to these areas.

2.6.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to biological resource considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to biological resources beyond those presented in Section 5.8 of the Project AFC, as supplemented in January 2010, and as described in Section C.2 of the SA/DEIS.

2.6.3 Cumulative Impacts

No additional cumulative impacts to biological resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.6 of the Project AFC, Section 2.6 of the Supplement to the AFC, and Section C.2 of the SA/DEIS are applicable to the proposed Project changes.

2.6.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.2 of the SA/DEIS are applicable to the proposed Project changes.

2.6.5 LORS Compliance

The inclusion of the well and waterline on the previously N.A.P. private parcels requires that the Project be consistent with the San Bernardino County General Plan and the Conservation/Open Space Element of the County General Plan (County of San Bernardino 2007). These applicable laws were presented in the LORS in Section C.2 of the SA/DEIS. The modifications to the Project are consistent with these and all applicable federal, state, and local LORS. No additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.6.6 References

J. Andre, pers. comm. Personal communication with James Andre. 2010.

BLM 1996a. Bureau of Land Management. Special Status Plant Management. BLM Manual Handbook 6840-1.

BLM 1996b. Bureau of Land Management. Special Status Plant Management. BLM Manual Supplement 6840-06.

BLM 2001. Bureau of Land Management. Special Status Species Management. BLM Manual 6840 Revision.

BLM 2009. Bureau of Land Management. Survey Protocols for NEPA/ESA Compliance for BLM Special Status Plant Species. URS 2010a. Applicant’s Submittal of Results from Helicopter Surveys of Golden Eagle Nests and Bighorn Sheep. Docketed April 30, 2010.

County of San Bernardino 2007. Conservation/Open Space Element of the San Bernardino County General Plan.

URS 2010b. Biological Assessment for the Calico Solar Project, San Bernardino County, California. As revised May 10, 2010.

URS 2010c. Applicant's Submittal of Burrowing Owl Survey Report. Docketed February 19, 2010.

USFWS 1992. Field Survey Protocol for any Non-Federal Action that May Occur within the Range of Desert Tortoise.

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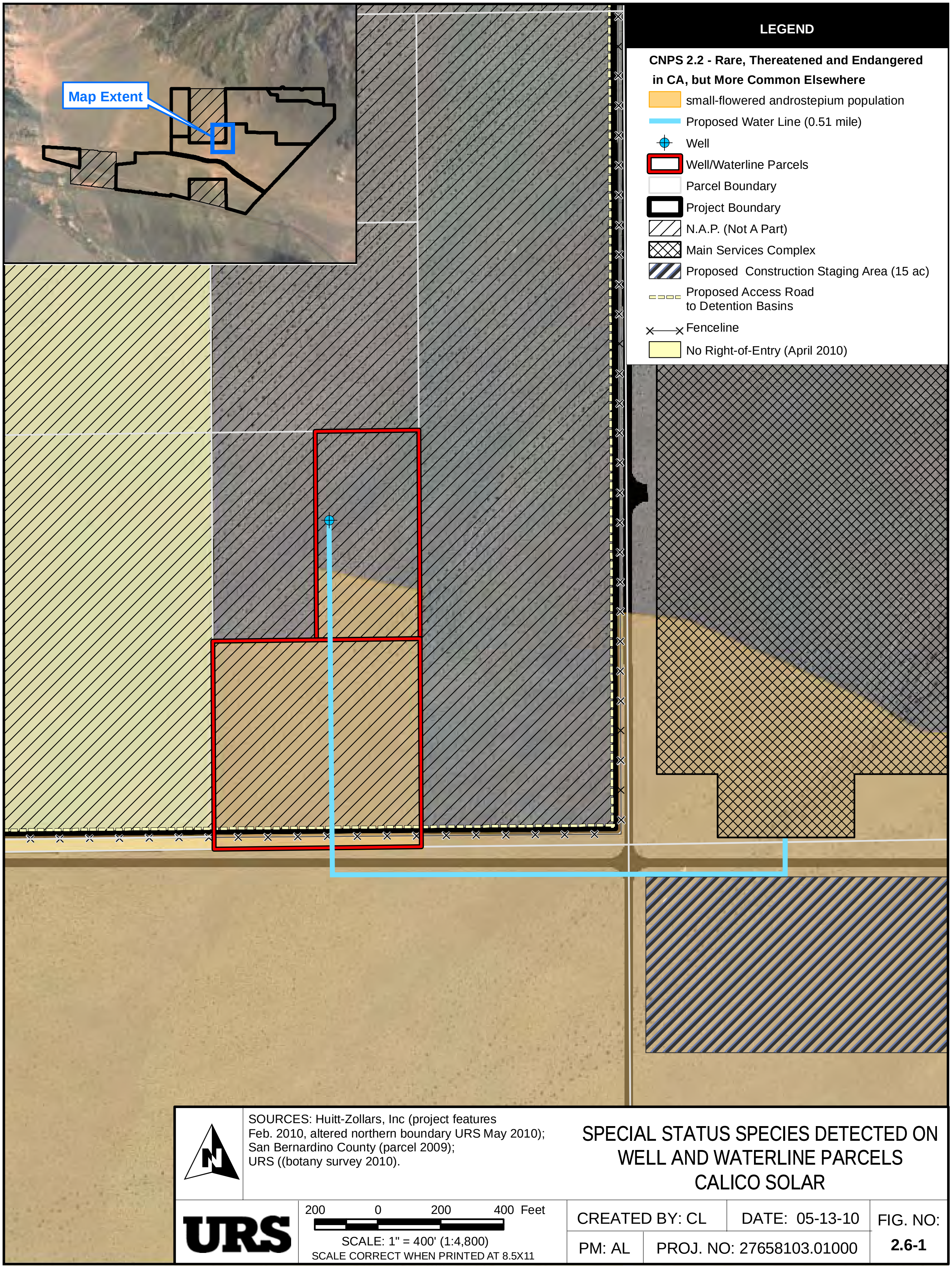

SOURCES: Huitt-Zollars, Inc (project features Feb. 2010, altered northern boundary URS May 2010); San Bernardino County (parcel 2009); URS ((botany survey 2010).

SPECIAL STATUS SPECIES DETECTED ON WELL AND WATERLINE PARCELS CALICO SOLAR

URS

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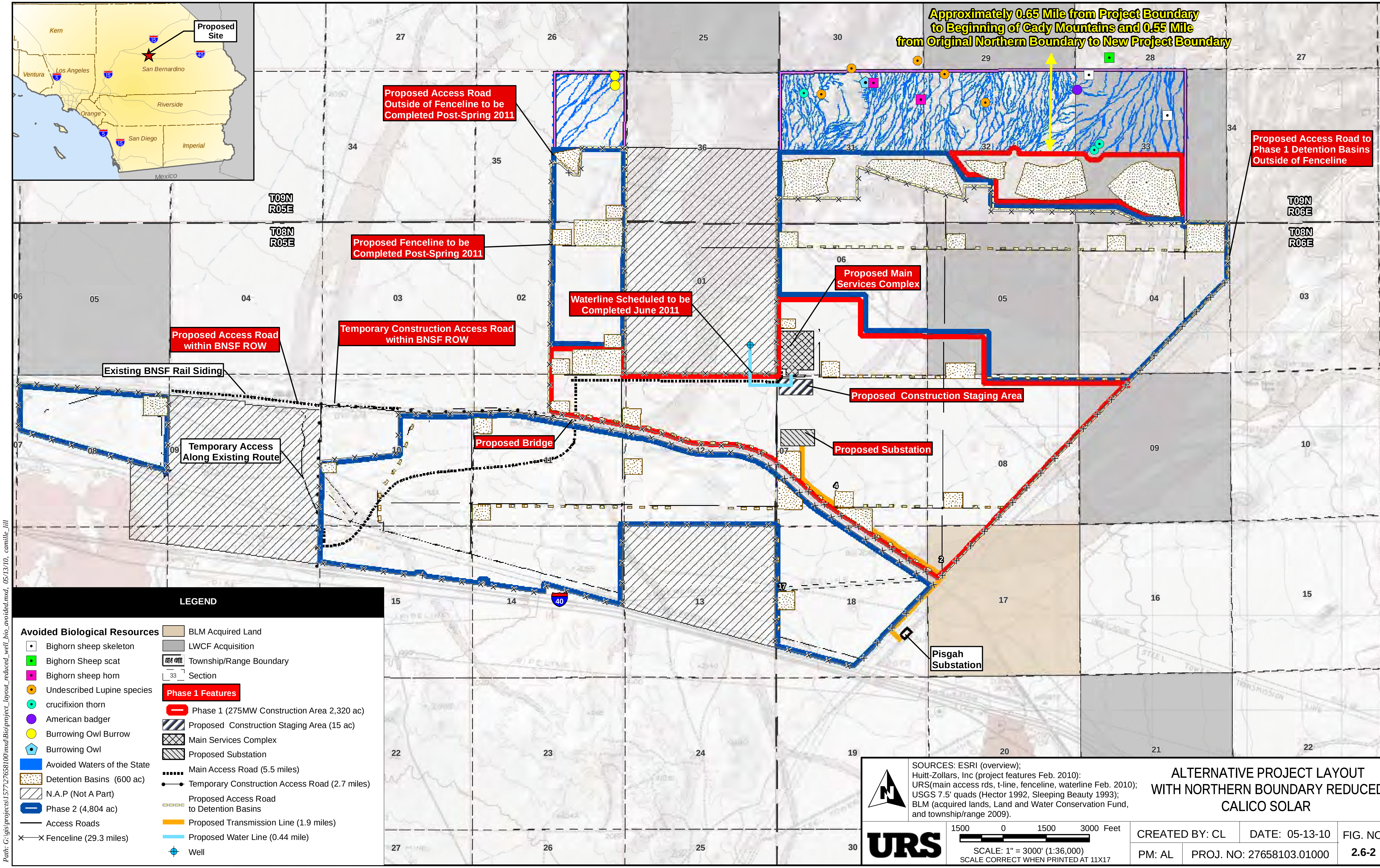

Approximately 0.65 Mile from Project Boundary
to Beginning of Cady Mountains and 0.55 Mile
from Original Northern Boundary to New Project Boundary
Proposed Site
Kern
San Bernardino
Ventura
Los Angeles
Riverside
Orange
San Diego
Imperial
Mexico
Proposed Access Road Outside of Fenceline to be Completed Post-Spring 2011
Proposed Access Road to Phase 1 Detention Basins Outside of Fenceline
T09N R05E
T08N R05E
T09N R06E
T08N R06E
Proposed Fenceline to be Completed Post-Spring 2011
Proposed Main Services Complex
Waterline Scheduled to be Completed June 2011
Proposed Access Road within BNSF ROW
Temporary Construction Access Road within BNSF ROW
Existing BNSF Rail Siding
Proposed Construction Staging Area
Temporary Access Along Existing Route
Proposed Bridge
Proposed Substation
Pisgah Substation
LEGEND
Avoided Biological Resources
Bighorn sheep skeleton
Bighorn Sheep scat
Bighorn sheep horn
Undescribed Lupine species
crucifixion thorn
American badger
Burrowing Owl Burrow
Burrowing Owl
Avoided Waters of the State
Detention Basins (600 ac)
N.A.P (Not A Part)
Phase 2 (4,804 ac)
Access Roads
Fenceline (29.3 miles)
BLM Acquired Land
LWCF Acquisition
Township/Range Boundary
Section
Phase 1 Features
Phase 1 (275MW Construction Area 2,320 ac)
Proposed Construction Staging Area (15 ac)
Main Services Complex
Proposed Substation
Main Access Road (5.5 miles)
Temporary Construction Access Road (2.7 miles)
Proposed Access Road to Detention Basins
Proposed Transmission Line (1.9 miles)
Proposed Water Line (0.44 mile)
Well
SOURCES: ESRI (overview);
Huitt-Zollars, Inc (project features Feb. 2010);
URS(main access rds, t-line, fenceline, waterline Feb. 2010);
USGS 7.5' quads (Hector 1992, Sleeping Beauty 1993);
BLM (acquired lands, Land and Water Conservation Fund, and township/range 2009).
ALTERNATIVE PROJECT LAYOUT
WITH NORTHERN BOUNDARY REDUCED
CALICO SOLAR
URS
1500 0 1500 3000 Feet
SCALE: 1" = 3000' (1:36,000)
SCALE CORRECT WHEN PRINTED AT 11X17
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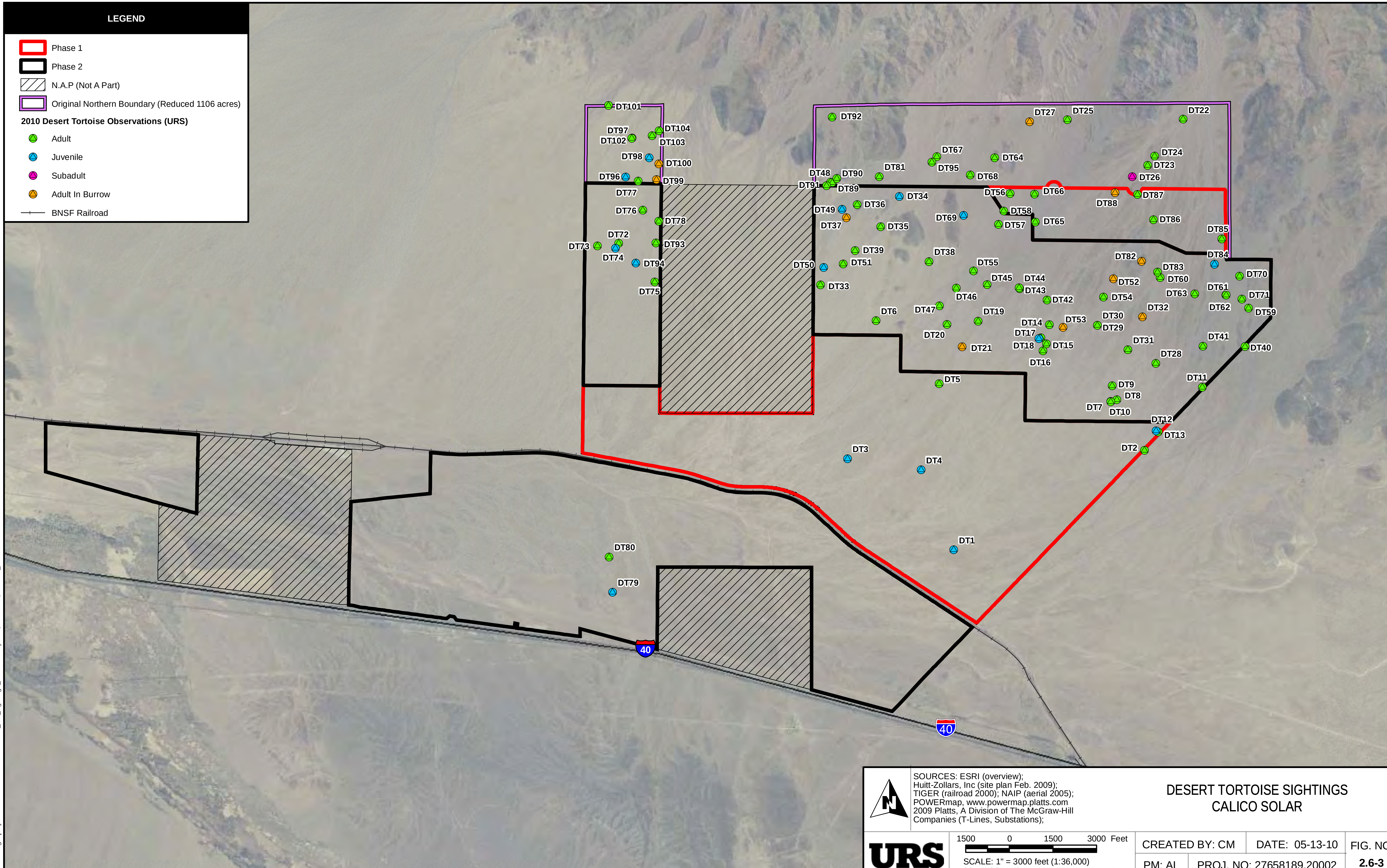

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2.7 CULTURAL RESOURCES

Consistent with the recently released California Desert District Special Permit Conditions Continuation Sheet for all BLM California State Permit for Archaeological Investigations Standard Permit Conditions, and BLM California supplemental State Permit Conditions, the cultural information collected for the Project is part of a federal undertaking. It is the sole property of the United States of America and will not be released without the written approval of the BLM.

Cultural resource surveys of the two private parcels intersected by the well and waterline were conducted and a confidential report of the findings was provided to the BLM under separate cover.

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2.8 PALEONTOLOGICAL RESOURCES

This section presents a discussion of the potential impacts related to paleontological resources from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.8.1 Affected Environment

The affected environment for paleontological resources was discussed in Section 5.8 of the AFC, Section 2.8 of the Supplement to the AFC, submitted in January 2010, and in Section C.4 of the SA/DEIS. The affected environment includes two private parcels previously identified as N.A.P. of the Project and a Project layout with a modified northern boundary. The affected environment resulting from the modifications to the onsite hydrogen supply system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.8.2 Environmental Consequences

The environmental consequences for paleontological resources during Project construction and operation remain unchanged from the AFC section 5.8, Section 2.8 of the Supplement to the AFC submitted in January 2010, and Section C.4 of the SA/DEIS.

2.8.2.1 Well #3 Water Supply

Paleontological surveys of the two private parcels that will be intersected by Well #3 and the waterline were conducted in May 2010. The surveys determined that Well #3 and the waterline that will transport water to the Main Services Complex occur entirely within the Surficial alluvium, as mapped by Dibblee and Bassett (1966). The Surficial alluvium is rated as having a low paleontological sensitivity. No paleontological resources were observed during the survey of the parcels conducted in May 2010. The inclusion of Well #3 and the associated waterline in the Project will not create additional construction or operation related impacts to paleontological resources beyond those presented in Section 5.8 of the Project AFC, as supplemented in January 2010, and described in Section C.4 of the SA/DEIS.

2.8.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to paleontological resource considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to paleontological resources beyond those presented in Section 5.8 of the Project AFC, as supplemented in January 2010, and described in Section C.4 of the SA/DEIS.

2.8.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to paleontological resource considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to paleontological hazards and resources beyond those presented in Section 5.8 of the Project AFC, as supplemented in January 2010, and described in Section C.4 of the SA/DEIS.

2.8.3 Cumulative Impacts

No additional cumulative impacts to paleontological resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.8 of the Project AFC, Section 2.8 of the Supplement to the AFC, and Section C.4 of the SA/DEIS are applicable to the proposed Project changes.

2.8.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.4 of the SA/DEIS are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.8.5 LORS Compliance

The federal, state, and local LORS presented in Section C.4 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will comply with all LORS.

2.8.6 References

Dibblee, T. W., Jr., and A. M. Bassett. 1966. Geologic map of the Cady Mountains Quadrangle, San Bernardino County, California. U. S. Geological Survey Miscellaneous Geologic Investigations, Map I-467.

2.9 LAND USE

This section presents a discussion of the potential impacts related to land use from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.9.1 Affected Environment

The affected environment for land use was originally discussed in Section 5.9 of the AFC, Section 2.9 of the Supplement to the AFC, submitted in January 2010, and in Section C.9 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply includes two private parcels that were previously N.A.P. of the Project. The affected environment resulting from the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS with regards to land use.

2.9.2 Environmental Consequences

The environmental consequences for land use during Project construction and operation remain unchanged from the AFC section 5.9, Section 2.9 of the Supplement to the AFC submitted in January 2010, and Section C.9 of the SA/DEIS.

2.9.2.1 Well #3 Water Supply

The use of Well #3 to supply the Main Services Complex with water will require a pipeline to bring water from the property corresponding to APN 0529-281-34, across the property corresponding to APN 0529-281-28, to BLM lands (Figure 2.9-1). A well permit will be required from the San Bernardino County Environmental Health Services Department.

According to the Water, Wastewater, Land Use Section Well Water Sharing Guidelines of the San Bernardino County Environmental Health Services, well sharing may only take place between contiguous parcels. To avoid an inconsistency with this LORS, the lots (APN 0529-281-28 and APN 0529-281-34) will be merged.

As indicated in Section C.8 of the SA/DEIS, the parcels are designated “Resource and Conservation” by San Bernardino County zoning. The County Zoning Ordinance allows the parcels to be merged through a lot line adjustment and/or certicate of compliance, if and when the parcels are contiguous or adjacent, under single ownership, in the same County tax rate area, have current and paid taxes, and as long as the merged parcels would not be deprived of legal access or result in the access of adjoining parcels being deprived. Because the two private parcels intersected by the well and waterline meet each of these conditions, typical processing times for lot mergers in San Bernardino County are approximately four to six weeks, as indicated in the Applicant’s Responses to CEC and BLM Data Requests, Set 1, Part 1, filed in July 2009.

With a lot merger, the use of Well #3 as the primary Project water supply is not a significant change with regard to land use considerations. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to land use resources beyond those presented in Section 5.9 of the Project AFC, as supplemented in January 2010, and in Section C.9 of the SA/DEIS.

2.9.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to land use considerations since the project remains on BLM lands and the project boundary modification results in a reduction of the Project area from approximately 8,230 acres to approximately 7,130 acres. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to land use beyond those presented in Section 5.9 of the Project AFC, as supplemented in January 2010, and in Section C.9 of the SA/DEIS.

2.9.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to land use considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to land use beyond those presented in Section 5.9 of the Project AFC, as supplemented in January 2010, and described in Section C.9 of the SA/DEIS.

2.9.3 Cumulative Impacts

No additional cumulative impacts to land use have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.9 of the Project AFC, Section 2.9 of the Supplement to the AFC, and Section C.9 of the SA/DEIS are applicable to the proposed Project changes.

2.9.4 Mitigation Measures

An additional mitigation measure beyond those presented in the Conditions of Certification in Section C.9 of the SA/DEIS are applicable to the proposed Project changes. To avoid conflict with County Water Well Sharing Guidelines the Project shall merge the private lots shown on Figure 1.1, corresponding to APN 052928128 and APN 052928134.

2.9.5 LORS Compliance

The federal, state, and local LORS presented in Section C.9 of the SA/DEIS are applicable to the revised Project. The only additional applicable LORS related to the well and waterline is the County of San Bernardino Environmental Health Services Division Water, Wastewater and Land Use Section – Water Well Sharing Guidelines.

2.9.6 References

Water Wastewater Land Use Section, Water Well Sharing Guidelines. County of San Bernardino, Environmental Health Services. Provided by the County Environmental Health Services Division, May 12, 2010.

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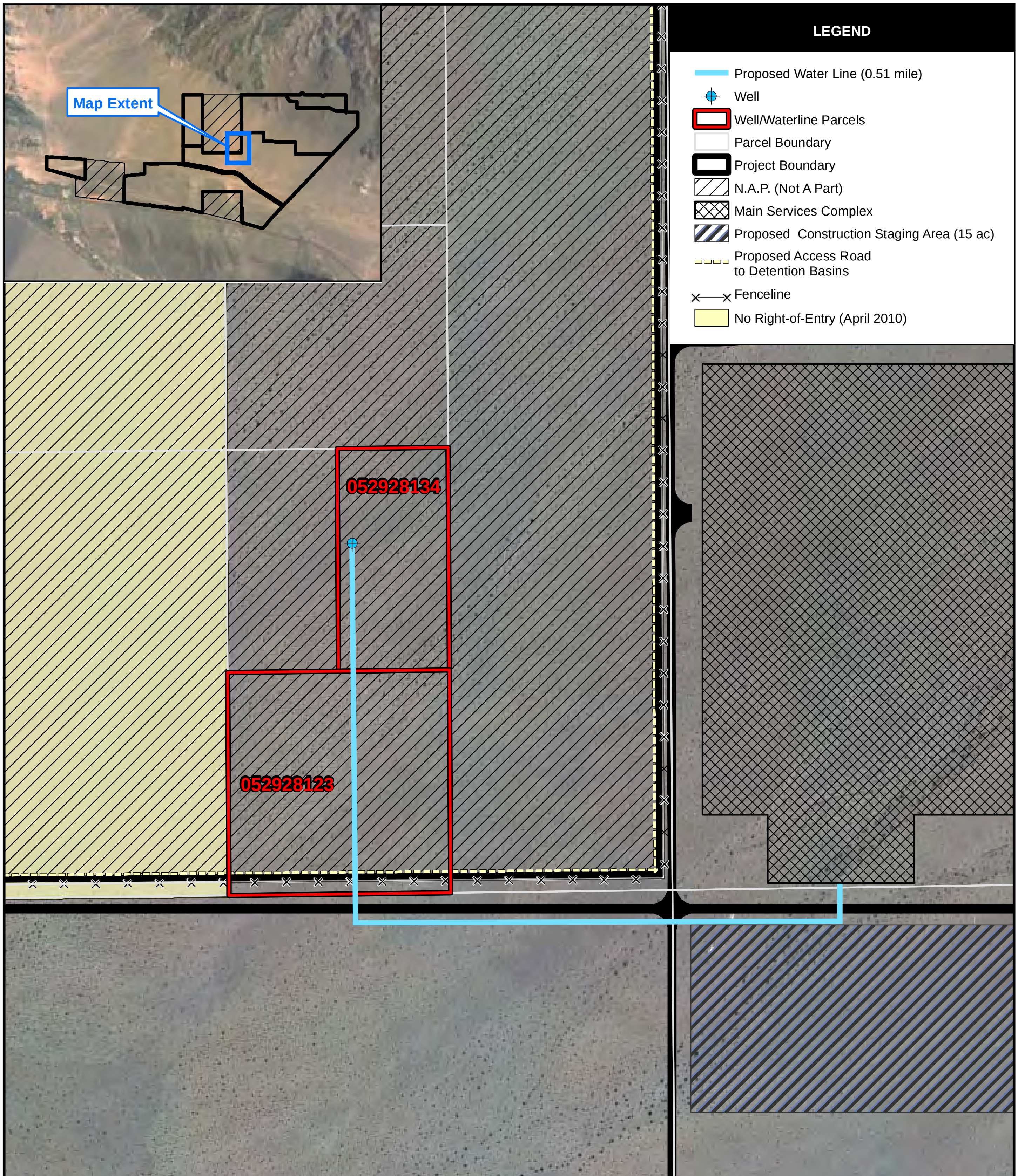

SOURCES: Huitt-Zollars, Inc (project features Feb. 2010, altered northern boundary URS May 2010); San Bernardino County (parcel 2009).

WELL AND WATERLINE PARCELS
CALICO SOLAR

URS

CREATED BY: CL	DATE: 05-13-10	FIG. NO:
PM: AL	PROJ. NO: 27658103.01000	2.9-1

Path: G:\gis\projects\1577\27658100\mxd\May 2010 Supplemental\Well_Parcels.mxd, 05/13/10, camille_lill

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2.10 SOCIOECONOMICS

This section presents a discussion of the potential impacts related to socioeconomics from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.10.1 Affected Environment

The affected environment for socioeconomics was originally discussed in Section 5.10 of the AFC, Section 2.10 of the Supplement to the AFC, submitted in January 2010, and in Section C.10 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement, and Section C.10 of the SA/DEIS.

2.10.2 Environmental Consequences

The environmental consequences for socioeconomics during Project construction and operation remain unchanged from the AFC section 5.10, Section 2.10 of the Supplement to the AFC submitted in January 2010, and Section C.10 of the SA/DEIS.

2.10.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to socioeconomic considerations. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to socioeconomics beyond those presented in Section 5.10 of the Project AFC, as supplemented in January 2010, and as described in Section C.10 of the SA/DEIS.

2.10.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to socioeconomic considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to socioeconomics beyond those presented in Section 5.10 of the Project AFC, as supplemented in January 2010, and as described in Section C.10 of the SA/DEIS.

2.10.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to socioeconomic considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to socioeconomics beyond those presented in Section 5.10 of the Project AFC, as supplemented in January 2010, and as described in Section C.10 of the SA/DEIS.

2.10.3 Cumulative Impacts

No additional cumulative impacts to socioeconomics have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.10 of the Project AFC, Section 2.10 of the Supplement to the AFC, and Section C.10 of the SA/DEIS are applicable to the proposed Project changes.

2.10.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.10 of the SA/DEIS are applicable to the proposed Project changes.

2.10.5 LORS Compliance

The LORS presented in Section C.10 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.10.6 References

No additional references beyond those presented in Section 5.10 of the Project AFC and Section 2.10 of the Supplement to the AFC were used for this supplemental analysis.

2.11 TRAFFIC AND TRANSPORTATION

This section presents a discussion of the potential impacts related traffic and transportation from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.11.1 Affected Environment

The affected environment for traffic and transportation was discussed in Section 5.11 of the AFC, section 2.11 of the Supplement to the AFC, submitted in January 2010 and in Section C.11 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC. The modifications to the affected traffic and transportation environment

2.11.2 Environmental Consequences

The environmental consequences for traffic and transportation during Project construction and operation remain unchanged from the AFC section 5.11 as updated in Section 2.11 of the Supplement to the AFC submitted in January 2010, and as described in Section C.11 of the SA/DEIS.

2.11.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to traffic and transportation considerations, relative to what was presented in Section 5.11 of the AFC and Section C.11 of the SA/DEIS. The Supplement to the AFC filed in January 2010 described the impacts to traffic and transportation associated with transporting water from the Cadiz BNSF well by either truck or rail. With use of Well #3, the traffic and transportation impacts are reduced from those presented in the Supplement and the SA/DEIS. Impacts to traffic and transportation are similar to those presented in the AFC, and they remain less than significant.

2.11.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to traffic and transportation considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to traffic and transportation beyond those presented in Section 5.11 of the Project AFC and Section C.11 of the SA/DEIS.

2.11.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to traffic and transportation considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to traffic and transportation beyond those presented in Section 5.11 of the Project AFC and Section C.11 of the SA/DEIS.

2.11.3 Cumulative Impacts

No additional cumulative impacts to traffic and transportation have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.11 of the Project AFC and Section C.11 of the SA/DEIS are applicable to the proposed Project changes.

2.11.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.11 of the SA/DEIS are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.11.5 LORS Compliance

The LORS presented in Section C.11 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.11.6 References

No additional references beyond those presented in Section 5.11 of the Project AFC were used for this supplemental analysis.

2.12 NOISE

This section presents a discussion of the potential impacts related to noise from the modifications to the primary Project water supply, the Project boundaries, and to an onsite hydrogen (H_2) system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.12.1 Affected Environment

The affected environment for noise was discussed in Section 5.12 of the AFC, Section 2.12 of the Supplement to the AFC, submitted in January 2010, and in Section C.9 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply is changed to include two private parcels that were previously N.A.P. of the Project. The Project boundary modifications change the affected environment by excluding approximately 1,100 acres from the Project footprint. The modifications to the hydrogen system do not change the affected environment for noise.

2.12.2 Environmental Consequences

2.12.2.1 Well #3 Water Supply

2.12.2.1.1 Construction Noise

Due to the proximity of Well #3 and the underground waterline to the Main Services Complex, and because an onsite well and waterline—both similarly located in proximity to the Main Services Complex—was already contemplated as a primary source of water for the Project at the time of AFC submission, construction noise associated with Well #3 would be considered part of the “Estimated Other Construction Noise” presented in Table 5.12-5 of the AFC and Tables CC-5-1 through CC-5-5 of the Project AFC Appendix CC. Thus, construction related impacts to noise as a result of installing Well #3 and the water line, beyond those presented in Section 5.12.2 of the Project AFC, are not expected.

The construction noise for linear facilities was addressed in Section C.9 of the SA/DEIS. The installation of Well #3 and the associated waterline do not present impacts beyond those identified and considered in that analysis.

2.12.2.1.2 Operational Noise

Due to the proximity of Well #3 to the Main Services Complex, and because an onsite well—similarly located in proximity to the Main Services Complex—was already contemplated as a primary source of water for the Project at the time of AFC submission, operation noise associated with Well #3 pumps and valves would not be considered dominant sources of noise and are considerably distant (at least two miles) from the nearest noise-sensitive receivers. There will be no operation-related impacts to noise as a result of utilizing Well #3 and the waterline, beyond those presented in Section 5.12.2 of the Project AFC and C.9 of the SA/DEIS.

2.12.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to noise considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related noise impacts beyond those presented in Section 5.12 of the Project AFC, as supplemented in January 2010, and as described in Section C.9 of the SA/DEIS.

2.12.2.3 Hydrogen System Modifications

2.12.2.3.1 Centralized Hydrogen System

While the storage capacities of the hydrogen system components have increased, the noise-generating components, such as compressors and the H_2 generator, have not changed during design development. Noise related to a centralized hydrogen supply system was analyzed in Section C.9 of the SA/DEIS. The modifications to the hydrogen system will not result in any noise-related impacts beyond those identified in the SA/DEIS.

2.12.2.3.2 Distributed Hydrogen System

Delivery of k-bottles to each individual SunCatcher will coincide with and involve the same truck trips planned for conducting SunCatcher mirror washing and maintenance activities. K-bottle refilling or replacing activities are expected to occur at a frequency of three times per year. Because the hydrogen delivery will not increase onsite traffic volumes and the corresponding generation of vehicle-related noise, no new impacts will occur beyond what was estimated for the Project AFC or identified in the SA/DEIS.

2.12.3 Cumulative Impacts

No additional cumulative noise impacts have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.12 of the Project AFC, and Section C.9 of the SA/DEIS are applicable to the proposed Project changes.

2.12.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.9 of the SA/DEIS are applicable to the proposed Project changes.

2.12.5 LORS Compliance

The federal, state, and local LORS presented in Section C.9 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.12.6 References

No additional references beyond those presented in Section 5.12 of the Project AFC were used for this supplemental analysis.

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2.13 VISUAL RESOURCES

This section presents a discussion of the potential impacts related to visual resources from the modifications to the primary Project water supply, the Project boundaries, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.13.1 Affected Environment

The affected environment for visual resources was originally discussed in Section 5.13 of the AFC, Section 2.13 of the Supplement to the AFC, submitted in January 2010, and in Section C.13 of the SA/DEIS. The affected environment will include two private parcels previously identified as N.A.P. of the Project and Project layout with a reduced footprint due to Project boundary modfications. The affected environment resulting from the modifications to the onsite hydrogen supply system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.13.2 Environmental Consequences

The environmental consequences for visual resources during Project construction and operation remain unchanged from the AFC section 5.13, Section 2.13 of the Supplement to the AFC submitted in January 2010, and Section C.13 of the SA/DEIS.

2.13.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to visual resource considerations. The well, its attendant features, and the pipeline will not create a significant change to the visual environment in the Project area. The well is a minimal structure and the waterline will be underground. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to visual resources beyond those presented in Section 5.13 of the Project AFC, as supplemented in January 2010, and in Section C.13 of the SA/DEIS.

2.13.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to visual resource considerations. The boundary modifications reduce the overall Project area and therefore will not create additional construction or operation related impacts to visual resources beyond those presented in Section 5.13 of the Project AFC, as supplemented in January 2010, and in Section C.13 of the SA/DEIS.

2.13.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to visual resource considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to visual resources beyond those presented in Section 5.13 of the Project AFC, as supplemented in January 2010, and described in Section C.13 of the SA/DEIS.

2.13.3 Cumulative Impacts

No additional cumulative impacts to visual resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.13 of the Project AFC, Section 2.13 of the Supplement to the AFC, and Section C.13 of the SA/DEIS are applicable to the proposed Project changes.

2.13.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.13 of the SA/DEIS are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.13.5 LORS Compliance

The LORS presented in Section C.13 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will comply with all LORS.

2.13.6 References

No additional references beyond those presented in Section 5.13 of the Project AFC and Section 2.13 of the Supplement to the AFC were used for this supplemental analysis.

2.14 WASTE MANAGEMENT

This section presents a discussion of the potential impacts related to waste management from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.14.1 Affected Environment

The affected environment for waste management was originally discussed in Section 5.14 of the AFC and section 2.14 of the Supplement to the AFC, submitted in January 2010. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC and its January 2010 Supplement, and as characterized in Section C.14 of the SA/DEIS.

2.14.2 Environmental Consequences

The environmental consequences for waste management during Project construction and operation remain unchanged from the AFC section 5.14 and Section 2.14 of the Supplement to the AFC submitted in January 2010, and as described in Section C.14 of the SA/DEIS.

2.14.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to waste management considerations. Water from Well #3 will be treated through RO to remove the majority of the dissolved solids. A de-mineralization stage may be required for the mirror washing water and water for the hydrogen generator. Wastewater from the RO process will be disposed in evaporation ponds located within the Main Services Complex (Figure 2.14-1). Based on the quality of the groundwater from Well #3, all demineralized water treatment wastewater salt cake will be disposed at a non-hazardous waste disposal facility. All salt cake will be removed and disposed of according to the Construction and Operation Waste Management Plans, as required by Conditions WASTE-3 and WASTE-7 in the SA/DEIS. The SA/DEIS utilized estimates of waste volume from the Project AFC, and no additional impacts from disposal of the water treatment wastewater salt cake will be associated with use of water from Well #3.

2.14.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to waste management considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to waste management beyond those presented in Section 5.14 of the Project AFC, as supplemented in January 2010, and as characterized in Section C.14 of the SA/DEIS.

2.14.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to waste management considerations, regardless of whether the centralized or distributed hydrogen system is utilized. The modifications will result in minor changes that do not create additional construction or operation related impacts to waste management beyond those presented in Section 5.14 of the Project AFC, as supplemented in January 2010, and as described in Section C.14 of the SA/DEIS.

2.14.3 Cumulative Impacts

No additional cumulative impacts to waste management have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.14 of the Project AFC, Section 2.14 of the Supplement to the AFC, and Section C.14 of the SA/DEIS are applicable to the proposed Project changes.

2.14.4 Mitigation Measures

The Conditions of Certification presented in Section C.14 of the SA/DEIS are applicable to the proposed Project changes. All de-mineralized water treatment wastewater salt cake will be disposed of at a non-hazardous waste disposal facility according to the Construction and Operation Waste Management Plans, as required by Conditions WASTE-3 and WASTE-7 in the SA/DEIS.

No additional mitigation measures are recommended based on the Project modifications.

2.14.5 LORS Compliance

The LORS presented in Section C.14 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.14.6 References

No additional references beyond those presented in Section 5.14 of the Project AFC and Section 2.14 of the Supplement to the AFC were used for this supplemental analysis.

2.15 HAZARDOUS MATERIALS HANDLING

This section presents a discussion of the potential impacts related to hazardous materials handling from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.15.1 Affected Environment

The affected environment for geologic hazards and resources was originally discussed in Section 5.15 of the AFC, Section 2.15 of the Supplement to the AFC, submitted in January 2010, and in Section C.5 of the SA/DEIS. The affected environment includes two private parcels previously identified as N.A.P. of the Project and a reduced Project layout resulting from modifications to the Project boundary. The affected environment resulting from the modifications to the onsite hydrogen supply system is unchanged from that presented in the AFC, its January 2010 Supplement, and the SA/DEIS.

2.15.2 Environmental Consequences

2.15.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to hazardous materials handling considerations. Construction of the waterline may include small quantities of materials that pose minimal potential for offsite impacts, as discussed in Section C.5 of the SA/DEIS. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to hazardous materials handling beyond those presented in Section 5.15 of the Project AFC, as supplemented in January 2010, and as described in Section C.5 of the SA/DEIS.

2.15.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to hazardous materials handling considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to hazardous materials handling beyond those presented in Section 5.15 of the Project AFC, as supplemented in January 2010, and as described in Section C.5 of the SA/DEIS.

2.15.2.3 Hydrogen System Modifications

The Applicant described the hydrogen use, supply and storage in the AFC, filed in December 2008. In the original design, it was proposed that hydrogen would be supplied to the SunCatchers through a distributed system. Each of the SCE, within the SunCatcher unit, would contain 14 cubic feet of hydrogen gas, and each SunCatcher unit would be equipped with a 196-scf k-bottle to replenish hydrogen gas lost within the gas circuit. K-bottles would be provided by a commercial hydrogen supplier. Section 4, Alternatives in the AFC described an alternative centralized hydrogen system.

The Applicant responded to CEC and BLM Data Requests 57-60 in July 2009, updating the hydrogen system to include a centralized hydrogen gas supply, storage and distribution system. The system included onsite generation of hydrogen through electrolysis and the storage of that hydrogen in a 36,400 scf steel storage tank. From the storage tank, the hydrogen would be piped to 95 individual compressor groups that include a compressor, a high pressure supply tank and a low pressure dump tank used to recover hydrogen from non-operational PCUs through a return line. This centralized hydrogen distribution system was the system analyzed in the SA/DEIS.

At this time, the Applicant is evaluating the relative advantages between the centralized hydrogen distribution system and a distributed system that utilizes k-bottles on the PCUs of all SunCatchers. This supplement describes both systems and provides an environmental assessment of each. The details of both the centralized hydrogen system and the distributed system have evolved over time, and this supplement to the AFC presents modifications to each system.

Centralized Hydrogen System Description

The details of the centralized hydrogen system have been refined as a result of experience from the Applicant's Maricopa Solar Project and as a result of design having progressed to final engineering. The maximum amount of hydrogen stored for each SunCatcher would be increased from 3.4 to 11 scf which would accommodate two full charges of the PCU. In order to support this increased hydrogen storage at each SunCatcher, the high pressure supply tanks and low pressure dump tanks at each compressor group would accommodate 29,333 scf and 9,900 scf, respectively. In the July 2009 responses CEC and BLM Data Requests 57-60, each high pressure supply tank was anticipated to be 648 scf and each low pressure dump tank was also reported to be 648 scf.

If a centralized hydrogen system is used at the Calico Solar site, the hydrogen gas will be produced through electrolysis by two redundant hydrogen generators. Each proposed hydrogen generator will be capable of producing 1,820 scfh. Although the hydrogen generators could run full time if needed to supply sufficient amount of hydrogen to the SunCatchers, the generators will be operated at off-peak electric hours using grid power and generated hydrogen will be stored onsite. Hydrogen gas produced by the onsite generators will be stored in a steel storage tank. The hydrogen tank, at approximately nine feet in diameter by 30 feet long, will be capable of storing approximately two-day supply of hydrogen (i.e., approximately 36,400 scf).

The hydrogen storage tank will distribute hydrogen fuel to 95 individual compressor groups. Each compressor group will be electrically operated and will consist of a compressor and a high pressure supply tank with a 29,333 scf capacity, delivering gas at approximately 2,760 psi. Each compressor group will also be equipped with a low pressure dump tank with the same 9,900 scf capacity and used to recover hydrogen from non-operational PCUs through a ¼" and ½" stainless steel return line. In this option there are no other holding tanks or storage tanks in the compressor groups. Delivery of hydrogen is through pipelines.

Distributed Hydrogen System Description

If the distributed hydrogen supply system utilizing k-bottles at each SunCatcher PCU is utilized at the Calico Solar site, the system will use two redundant hydrogen generators and one steel storage tank located at the Main Services Complex as described in the centralized system. However, the system would not deliver hydrogen through pipelines. In lieu of the distribution equipment, hydrogen will be filled from the hydrogen storage tank to each individual SunCatcher through trucks. Each SunCatcher will include an 82-scf high pressure supply tank, 28-scf low pressure dump tank, and a 489-scf local storage tank. In addition, each SunCatcher unit will contain a minimum of 11-scf of hydrogen at 580 psi at all times, resulting in a total of around 610-scf of hydrogen in each SunCatcher.

The k-bottles will be delivered back to each SunCatcher, utilizing the mirror-washing truck trips included in the SA/DEIS analysis. Hydrogen refilling and replacement trips are expected occur approximately three times per year. Table 2.15-1 presents a summary of differences between each hydrogen supply system.

Table 2.15-1
Potential Hydrogen Supply Systems

Feature	Centralized Hydrogen System	Distributed Hydrogen System
Storing hydrogen in main service complex	36,400 scf x 1 tank	36,400 scf x 1 tank
High-pressure supply tank	29,333 scf x 95 compressor groups	82 scf x 34,000 SunCatchers
Low-pressure supply tank	9,900 scf x 95 compressor groups	28 scf x 34,000 SunCatchers
Local Storage Tank	--	489 scf x 34,000 SunCatchers
Single SunCatcher	11 scf	11 scf
Total amount onsite	4,140,000 scf (23,000 lbs)	20,800,000 scf (116,000 lbs)

Offsite Consequence Analysis

The Project consists of up to 34,000 SunCatchers and will use hydrogen gas as the working fluid in the PCU. Because of the hazardous nature of hydrogen there is a risk that it may cause an offsite consequence upon uncontrolled release. That aspect of the project is presented in this section, and the Project conducted an offsite consequence analysis (OCA) based on Federal and State Risk Management Programs regulatory criteria. The criteria for an OCA require a worst-case release scenario be estimated to evaluate the potential hazard posed by hydrogen stored at the proposed Project site.

Accidental Release Process

The OCA conducted for the Project evaluated uncontrolled worst-case release scenarios, based on the conditions recommended in state and federal Risk Management Plan (RMP). The accidental release scenarios from the centralized system evaluated consist of the following:

- The release and ignition of the entire contents of the hydrogen storage tank;

- The release and ignition of the entire contents of one high pressure supply tank in a compressor group;
- The release and ignition of the entire contents of one low pressure dump tank in a compressor group; and
- The release and ignition of the maximum potential quantity of hydrogen found at the Project Site.

And the accidental release scenarios evaluated for the distributed system consist of the following:

- The release and ignition of the entire contents of the hydrogen storage tank;
- The release and ignition of a single SunCatcher unit; and
- The release and ignition of the maximum potential quantity of hydrogen found at the Project Site.

It is important to note that the OCAs for the Project provide conservative evaluations for accidental hydrogen releases. The OCAs were performed following the methodology provided in the RMP guidance (U.S. EPA 1999) and evaluated the total impact from a vapor cloud explosions generated from each release scenario. The following section provides further details of the vapor cloud explosion events examined for the worst case scenario event.

Worst Case Scenario – Vapor Cloud Explosion

Based on RMP guidance criteria (U.S. EPA 1999), the worst case scenario for a flammable substance such as hydrogen consists of a vapor cloud explosion (where the total quantity of hydrogen released is assumed to form a vapor cloud). The following characteristics of a vapor cloud explosion are assumed for the OCA.

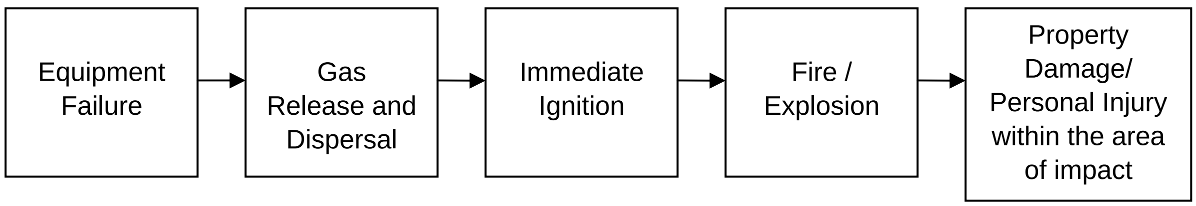
- The entire hydrogen content is assumed to participate in the formation of a vapor cloud.
- Ten percent of the flammable vapors in the cloud will participate in the explosion.

The impact for this worst case scenario vapor cloud explosion is then measured by the distance from the source of the explosion to a 1 psi overpressure level.

The evaluation of a worst case scenario for a flammable substance presents the effects of the blast from a vapor cloud explosion as the most significant hazard from an accidental hydrogen release. The 1.0 psi overpressurization endpoint selected by the U.S. Environmental Protection Agency (EPA) provides an impact that may cause partial demolition of houses and can result in serious injuries to any population present within the area of impact.

Although a vapor cloud explosion presents the greatest potential impact from an accidental hydrogen release, its probability of occurrence is remote based on historical data. The release and scenario characteristics required to achieve a worst case scenario vapor cloud explosion are unlikely to present themselves. Figure 2.15-1 shows the necessary sequence of events for a vapor cloud explosion to occur.

Figure 2.15-1
Hydrogen Gas Release Sequence



Hydrogen Release and Ignition Sequence of Events

When hydrogen is released into the ambient conditions, the hydrogen gas will expand rapidly by a factor of up to 845 times in volume as it warms to ambient temperature (Airproducts 2007). It is then mixed with air and forms a combustible gas cloud. The dispersion of the cloud is affected by wind speed and direction and can be influenced by atmospheric turbulence and nearby structures.

Since its minimum ignition energy in air at atmospheric pressure is about 0.2 millijoule (mJ) (Hattwig and Steen 2004), hydrogen gas is easily ignited by any ignition sources or even friction and static discharges. The ignition is considered to be occurring almost spontaneously as the gas disperses in a plume. The flame will propagate through deflagration at subsonic speed relative to the unburned gas. Typical flame speeds (i.e., relative to a stationary observer) are from the order of 1 to 1000 meter per second (m/s) (GexCon 2003). Although the hydrogen cloud is colorless, water vapor clouds will form as a product of the combustion to indicate the rough contour of the flammable hydrogen clouds. A detonation (i.e., a supersonic combustion wave) can occur if the hydrogen and air mixture is within its explosion range and an appropriate ignition source is available. This does not occur in unconfined space unless high explosives or very strong shockwaves are present.

At the Project Site, hydrogen storage tanks are situated in an open area, the flame from an ignited release will propagate through a flammable hydrogen-air cloud and will burn within seconds. Flame acceleration will not occur unless the hydrogen cloud flows into a confined space, where the increasing temperature expands the gas and generates a turbulent flow of unburned gas. Under a confined space release situation, the unburned gas will increase the burning rate and cause high explosion pressures and eventually a detonation.

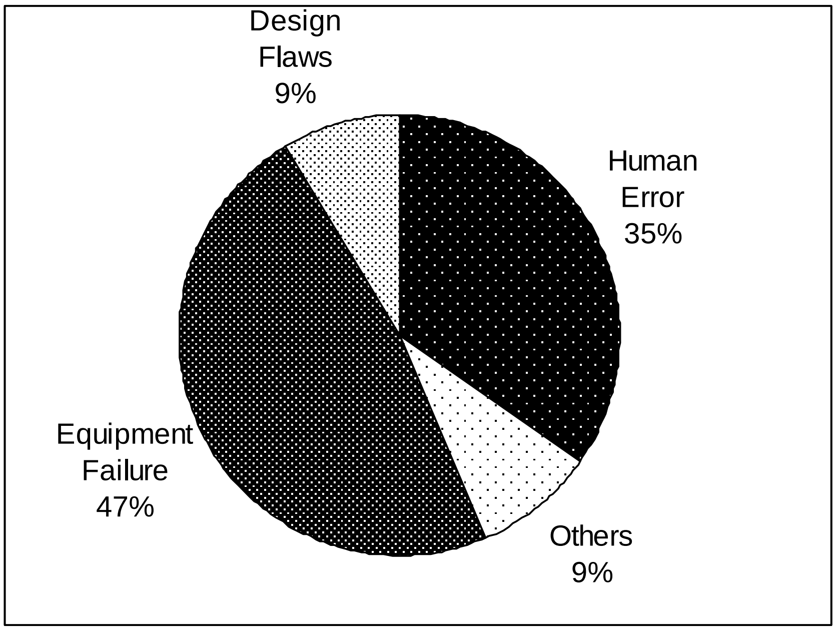
Historical Data Analysis

In order to properly evaluate the consequences of a potential hydrogen explosion at the Project Site, historical accident records of similar hydrogen storage systems are analyzed in this section. H_2 Incidents is an online database, supported by the United States Department of Energy (U.S. DOE), which serves as a voluntary reporting tool for all accidents involving hydrogen or hydrogen-related technologies. It is used as the primary sources of records as discussed below (U.S. DOE 2009).

There have been 140 hydrogen accidents reported between 1972 to the present time or an average of approximately 3.8 accidents per year. Of the 140 hydrogen-related accidents, 23 were studied, which is the focus of this study as a worst case scenario.

URS (URS Corporation) has reviewed the 23 accidents and found that there are several hazards that are commonly associated with hydrogen accidents, ranging from respiratory ailment, component failure, ignition, and burning. Although a combination of hazards occurs in most instances, the typical release is attributed to leakage caused by defective seals or gaskets, valve misalignment, or failures of flanges or other equipment. According to the H_2 Incidents database, 78 percent of the accidents released an uncertain amount of hydrogen into the atmosphere, while 56 percent of those releases sparked an ignition. The causes of these accidental releases are categorized in Figure 2.15-2 below.

Figure 2.15-2
Contributing Causes of Hydrogen Release Accidents



It is found that 47 percent of these accidents are caused by equipment failure, such as valve malfunction and storage tank leakage. Human errors, mainly transportation accidents caused by drivers, constituted for 35 percent of the overall accident causes. It should be noted that most of these accidents can be prevented with better standard operating procedure protocols and operation awareness and training.

Offsite Consequence Analysis

The OCA evaluation conducted for the various scenarios was performed through two methods: (1) EPA approved modeling program RMP*COMP; and (2) EPA RMP OCA Guidance (EPA 1999a, 1999b, 1999c) documents. Results from the two methods were compared to check for accuracy of the calculations The OCA evaluations for each scenario were conducted based on worst case scenario criteria, defined as a vapor cloud explosion event from each release. As mentioned earlier, the accidental release scenarios for the centralized system evaluated consist of: (1) the release and ignition of the entire contents of the hydrogen storage tank, (2) the release and ignition of the entire contents of one high pressure supply tank in a single compressor group, (3) the release and ignition of the entire contents of one low pressure dump tank in a single compressor group, (4) the release and ignition of the maximum potential quantity of hydrogen found at the Project Site. And the accidental release scenarios for the distributed system evaluated consist of: (1) the release and ignition of the entire contents of the hydrogen storage tank, (2) the release and ignition of a single SunCatcher unit, (3) the release and ignition of the maximum potential quantity of hydrogen found at the Project Site. Further details regarding each scenario and its OCA evaluation are provided within the following subsections.

Release Scenarios

The accidental release scenarios below were considered in the analysis of the off-site consequence. The scenarios were evaluated based on EPA's RMP worst case scenario criteria discussed above.

(1) Centralized System

Scenario 1: The content of the 36,400 scf hydrogen storage tank (approximately 204 pounds) at the Project Site is instantaneously released into the atmosphere. The released hydrogen forms a vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

Scenario 2: The hydrogen content of one high pressure supply tank (approximately 164 pounds) is instantaneously released into the atmosphere. The released hydrogen forms a vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

Scenario 3: The hydrogen content of one low pressure dump tank (approximately 55 pounds) is instantaneously released into the atmosphere. The released hydrogen forms a vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

Scenario 4: The maximum hydrogen quantity at the Project Site, i.e. the hydrogen storage tank, compressor groups, and surge tank groups, (approximately 23,000 pounds) is instantaneously released into the atmosphere. All of the released hydrogen forms a single vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

(2) Distributed System

Scenario 1: The content of the 36,400 scf hydrogen storage tank (approximately 204 pounds) at the Master Service Center is instantaneously released into the atmosphere. The released hydrogen forms a vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

Scenario 2: The content of one single SunCatcher with all tanks connecting to it (approximately 3.4 pounds) is instantaneously released into the atmosphere. The released hydrogen forms a vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

Scenario 3: The maximum hydrogen quantity at the Project Site, i.e. the hydrogen storage tank, and all SunCatchers (approximately 116,000 pounds) is instantaneously released into the atmosphere. All of the released hydrogen forms a single vapor cloud and 10 percent of the flammable vapor in the cloud participates in the explosion.

As previously presented, the worst case scenario evaluations performed for each hypothetical scenario were applied to produce conservative results. Each of the scenarios provided above is unrealistic, due to their extremely low probability of occurrence. However, the evaluation of these scenarios under worst case criteria was performed by the Project to determine the furthest extent of impact from a release and ignition of hydrogen at the Project Site.

Methodology of Modeling

Two methods were used to evaluate the impact distances for the scenarios described above.

(1) RMP* COMP

RMP* COMP is an EPA recommended risk management program developed by the Office of Response and Restoration, National Ocean Service, National Oceanic and Atmospheric Administration (NOAA), and the EPA Office of Emergency Management. Based on the total release amount, the program models the potential impact from an accidental release by estimating the distance to endpoint according to EPA's recommended procedures in the offsite consequence analysis--both worst-case and alternative scenarios. By inputting the release amount and selecting the modeling scenario, the program will complete the calculation based on OCA Guidance and automatically generate the endpoint distance to 1.0 psi overpressure.

(2) RMP OCA Guidance

In the RMP OCA Guidance, the total quantity of hydrogen is assumed to form a vapor cloud. The entire cloud is assumed to be within the flammability limits, and the cloud is assumed to explode. Ten percent of the flammable vapor in the cloud is assumed to participate in the explosion. The effect is measured as the distance to the 1.0 psi overpressure level. This is determined using the following equation:

$$D = 0.0081\left(0.1\,W_f\,\frac{H_{Cf}}{H_{CTNT}}\right)^{1/3}$$

Where:

D	=	distance to overpressure of 1 psi (miles)
W_f	=	weight of flammable substance (pounds)
H_{Cf}	=	heat of combustion of flammable substance (kjoules/kilogram)
H_{CTNT}	=	heat of combustion of trinitrotoluene (4,600 kjoules/kilogram)

Evaluation Parameters

A vapor cloud explosion is used to model the hazard of explosion from a hydrogen release event. The following section explains the parameters used for each effect evaluation. Table 2.15-2 presents the parameters used, while Table 2.15-3 shows the scenarios used in the analysis.

Table 2.15-2
Chemical Physical Parameters

Chemical	H_c(1) (kjoules/kilogram)	Density(2) (lb/scf)	References
Hydrogen	119,950	0.0056	1, 2

Sources: 1 - EPA Risk Management Plan Off-site Consequence Analysis Guidance Exhibit C-2, Appendix C, 1999
2 Perry's Chemical Engineering Handbook 6th Edition, 1984.

Note:

H_c = Heat of Combustion

Density of hydrogen at standard conditions (i.e. 60°F, 14.696 psia)

Table 2.15-3
Scenario Definitions

Scenario	Source of Release	Approximate Volume (scf)	Total Mass (lbs)
Centralized System			
1	Hydrogen Storage Tank	36,400	204
2	High Pressure Gas Tank	29,333	164
3	Low Pressure Dump Tank	9,900	55
4	Maximum Amount of Hydrogen	4,140,000	23,000
Distributed System			
1	Hydrogen Storage Tank	36,400	204
2	Single SunCatcher (3k bottle)	610	3.4
3	Maximum Amount of Hydrogen	20,800,000	116,000

Analysis Results

The off-site consequence results are summarized in Table 2.15-4. Results as shown in Table 2.15-4 are comparable.

Table 2.15-4
Explosion Distance to Endpoint (overpressure of 1.0 psi)

Scenario	Volume (scf)	Weight (lbs)	Modeling Endpoint Distance (miles)	Calculated Endpoint Distance (miles)	% Difference between methods
Centralized System					
1	36,400	204	0.07	0.07	0
2	29,333	164	0.06	0.06	0
3	9,900	55	0.04	0.04	0
4	4,140,000	23,000	0.30	0.32	6
Distributed System					
1	36,400	204	0.07	0.07	0
2	610	3.4	0.01	0.01	0
3	20,800,000	116,000	0.50	0.54	7

Note:
lbs = pounds
scf = standard cubic feet

Conclusion

OCAs were performed using the EPA approved RMP*Comp modeling program and confirmed through RMP OCA Guidance calculations. The purpose of conducting these OCAs was to evaluate any potential offsite hazards that may occur from the storage and use of hydrogen at the Project Site. As described above, four separate accident scenarios were evaluated using worst-case scenario criteria. The distances from the point of release to each respective scenario endpoint are provided in Table 2.15-4.

As shown in Table 2.15-4, based on the OCA modeling, the maximum potential extent of impact in the event of a worst-case release from the largest vessel (hydrogen storage tank), as defined by the RMP OCA Guidance, would be equivalent to 0.07 mile. However, in the event of the worst case scenario induced from cumulative releases at the site, the maximum impacted distances are 0.35 mile for centralized system and 0.44 mile for distributed system. These distances are derived from an unrealistic hypothetical situation where all potential hydrogen present at the Project Site participates in a vapor cloud explosion.

Results from the OCA modeling demonstrated that an accidental release of hydrogen, under conservative worst-case scenario conditions, will not impact the public or environmental receptors in the vicinity of the site. From the evaluation of the four release scenarios explained above, the impact distance from the point of release to each respective scenario endpoint is estimated to range from 0.04 to 0.35 mile for centralized system or range from 0.01 to 0.44 mile for distributed system. Based on the location of the Project Site, the major portion of the impact derived from any of the analyzed scenarios shall not affect any sensitive receptors in the event of such a release at the Project Site. Additionally, the Project will provide fire protection measures to mitigate the impact from an accidental hydrogen release further reducing the overall area of impact.

2.15.3 Cumulative Impacts

No additional cumulative impacts to hazardous materials handling have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.15 of the Project AFC, Section 2.15 of the Supplement to the AFC, and Section C.5 of the SA/DEIS are applicable to the proposed Project changes.

2.15.4 Mitigation Measures

Condition for Certification HAZ-2 in Section C.5 of the SA/DEIS includes a RMP for hydrogen storage, per the requirements of the California Accidental Release Prevention Program. No additional mitigation measures are recommended based on the Project modifications.

2.15.5 LORS Compliance

The LORS presented in Section C.5 of the SA/DEIS are applicable to the revised Project.

The maximum amount of hydrogen that could be stored onsite is estimated to be 23,000 pounds for centralized system, and 116,000 pounds for distributed system. Hydrogen is identified as a hazardous substance by both the California Accidental Release Prevention Program (CalARP) [19 CCR 2735 et seq.] and the federal Chemical Accident Prevention Provisions [40 CFR 68], based on its flammable characteristics. The regulatory requirements for the storage of hydrogen at the site are presented in Table 2.15-5 below:

Table 2.15-5
Regulatory Program Applicability

Hazardous Chemical	Federal RMP Threshold (lbs)	State CalARP Threshold (lbs)	Regulatory Program Applicability
Hydrogen	10,000	10,000	Both systems will be subject to both state CalARP and federal RMP program enforcement.

Notes:
CalARP = California Accidental Release Prevention
CFR = Code of Federal Regulations
lbs = pounds
RMP = Risk Management Plan

As shown in Table 2.15-5, due to the maximum amount of hydrogen expected to be present at the Project Site, the Project will be subject to either state or federal requirements for the hydrogen storage. Condition of Certification HAZ-2 requires the Applicant to prepare an RMP to comply with regulatory requirements. The Project will comply with all LORS.

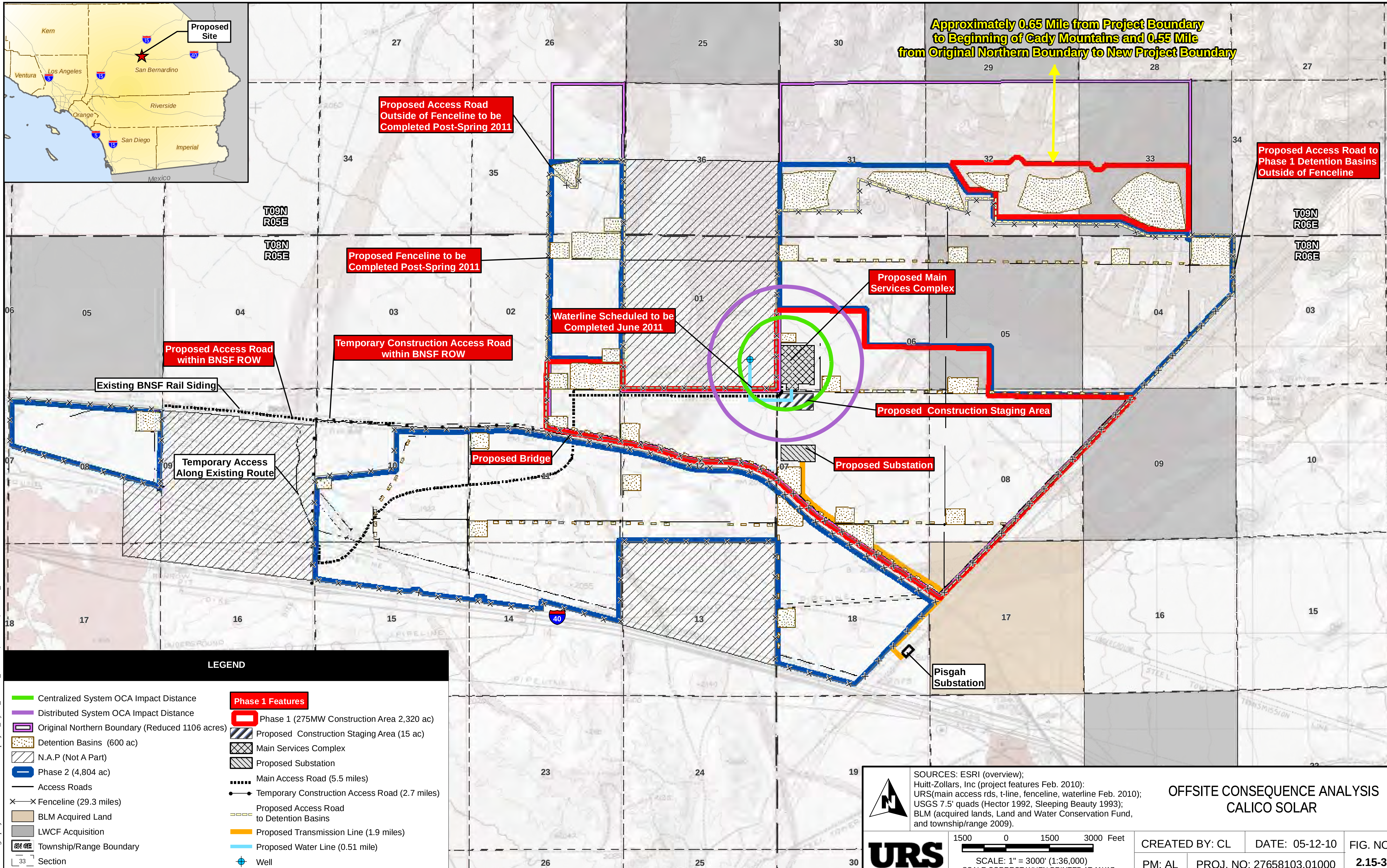
2.15.6 References

GexCon. *Gas Explosion Handbook*. 2003, Sweden. http://www.gexcon.com/ (Accessed on June 3, 2009.)

Hattwig, Martin and Steen, Henrikus. *Handbook of Explosion Prevention and Protection*. 2004

U.S. Department of Energy, Pacific Northwest National Laboratory. *H2 Incidents*. http://h2incidents.org/ (Accessed on June 3, 2009.)

U.S. Environmental Protection Agency Risk Management Program Guidance for Offsite Consequence Analysis Guidance (April 1999)



OFFSITE CONSEQUENCE ANALYSIS
CALICO SOLAR

FIG. NO: 2.15-3

Path: G:\gis\projects\1577\27658100\mxd\project_layout_reduced_well.mxd, 05/12/10, camille_lilli

2.16 PUBLIC HEALTH AND SAFETY

This section presents a discussion of the potential impacts related to public health and safety from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.16.1 Affected Environment

The affected environment for public health and safety was discussed in Section 5.16 of the AFC, Section 2.16 of the Supplement to the AFC, submitted in January 2010, and in Section C.6 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.16.2 Environmental Consequences

The environmental consequences for public health and safety during Project construction and operation remain unchanged from the AFC section 5.16, Section 2.16 of the Supplement to the AFC submitted in January 2010, and Section C.6 of the SA/DEIS.

2.16.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to public health and safety considerations. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to public health and safety beyond those presented in Section 5.16 of the Project AFC, as supplemented in January 2010, and as described in Section C.6 of the SA/DEIS.

2.16.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to public health and safety considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to public health and safety beyond those presented in Section 5.16 of the Project AFC, as supplemented in January 2010, and as described in Section C.6 of the SA/DEIS.

2.16.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to public health and safety considerations, regardless of whether the centralized or distributed hydrogen system is utilized. As described in Section 2.15 of this document, the accidental, worst-case hydrogen release scenario would not impact public receptors in the vicinity of the Project. The modifications will result in minor changes that do not create additional construction or operation related impacts to public health and safety beyond those presented in Section 5.16 of the Project AFC, as supplemented in January 2010, and as described in Section C.6 of the SA/DEIS.

2.16.3 Cumulative Impacts

No additional cumulative impacts to public health and safety have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.16 of the Project AFC, Section 2.16 of the Supplement to the AFC, and Section C.6 of the SA/DEIS are applicable to the proposed Project changes.

2.16.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.6 of the SA/DEIS are applicable to the proposed Project changes.

2.16.5 LORS Compliance

The LORS presented in Section C.6 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.16.6 References

No additional references beyond those presented in Section 5.16 of the Project AFC and Section 2.16 of the Supplement to the AFC were used for this supplemental analysis.

2.17 WORKER SAFETY

This section presents a discussion of the potential impacts related to worker safety from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.17.1 Affected Environment

The affected environment for worker safety was originally discussed in Section 5.17 of the AFC, Section 2.17 of the Supplement to the AFC, submitted in January 2010, and Section C.15 of the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.17.2 Environmental Consequences

The environmental consequences for worker safety during Project construction and operation remain unchanged from the AFC section 5.17, Section 2.17 of the Supplement to the AFC submitted in January 2010, and Section C.15 of the SA/DEIS.

2.17.2.1 Well #3 Water Supply

The use of Well #3 as the primary Project water supply is not a significant change with regard to worker safety considerations. The changed water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to worker safety beyond those presented in Section 5.17 of the Project AFC, as supplemented in January 2010, and as described in Section C.15 of the SA/DEIS.

2.17.2.2 Project Boundary Modifications

The modifications to Project boundary are not significant changes with regard to worker safety considerations. The boundary modifications will result in minor changes that do not create additional construction or operation related impacts to worker safety beyond those presented in Section 5.17 of the Project AFC, as supplemented in January 2010, and as described in Section C.15 of the SA/DEIS.

2.17.2.3 Hydrogen System Modifications

The modifications to the onsite hydrogen system are not significant changes with regard to worker safety considerations, regardless of whether the centralized or distributed hydrogen system is utilized. Worker safety considerations under the centralized system were analyzed in the SA/DEIS and worker safety considerations associated with use, and refilling of k-bottles was discussed in the Project AFC. The modifications will result in minor changes that do not create additional construction or operation related impacts to worker safety beyond those presented in Section 5.17 of the Project AFC, as supplemented in January 2010, and as described in Section C.15 of the SA/DEIS.

2.17.3 Cumulative Impacts

No additional cumulative impacts to worker safety have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.17 of the Project AFC, Section 2.17 of the Supplement to the AFC, and Section C.15 of the SA/DEIS are applicable to the proposed Project changes.

2.17.4 Mitigation Measures

No additional mitigation measures beyond those presented in the Conditions of Certification in Section C.15 of the SA/DEIS are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.17.5 LORS Compliance

The LORS presented in Section C.15 of the SA/DEIS are applicable to the revised Project and no additional federal, state, or local LORS are applicable. The Project will be consistent with all LORS.

2.17.6 References

No additional references beyond those presented in Section 5.17 of the Project AFC and Section 2.17 of the Supplement to the AFC were used for this supplemental analysis.

2.18 CUMULATIVE IMPACTS

This section presents a discussion of the potential cumulative impacts related from the modifications to the primary Project water supply, the Project boundaries, and to the onsite hydrogen system.

The discussion below includes the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS.

2.18.1 Affected Environment

The affected environment for Cumulative Impacts was originally discussed in Section 5.18 of the AFC, Section 2.18 of the Supplement to the AFC, submitted in January 2010, and in the SA/DEIS. The affected environment resulting from the modifications to the primary Project water supply, the Project boundary, and to the onsite hydrogen system is unchanged from that presented in the AFC, its January 2010 Supplement and the SA/DEIS.

2.18.2 Environmental Consequences

The modifications to Project boundary are not significant changes with regard to cumulative impacts. The project modifications do not create additional construction or operation related cumulative impacts beyond those presented in Section 5.18 of the Project AFC, as supplemented in January 2010, and as described in the SA/DEIS.

2.18.3 Mitigation Measures

No additional mitigation measures for cumulative impacts beyond those presented in the Conditions of Certification in the SA/DEIS are applicable to the proposed Project changes.

2.18.4 LORS Compliance

The LORS presented in the SA/DEIS are applicable to the revised Project and no federal, state, or local additional LORS are applicable. The Project will be consistent with all LORS.

2.18.5 References

No additional references beyond those presented in Section 5.18 of the Project AFC and Section 2.18 of the Supplement to the AFC were used for this supplemental analysis.

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ORANGE COAST TITLE COMPANY
ESCROW DIVISION
3536 Concours Dr., Suite 120
Ontario, CA 91764
(909) 987-5433

BUYER(S) ESTIMATED CLOSING STATEMENT

ESCROW NO: 1160211 - AR
ESCROW OFFICER: Alma Rushing

DATE: 4/15/2010
TIME: 03:36 PM
CLOSING DATE: 4/30/2010

BUYER(S): CALICO SOLAR LLC
PROPERTY ADDRESS: apn# 0529-281-28, 34 see APN above San Bernardino, CA 92408

	DEBITS	CREDITS
TOTAL CONSIDERATION	$ [redacted]	
Deposits		
Initial Deposit 0529-281-28, 34		$ [redacted]
Prorations		
County Taxes @ $16.87 for 6 Months From 4/30/2010 To 7/1/2010	$ [redacted]	
Title Charges - Orange Coast Title Company - Builder Services		
[Total Title Charges: $408.25]		
Owners Policy For $7,500.00	$ [redacted]	
County Transfer Tax	$ [redacted]	
Recording Charges		
[Total Recording Charges: $40.00]		
Grant Deed	$ [redacted]	
Escrow Charges		
[Total Escrow Charges: $[redacted]]		
Escrow Fee	$ [redacted]	
Pad	$ [redacted]	
Balance Due Escrow		$ [redacted]
Totals	$ [redacted]	$ [redacted]

[redacted]

CALICO SOLAR LLC
A Delaware Limited Liability Company

By: Felicia L Bellows

Its: Vice President

PRELIMINARY CHANGE OF OWNERSHIP REPORT

To be completed by transferee (buyer) prior to transfer of subject property in accordance with Section 480.03 of the Revenue and Taxation Code. A Preliminary Change of Ownership Report must be filed with each conveyance in the County Recorder's office for the county where the property is located; this particular form may be used in all 58 counties of California.

FOR RECORDER'S USE ONLY
DOCUMENT NUMBER
RECORDING DATE

THIS REPORT IS NOT A PUBLIC DOCUMENT

SELLER/TRANSFEROR: KENNETH C. DEANS
SHIRLEY A. DEANS

BUYER/TRANSFEREE: CALICO SOLAR LLC

ASSESSOR'S PARCEL NUMBER(S): 0529-281-28, 0529-281-34

PROPERTY ADDRESS OR LOCATION: apn# 0529-281-28, 34 see APN above, San Bernardino, CA 92408

MAIL TAX INFORMATION TO: Name CALICO SOLAR LLC
Address 4800 North Scottsdale Road #5500
Scottsdale, AZ 85251
Phone Number (8 a.m. – 5 p.m.) [redacted]

NOTICE: A lien for property taxes applies to your property on January 1 of each year for the taxes owing in the following fiscal year, July 1 through June 30. One-half of these taxes is due November 1, and one-half is due February 1. The first installment becomes delinquent on December 10, and the second installment becomes delinquent on April 10. One tax bill is mailed before November 1 to the owner of record. **If this transfer occurs after January 1 and on or before December 31, you may be responsible for the second installment of taxes due February 1.**

The property which you acquired may be subject to a supplemental assessment in an amount to be determined by the County Assessor. For further information on your supplemental roll obligation, please call the County Assessor.

PART I: TRANSFER INFORMATION *(please answer all questions)*

YES	NO		
☐	☐	A.	Is this transfer solely between husband and wife (addition of a spouse, death of a spouse, divorce settlement, etc.)?
☐	☐	B.	Is this transaction only a correction of the name(s) of the person(s) holding title to the property (For example, a name change upon marriage)? Please explain ______
☐	☐	C.	Is this document recorded to create, terminate, or reconvey a lender's interest in the property?
☐	☐	D.	Is this transaction recorded only as a requirement for financing purposes or to create, terminate, or reconvey a security interest (e.g. cosigner)? Please explain ______
☐	☐	E.	Is this document recorded to substitute a trustee of a trust, mortgage, or other similar document?
☐	☐	F.	Did this transfer result in the creation of a joint tenancy in which the seller (transferor) remains as one of the joint tenants?
☐	☐	G.	Does this transfer return property to the person who created the joint tenancy (original transferor)?
☐	☐	H.	Is this transfer of property:
☐	☐		1. to a revocable trust that may be revoked by the transferor and is for the benefit of the ☐ transferor ☐ transferor's spouse?
☐	☐		2. to a trust that may be revoked by the Creator/Grantor who is also a joint tenant, and which names the other joint tenant(s) as beneficiaries when the Creator/Grantor dies?
☐	☐		3. to an irrevocable trust for the benefit of the ☐ Creator/Grantor and/or ☐ Grantor's spouse?
☐	☐		4. to an irrevocable trust from which the property reverts to the Creator/Grantor within 12 years?
☐	☐	I.	If this property is subject to a lease, is the remaining lease term 35 years or more including written options?
☐	☐	*J.	Is this a transfer between ☐ parent(s) to child(ren)? ☐ or from grandparent(s) to grandchild(ren)?
☐	☐	*K.	Is this transaction to replace a principal residence by a person 55 years of age or older? Within the same county? ☐ Yes ☐ No
☐	☐	*L.	Is this transaction to replace a principal residence by a person who is severely disabled as defined by Revenue and Taxation Code Section 69.5? Within the same county? ☐ Yes ☐ No
☐	☐	M.	Is this transfer solely between domestic partners currently registered with the California Secretary of State?

*If you checked yes to J, K, or L, you may qualify for a property tax reassessment exclusion, which may result in lower taxes on your property. **If you do not file a claim, your property will be reassessed.**

Please provide any other information that would help the Assessors to understand the nature of the transfer.

If the conveying document constitutes an exclusion from a change in ownership as defined in section 62 of the Revenue and Taxation Code for any reason other than those listed above, set forth the specific exclusions claimed: ______

Please answer all questions in each section. If a question does not apply, indicate with "N/A". Sign and date at bottom of second page.

PART II: OTHER TRANSFER INFORMATION

A. Date of transfer if other than recording date ______.

B. Type of transfer *(Please check appropriate box.)*

☒ Purchase ☐ Foreclosure ☐ Gift ☐ Trade or Exchange ☐ Merger, Stock, or Partnership Acquisition
☒ Contract of Sale - Date of Contract ______
☐ Inheritance - Date of Death ______ ☐ Other: Please explain: ______
☐ Creation of Lease ☐ Assignment of a Lease ☐ Termination of a Lease ☐ Sale/Leaseback
☐ Date lease began ______
☐ Original term in years (including written options) ______
☐ Remaining term in years (including written options) ______
Monthly Payment ______ Remaining Term ______

C. Was only a partial interest in the property transferred? ☐ Yes ☐ No
If yes, indicate the percentage transferred ______%

Please write Assessor's Parcel Number(s): ____________________

Please answer, to the best of your knowledge, all applicable questions, sign and date. If a question does not apply, indicate with "N/A."

PART III: PURCHASE PRICE AND TERMS OF SALE

A. CASH DOWN PAYMENT OR value of trade or exchange (*excluding closing costs*) Amount $________

B. FIRST DEED OF TRUST @ ____% interest for ______ years. Pymts/Mo.=$__________ (Prin. & Int. only) Amount $________
☐ FHA (________ **Discount Points**) ☐ Fixed rate ☐ New loan
☐ Conventional ☐ Variable rate ☐ Assumed existing loan balance
☐ VA (________ **Discount Points**) ☐ All inclusive D.T. ($__________ Wrapped) ☐ Bank or savings & loan
☐ Cal-Vet ☐ Loan carried by seller ☐ Finance company
Balloon payment ☐ Yes ☐ No Due Date __________ Amount $________

C. SECOND DEED OF TRUST @ ____% interest for ____ years. Pymts/Mo.=$__________ (Prin. & Int. only) Amount $________
☐ Bank or savings & loan ☐ Fixed rate ☐ New loan
☐ Loan carried by seller ☐ Variable rate ☐ Assumed existing loan balance
Balloon payment ☐ Yes ☐ No Due Date __________ Amount $________

D. OTHER FINANCING: Is other financing involved not covered in (b) or (c) above? ☐ Yes ☐ No Amount $________
Type: __________ @ ____% interest for ______ years. Pymts./Mo .= $__________ (Prin. & Int. only)
☐ Bank or savings & loan ☐ Fixed rate ☐ New loan
☐ Loan carried by seller ☐ Variable rate ☐ Assumed existing loan balance
Balloon payment ☐ Yes ☐ No Due Date __________ Amount $________

E. WAS AN IMPROVEMENT BOND ASSUMED BY THE BUYER? ☐ Yes ☐ No Outstanding Balance: Amount $________

F. TOTAL PURCHASE PRICE (*or acquisition price, if traded or exchanged, include real estate commission if paid.*)

TOTAL ITEMS A THROUGH E | $ |

G. PROPERTY PURCHASED ☐ Through a broker ☐ Direct from seller ☐ From a family member ☐ Other ***(please explain)***:________
If purchased through a broker, provide broker's name and phone number: ____________________
Please explain any special terms, **seller concessions**, or financing and any other information that would help the Assessor understand the purchase price and terms of sale. ____________________

PART IV: PROPERTY INFORMATION

A. TYPE OF PROPERTY TRANSFERRED:
☐ Single-family residence ☐ Agricultural ☐ Timeshare
☐ Multiple-family residence (no. of units:______) ☐ Co-op/Own-your-own ☐ Manufactured home
☐ Commercial/Industrial ☐ Condominium ☐ Unimproved lot
☐ Other (Description: i.e., timber, mineral, water rights, etc.__________________)

B. IS THIS PROPERTY INTENDED AS YOUR PRINCIPAL RESIDENCE? ☐ Yes ☐ No
If yes, enter date of occupancy ______ / ______, 20____ or intended occupancy ______ / ______, 20____.
(month) (day) (year) (month) (day) (year)

C. IS PERSONAL PROPERTY INCLUDED IN PURCHASE PRICE? (i. e. furniture, farm equipment, machinery, etc.) (Deleted ☐ Yes ☐ No)
(other than a manufactured home subject to local property tax)? ☐ Yes ☐ No
If yes, enter the value of the personal property included in the purchase price $__________ (*Attach itemized list of personal property.*)

D. IS A MANUFACTURED HOME INCLUDED IN PURCHASE PRICE? ☐ Yes ☐ No
If yes, how much of the purchase price is allocated to the manufactured home? $ __________
Is the manufactured home subject to local property tax? ☐ Yes ☐ No What is the decal number? __________

E. DOES THE PROPERTY PRODUCE INCOME? ☐ yes ☐ no **If yes**, is the income from:
☐ Lease/Rent ☐ Contract ☐ Mineral rights ☐ Other ***(please explain)***: __________

F. WHAT WAS THE CONDITION OF PROPERTY AT THE TIME OF SALE?
☐ Good ☐ Average ☐ Fair ☐ Poor
Please explain the physical condition of the property and provide any other information (such as restrictions, etc.) that would assist the Assessor in determining the value of the property: __________

CERTIFICATION

OWNERSHIP TYPE	(✓)	
Proprietorship	☐	*I certify that the foregoing is true, correct and complete to the best of my knowledge and belief. This declaration is binding on each and every co-owner and/or partner.*
Partnership	☐	
Corporation	☐	
Other ______	☐	

NAME OF NEW OWNER/CORPORATE OFFICER Felicia L. Bellows		TITLE Vice President of Development
SIGNATURE OF NEW OWNER/CORPORATE OFFICER Felicia L. Bellows		DATE 4/19/10
NAME OF ENTITY (*typed or printed*) Calico Solar, LLC.		FEDERAL EMPLOYER ID NUMBER 38-3782460
ADDRESS (*typed or printed*) 1001 McKinney, Suite 1730, Houston, Tx 77002	E-MAIL ADDRESS (*optional*)	DATE

(NOTE: The Assessor may contact you for further information)

If a document evidencing a change of ownership is presented to the recorder for recordation without the concurrent filing or a preliminary change of ownership report, the recorder may charge an additional recording fee of twenty dollars ($20).

ORANGE COAST TITLE COMPANY
ESCROW DIVISION
3536 Concours Dr., Suite 120
Ontario, CA 91764
(909) 987-5433

April 15, 2010

TO: Orange Coast Title Company
Escrow No.: 1160211-AR

Property Address: apn# 0529-281-28, 34 see APN above, San Bernardino, CA 92408

RECEIPT FOR AND APPROVAL OF PRELIMINARY REPORT

The undersigned hereby acknowledges having received and read a copy of the preliminary report issued under order number 140-1160211-32, dated March 22, 2010 , issued by Orange Coast Title Company

The undersigned further acknowledges approval of said report as to items numbered 1, 4, 5, and 6 of Schedule "B".

Any contingency regarding same is hereby satisfied and escrow holder is instructed to continue processing this escrow without further regard to said contingency.

CALICO SOLAR LLC
A Delaware Limited Liability Company

By: Felicia R Pollard

Its: Vice President

/ ______________________
KENNETH C. DEANS

/ ______________________
SHIRLEY A. DEANS

Order No. 140-1160211-32

REQUEST NOT TO SHARE NONPUBLIC PERSONAL INFORMATION

Please read the following information carefully.

Orange Coast Title Company may share nonpublic, personal information we collect about you within our family of companies (our "Affiliated Companies"). We may also provide this information to companies that perform marketing or other services on our behalf, or on behalf of our Affiliated Companies ("Service Providers"). By sharing this information, we can better understand your service needs. We can then send you notification of new products and services offered by Orange Coast Title Company, its Affiliated Companies or its Service Providers that you may not otherwise know about.

However, you may prohibit the sharing of non-public personal information within our Affiliated Companies, or with any third parties at any time. If you would like to limit disclosures of non-public, personal information about you as described herein, please check the appropriate box or boxes to indicate your privacy choices, and return this form to us at the address below.

✓ Please do not share personal information about me with non-affiliated third parties.

✓ Please do not share personal information about me with any of your Affiliated Companies except as necessary to effect, administer, process, service or enforce a transaction requested or authorized by me.

✓ Please do not contact me with offers of products or services by mail.

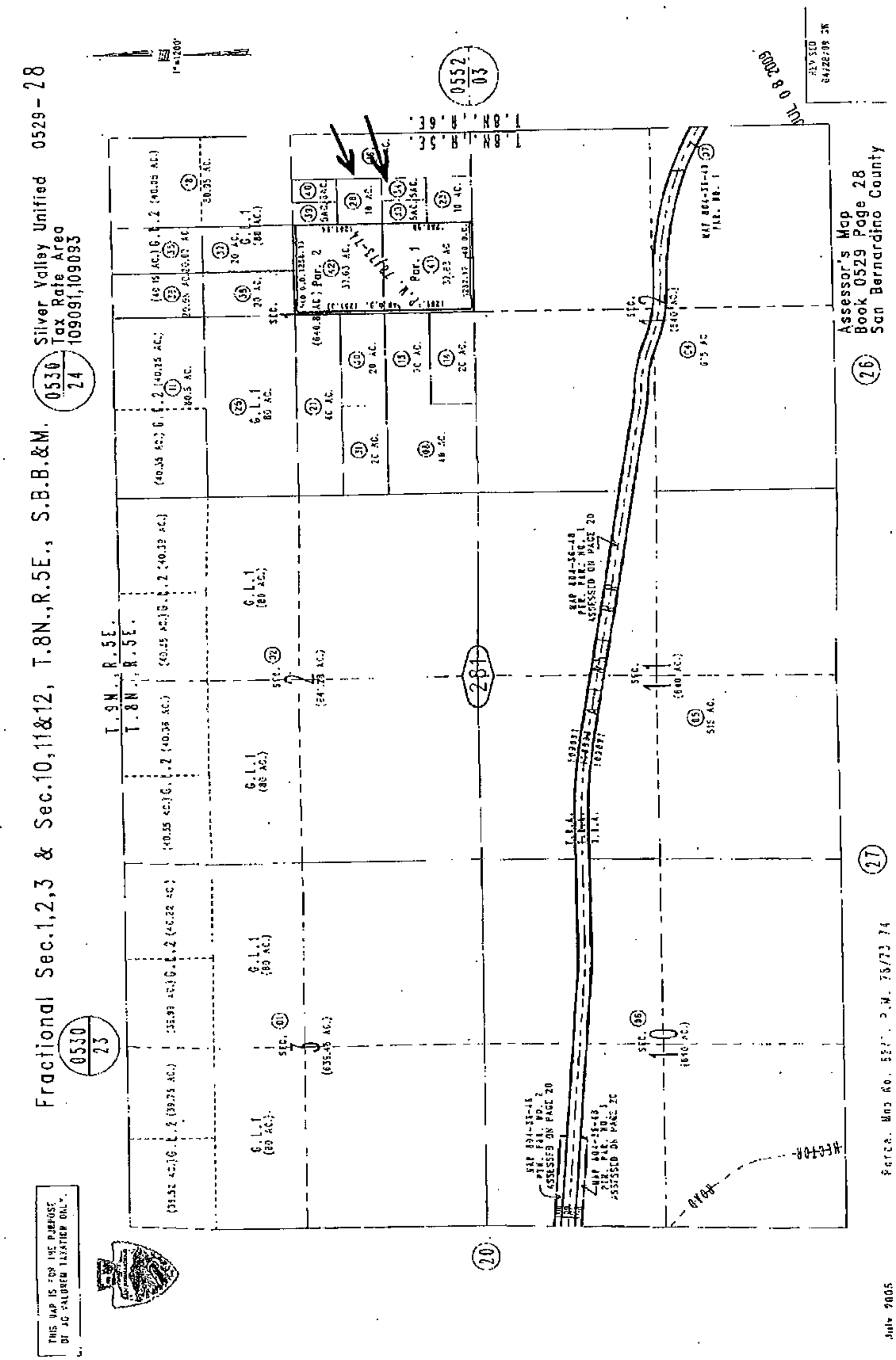
✓ Please do not contact me with offers of products or services by e-mail.

✓ Please do not contact me with offers of products or services by telephone.

Name:	Company Name: Calico Solar, LLC
Address:	Address: 1001 McKinney, Suite 1730
City, State, Zip:	City, State, Zip: Houston, TX 77002
Phone Number:	Phone Number: [redacted]
E-mail address:	E-mail address: Felicia.Bellows@TesseraSolar.com

Orange Coast Title Company
3536 Concours Drive, Suite 120
Ontario, CA 91764
909-987-5433

THIS MAP SHOULD BE USED FOR REFERENCE PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.



PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (the "Agreement") is entered into as of this 30th day of April, 2010 (the "Effective Date") by and between Ross John Gorgone and Marilyn Gorgone ("Seller"), and Calico Solar LLC, a Delaware limited liability company, and/or its assigns ("Buyer"), with reference to the following facts:

RECITALS

A. Seller owns certain real property consisting of approximately 10 acres, situated in San Bernardino County, California, more particularly described in the attached <u>Exhibit A</u>, incorporated by reference and any improvements and personal property located thereon (collectively, the "Property").

B. Buyer desires to purchase the Property from Seller subject to the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, for valuable consideration, the parties agree as follows:

1. **<u>Purchase Price and Terms</u>**. The purchase price of the Property (the "Purchase Price") shall be [redacted]. The Purchase Price shall be payable as follows:

1.1 <u>Deposit</u>. Upon Opening of Escrow (as defined below), Buyer shall deposit with the Escrow Agent (as defined below) cash in the amount of [redacted] (together with any interest earned thereon, the "Deposit"). Promptly after receipt, Escrow Agent shall release the Deposit to Seller. The Deposit shall applicable to the Purchase Price at Closing.

1.2 <u>Balance</u>. The balance of the Purchase Price, which shall equal the Purchase Price less the Deposit and any prorations or other credits or debits, shall be payable in cash or certified funds at Closing (as defined below).

2. **<u>Contingencies</u>**. Buyer's obligation to close Escrow (as defined below) shall be subject to the satisfaction of the following matters or Buyer's express written waiver thereof within the times set forth below:

2.1 <u>Title Contingency</u>. Buyer shall obtain a current Owners Title Insurance Commitment on the Property, including legible copies of all exceptions to title (the "Title Report") from the Escrow Agent. Buyer shall have twenty (20) days after receiving the Title Report to object in writing to any exceptions to title appearing on the Title Report. Seller shall thereafter use commercially reasonable efforts to remove such exceptions or notify Buyer in writing that it is unable to remove such exceptions. Only those exceptions expressly approved by Buyer in writing shall be deemed "Permitted Exceptions," which may remain on title at Closing. If any exceptions to title objected to by Buyer cannot be removed by Seller, Buyer shall notify Seller in writing that title is not acceptable, in which case this Agreement shall terminate, the Deposit shall be returned to Buyer, and neither Seller nor Buyer shall have any further liability or obligation hereunder. If Buyer does not notify Seller that title is not acceptable Buyer shall be deemed to have waived such exceptions or objections.

2.2 Investigation of Property. After the Opening of Escrow Buyer may inspect the physical and environmental condition of the Property, the character, quality, value and general utility of the Property, including, without limitation, the zoning, land use, environmental and building requirements and restrictions applicable to the Property, the terms of any leases, and any other factors or matters relevant to Buyer's decision to purchase the Property. If Buyer determines that the Property is not acceptable for any reason whatsoever, Buyer shall have the right to terminate this Agreement as of the date such termination notice is given by Buyer, the Deposit shall be returned to Buyer, and neither Seller nor Buyer shall have any further liability or obligation hereunder.

2.3 Access for Review. From the Effective Date to the Closing Date, Seller shall provide Buyer and Buyer's representatives with all drawings, plans and specifications for the Property, all engineering and other reports and studies relating to the Property, all files and correspondence relating to the Property, and all financial and accounting books and records relating to the ownership, management, operation, maintenance or repair of the Property that are in Seller's possession. Seller shall also provide Buyer access to the Property at all reasonable times to make such studies, inspections, tests (including subsurface tests, borings, samplings and measurements), as Buyer, in Buyer's discretion, considers reasonably necessary or desirable in the circumstances. Such access shall include the right to conduct studies of solar energy, wind speed and direction and other meteorological data) as Buyer may elect in order to determine the feasibility of solar energy conversion on the Property, including, without limitation, the right to construct, install, erect, improve and place (and thereafter remove, repair, replace and relocate) on the Property, and to operate, any of the following: pyranometer and other measuring devices and equipment, tracking systems, signs and fences, meteorological towers and other related equipment and improvements. Buyer shall indemnify and defend Seller against and hold Seller harmless from all claims, demands, liabilities, losses, damages, costs and expenses, including reasonable attorneys' fees and disbursements, arising from any bodily injury, property damage or mechanics' lien claim caused by Buyer in connection with entry on the Property by Buyer pursuant to this Section 2.2 or 2.3.

3. **Escrow and Closing.**

3.1 Opening of Escrow. Within ten (10) business days after the Effective Date (the "Opening of Escrow"), an escrow (the "Escrow") shall be opened with Orange Coast Title (the "Escrow Agent").

3.2 Close of Escrow. Closing of Escrow (the "Closing") is scheduled to occur within thirty days of the Opening of Escrow.

3.3 Closing Documents. At Closing, Seller shall execute, acknowledge, and deliver to the Escrow Agent a grant deed to the Property in the form acceptable to Buyer, conveying good and marketable fee simple absolute title to the Property to Buyer free and clear of all liens, encumbrances, leases, easements, restrictions, rights, covenants and conditions of any kind or nature whatsoever, except the Permitted Exceptions. Seller shall execute and deliver to the Escrow Agent a certificate in the form required by applicable regulations under Section 1445 of the Internal Revenue Code of 1986, as amended, affirming that Seller is not a foreign person, a California form 593-C real estate withholding certificate, and such other affidavits or certifications as may be required by the Title Company. At Closing, Seller and Buyer shall also execute, acknowledge and deliver to the Escrow Agent such assignments, contracts, bills of sale, evidence of authority, or other agreements as are necessary to convey the entirety of the Property to Buyer.

3.4 Title Insurance. Upon the Closing, Seller shall convey and transfer to Buyer title to the Property as well as enable the Buyer to obtain CLTA standard owner's title insurance policy (the "Title Policy") in the amount of the total purchase price of the Property, insuring that Buyer has good and indefeasible title to the Property subject only to the standard printed exceptions and the Permitted Exceptions.

3.5 Closing Costs and Prorations. Buyer shall pay the escrow fees, the full amount of the premium for the Title Policy, and the cost of recording the deed conveying the Property to Buyer. Seller shall pay any realty transfer taxes associated with sale of the Property to Buyer. Real property taxes for the current tax year, insurance premiums (if Buyer assumes any existing policy) and other usual items, including without limitation, assessments and utilities, shall be prorated as of the Closing Date, with a post-Closing true-up to be performed by the parties within thirty (30) days after notice that such true-up is required. Buyer and Seller shall each pay one-half of any other closing costs.

3.6 Possession. Seller shall transfer possession of the Property to Buyer immediately upon Closing.

4. **Representations by Seller**. Seller acknowledges that the warranties and representations of Seller contained in this Agreement, including those covenants, warranties and representations contained in Section 4 (herein all such covenants, warranties and representations are collectively referred to as the "Seller Warranties"), are material inducements to Buyer entering into this Agreement. The accuracy of each Seller Warranty, as of the Effective Date and as of the Closing Date (unless otherwise expressly limited), is a covenant of Seller and also a condition precedent to Buyer's obligations thereunder for the breach of which Buyer may, in addition to any other remedy provided herein, terminate this Agreement. The Seller Warranties shall survive any investigations by Buyer and shall survive Closing, and shall not be merged into any document delivered at Closing. The foregoing is not intended by the parties hereto to in any manner constitute a waiver or limitation by Buyer regarding its right, and the statutory or common law period in which it must exercise that right, to obtain indemnity or contribution from Seller as a result of Seller's breach of the representation set forth in Section 4.1 (d) and 4.1 (e). Seller shall indemnify and defend Buyer against and hold Buyer harmless from all claims, demands, liabilities, losses, damages, costs and expenses, including reasonable attorneys' fees and disbursements, that may be suffered or incurred by Buyer if any Seller Warranty was untrue or incorrect in any respect when made or that may be caused by any breach by Seller of any Seller Warranty.

Seller makes the following Seller Warranties, as of the Effective Date and as of Closing:

4.1 Seller represents and warrants that, as of the Effective Date:

(a) the Property is in compliance with all federal, state and other environmental and other laws, rules and regulations,

(b) there are no pending, and to Seller's knowledge threatened, claims, lawsuits, administrative proceedings, enforcement actions or investigations concerning the Property, nor has Seller received notice of any such activities,

(c) Seller has not received any notice of any judicial or administrative consent orders or other provisions calling for compliance with any legal requirement or for correction of any violation,

(d) the Property has not been the site of any activity that would violate any past or present environmental law or regulation of any governmental body or agency having jurisdiction over the Property, and that there are not now and have never been any solid or hazardous wastes or substances, or oil or other dangerous or toxic substances, all as defined in the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"), the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"), the Hazardous Material Transportation Act, 49 U.S.C. §§1801 et seq., the Clean Water Act, 33 U.S.C. §§1251 et seq., or the Toxic Substance Control Act, 15 U.S.C. §§2600 et seq., or any other applicable federal, state or local law, rule or regulation, stored, placed, treated, released or disposed of anywhere on the Property, and

(e) the Property is not identified on any current or proposed (i) National Priorities List under 40 CFR Part 300, (ii) CERCLA Information Systems List, or (iii) state environmental or other regulatory agency list based on a statute similar to CERCLA or RCRA.

The representations and warranties contained herein shall survive the Closing.

4.2 Authority. Each of the person(s) executing this Agreement on behalf of Seller has full authority to do so; this Agreement and the transaction contemplated hereby have been approved by all necessary actions of Seller.

4.3 Withholding. No California withholding of tax or reporting pursuant to California Revenue and Taxation Code section 18805, 18815 and 26131 will be required with respect to the sale of the Property by Seller.

4.4 Brokers. Seller has not dealt with any investment adviser, real estate broker or finder, or incurred any liability for any commission or fee to any investment adviser, real estate broker or finder, in connection with the sale of the Property to Buyer or this Agreement.

5. **Seller Covenants**.

5.1 At Closing, Seller shall transfer and convey to Buyer the Property free and clear of all liens and security interest whatsoever, subject only to the Permitted Exceptions.

5.2 From the Effective Date until the Closing or earlier termination of this Agreement, Seller shall use reasonable efforts to operate and maintain the Property in a manner generally consistent with the manner in which Seller has operated and maintained the Property prior to the Effective Date.

5.3 From the Effective Date until the Closing or earlier termination of this Agreement, Seller shall not encumber the Property in any way nor grant any property or contract right relating to the Property that will not terminate at Closing without the prior written consent of Buyer.

5.4 From the Effective Date until the Closing or earlier termination of this Agreement, Seller shall not obtain any permits for or related to the Property or engage in any construction on the Property without the prior written consent of Buyer.

6. **Remedies**.

6.1 Buyer's Determination that Property is not Acceptable. If at any time prior to Closing, Buyer determines that the Property is not acceptable to Buyer, or any contingency under Section 2 is not satisfied or waived by Buyer, Buyer and Seller agree that this Agreement shall terminate upon Buyer's notice (or deemed notice) of such disapproval, Buyer shall retain the Deposit, and neither Seller nor Buyer shall have any further liability or obligation thereunder.

6.2 Breach of Agreement by Buyer. IF THE TRANSACTION DOES NOT CLOSE BEFORE THE CLOSE OF BUSINESS ON THE CLOSING DATE AS A RESULT OF A BREACH OF THIS AGREEMENT BY BUYER, THEN BUYER AND SELLER AGREE THAT IT WOULD BE IMPRACTICAL AND EXTREMELY DIFFICULT TO ESTIMATE THE DAMAGES THAT SELLER MAY SUFFER. THEREFORE BUYER AGREES THAT IN SUCH EVENT SELLER SHALL BE ENTITLED TO RETAIN THE DEPOSIT, WHICH SUM THE PARTIES AGREE IS A REASONABLE ESTIMATE OF THE DAMAGES TO BE INCURRED BY SELLER AS A RESULT OF SUCH BREACH, CONSIDERING ALL OF THE CIRCUMSTANCES EXISTING ON THE DATE OF THIS AGREEMENT, INCLUDING THE RELATIONSHIP OF SUCH SUM TO THE

RANGE OF HARM TO SELLER THAT REASONABLY COULD BE ANTICIPATED AND THE ANTICIPATION THAT PROOF OF ACTUAL DAMAGES WOULD BE COSTLY, DIFFICULT, AND IMPRACTICABLE. SELLER'S RIGHT TO LIQUIDATED DAMAGES AS DESCRIBED IN THIS SECTION 6.2 SHALL BE SELLER'S SOLE REMEDY AS A RESULT OF A FAILURE BY BUYER TO CLOSE AS DESCRIBED IN THIS SECTION.

SELLER'S INITIALS: JY ______ BUYER'S INITIALS: my RB

7. Seller Default

If Seller defaults under or breaches this Agreement and fails to sell the Property in accordance with this Agreement, Buyer shall have the right, as its sole remedy, either (a) to terminate this Agreement by giving written notice to Seller and receive the return of the Deposit, which return shall operate to release Seller from any and all liability hereunder, or (b) to enforce specific performance of Seller's obligation to sell the Property to Buyer in accordance with this Agreement.

8. Casualty Eminent Domain

If, before the Closing Date, there is a casualty, Buyer shall have the right to terminate this Agreement within twenty (20) days after notice of such casualty. If, before the Closing Date, proceedings are commenced for the taking by exercise of the power of eminent domain of all or a material part of the Property which, as reasonably determined by Buyer, would render the Property unacceptable to Buyer or unsuitable for Buyer's intended use, Buyer shall have the right, by giving notice to Seller within twenty (20) days after Seller gives notice of the commencement of such proceedings to Buyer, to terminate this Agreement, in which event this Agreement shall terminate and the Deposit shall be returned to Buyer. If, before the Closing Date, proceedings are commenced for the taking by exercise of the power of eminent domain of less than such a material part of the Property, or if Buyer has the right to terminate this Agreement pursuant to the preceding sentence but Buyer does not exercise such right, then this Agreement shall remain in full force and effect and, on the Closing Date, the condemnation award (or, if not theretofore received, the right to receive such award) payable on account of the taking shall be transferred to Buyer. Seller shall give notice to Buyer immediately after Seller's receiving notice of the commencement of any proceedings for the taking by exercise of the power of eminent domain of all or any part of the Property. Buyer shall have a period of twenty (20) days (or such shorter period as Buyer may elect by giving notice to Seller) after Seller has given the notice to Buyer required by this Section 8 to evaluate the extent of the taking and make the determination as to whether to terminate this Agreement. If necessary, the Closing Date shall be postponed until Seller has given the notice to Buyer required by this Section 8 and the period of twenty (20) days described in this Section 8 has expired.

9. **General**.

9.1 Binding Effect. This Agreement is binding on and will inure to the benefit of Seller, Buyer, and their respective heirs, legal representatives, successors, and assigns.

9.2 Notices. All notices and communications in connection with this Agreement shall be in writing and shall be deemed given when delivered by personal service or two (2) business days after placement in the U.S. Mails, certified, return receipt requested, postage prepaid, and addressed to the address for Seller and Buyer set forth below, or such other address as either party may designate by written notice to the other in accordance with this Section 9.2.

Buyer:

Legal Address
Calico Solar LLC
1001 McKinney, Suite 1730
Houston, Texas 77002
Attention: General Counsel
Fax: [redacted]

Mailing Address
Calico Solar LLC
C/O: Tessera Solar
4800 N. Scottsdale Rd., Suite 5500
Scottsdale, AZ 85251

Copy to:

Seller: Ross John Gorgone
P.O. Box 660787
Arcadia, CA 91066
Fax: [redacted]

Marilyn Gorgone
P.O. Box 660787
Arcadia, CA 91066
Fax: [redacted]

Notices may also be sent by facsimile machine to the fax number indicated above. Notices given by facsimile shall be deemed to be received and effective upon completion of facsimile transmission to the number set forth above and verification by transmitting machine. Any notice given by facsimile must also be delivered via personal delivery or overnight delivery (U.S. Mail, Federal Express, UPS, etc.), sent within twenty-four (24) hours of facsimile transmission, although the failure to send such subsequent notice shall not invalidate any facsimile transmission actually received.

9.3 Entire Agreement. This Agreement sets forth the entire understanding of the parties with respect to the purchase and sale of the Property. This Agreement supersedes any and all prior negotiations, discussions, agreements, and understandings between the parties. This Agreement may not be modified or amended except by a written agreement executed by both parties.

9.4 Further Assurances. The parties agree to execute and deliver such further documents, instruments, and other agreements as are necessary or convenient to carry out the terms and purposes of this Agreement.

9.5 Applicable Law. This Agreement shall be construed, applied, and enforced in accordance with the laws of the State of California.

9.6 Time of the Essence. Time is of the essence of this Agreement.

9.7 Counterparts. This Agreement may be executed in one or more counterparts, including facsimile or .pdf counterparts, and all so executed shall constitute one agreement, binding on all the parties hereto, even though all parties are not signatories to the original or the same counterpart. Any counterpart of this Agreement, which has attached to it separate signature pages, which altogether contain the signatures of all parties, shall for all purposes be deemed a fully executed instrument.

9.8 Instruments. The deed and all other instruments to be furnished thereunder shall be prepared on the forms currently in use by Escrow Agent, or any title company selected by Escrow Agent to the extent the same are available.

9.9 Construction. Seller and Buyer acknowledge that each party and its counsel have reviewed and revised this Agreement and that the rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any document executed and delivered by either party in connection with the transactions contemplated by this Agreement. The captions in this Agreement are for convenience of reference only and shall not be used to interpret this Agreement.

9.10 Attorneys' Fees. If there is any legal action or proceeding between Seller and Buyer arising from or based on this Agreement, the unsuccessful party to such action or proceeding shall pay to the prevailing party all costs and expenses, including reasonable attorneys' fees and disbursements, incurred by such prevailing party in such action or proceeding and in any appeal in connection therewith. If such prevailing party recovers a judgment in any such action, proceeding or appeal, such costs, expenses and attorneys' fees and disbursements shall be included in and as a part of such judgment.

9.11 Partial Invalidity. If any provision of this Agreement is determined by a proper court to be invalid, illegal or unenforceable, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement and this Agreement shall remain in full force and effect without such invalid, illegal or unenforceable provision.

IN WITNESS WHEREOF, the parties have executed this Agreement, effective as of the later of the dates written below.

BUYER:

Calico Solar LLC,
a Delaware limited liability company

By: Felicia L Bellows
Name: Felicia L. Bellows
Title: Vice President
Date: 4/30/10

SELLER:

Ross John Gorgone

By: R Gorgone
Name: ROSS GORGONE
Title: OWNER
Date: 4/27/10

Marilyn Gorgone

By: Marilyn Gorgone

Name: MARILYN GORGONE

Title: OWNER

Date: 4/27/10

EXHIBIT A

Legal Description of Property

APN: 0529-281-23-0000 10 Acres

Southwest one quarter of the Southeast one quarter of the Southeast one quarter of Section One, Township Eight North, Range Five East, ex mineral rights per Reservation of Record.

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REPORT

WELL INSTALLATION, SAMPLING AND
AQUIFER TESTING
CALICO SOLAR PROJECT
SAN BERNARDINO COUNTY, CALIFORNIA

PREPARED FOR:

TESSERA SOLAR NORTH AMERICA, INC.

URS PROJECT NO. 27658188.30001

MAY 14, 2010

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REPORT

WELL INSTALLATION, SAMPLING AND AQUIFER TESTING CALICO SOLAR PROJECT SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for

Tessera Solar North America, Inc.
4800 N. Scottsdale Road, Suite 5500
Scottsdale, AZ 85251

URS Project No. 27658188.30001

May 14, 2010

URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4314
619.294.9400 Fax: 619.293.7920

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URS

May 14, 2010

Ms. Felicia Bellows, Vice President
Tessera Solar North America, Inc.
4800 N. Scottsdale Road, Suite 5500
Scottsdale, AZ 85251

Subject: Report of Well Installation, Sampling and Aquifer Testing
Calico Solar Project
San Bernardino County, California
URS Project No. 27658188.30001

Dear Ms. Bellows:

URS Corporation Americas (URS) is pleased to provide Tessera Solar North America, Inc. (Tessera Solar) this report summarizing the results of well installation, sampling and aquifer testing conducted for the above referenced project. We completed this investigation in accordance with Work Order No. 8188-07 and our proposal dated March 9, 2010.

The purpose of this drilling program was to evaluate groundwater availability and quality associated with the aquifer beneath the site and to demonstrate that groundwater is a viable water source for the construction and operation of the proposed solar power plant. Well #3 produces quantities that can support construction and operation of the Project.

We appreciate the opportunity to work with you on this project. If you have any questions, please give us a call.

Sincerely,

URS CORPORATION

Robert K. Scott

REGISTERED GEOLOGIST
ROBERT K. SCOTT
No. 734
CERTIFIED HYDROGEOLOGIST
STATE OF CALIFORNIA

Robert K. Scott, P.G., C.Hg.
Vice President and Principal Geologist

RKS/JL:mv

URS Corporation
1615 Murray Canyon Road, Suite 1000
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Tel: 619.294.9400
Fax: 619.293.7920

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µg/l·	Micrograms per liter
AFC	Application for Certification
afy	Acre-feet per year
ASTM	American Society for Testing Materials
bgs	Below Ground Surface
BLM	Bureau of Land Management
BNSF	Burlington Northern & Santa Fe
btoc	below to of casing
CAISO	California Independent Service Operator
Calscience	Calscience Environmental Laboratories, Inc.
CDCA	California Desert Conservation Plan
CDWR	California Department of Water Resources
CEC	California Energy Commission
CHg	Certified Hydrogeologist
cm/s	centimeters per second
DWSAP	Drinking Water Source Assessment and Protection
EHS	Environmental Health Services
Ft	Feet
ft/day	feet per day
GAMA	Groundwater Ambient Monitoring Assessment
gpd/ft	gallons per day per foot
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
HSP	Health and Safety Plan
K	Hydraulic Conductivity
kV	Kilovolt
MCLs	Maximum Contaminant Levels
mg/l	milligrams per liter
msl	Mean Sea Level datum
MW	Megawatt
NWIS	National Water information System
OCPs	Organochlorine pesticides
PCBs	Polychlorinated biphenyls
ppm	Parts per million
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
S	Storativity
SC	Specific conductance
SCE	Southern California Edison
SIS	System Impact Study
SVOCs	Semivolatile organic compounds
T	Transmissivity
TDS	Total Dissolved Solids
Tessera Solar	Tessera Solar North America Inc.
URS	URS Corporation Americas

USA	Underground Service Alert
U.S. EPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
USCS	Unified Soil Classification System
VOCs	Volatile organic compounds
ZOI	Zone of Influence

SECTION 1 INTRODUCTION

This report summarizes the results of a groundwater exploration program conducted by Tessera Solar North America, Inc. (Tessera Solar, Applicant) through drilling test borings and installing two test wells on private land and land owned by the Applicant surrounded by the Calico Solar site in San Bernardino County, California. The Calico Solar site (Project) is located about 16 miles west of Ludlow, California north of Interstate Highway 40 (I-40; see Figure 1). Tessera Solar is currently permitting the site for development as a solar-powered electrical generation station. The investigation was performed to evaluate the potential for groundwater to serve as a water supply for construction and operation of the facility.

1.1 PROJECT DESCRIPTION

The Calico Solar Project includes the construction, operation, maintenance, and decommissioning of up to 850 megawatts (MW) of capacity by a solar power generating facility and its ancillary systems in two phases (the first phase would be developed for 275MW and the second for 575MW). The Project will consist of approximately 34,000 SunCatchers. The project layout is shown on Figure 2. Construction is tentatively scheduled to occur over an approximate three-year period beginning in 2010 through 2012 for Phase 1 and a two-year period between 2013 and 2015 for Phase 2, assuming Southern California Edison (SCE) completes the full transmission build-out necessary for Phase 2 by December 31, 2013.

Approval of the Project ROW Grant Application (Form 299, Applications CACA 49539 and 49537) will result in the issuance of a ROW Grant Permit for use of federal lands administered by the BLM. The Project would require an amendment to the 1980 California Desert Conservation Area (CDCA) Plan.

An on-site substation (*i.e.*, Calico Solar Substation [approximately 15 acres]) will be constructed to deliver the electrical power generated by the Project to the SCE Pisgah Substation (Figure 2). Approximately twelve to fifteen 220-kilovolt (kV) transmission line structures (90 to 110 feet tall) will be required to make the interconnection from the Calico Solar to the SCE Pisgah Substation. Each of these structures will be constructed within the Project site.

The Project will include a centrally located Main Services Complex (37.6 acres) that includes three SunCatcher assembly buildings, administrative offices, operations control room, maintenance facilities, and a water treatment complex including a water treatment structure, raw water storage tank, demineralized water storage tank, basins, and potable water tank. A 15-acre temporary construction laydown area will be developed adjacent to the Main Services Complex.

Tessera Solar's Supplemental Filing dated January 2010 had proposed that water for the Project would be supplied by groundwater from a well located within the Cadiz basin and brought onsite by rail. However, the favorable results of the groundwater exploratory program demonstrate that groundwater is a viable water source for the Project, and water supplied by the well in the Cadiz basin will not be needed as a primary supply. The well that has been installed and tested as part of this investigation (Well #3) will serve as primary water supply.

The expected average water consumption for the Project during construction is approximately 136 acre-feet per year (afy), and the maximum expected extraction during construction is 12.4 acre-feet (af) per month (93 gallons per minute [gpm]). Estimated monthly groundwater extraction required during the construction phases of the Project are summarized in Table 1. The operational water needs (inclusive of mirror cleaning, dust control, and potable water usage) once the 275-MW plant is constructed will be 6.5 afy, and once the 850-MW plant is operational, water use for normal operations will be approximately 20 afy.

Based on groundwater quality information collected during this investigation, it will require treatment to meet facility operations requirements. The water will be treated by a reverse osmosis system to remove the majority of the dissolved solids. A demineralization stage may be required for mirror washing water and the hydrogen generator. To prevent bacterial growth in the raw water storage tank at the facility, chlorine will be added. Waste water generated as a result of treatment will be discharged to evaporation ponds located at the Main Services Complex. The size of the evaporation ponds is currently estimated to be approximately 0.5 acres. The approximate location of the evaporation ponds are shown on Figure 2. Sanitary waste water will be discharged to a septic tank and leachfield system located adjacent to the Main Services Complex.

1.2 PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the feasibility of the aquifer underlying the site to serve as a viable water supply for this Project and evaluate the potential effects of pumping this resource on water quality, other potential users of groundwater in the basin and the environment. Results of the study will also be used to support the design of a proposed water treatment facility. The scope of work developed for this investigation included the following tasks:

- Mobilizing for the field program;
- Drilling, logging, installing, and sampling the test wells;
- Submitting groundwater samples for chemical analyses;
- Conducting chemical analyses;
- Conducting aquifer testing;
- Analyzing the aquifer testing data to estimate the aquifer properties, estimating the production rate (yield) of the well and evaluating the potential effects of pumping on water quality and other possible water users; and
- Preparing this report summarizing the field procedures, and analytical and aquifer testing results in support of using the well as a back-up water supply.

URS provided limited technical assistance to Tessera Solar during execution of the drilling program for the two initial test borings (Well #1 and Well #2) completed by its contractor. URS was retained by Tessera Solar to complete aquifer testing and groundwater sampling for the wells completed by its contractor. Tessera Solar retained URS to provide technical and field oversight of the drilling of a third test boring and completion of that boring as a test well (Well #3). URS also conducted groundwater sampling and analyses related to Well #1 and Well #3. Based on a geophysical log, the second test boring (Well#2) was not converted to a test well.

SECTION 2 GEOLOGIC AND HYDROGEOLOGIC SETTING

URS conducted a hydrogeological data review for the site vicinity. Information related to local geology and hydrogeology is presented in this section.

2.1 GEOLOGIC SETTING

The site is located in the western Mojave Desert on the southwestern flank of an alluvial fan emanating from the Cady Mountains, which form the northern and eastern boundary of a topographic basin. The southern portion of the site is located near the floor of the basin; south of the site, the ground surface slopes up gradually toward Pisgah Crater. The site area is bound on the west by low volcanic mountains and Troy Dry Lake. The geology in the vicinity of the site is shown on Figure 3 (URS, 2008b). Elevations across the site range from approximately 2,800 feet above mean sea level (msl) near the apex of the alluvial fans near the northeastern corner of the site to approximately 1,820 feet msl within the wash near the southwestern corner of the site (URS, 2008a).

The site is mapped as primarily underlain by Holocene- and Pleistocene-age alluvial and fan deposits. The alluvial deposits shed from the adjacent ranges are composed of silty sand and gravel with localized gravel and cobble channels. The percentage and size of cobbles, and possibly boulders, are likely to increase toward the fan apexes in proximity to the Cady Mountains. Within the southeast portion of the site, the sandy alluvial deposits may be interlayered with basalt flows from Pisgah Crater (See Figures 3 and 4). Clayey lake deposits associated with Troy Lake also extend onto the southwest corner of the site from the west. Figure 3 (mapping by Dibblee and Bassett, 1963) shows the clayey deposits (Qc) terminating west of the site. However, preliminary on-site geologic mapping indicates that these lake deposits (Qlc) extend significantly into the southwest portion of the site. A U.S. Geological Survey (USGS) report (Madsen, 1970) describes three cores drilled to a depth of approximately 1,600 feet in Tertiary lacustrine deposits that consist of mudstone, tuffs and evaporite deposits that include borate salts in the vicinity of Hector. The mountains to the north, west and east of the site are primarily volcanic in origin; some volcanic rock outcrops are present in the northeastern portion of the site (URS, 2008b). These volcanic rocks lie non-conformably on older granitic rocks that form the core of the Cady Mountains. These volcanics and granitics served as the source of the Tertiary-age fanglomerates that are present in the subsurface.

The Pisgah Fault has been mapped on the eastern flank of the mountains west of the site; groundwater implications of this fault are discussed in the following section. Traces of the Lavic Lake Faults are present within the site boundary. These faults likely extend into the Cady Mountains to the north; however, they have not been mapped in detail north of I-40. The approximate locations of the faults are shown on Figures 3 and 4.

2.2 HYDROGEOLOGIC SETTING

The site is located within two different hydrologic regions, depending on whether surface water or groundwater is being considered. With respect to surface water, the site is located in the Troy Valley Hydrologic Subarea of the Newberry Springs Hydrologic Area of the Mojave Hydrologic Unit of the Lahontan Hydrologic Region. For groundwater, the site was previously within the Troy Valley

Groundwater Basin, however, a reclassification places the site within the Lavic Valley Groundwater Basin, part of the Colorado River Hydrologic Region located to the south. The Troy Valley basin was incorporated into Lower Mojave River Valley Groundwater Basin to the west, now divided from the Lavic Valley basin by the Pisgah fault. The Lavic Valley and surrounding basins are shown on Figure 5.

The Lavic Valley Groundwater Basin is approximately 159 square miles and is bounded by non-water bearing rocks of the Cady Mountains on the north and east, the Bullion Mountains on the south and east, the Lava Bed Mountains on the southwest, and the Pisgah Fault on the west. The opinion that the Pisgah fault is a groundwater flow barrier is based on a geologic map prepared by Rogers in 1967, as well as more recent data indicating that water levels are deeper to the east of the Pisgah and parallel faults (DWR, 2004b). The division of the Lavic Valley basin from the Broadwell Valley basin to the east is not well documented; the mountains may only provide a partial groundwater barrier, depending on the depth of the alluvium in the valley. The southern part of the Lavic Valley basin lies within the Twenty-nine Palms Marine Corps Base (DWR, 2004a). Groundwater east of the Pisgah Fault flows easterly toward the Colorado River Basin (URS, 2008a).

Parts of the eastern and northern boundaries of the Lavic Valley basin are drainage divides for surface water flow. In the northern part of the basin, surface drainage is to the southwest toward Hector Siding (immediately north of the railroad tracks at Hector Road), and in the southern part drainage is toward Lavic Dry Lake (DWR, 2004a). Surface water flow in the site area comes from the Cady Mountains on the north and east, as well as the Pisgah Crater area on the south. Typically, surface water infiltrates the ground in washes on the alluvial fans and in the valley. During high flows, surface water runoff across the site and from the surrounding hills generally flows southwesterly toward Troy Lake (URS, 2008a).

DWR Bulletin No. 118 indicates that groundwater in the Lavic Valley basin is present in Quaternary alluvial and lacustrine deposits. However, the results of this investigation and review of the stratigraphy mapped and described by Dibblee and Bassett (1963) for the vicinity indicates that the groundwater encountered in Well #3 is probably derived from older Tertiary-age deposits present beneath the Quaternary deposits noted in Bulletin No. 118. These Tertiary-age deposits include sandstones, claystones, fanglomerates derived from granite and volcanics that are currently exposed in the Cady Mountains, and volcanics. Based on the geophysical logs and observations during drilling, there appears to be a coarser, more permeable interval of strata from approximately 550 to 800 feet bgs, and another from approximately 1,050 to 1,150 feet bgs. The representative thickness of these more permeable strata that represent the aquifer from which water will be extracted for the Project is approximately 350 feet. Because there are no records of other wells or borings drilled to this depth in the basin, the areal extent of the aquifer is not known.

The principal recharge in the Lavic Valley basin is derived from percolation of runoff. Subsurface flow from adjoining basins may also contribute to recharge. Natural recharge into the basin is estimated to be about 300 afy and the storage capacity of the aquifer has been estimated to be approximately 270,000 acre-feet (af). However, little data exists to confirm these estimated values appearing in Bulletin No. 118.

2.3 EXISTING WELL INFORMATION

Two inactive groundwater wells are present within the immediate site vicinity: one is in the central portion of the site in an area of private land and the other (the “Crow Nest Well”) is about 1.5 miles north of the westernmost point of the project. Both wells are shown on Figure 3. According to the BLM, the Crow Nest Well is approximately 170 feet deep and historically used to support the grazing of livestock. It was associated with two 4,500-gallon above ground water tanks (Rotte, 2008). URS measured depth to water in this well to be about 130 feet and the total well depth to be approximately 138 feet. According to information provided by Eagle Well Drilling, the depth of the more central well to the site is 320 feet and the depth to water was measured to be 310 feet. Both wells are in relatively poor condition. Well completion reports for these wells were not available from DWR or San Bernardino County.

The locations of other nearby wells and groundwater depths were researched using the DWR website (http://wdl.water.ca.gov/gw/map/scal.cfm) and other sources. No other wells were found within approximately one mile of the site boundaries, however numerous wells were found in the general area. An additional search of the USGS National Water Information System (NWIS) Web Interface resulted in no groundwater well information for an approximately 400-square mile area generally centered on the site. The existing and destroyed wells identified during our search are shown on Figure 5. Additional details, including well location, ground surface elevation, and well and groundwater depth (where available) are presented in Table 1.

Within the Lavic Valley basin, records for several wells constructed in the late 1800s and early 1900s were located in the central/southern part of the basin (close to Lavic Dry Lake, see wells 41, 44 and 45 on Figure 5). The data indicates that groundwater depths measured in the 1960s and earlier ranged from 53 to 64 feet below the ground surface. A pumping rate of 140 gallons per minute (gpm) was recorded in well no. 44 in 1917 (DWR, 1967). More recent data on these wells could not be located and their current status is not known. No wells in the basin in closer proximity to the site were found. These are the nearest wells in the basin to the site, which are located approximately 10 miles away.

Within the Lower Mojave River Valley basin, data from the California Department of Water Resources (DWR) website (DWR, 2009) identifies numerous wells immediately west of the Pisgah fault and the mountains west of the Project (see wells numbered 1 through 19 on Figure 5). The closest well is about two miles southwest of the Project, but it lies outside the Lavic Valley basin. These wells are primarily within the Troy Lake area, with groundwater depths generally between 5 and 75 feet below the ground surface. Many other wells are located further west, closer to the Mojave River. Maximum and average well yields for the basin are reported as 2,700 and 770 gallons per minute, respectively (DWR, 2004b).

Some wells were identified within the central portion of the Broadwell Valley basin, east of the Lavic Valley basin, on the order of 8 to 10 miles east of the site. In the southern part of the basin (well nos. 26 and 28 on Figure 5), measured groundwater depths were 425 and 785 feet below the ground surface, respectively, in 1963 and earlier. Well no. 27 was reported to have a pumping rate of 140 gpm. Well no. 29, south of Interstate 40, was installed more recently, and groundwater was measured at a depth of 261 feet in 1990. Further north, most of the wells (30 through 37) were dry or destroyed as of 1965. One well (no. 24) had a measured groundwater depth of about 102 feet in 1979, indicating that the depth to groundwater is shallower closer to the mountains than in the valley. (DWR, 1967; Emcon, 1993)

In general, the groundwater data supports the theory that groundwater depths increase further to the east across the various faults in the area. However, local conditions may control, with an increasing depth to groundwater further from the base of mountains, as well as shallow groundwater within the dry lakes.

2.4 WATER QUALITY DATA

Limited water quality data are available within the Lavic Lake Groundwater Basin. Water from a well in the southern part of the basin near Lavic Lake sampled in 1917 was sodium sulfate in character with a total dissolved solids (TDS) concentration of 1,680 mg/L (ppm). Water from a well sampled in the 1950s in the northeastern part of the basin, possibly near the site, was sodium sulfate in character with a TDS concentration of 1,721 mg/L. Water from a well in the northwestern part of the basin near Hector Siding (not found during recent field studies) sampled in the 1950s was calcium-sodium bicarbonate in character with a TDS concentration of 278 mg/L (DWR, 2004). Groundwater analytical results for wells installed during this investigation are summarized in Section 4.

Additional references were reviewed, with very limited information found for the site vicinity. The State Water Resources Control Board has a Groundwater Ambient Monitoring and Assessment (GAMA) program for the Mojave River Basin, but the results will not be published until April 2009 (http://www.waterboards.ca.gov/gama/). The board also has an Underground Storage Tanks program (http://geotracker.waterboards.ca.gov/), but there are no monitoring wells in the project area. The USGS has a National Water Information System (http://nwis.waterdata.usgs.gov/nwis/qwdata/); only limited information was available for the site vicinity (discussed below), and no data were available within the Lavic Valley basin.

SECTION 3 INVESTIGATIVE METHODS

This section describes the methods that were used during the groundwater exploration program.

3.1 WELL INSTALLATION AND DEVELOPMENT

3.1.1 Well #1 and Well #2

Prior to drilling, Tessera Solar obtained right-of-entry agreements from the owners of the parcels on which each of the test borings are located. Copies of the right-of-entry agreements indicating the owner's contact information are provided in Appendix A. Property ownership information is also included in the well permits appearing in Appendix B. Tessera Solar contracted Mid-State Pump and Drilling (Mid-State) of Yuba City California (California License No. 937025) to drill test borings and install wells at the site. Mid-State obtained well permits for up to four test wells from the San Bernardino County Department of Public Health Environmental Health Services (EHS). Permit Nos. 2009110709 and 2009110712 were issued by the EHS on November 20, 2009 to Mid-State for Well #1 and Well #2. Copies of the permits are provided in Appendix A.

URS was not retained to provide oversight of drilling activities; however, URS provided limited assistance to Tessera Solar and the driller from technical and logistical perspectives. URS personnel were periodically on-site in association with observing the installation and development of Well #1 and drilling and geophysical logging of Well #2. However, URS' responsibility was to conduct aquifer testing of the wells installed by Mid-State.

Well #1 and Well #2 were drilled between December 14, 2009 and mid-March 2010 using a mud-rotary drilling rig. Test boring Well #1 was drilled to approximately 802 feet below the ground surface (bgs). Boring Well #2 was drilled to approximately 840 feet bgs. No soil sampling was conducted during drilling; however, drill cuttings were logged by the driller. URS has prepared the logs provided in Appendix B, based on the driller's logs and observations.

The test boring for Well #1 was completed as a well. Well #1 was installed in the test boring in late January 2010. Prior to installation, the driller thinned the mud to install the well, causing the boring to cave. The boring had to be redrilled two times before the casing was installed. The well was constructed of blank 8-inch diameter, welded, mild steel casing from the ground surface to approximately 700 feet bgs, and 8-inch diameter, welded mill slotted casing (1/8-inch mill slot) from approximately 700 to 800 feet bgs. The annular space between slotted casing and the borehole was filled with 3/8-inch gravel filter-pack to approximately 20 feet below ground surface. The remainder of the well boring was sealed with cement. A concrete pad and riser were installed at the ground surface to secure the well head. Well construction details are included in the boring logs (Appendix B).

Development of the well was delayed, which resulted in the drilling mud to remain in the casing/borehole for several weeks. During this period, approximately 80 feet of mud settled into the screen interval of the casing. The large amount of mud was difficult to remove from inside the well and within the filter pack during well development. In an attempt to remove the drilling mud, the driller utilized a cable tool drill rig to core the mud from the well casing; however, this method was unsuccessful and resulted in compaction of the mud into the lower section of the screen. The driller removed the compacted mud from the casing by air lifting with the mud-rotary drill rig. Following removal of mud from the screen interval, the driller attempted to remove mud from the filter pack by surging, bailing, and limited pumping. In addition, a mud dispersant was added to the well to aid in well development. Approximately 3,000 gallons of water generated during development was placed in tanks, and transported and disposed at an appropriate treatment facility. Prior to the aquifer test, the depth to water was measured in Well #1 using an electronic water-level indicator to the nearest 0.01 feet. On March 6, 2010, the depth to water was measured to be 353.42 feet below top of casing (btoc)

Following the drilling of the Well #2 boring, URS recommended that downhole geophysical logging be conducted to determine whether or not to complete the boring as a well. It was geophysically logged by Welenco, Inc. (Welenco) of Bakersfield, California. The logs completed included spontaneous potential, short- and long-normal resistivity and gamma. Based on the response of the strata observed on the logs (low probability of significant permeable zones), a well was not completed in this boring. This test boring was abandoned by Mid-State. A copy of the geophysical log is provided in Appendix C. In addition, because the well was not constructed, and drilling was completed using the mud-rotary technique, the depth to water could not be measured in the borehole.

Based on the results of aquifer testing of Well #1 and the geology observed in test boring Well #2, the program for Well #3 proposed drilling to a maximum depth of 1,200 feet bgs. The drilling program for Well #3 is described in the following section.

3.1.2 Well #3

A copy of the right-of-entry agreement is provided in Appendix A. URS subcontracted with Water Development Corporation (WDC) of Montclair, California (California License No. 283326) to install the test well (Well #3). Prior to well installation, the URS/drilling contractor obtained a well permit for a test well from the EHS. Permit No. 20110030152 was issued by the EHS on March 9, 2010. A copy of the permit is provided in Appendix B. The well was installed at the location shown on Figure 2. The details of the conditions encountered are provided on the well log included in Appendix B.

The well boring was drilled between March 9 and 16, 2010 using a mud-rotary drilling rig to a total depth of approximately 1,147 feet bgs. A pilot boring was initially drilled using a 10-inch diameter tri-cone bit. Upon completion of drilling, the pilot boring was reamed using 14.75-inch diameter drill casing to accommodate construction of a 6-inch diameter well. No soil sampling was conducted during drilling; however, drill cuttings were logged by a URS geologist under the oversight of a California Certified Hydrogeologist (C.Hg.) using the Unified Soil Classification System (USCS) in accordance with American Society for Testing and Materials (ASTM) 2488-D. In addition to the detailed geologic field log, the onsite URS geologist prepared daily field reports that documented onsite field activities, site conditions, observations, drilling or construction progress, and unique conditions observed. Descriptions included soil type, particle size and distribution, color (using the Munsell soil color chart), moisture content, and geologic texture. Because there is no water on site, the driller provided a water truck for water supply needed during drilling and well development activities. Baker tanks were used for clean water storage during drilling, and for containment of turbid water generated during well development.

Following drilling, the well boring was geophysically logged by Welenco, Inc. of Bakersfield, California. Welenco's logging tool would not pass freely to the total depth of the well boring. Therefore, another logging company, Pacific Geophysical Surveys of Clairmont, California logged the well boring to total depth utilizing a heavier logging tool. The logs completed included spontaneous potential, short- and long-normal resistivity and gamma. A deviation log was also performed to identify the degree of deviation that the borehole was from vertical. Copies of the geophysical logs are included in Appendix C. The results of logging were used to identify screen intervals in the well.

Construction of the Well #3 was performed between March 26 and 28, 2010. Prior to construction of Well #3, WDC thinned the mud used for drilling, by circulating fresh water within the borehole and pumping the turbid water into a onsite storage tank. Well #3 was constructed using 6 9/16-inch outer diameter (6 5/16-inch inner diameter) mild steel Fullflow 0.050-inch perforations that was installed in accordance with CCDWR Bulletin 74-91. Based on the geophysical logs and observations during drilling, two screen intervals were installed from 552 to 802 feet bgs and 1,042 to 1,142 feet bgs. A filter pack of Mesh 8 x 20 was placed from 65 to 868 feet and 892 to 1,147 bgs. The filter pack was pumped into place using a tremie pipe. A bentonite seal was placed between the two screen intervals from 868 to 892 feet bgs. Additional bentonite chips were placed from 50 to 65 feet and a cement-bentonite sanitary seal was pumped into place from the 50 feet bgs to ground surface in accordance with DWR guidelines and San Bernardino County permit requirements. During placement of the seal, the 50-foot temporary conductor casing was removed. A locking cap was been placed on the wellhead to reduce the potential for unauthorized access, and a concrete pad and locking standpipe were installed at the ground surface.

Following completion, Well #3 was developed to remove fine-grained sediment from the well and filter pack resulting from installation. The well development logs are included in Appendix D. Development began on March 31 and was completed on April 6, 2010. Development consisted of surging, bailing, and pumping the well using a down-hole electric pump. Prior to development, the groundwater level and the depth to the bottom of the well were measured and compared to well completion details, thereby identifying the initial water groundwater level and the amount of solids in the well. The well was bailed until the observed solids were removed. Well development continued using a vented surge block to concentrate surge energy over 10-foot intervals of the screen length. Development was initiated slowly, beginning at the bottom of the screen and proceeding upward. After surging the entire length of screen interval within the saturated zone, bailing continued to remove the solids that were drawn into the well during surging. The sequence of surging and bailing was repeated until the well had been developed to the maximum extent practical. A total of approximately 700 gallons of groundwater with solids (approximately 1.5 well borehole volumes) was bailed from the well. This water was placed into an on-site Baker tank to allow the fines to settle before discharging the water to the ground surface.

The final development task included pumping the well and monitoring field-measured values for pH, temperature, conductivity, and turbidity. The measured parameters were documented on the well development and sampling log. The log sheet includes the time of each measurement, approximate amount of water removed prior to each measurement, and the time intervals during which development was conducted. After well development had been completed, the depth to the bottom of the well was verified. The well was pumped at approximately 10 to 22 gallons per minute and approximately 5,500 gallons were removed. On April 18, 2010, prior to conducting the aquifer testing, the depth to water in Well #3 was 343.56 feet btoc.

Groundwater generated during these activities was collected and stored in an onsite storage tanks. Once the fine-grained material settled to the bottom of the tank, the water passed through filtering material and was released slowly onto the ground surface. Sediment that had accumulated in the storage tank was removed and disposed off-site at a permitted disposal facility by a URS subcontractor.

3.2 GROUNDWATER SAMPLING PROCEDURES

3.2.1 Well #1

Groundwater sampling was conducted on February 22, 2010 by MACTEC, Inc. (MACTEC) following completion of well development by Mid-State. During development, the driller and a MACTEC representative monitored water levels and parameters such as pH, specific conductance and temperature. When the water was relatively free of fine sediment and turbidity, the well was sampled. The analyses were conducted on a rush turnaround using U.S. EPA methods and/or Standard Methods and were analyzed within the U.S. EPA-recommended holding times by a state-certified laboratory. The data were used to evaluate water quality prior to completion of the aquifer test and to document water quality prior to discharge of the water during the testing activities.

Water samples were collected from the discharge hose and placed into laboratory-prepared containers. The containers were sealed, placed in an insulated cooler with ice and maintained at 4º C during transport under chain-of-custody procedures to Calscience Environmental Laboratories, Inc. (Calscience), a state-certified laboratory located in Garden Grove, California for analyses. Because no well was completed in the test boring for Well #2, no water sample was collected for analysis from this boring prior to abandonment.

3.2.2 Well #3

Following the completion of well development, URS personnel collected groundwater samples from Well #3 for chemical analyses to evaluate water quality. The samples were collected on April 6, 2010 in accordance with standard sampling procedures. The samples were placed in laboratory-prepared containers with the appropriate preservatives in accordance with U.S. EPA Guidance SW-846 and/or Standard Methods. The analyses were conducted on a rush turnaround using U.S. EPA methods and/or Standard Methods and were analyzed within the U.S. EPA-recommended holding times by a state-certified laboratory. The data were used to evaluate water quality prior to completion of the aquifer test and to document water quality prior to discharge of the water during the testing activities.

3.3 AQUIFER TESTING FIELD METHODOLOGIES

Aquifer testing methodologies for this groundwater investigation program are described in the following sections for Well # 1 and Well #3.

3.3.1 Well #1

URS conducted a short-term stepped-rate test for Well #1 that consisted of four steps, with each step lasting approximately two hours. An initial stress test was performed on March 3, 2010 to preliminarily assess drawdown response in the well and identify pumping rates for the stepped-rate pumping test. The stepped-rate pumping test was conducted on March 6, 2010. Electronic water-level meters were used to measure drawdown and recovery during the test, and water-level data were recorded by hand. The initial depth to groundwater prior to starting the test was measured at 353.42 feet below top of casing. The top of casing is approximately 1 foot above ground surface. Field monitoring activities were conducted in accordance with general guidelines in American Society for Testing Materials standard D4050-91 (ASTM, 1994).

Based on results of the stress test and the minimum pumping rate of the submersible pump, the target pumping rates for each step were 2 gpm, 4 gpm, 6 gpm, and 8 gpm. A summary of the pumping and drawdown measurements are shown on Figure F-1. During the 8-hour stepped-rate pumping test, approximately 2,400 gallons of water was pumped from the well with a measured drawdown of approximately 239.20 feet prior to terminating pumping. During recovery, the water level rose to within 19 feet of the initial water level by the end of a 4-hour recovery measurement phase.

3.3.2 Well #3

The aquifer test field methods consisted of two short-term stress tests conducted on April 8, 2010 and a constant-rate test conducted from April 18 to 19, 2010 on the test well. As the aquifer was stressed, water-level drawdown was monitored in the pumping well. Field monitoring activities were conducted in accordance with general guidelines in American Society for Testing Materials standard D4050-91 (ASTM, 1994).

The aquifer pumping test consisted of four phases: (1) setup; (2) stress and constant-rate pumping; (3) recovery; and (4) demobilization. During the first phase, the pumping equipment and transducer were placed in the pumping well and adjusted as appropriate. The second phase consisted of a short–term stress and long-term constant-rate pumping period. Discharge water was routed onto the ground approximately 120 feet south of Well #3 through a hose and a series of sprinkler heads to minimize the effects of runoff. After completing the pumping step, a recovery period began (third phase). The recovery period lasted until water levels had recovered to at least 90 percent of the drawdown. The fourth phase consisted of removing aboveground equipment from the test site (the pump remained in the well for future use).

Following ASTM (1994) guidelines for an aquifer testing program, drawdown and recovery were monitored. The frequency of water-level measurements for the recovery period was similar to the pumping period. Water-level measurements were confirmed periodically using an electronic water-level indicator. The frequency of manual measurements was at least every 20 minutes during the first 2 hours of the test, and at least every 30 minutes thereafter.

Equipment used during the aquifer test included the following:

- Electric submersible pump capable of providing flow ranges of approximately 60 to 120 gpm;
- A diesel-powered generator capable of providing uninterrupted power for a minimum of 24 hours;
- A quick connect conveyance piping system consisting of polyethylene discharge tubing, a check valve located down hole between pump/discharge piping, an in-line flow meter to monitor

groundwater discharge at a minimum rate of 20 gpm, and approximately 120 feet of hose to discharge groundwater away from the well.

- An electric water-level indicator with a measuring accuracy of approximately 0.01 feet.
- An In-Situ minstrel pressure transducer data logger [500 pounds per square inch (phi)].
- A laptop computer.
- Aquifer testing logs to record the test data.

The general procedures for completing the aquifer testing were as follows:

- An initial water-level measurement was obtained manually from the permanent marking at the top of the well casing and was recorded on the aquifer test field sheet. The well diameter was recorded.
- The pump and a pressure transducer were lowered into the pumping well to a depth of approximately 520 and 535 feet below the top of well casing, respectively. The transducer was activated and the data logger recorded measured water levels on a pre-selected logarithmic cycle. Water levels were confirmed manually with the electric water-level indicator and compared to the initial transducer readings. The pump and the pressure transducer were secured to the well casing to ensure that both remained suspended at the same height during the entire test.
- At an appropriate time, the pump was activated at the selected pumping rate.
- For the two stress tests, the selected pumping rates of 40 and 65 gpm were maintained for 2 hours and 1 hour, respectively.
- For the constant-rate test, pumping started at a rate that was slightly more than the estimated peak flow required for the project. Time-drawdown was assessed in the field to check the progress of the test. Pumping in Well #3 was maintained at a constant rate of 100 gpm for the entire duration of the drawdown portion of the test.
- Manual water-level measurements in the pumping well were taken periodically to confirm pressure transducer readings.
- Following the end of the pumping period, water levels were measured using the pressure transducer until water levels had recovered at least 90 percent of the drawdown depth.
- Water pumped from the well was discharged onto the ground surface approximately 120 feet from the well through a hose and series of sprinkler heads.

SECTION 4 LABORATORY ANALYSES AND RESULTS

4.1 LABORATORY ANALYSES

Calscience, a state-certified laboratory located in Garden Grove, California conducted the chemical analyses of the groundwater samples collected from Well #1 and Well #3. Samples were analyzed on a rush turnaround and included the following analyses:

- Anions (sulfate, chloride, nitrate, orthophosphate and fluoride)
- Dissolved and total metals (base cations, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, zinc, iron, manganese, aluminum, and silicon
- Turbidity
- Alkalinity (Total, Bicarbonate and Hydroxide)
- Specific conductance (SC)
- Total Dissolved Solids (TDS)
- Total Suspended Solids
- pH
- Total phosphorus
- Carbon dioxide
- Radionuclides
- Total petroleum hydrocarbons (TPH)
- Volatile organic compounds (VOCs)
- Semivolatile organic compounds (SVOCs)
- Organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs)
- Asbestos
- Cyanide

4.2 LABORATORY ANALYTICAL RESULTS

Laboratory results for the groundwater sample collected and analyzed from the well are summarized in Table 3. Primary and secondary Maximum Contaminant Levels (MCLs) for drinking water in California are provided on the table for comparative purposes. Primary MCLs were developed to address human health risk associated with drinking water. Secondary MCLs were established primarily to address aesthetics, such as color, odor and taste. Copies of the laboratory analytical reports and chain-of-custody forms are provided in Appendix E. A brief discussion of the results is provided below by well.

4.2.1 Well #1

Title 22 Metals: Dissolved metals concentrations are reported in Table 3. These appear in the report as "filt." (filtered) under the preparation method appearing on the metals results sheet in the laboratory analytical report provided in Appendix E. Total metals analytical results appear in the laboratory report provided in the appendix. Of the 17 Title 22 metals, six were detected in the groundwater sample from Well #1. These metals included arsenic (0.0328 mg/l), barium (0.0374 mg/l), chromium (0.0310 mg/l), molybdenum (0.212 mg/l), vanadium (0.0572 mg/l) and zinc (1.11 mg/l). The concentration of arsenic detected is above its primary maximum contaminant level (MCL) of 0.01 mg/l for drinking water. None of the other metals detected were above their respective MCLs.

Base Cations: Dissolved concentrations of calcium, magnesium, sodium and potassium were 45.4, 16.5, 545 and 18.0 mg/l, respectively. Total concentrations are provided in the laboratory analytical report.

Other Metals: Manganese was detected at a concentration of 0.0822 mg/l. Silicon was detected at a concentration of 23.5 mg/l and silica was present at a concentration of 50.3 mg/l. The concentration of manganese was above its secondary MCL of 0.05 mg/l.

Anions: Fluoride was detected at a concentration of 1.4 mg/l. Nitrate (as Nitrogen) was present at a concentration of 4.0 mg/l. Chloride and sulfate were detected at concentrations of 190 and 900 mg/l, respectively. The sulfate concentration was above its secondary MCL of 250 mg/l. Total alkalinity and bicarbonate (as $CaCO_3$) were present at a concentration of 134 mg/l.

General Water Quality Parameters: Turbidity, specific conductance (SC), TDS, and pH present in the groundwater sample from the well were 27 NTU, 2,600 umhos/cm, 1,800 mg/l and 7.85 respectively. The specific conductance and the TDS concentration were both above their respective secondary MCLs for drinking water.

Other Priority Pollutants: TPH, SVOCs, OCPs, PCBs, total cyanide and asbestos were not present at detectable concentrations. The VOCs toluene and xylenes were detected in the water sample from the well at concentrations of 8.5 and 1.5 µg/l, respectively. The presence of toluene and xylenes is attributed to introduction during the drilling process. It is not anticipated that this compound is present in the aquifer, since there is no development in the immediate area and the depth to water is relatively deep (over 300 feet bgs).

Radionuclides: Radionuclides were not present at concentrations above their respective MCLs.

Based on the analytical results, the groundwater is not a suitable source of potable water without further treatment. The arsenic concentration is above its respective primary MCL and manganese, sulfate, specific conductance and TDS are present at concentrations above their respective secondary MCLs.

4.2.2 Well #3

Title 22 Metals: Dissolved metals concentrations are reported in Table 3. These appear in the report as "filt." (filtered) under the preparation method appearing on the metals results sheet in the laboratory analytical report provided in Appendix E. Total metals analytical results appear in the laboratory report provided in the appendix. Of the 17 Title 22 metals, six were detected in the groundwater sample from the well. These metals included arsenic (0.0811 mg/l), barium (0.0220 mg/l), chromium (0.0172 mg/l), molybdenum (0.321), vanadium (0.0329 mg/l) and zinc (0.19 mg/l). The concentration of arsenic detected is above its primary MCL of 0.01 mg/l for drinking water. None of the other metals detected were above their respective MCLs.

Base Cations: Dissolved concentrations of calcium, magnesium, sodium and potassium were 25.1, 6.24, 437 and 12.7 mg/l, respectively. Total concentrations are provided in the laboratory analytical report.

Other Metals: Iron and manganese were detected at concentrations of 0.316 and 0.0684 mg/l, respectively. Silicon was detected at a concentration of 33.8 mg/l and silica was present at a concentration of 72.3 mg/l. The concentrations of iron and manganese were both above their secondary MCLs of 0.3 and 0.05 mg/l, respectively.

Anions: Fluoride was detected at a concentration of 3.8 mg/l. Nitrate (as Nitrogen) was present at a concentration of 5.2 mg/l. Chloride and sulfate were detected at concentrations of 78 and 700 mg/l, respectively. The detected concentration of fluoride was above its primary MCL of 2.0 mg/l. The sulfate concentration was above its secondary MCL of 250 mg/l. Total alkalinity and bicarbonate (as $CaCO_3$) were present at a concentration of 160 mg/l.

General Water Quality Parameters: Turbidity, specific conductance (SC), TDS, and pH present in the groundwater sample from the well were 4.6 NTU, 1,900 umhos/cm, 1,340 mg/l and 7.83 respectively. The specific conductance and the TDS concentration were both above their respective secondary MCLs for drinking water.

Other Priority Pollutants: TPH, SVOCs, OCPs, PCBs, total cyanide and asbestos were not present at detectable concentrations. The VOC toluene was detected in the water sample from the well at a concentration of 5.9 μg/l. The presence of toluene is attributed to introduction during the drilling process. It is not anticipated that this compound is present in the aquifer, since there is no development in the immediate area and the depth to water is relatively deep (over 300 feet bgs).

Radionuclides: Radionuclides were not present at concentrations above their respective MCLs.

Based on the analytical results, the groundwater is not a suitable source of potable water without further treatment. Arsenic and fluoride concentrations are above their respective primary MCLs and iron, manganese, sulfate, specific conductance and TDS are present at concentrations above their respective secondary MCLs.

SECTION 5 AQUIFER TESTING RESULTS

Aquifer testing results for Well #1 and Well #3 are provided in this section. Pumping drawdown charts and projections are shown on the figures provided in Appendix F. A summary of the data analysis is provided below by well.

5.1 WELL #1

5.1.1 Specific Capacity

Specific capacity is a correlation of drawdown resulting from a rate of pumping. Although this correlation is commonly used in assessing the production capacity of a well, it has a tendency to vary with time and pumping rate due to factors such as aquifer responses and well turbulence. Regardless, specific capacity is considered a reasonable estimate of a well's production capacity (Driscoll, 1986).

Drawdown data at the end of each pumping step was used to calculate the short-term specific capacity using the following formula:

$$Sp = \frac{Q}{(h_o - h)} \tag{1}$$

Where: Sp = Short-term specific capacity (gpm/ft)

Q = Pumping rate (gpm)

(h_o-h) = Total drawdown at 2, 4, 6, 8 hours of pumping (ft)

Results of the analysis, as shown on Figure F-1, indicated a *Sp* range from 0.033 gpm/ft at 8 gpm to 0.046 gpm/ft at 2 gpm. The overall average *Sp* was 0.039 gpm/ft.

5.1.2 Transmissivity

Using the step-drawdown pumping and recovery data, estimates of transmissivity (T) were made with the Cooper & Jacob (1946) Drawdown and Theis (1935) Recovery Test methods applied by the AQTESOLV® program (Windows Version 3.01, Duffield—2000). Output plots of the analyses are included in Attachment F. Results of the analyses indicate a T of 8.5 gallons per day per foot (gpd/ft).

5.1.3 Drawdown Analysis

Using the *Sp* average of 0.039 gpm/ft, initial drawdowns for target pumping rates were estimated for the time ending with the first pumping step using the following formula:

$$s_w = \frac{Q}{Sp} \tag{2}$$

Where: s_w = Initial drawdown in ft.

Theoretical pumping curves were then developed to predict total drawdown after one log cycle (20 hours) of pumping at a specified Q using the following modified Cooper-Jacob (1946) equation:

$$\Delta s_w = \frac{264Q}{T} \tag{3}$$

Where: T = Transmissivity in gpd/ft

Δs_w = Drawdown over one log cycle for pumping rate Q (ft/log cycle)

The resultant drawdowns after one log cycle of pumping for each target rate were estimated from the following modified Cooper and Jacob (1946) equation:

$$s_w' = \frac{264Q}{T} + s_w \tag{4}$$

Where: s_w' = Predicted drawdown, in ft, after one log cycle (at 20 hours) of pumping at Q

Theoretical pumping curves were then derived by fitting a straight line with a slope Δs_w through the predicted points of drawdown, s_w and s_w', for the target values of Q as shown on Figure F-2. The projected rates are overlain by the pumping test drawdown data to show how the actual step-test data at 2 gpm, 4 gpm, 6 gpm, and 8 gpm correspond with the long-term projections.

Typically, the maximum recommended well pumping rate should not result in long-term drawdown that exceeds 20 percent of the aquifer thickness (.e. the maximum recommended continuous well pumping rate should remain at least 80 percent of the aquifer's water column thickness). Therefore, based on the maximum pumping rate of 0.75 gpm for a four-month continuous cycle will yield about 89 feet of drawdown in the well, which is the maximum recommended drawdown.

Based on the results of the aquifer test, it was found that Well #1 does not produce a quantity of water that could meet the needs for construction and operation of the Project. It is likely that the difficulties encountered during well construction, such as caving of the borehole prior to casing installation (3 times), the long residence time of the drilling mud in the borehole (several weeks) and incomplete removal of mud from the filter pack and formational materials have significantly restricted groundwater flow from the formation and may be responsible for the low yield observed in this well. Well #1 will not be used to supply water for the Project. Therefore, no estimates of drawdown or a zone of influence have been estimated for pumping this well during the lifetime of the Project. It is possible that this well could be used to monitor seasonal water-level changes during long-term pumping of Well #3.

Because it was not known to what degree the construction issues contributed to the low yield of the well, URS proposed to drill test boring Well #3 to a depth of up to 1,200 feet. Aquifer testing results for Well #3 are summarized in the following section.

5.2 WELL #3

5.2.1 Specific Capacity

Specific capacity is a correlation of drawdown resulting from a rate of pumping. Although this correlation is commonly used in assessing the production capacity of a well, it has a tendency to vary with time and pumping rate due to factors such as aquifer responses and well turbulence. Regardless, specific capacity is considered a reasonable estimate of the production capacity of a well (Driscoll, 1986).

The specific capacity for Well #3 was calculated based on the drawdown observed near the completion of pumping (t = 24 hours) based on the following formula:

$$Sp = \frac{Q}{(h_o - h)} \qquad (1)$$

Where:

Sp	=	specific capacity (gpm/ft)
Q	=	pumping rate (gpm)
$(h_o\text{-}h)$	=	drawdown at 24 hours of pumping (feet)

During the stress test, the maximum water level drawdown was approximately 1.74 feet (at 40 gpm) and 3.24 feet (at 60 gpm) in Well #3. Using the specific capacity observed in Well #3 during the stress drawdown tests (22.99 gallons per minute per foot [gpm/ft] at 40 gpm, and 20.06 gpm/ft at 65 gpm), and the estimated peak flow for the project, a pumping rate of 100 gpm was selected for the constant-rate test.

After 24 hours of pumping at approximately 100 gpm, 6.60 of drawdown were observed in Well #3 as shown of Figure F-3. This corresponds to an estimated specific capacity (*Sp)* of 15.15 gpm/ft.

5.2.2 Transmissivity

Estimates of transmissivity (*T*) were made calculated by using the specific capacity data, calculated from the drawdown at the end of the constant-rate pumping based on the following formulas:

For a confined aquifer, $$T = \frac{Q}{(h_o - h)} x2000 \quad (2)$$

For an unconfined aquifer, $$T = \frac{Q}{(h_o - h)} x1500 \quad (3)$$

Where:

Q	=	pumping rate (gpm)
$(h_o\text{-}h)$	=	drawdown at 24 hours of pumping (feet)

The estimated transmissivity value for an unconfined aquifer and a confined aquifer range from 22,700 to 30,300 gallons per day per foot (gpd/ft).

5.2.3 Drawdown Analysis

Drawdown in Well #3 stabilized within the first minute of pumping and remained stable throughout the remainder of the pumping test. In addition, the well recovered within a few seconds of stopping the pumping phase of the test indicating that the aquifer is very transmissive. Therefore, the estimated long-term drawdown for the well at the 100 gpm pumping rate would be consistent with the drawdown during the pumping test. It should be noted that the geology in the area appears to be variable and additional drawdown may occur as a result of long-term pumping effects.

Projected drawdowns as a result of the construction and operations pumping scenarious are shown on Figure F-4. Figures showing the projected extent of drawdown during various pumping phases for the Project, based on the results of aquifer testing are provided in Appendix G. The estimated cone of depression following the construction phase (assuming 5 years) and at 10, 20 and 30 years of project operations are shown on G-1 through G-4. As a conservative estimate of the projected cone of depressions resulting from pumping during construction, an annualized pumping rate based on the maximum monthly estimated water use of 12.4 af was used (150 afy). Plots depicting the drawdown associated with these pumping scenarios are provided as Figures G-5 through -12. In order to estimate the cones of depression associated with various pumping scenarios, a value for the storativity (S) of the aquifer was estimated, since it cannot be calculated from an aquifer test without drawdown data for a monitoring well. Therefore, the cones of depression have been developed based on assuming low (confined) and high (unconfined) values of S to provide upper and lower bounds for the extent of the radius of influence. The value of S assumed for a confined aquifer was 0.001 and for an unconfined aquifer was 0.2 based on Driscoll (1986). Because the water level in the nearby 320-foot well is similar to that observed in Wells #1 and Well #3, it is likely that the aquifer penetrated by Well# 3 is not confined. However, there is a continuum between confined and unconfined conditions, and as such, the cone of depression for various times under the assumed conditions of the Theis Non-equilibrium Well Equation

(Theis, 1935) for Well #3 may be between the two scenarios presented if the aquifer system is semi-confined.

The estimated projected cones of depression for confined and unconfined conditions for 5 years of construction with annual water use of 150 afy are shown on Figures G-1 and G-2, respectively. Under the confined scenario, one foot of drawdown may be experienced in the aquifer at a distance of up to 11,000 feet from the pumping well. It should be noted that under confined conditions, the change in head (drawdown) is due to changes in pressure and elevation in the aquifer, and the change in head is attributed to changes in pressure that are experienced at great distances from a well. However, this change in head is not attributable to a change in water level in a confined aquifer, unlike the water-level changes that occur in an unconfined aquifer that result in its dewatering. In the unconfined scenario, it is estimated that greater than 1 foot of drawdown may be experienced in the aquifer to a distance of approximately 1,900 feet. Under either scenario, the extent of the cone of depression where there is greater than 1 foot of drawdown is relatively small, since the nearest existing wells that could be affected by pumping from the Project appear to be approximately 10 miles away. It should also be noted that the operational status of the wells identified during our data review that may be 10 miles away is not known.

Figures G-3 and G-4 show the estimated distance at which greater than 1 foot of drawdown occurs as a result of pumping at a rate of 20 afy during facility operations following 10, 20 and 30 years. Figure G-3 considers the confined scenario and Figure G-4 is for the unconfined scenario. In each instance the cone of depression is very small at the operational pumping rate of 20 afy (12.3 gpm) for the Project. For all timeframes (10, 20 and 30 years), the cone of depression is in a state of relative static equilibrium (stable conditions), with the extent of greater than 1 foot of drawdown extending less than 10 feet away from the pumping well. It should be noted that after pumping Well #3 at the rate necessary to support construction for up to 5 years (150 afy), the extent of the cones of depression will recover to those shown for the lower pumping rate for the duration of Project operations (20 afy).

The results of this evaluation of the estimated cone of depression for pumping Well #3 during the construction and operations of the proposed Project indicate that there will be no significant impact on other water users in the basin and the environment.

5.2.4 Zone of Influence (ZOI)

In accordance with guidance provided by the California Drinking Water Source Assessment and Protection (DWSAP) program (California Department of Health Services, 1999), the groundwater pumping zone of influence (ZOI) was calculated to assess the potential capture of groundwater after 10 year, 20 years, and 30 years of pumping activities at the long-term projected rate of 40 afy (about 25 gpm of continuous pumping), and after 5 years of pumping at the short-term projected rate of 150 afy (about 93 gpm of continuous pumping; the annualized volume based on the maximum flow rate needed during construction). ZOI calculations are based on the *fixed radius delineation method* using the following formula:

$$r = \sqrt{\frac{Q't}{\pi \eta H}} \tag{7}$$

where: r = Radius of pumping ZOI (ft)

Q'	=	Pumping capacity of the well (13 gpm and 93 gpm)
t	=	Travel time (10, 20, 30 years)
η	=	Effective porosity (unitless; 0.2 is the default value)
H	=	Length of perforated well screen (350 feet)

Results of the analysis indicate a ZOI of 210 feet at 10 years, 290 feet at 20 years, and 353 feet at 30 years at the operations pumping rate of approximately 13 gpm, and 390 feet for pumping at a rate of approximately 93 gpm for a 5-year period of construction. These results indicate that the construction and operational pumping scenarios will not affect groundwater conditions at the nearest production well, which is approximately 10 miles away. A summary of the test results are tabulated below.

Annual Construction Use (afy)		1500
Annual Production Use (afy)		20
Daily Ave. Use (gpm)		
	Construction	93
	Production	13
Short-Term *Sp* (gpm/ft)		15.15
Transmissivity (gpd/ft)		22,700 – 33,300
Construction Drawdown (ft)		
	5 yrs	8
Production *ZOI* (ft) @ 93 gpm		
	5 yrs	390
Production *ZOI* (ft) @ 13 gpm		
	10 yrs	210
	20 yrs	290
	30 yrs	360

SECTION 6 CONCLUSIONS

The conclusions presented in this report are based on the information collected during our data review and field investigation.

6.1 WATER QUALITY

Analytical results for the water sample analyzed from the test well indicate the following:

- Arsenic and fluoride are present at concentrations above their respective primary MCLs. The water is not suitable for drinking without treatment.
- Iron, manganese, sulfate, specific conductance and TDS are present at concentrations that are above their respective secondary MCLs, also indicative that the groundwater is not suitable for drinking without treatment.
- Based on the TDS concentration, the groundwater is considered fresh water; however it is not suitable for drinking without treatment.
- Based on the limited drawdown during pumping and the rapid recovery of water levels following the aquifer test, it is likely that groundwater extraction for the Project will not adversely affect water quality during construction or operation.
- The results of the zone of influence calculations indicate that the distance that the water will move during pumping is relatively small. As such, the proposed pumping during construction and operation of the Project will not significantly affect water quality and the environment.

6.2 WATER QUANTITY

Based on the results of the pumping test, URS concludes the following:

- Well #1 does not produce a significant quantity of water and cannot support the water requirements for construction and operations of the Project. It is likely that the circumstances related to its installation may have adversely affected the yield of this well.
- The geologic conditions observed in boring Well #2 did not appear to be favorable to groundwater production based on the geophysical log. Based on the results of aquifer testing conducted for Well #1 and the Well #2 observations, the boring for Well #3 was drilled to greater than 1,100 feet to identify an aquifer that could met the water demands for construction and operation of the Project.
- The aquifer penetrated by Well #3 can support water demands for the Calico Solar site during construction and the lifespan of its operations based on the results of aquifer testing.
- Pumping of the well at the prescribed rates will have no significant impact to water levels in the area, as the ZOI is relatively small and will not affect wells that may be present in the basin that are approximately 10 miles away.

- Because there is limited information related to groundwater occurrence in the basin from the depth interval in Well #3, some level of groundwater monitoring consistent with the San Bernardino County Desert Groundwater Management Ordinance will be conducted to monitor water levels in Project vicinity during pumping.

SECTION 7 LIMITATIONS

The conclusions presented in this report are professional opinions based solely upon the data described in this report. They are intended exclusively for the purpose outlined herein and the site location and project indicated. This report is for the sole use and benefit of the Client. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

Given that the scope of services for this investigation was limited, and that conditions will vary across the site, it is possible that currently unrecognized subsurface conditions may be present at the site. Should site use or conditions change, the information and conclusions in this report may no longer apply. Opinions relating to environmental, geologic, and geotechnical conditions are based on limited data and actual conditions may vary from those encountered at the times and locations where data were obtained. No express or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed by the Client with the customary thoroughness and competence of professionals working in the same area on similar projects.

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Table 1
Estimated Monthly Water Use During Construction
Calico Solar

	Month-Year	Gallons	Acre-Feet
YEAR 1 TOTAL = 135.6 afy	Nov-10	3,278,200	10.1
	Dec-10	3,278,200	10.1
	Jan-11	3,369,775	10.3
	Feb-11	3,811,595	11.7
	Mar-11	3,915,144	12.0
	Apr-11	3,915,144	12.0
	May-11	3,823,569	11.7
	Jun-11	3,823,569	11.7
	Jul-11	3,823,569	11.7
	Aug-11	3,823,569	11.7
	Sep-11	3,653,369	11.2
	Oct-11	3,653,369	11.2
YEAR 2 TOTAL = 123.1 afy	Nov-11	3,653,369	11.2
	Dec-11	3,549,820	10.9
	Jan-12	3,549,820	10.9
	Feb-12	3,549,820	10.9
	Mar-12	3,549,820	10.9
	Apr-12	3,108,000	9.5
	May-12	3,108,000	9.5
	Jun-12	3,108,000	9.5
	Jul-12	3,108,000	9.5
	Aug-12	3,108,000	9.5
	Sep-12	3,359,073	10.3
	Oct-12	3,359,075	10.3
YEAR 3 TOTAL = 71.9 afy	Nov-12	3,400,702	10.4
	Dec-12	3,916,160	12.0
	Jan-13	0	0.0
	Feb-13	0	0.0
	Mar-13	0	0.0
	Apr-13	0	0.0
	May-13	0	0.0
	Jun-13	0	0.0

Table 1
Estimated Monthly Water use during Construction
Calico Solar
(Continued)

	Month-Year	Gallons	Acre-Feet
YEAR 3 TOTAL = 71.9 afy (Continued)	Jul-13	4,045,919	12.4
	Aug-13	4,045,921	12.4
	Sep-13	4,004,298	12.3
	Oct-13	4,004,300	12.3
YEAR 4 TOTAL = 142.5 afy	Nov-13	4,004,302	12.3
	Dec-13	4,004,304	12.3
	Jan-14	4,004,306	12.3
	Feb-14	4,004,307	12.3
	Mar-14	4,004,309	12.3
	Apr-14	4,004,311	12.3
	May-14	3,753,242	11.5
	Jun-14	3,753,243	11.5
	Jul-14	3,753,245	11.5
	Aug-14	3,753,247	11.5
	Sep-14	3,753,249	11.5
	Oct-14	3,623,493	11.1
YEAR 5 TOTAL = 125.5 afy	Nov-14	3,623,495	11.1
	Dec-14	3,623,497	11.1
	Jan-15	3,623,499	11.1
	Feb-15	3,623,501	11.1
	Mar-15	3,623,503	11.1
	Apr-15	3,623,504	11.1
	May-15	3,623,506	11.1
	Jun-15	3,108,052	9.5
	Jul-15	3,108,054	9.5
	Aug-15	3,108,056	9.5
	Sep-15	3,108,056	9.5
	Oct-15	3,108,056	9.5

Table 2
Nearby Well Information

Reference No. (see Fig 1)	Groundwater Basin	Township, Range, Section	UTM Data					Ground Surface Elevation (feet, datum?)	Measured Depth to Groundwater (feet, bgs)	Date Groundwater Measured	Source	Total Dissolved Solids (TDS, ppm)	Notes
			Datum	Easting	Northing	Units	Zone						
1	Lower Mojave River Valley	NA	NAD27	544074	3850401	meters	11	1807	48.2	4/6/2006	DWR-1		
2	Lower Mojave River Valley	NA	NAD27	543829	3850350	meters	11	1810.1	31.2	12/3/1958	DWR-1		
3	Lower Mojave River Valley	NA	NAD27	542611	3849944	meters	11	1850	72.5	11/19/1962	DWR-1		
4	Lower Mojave River Valley	NA	NAD27	542604	3851577	meters	11	1780	42.4	10/17/1962	DWR-1		
5	Lower Mojave River Valley	NA	NAD27	540699	3851260	meters	11	1782	47.5	4/30/2008	DWR-1		
6	Lower Mojave River Valley	NA	NAD27	539402	3851531	meters	11	1783.2		5/20/1953	DWR-1		Dry well
7	Lower Mojave River Valley	NA	NAD27	538620	3850296	meters	11	1780	8.4	6/18/1959	DWR-1		
8	Lower Mojave River Valley	NA	NAD27	538213	3850325	meters	11	1785	12.0	6/17/1959	DWR-1		
9	Lower Mojave River Valley	NA	NAD27	538211	3850695	meters	11	1780	8.7	6/17/1959	DWR-1		
10	Lower Mojave River Valley	NA	NAD27	537827	3851525	meters	11	1780	6.4	6/17/1959	DWR-1		
11	Lower Mojave River Valley	NA	NAD27	540247	3855940	meters	11	1780	5.9	6/16/1959	DWR-1		nearby pump operating
12	Lower Mojave River Valley	NA	NAD27	540604	3856602	meters	11	1782	52.6	5/1/2008	DWR-1		

Table 2
Nearby Well Information
(Continued)

Reference No. (see Fig 1)	Groundwater Basin	Township, Range, Section	UTM Data Datum	Easting	Northing	Units	Zone	Ground Surface Elevation (feet, datum?)	Measured Depth to Groundwater (feet, bgs)	Date Groundwater Measured	Source	Total Dissolved Solids (TDS, ppm)	Notes
13	Lower Mojave River Valley	NA	NAD27	540581	3856857	meters	11	1778	51.8	5/1/2008	DWR-1		
14	Lower Mojave River Valley	NA	NAD27	540552	3857606	meters	11	1807	66.2	4/5/2008	DWR-1		
15	Lower Mojave River Valley	NA	NAD27	540059	3858188	meters	11	1783	NA	6/3/1992	DWR-1	1100	Pumping
16	Lower Mojave River Valley	NA	NAD27	540219	3858128	meters	11	1791	40.4	5/1/2008	DWR-1		
17	Lower Mojave River Valley	NA	NAD27	540256	3859575	meters	11	1790	7.0	6/16/1959	DWR-1		nearby pump operating
18	Lower Mojave River Valley	NA	NAD27	539875	3859573	meters	11	1780	2.8	6/16/1959	DWR-1		nearby pump operating
19	Mojave Watershed	NA	NAD27	540347	3862009	meters	11	1820	41.2	10/29/1959	DWR-1		nearby pump operating
20	Caves Canyon Valley	NA	NAD27	542161	3870297	meters	11	1612.1	17.7	5/2/2008	DWR-1		
21	Caves Canyon Valley	NA	NAD27	542465	3870459	meters	11	1607.7	NA	4/27/2006	DWR-1		Dry well
22	Caves Canyon Valley	NA	NAD27	542996	3870707	meters	11	1603.4	23.8	5/2/2008	DWR-1		
23	Caves Canyon Valley	NA	NAD27	556471	3877281	meters	11	1410	NA	3/22/1993	DWR-1	1400	Well destroyed
24	Broadwell Valley	NA	NAD27	574245	3857261	meters	11	1299	101.6	6/28/1979	DWR-1		
25	Broadwell Valley	NA	NAD27	580500	3862243	meters	11	2180	49.0	2/1/1972	DWR-1		
26	Broadwell Valley	T7N, R7E, S1E1	NA	NA	NA	NA	NA	1795	425	2/26/1963	DWR-2		well depth 500 ft
27	Broadwell Valley	T7N, R7E, S2Z1	NA	NA	NA	NA	NA	1830	NA	2/26/1963	DWR-2		140 gpm

Table 2
Nearby Well Information
(Continued)

Reference No. (see Fig 1)	Groundwater Basin	Township, Range, Section	UTM Data					Ground Surface Elevation (feet, datum?)	Measured Depth to Groundwater (feet, bgs)	Date Groundwater Measured	Source	Total Dissolved Solids (TDS, ppm)	Notes
			Datum	Easting	Northing	Units	Zone						
28	Broadwell Valley	T7N, R8E, S8B1	NA	NA	NA	NA	NA	1788	785	1883	DWR-2	470 to 551	Well depth 1600 ft
29	Broadwell Valley	T8N, R8E, S20D	NA	NA	NA	NA	NA		261	1990	Emcon		drilled early 1990
30	Broadwell Valley	T9N, R8E, S18	NA	NA	NA	NA	NA	1298	dry	2/27/1964	DWR-2		Well depth 43 feet
31	Broadwell Valley	T9N, R7E, S13	NA	NA	NA	NA	NA	1300	dry | 103	7/27/64 | 11/27/17	DWR-2		Well depth 89 feet (7/27/64)
32	Broadwell Valley	T9N, R8E, S31	NA	NA	NA	NA	NA	1300	NA	NA	DWR-2		Well depth 28 feet (6/22/65
33	Broadwell Valley	T8N, R8E, S5	NA	NA	NA	NA	NA	1300	dry	7/27/1964	DWR-2		Well depth 600 ft (1915), 51 ft (7/27/64)
34	Broadwell Valley	T8N, R8E, S6	NA	NA	NA	NA	NA	1300	destroyed	6/22/1965	DWR-2		Well depth 303 ft originally
35	Broadwell Valley	T8N, R8E, S9	NA	NA	NA	NA	NA	1415	destroyed	6/22/1965	DWR-2		Well depth 332 ft originally
36	Broadwell Valley	T8N, R8E, S8	NA	NA	NA	NA	NA	1330	dry	10/5/1964	DWR-2		Well depth 68 ft (10/5/64), 400 ft (1917)
37	Broadwell Valley	T8N, R8E, S17	NA	NA	NA	NA	NA	1355	destroyed	6/22/1965	DWR-2		Well depth 425 ft originally
38	Broadwell Valley	T7N, R8E, S5	NA	NA	NA	NA	NA	1740	dry	7/30/1964	DWR-2		Well depth 445 ft (7/30/64)
39	Bristol Valley	T7N, R10E, S16	NA	NA	NA	NA	NA	1080	destroyed	12/1/1965	DWR-2		Well depth 867 ft originally
40	Broadwell Valley	T7N, R9E, S18	NA	NA	NA	NA	NA	2020	destroyed	8/4/1964	DWR-2		Well depth 89 ft (8/4/64)

Table 2
Nearby Well Information
(Continued)

Reference No. (see Fig 1)	Groundwater Basin	Township, Range, Section	UTM Data					Ground Surface Elevation (feet, datum?)	Measured Depth to Groundwater (feet, bgs)	Date Groundwater Measured	Source	Total Dissolved Solids (TDS, ppm)	Notes
			Datum	Easting	Northing	Units	Zone						
41	Lavic Valley	T7N, R6E, S14	NA	NA	NA	NA	NA	1890	55	9/23/1963	DWR-2		
42	NA	T7N, R8E, S22	NA	NA	NA	NA	NA	2400	dry	8/4/1964	DWR-2		Well depth 117 ft
43	Bristol Valley	T7N, R9E, S25	NA	NA	NA	NA	NA	1650	destroyed	7/30/1964	DWR-2	1260 (4/15/1902)	
44	Lavic Valley	T7N, R6E, S26	NA	NA	NA	NA	NA	1900	64	1917	DWR-2		140 gpm, well depth 72 ft (1917)
45	Lavic Valley	T7N, R6E, S29	NA	NA	NA	NA	NA	1888	53	2/9/1918	DWR-2		Well depth 59 ft (2/9/18)
46	NA	T7N, R5E, S26	NA	NA	NA	NA	NA	3280	80	8/5/1964	DWR-2		Well depth 90 ft
47	Lavic Valley	T7N, R5E, S28	NA	NA	NA	NA	NA	3320	dry	8/5/1964	DWR-2		Well depth 60 ft
48	Bristol Valley	T7N, R8E, S33	NA	NA	NA	NA	NA	2111	dry	7/30/1964	DWR-2		Well depth 192 ft
49	NA	T7N, R5E, S35	NA	NA	NA	NA	NA	3760	dry	8/5/1964	DWR-2		Well depth 60 ft

Notes:

DWR-1 = California Department of Water Resources (http://wdl.water.ca.gov/gw/map/scal.cfm)

DWR-2 = California Department of Water Resources Bulletin No. 91-14, "Water Wells and Springs in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys and Vicinity," August 1967.

Emcon = Emcon Associates, 1993, Hydrogeologic Characterization, Broadwell Basin Residuals Repository, San Bernardino County, California, Prepared for Broadwell Corporation, Project D46-11.04, December 1990 and updated 1993.

Approximate well locations are shown on Figure 1.

Table 3
Groundwater Analytical Results
Calico Solar
(analytes reported in mg/l, unless noted otherwise)

Analyte	Well #1	Well #3	Primary/ Secondary MCL
Date Sampled	2/22/2010	4/6/2010	
Lab Report ID	10-02-1824	10-04-0403	
Title 22 Metals:			
Antimony	<0.0150	<0.0150	0.006
Arsenic	0.0328	0.0811	0.01
Barium	0.0374	0.0220	1.0
Beryllium	<0.0100	<0.0100	0.004
Cadmium	<0.0100	<0.0100	0.005
Chromium	0.0310	0.0172	0.05
Cobalt	<0.0100	<0.0100	NE
Copper	<0.0100	<0.0100	1.0*
Lead	<0.0100	<0.0100	0.015
Mercury	<0.000500	<0.000500	0.002
Molybdenum	0.212	0.321	NE
Nickel	<0.0100	<0.0100	0.1
Selenium	<0.0150	<0.0150	0.05
Silver	<0.00500	<0.00500	0.1*
Thallium	<0.0150	<0.0150	0.002
Vanadium	0.0572	0.0329	NE
Zinc	1.11	0.19	5.0
Base Cations:			
Calcium	45.4	25.1	NE
Magnesium	16.5	6.24	NE
Sodium	545	437	NE
Potassium	18	12.7	NE
Other Metals:			
Aluminum	<0.0500	<0.0500	0.2*
Iron	<0.100	0.316	0.3*
Manganese	0.0822	0.0684	0.05*
Silicon	23.5	33.8	NE
Silica	50.3	72.3	NE
Anions:			
Fluoride	1.4	3.8	2.0
Chloride	190	78	250*
Nitrate (as N)	4.0	5.2	10
o-Phosphate (as P)	<0.10	<0.10	NE
Total Alkalinity (as CaCO3)	134	160	NE
Bicarbonate (as $CaCO_3$)	134	160	NE
Carbonate (as $CaCO_3$)	<1.0	<1.0	NE
Hydroxide (as $CaCO_3$)	<1.0	<1.0	NE
Sulfate	900	700	250*

Table 3
Groundwater Analytical Results
Calico Solar
(analytes reported in mg/l, unless noted otherwise)
(Continued)

Analyte	Well #1	Well #3	Primary/ Secondary MCL
Date Sampled	2/22/2010	4/6/2010	
Lab Report ID	10-02-1824	10-04-0403	
General Water Quality Parameters:			
Turbidity (NTU)	27	4.6	NE
SC (umhos/cm)	**2600**	**1900**	900*
TDS	**1800**	**1340**	500*
TSS	37	4.6	NE
pH (unitless)	7.85	7.83	NE
Total P	<0.10	<0.10	NE
Carbon Dioxide	2.5	5.6	NE
Other Priority Pollutants:			
VOCs (ug/l): Toluene	8.5	5.9	150
Xylenes (total)	1.5	<1.0	1750
SVOCs	ND	ND	various
OCPs	ND	ND	various
PCBs	ND	ND	0.0005
TPH (C6-C44) (ug/l)	<500	<500	NE
Total Cyanide	<0.050	<0.050	0.15
Asbestos (MFL)	<2.30	<0.19	7
Radionuclides (pCi/L):			
Gross Alpha	6.30	4.61	15
Gross Beta	4.85	5.79	50
Strontium 90	0.766	0.129	8
Radium 226	0.353	0	5
Tritium	381	3.44	20000
Uranium	0.267	3.33	20
Radium 228	0.263	0.357	5

Notes:

NA: Not Analyzed

NE: None Established.

ND: None detected; see lab report for detection limits for specific compounds.

MCL: Maximum Containment Level.

MCL is primary, unless indicated with an asterisk (*).

BOLD indicates concentration is above MCL.

The symbol "<" (less than) indicates the constituent was not detected above the analytical detection limit specified.
--- various

[a] MCL for total xylenes

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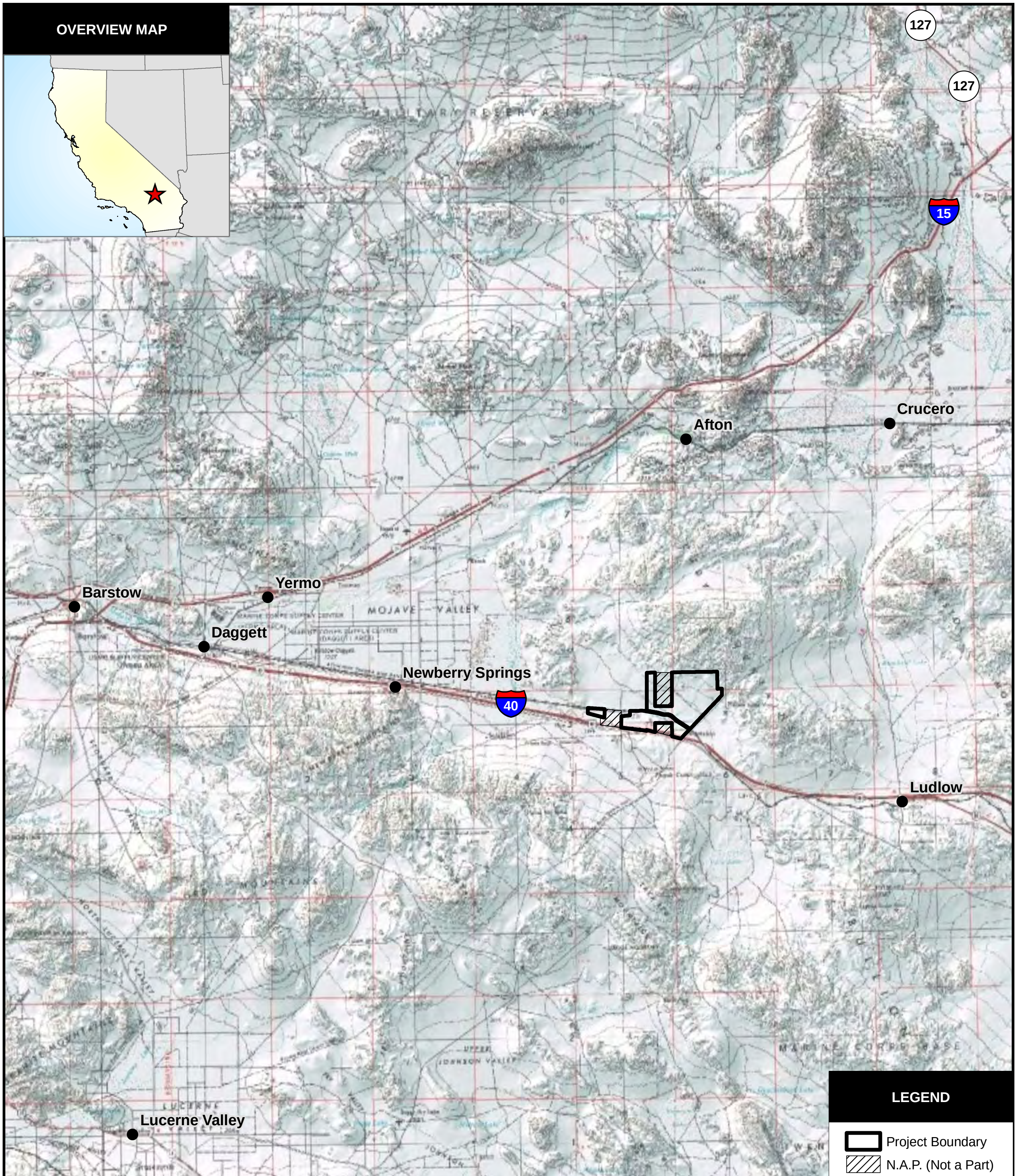


SOURCES:
Huitt-Zollars, Inc (site plan Feb. 2010);
POWERmap, www.powermap.platts.com 2009 Platts,
A Division of The McGraw-Hill Companies (T-Lines,
Substations); ESRI (roads, overview);
USGS (7.5' quads various dates).

SITE LOCATION MAP
CALICO SOLAR PROJECT

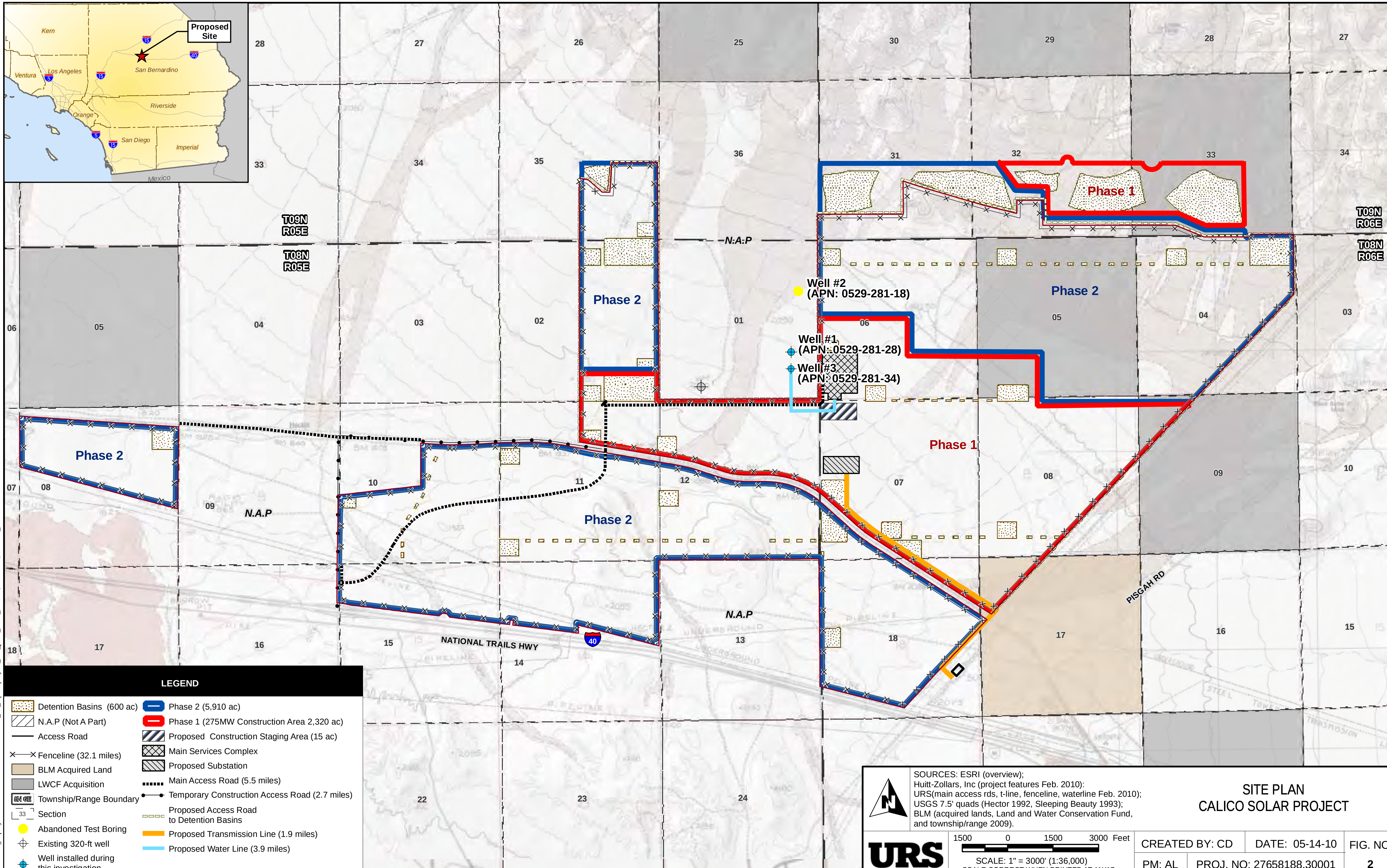
URS

4 0 4 8 Miles

SCALE: 1" = 8 Miles(1:506,880)
SCALE CORRECT WHEN PRINTED AT 8.5X11

CREATED BY: CM	DATE: 05-04-10	FIG. NO:
PM: AL	PROJ. NO: 27658188.30001	1

Path: G:\gis\projects\1577\27658100\mxd\SAR\2010_04_report\site_map.mxd, 05/04/10, colin_mattison



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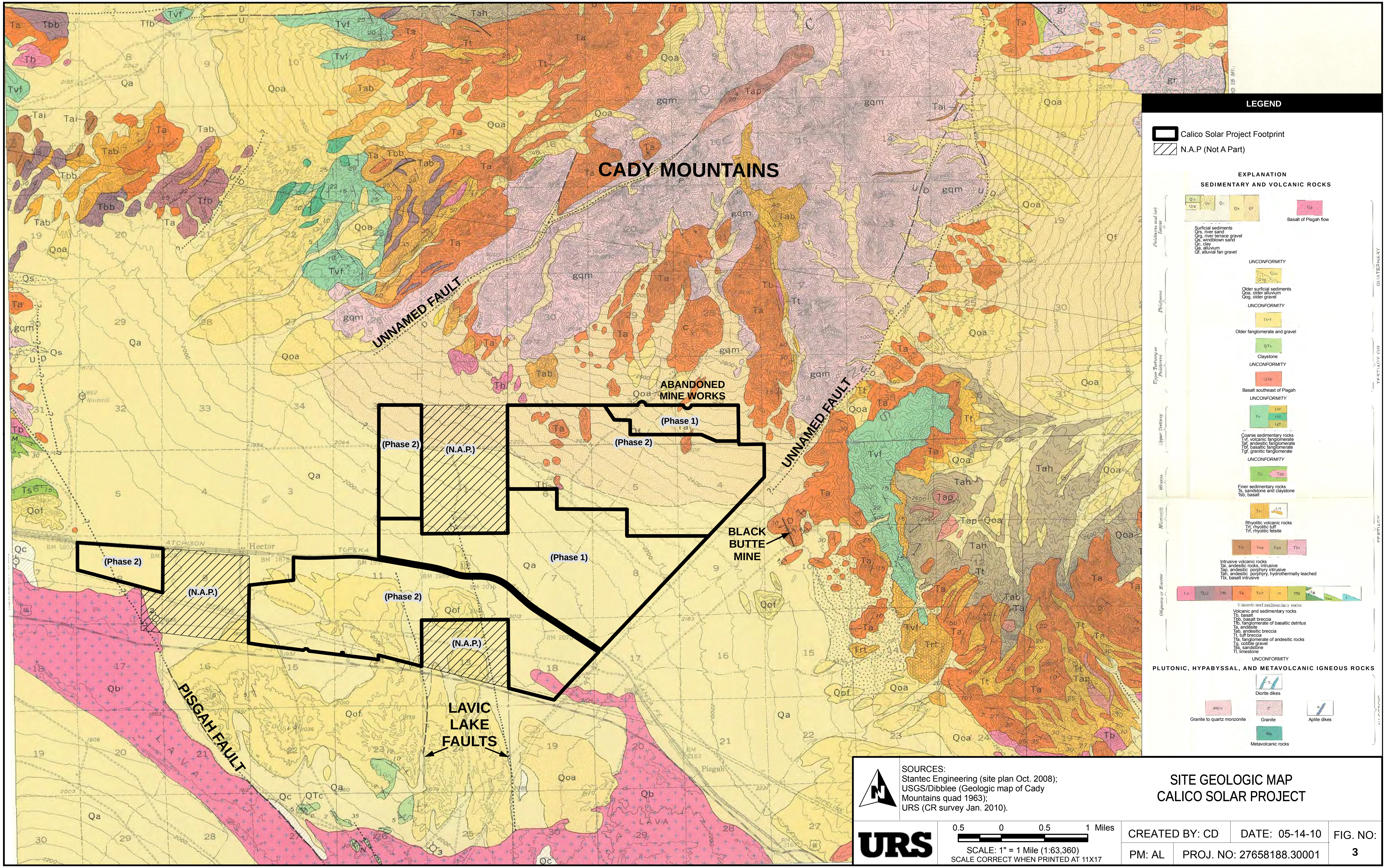

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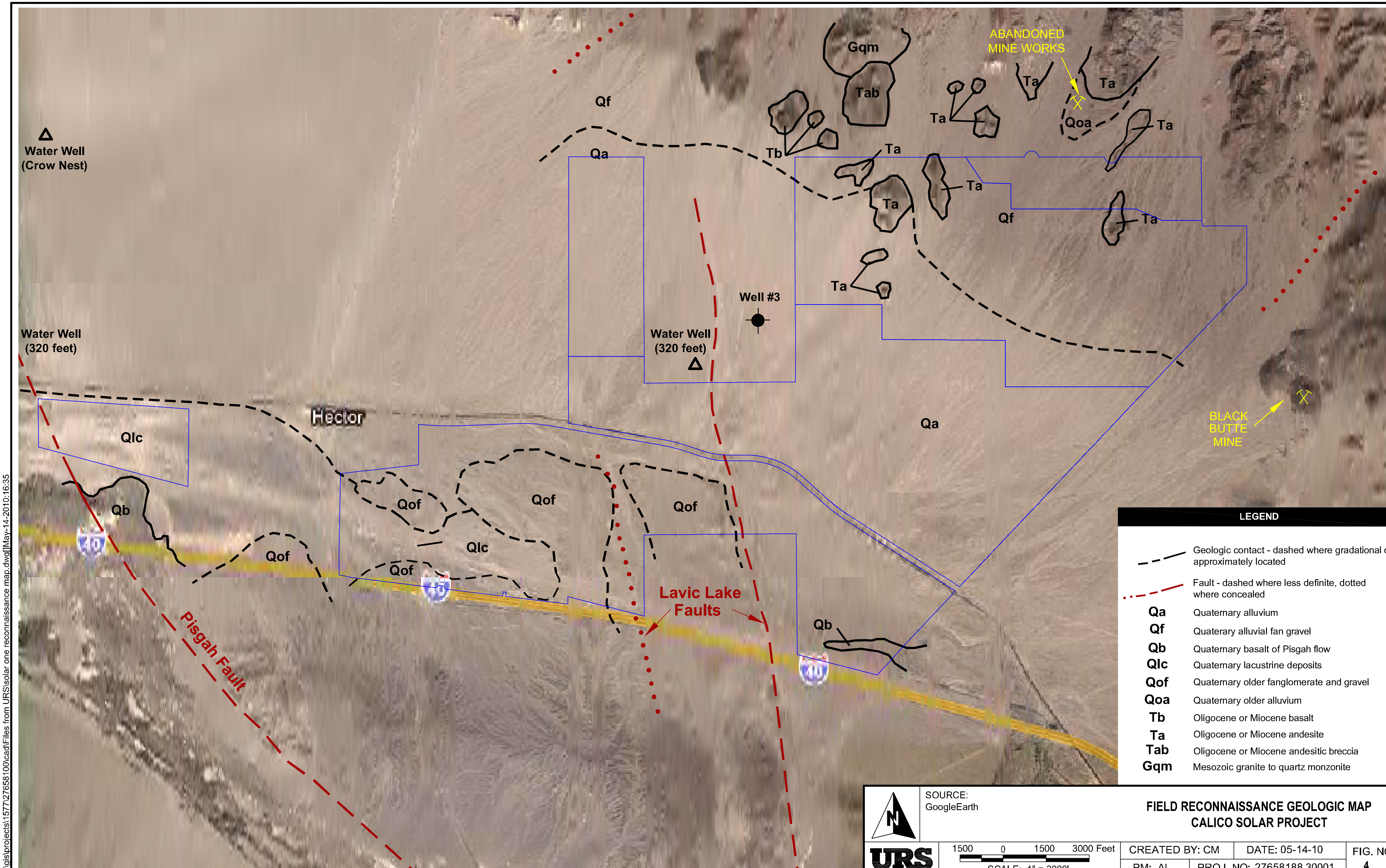

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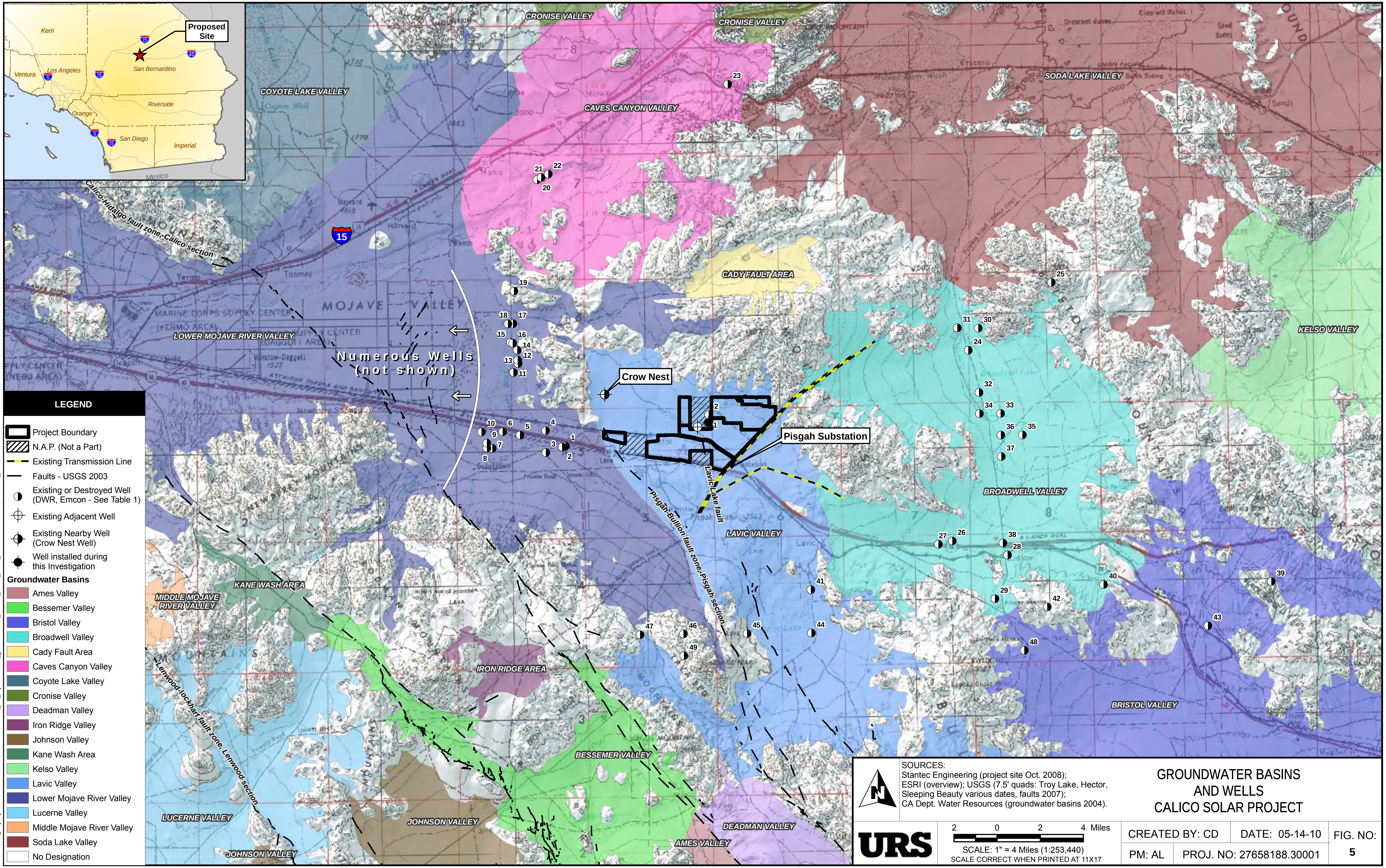

Proposed Site
Kern
Ventura
Los Angeles
San Bernardino
Riverside
Orange
San Diego
Imperial
Mexico
CRONISE VALLEY
COYOTE LAKE VALLEY
CAVES CANYON VALLEY
SODA LAKE VALLEY
CADY FAULT AREA
KELSO VALLEY
LOWER MOJAVE RIVER VALLEY
Numerous Wells (not shown)
Crow Nest
Pisgah Substation
BROADWELL VALLEY
LAVIC VALLEY
Lavic Lake fault
Pisgah-Bullion fault zone-Pisgah section
Calico-Hidalgo fault zone-Calico section
Lenwood-lockhart fault zone, Lenwood section
KANE WASH AREA
MIDDLE MOJAVE RIVER VALLEY
IRON RIDGE AREA
BESSEMER VALLEY
BRISTOL VALLEY
LUCERNE VALLEY
JOHNSON VALLEY
DEADMAN VALLEY
AMES VALLEY
LEGEND
Project Boundary
N.A.P. (Not a Part)
Existing Transmission Line
Faults - USGS 2003
Existing or Destroyed Well (DWR, Emcon - See Table 1)
Existing Adjacent Well
Existing Nearby Well (Crow Nest Well)
Well installed during this Investigation
Groundwater Basins
Ames Valley
Bessemer Valley
Bristol Valley
Broadwell Valley
Cady Fault Area
Caves Canyon Valley
Coyote Lake Valley
Cronise Valley
Deadman Valley
Iron Ridge Valley
Johnson Valley
Kane Wash Area
Kelso Valley
Lavic Valley
Lower Mojave River Valley
Lucerne Valley
Middle Mojave River Valley
Soda Lake Valley
No Designation
SOURCES:
Stantec Engineering (project site Oct. 2008);
ESRI (overview); USGS (7.5' quads: Troy Lake, Hector, Sleeping Beauty various dates, faults 2007);
CA Dept. Water Resources (groundwater basins 2004).
2 0 2 4 Miles
SCALE: 1" = 4 Miles (1:253,440)
SCALE CORRECT WHEN PRINTED AT 11X17
URS
GROUNDWATER BASINS
AND WELLS
CALICO SOLAR PROJECT
CREATED BY: CD
DATE: 05-14-10
FIG. NO:
5
PM: AL
PROJ. NO: 27658188.30001
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Tessera Solar™
power from stirling energy systems

October 21, 2009

Ann Dale
948 Sunset Boulevard
Arcadia, CA 91087

Regarding: Request For Permission to Enter for Water Well Testing
Affecting Assessor's Parcel No. 0529-281-18-0000

Dear Ms. Dale;

You have verbally agreed while speaking with Irene James to allow the testing of the water well on your above referenced parcel of land, located in the Mojave Desert of San Bernardino County. This letter is just a written request for both of our records and offers more of the details that you requested.

SES has hired a qualified firm, Eagle Well Drilling owned by Mr. Raymond Ware, whose reputation is well respected and the company is often used in this area for this type of work. We can provide you with a copy of the report. First Mr. Ware will visit the site to determine the best course of action. The actual testing will consist of some small pickup trucks, a drill rig and several workers to conduct the tests. The tests may take a few days to complete. All best care will be taken.

Study results will be used only for evaluation investigative purposes. They will be included in a report or reports provided to BLM and other affected agencies. They have no connection with, nor will they be utilized for land use, law enforcement, or other purposes unrelated to BLM-mandated studies.

You have our assurance that:

- You may be contacted by phone (please supply your telephone number below) or mail prior to Eagle's entry on your property, if requested;
- Your permission to enter your property will be solely for purposes of conducting well tests. No materials or equipment will be left on your property. No adverse impacts or harms will be caused by these activities, and, in the event test holes are needed, they will be filled and the location restored to "as is" condition, all at no cost to you;
- Written results of studies conducted on your property will be provided to you;
- Eagle Well Drilling is fully insured and liable for its actions, including any damages caused by its activities while on your property. We can order a

Certificate of Insurance from the company for you; which will list your parcel as an additional insured. If you need any details to explain this further, we will be pleased to provide it to you.

If you have additional concerns or questions regarding this request that I have not addressed in this letter, I will be happy to talk with you, please call Irene James at [redacted] her cellular telephone, or email her at [redacted]

Please just sign below and return in the provided self-addressed, stamped envelope. I have included two copies of this letter so that you can keep one for your files.

Thanks so much!

Sincerely,

Felicia L Bellows

Felicia L. Bellows,
Vice President of Development

For myself and on behalf of Ann Dale, who are also owners of record of the property identified above as APN: 05029-281-18-0000 permission to access the property for purposes of conducting water well testing is hereby granted.

Dated 10/22/09 Signed: Ann Dale

Please print your name on this line: ANN DALE

Your contact phone number: [redacted]

Tessera Solar™

October 21, 2009

Kenneth C. Deans
Sole Beneficiary to Jerome C. Voight
W8848 Stoney Brook Road
Waterloo, WI 53594

Regarding: Request For Permission to Enter for Water Well Testing Affecting Assessor's Parcel No. 0529-281-28-0000 and 0529-218-34-0000

Dear Mr. Deans;

You have verbally agreed while speaking with Irene James to allow the testing of the water well on your above referenced parcel of land, located in the Mojave Desert of San Bernardino County. This letter is just a written request for both of our records and offers more of the details that you requested.

SES has hired a qualified firm, Eagle Well Drilling owned by Mr. Raymond Ware, whose reputation is well respected and the company is often used in this area for this type of work. We can provide you with a copy of the report. First Mr. Ware will visit the site to determine the best course of action. The actual testing will consist of some small pickup trucks, a drill rig and several workers to conduct the tests. The tests may take a few days to complete. All best care will be taken.

Study results will be used only for evaluation investigative purposes. They will be included in a report or reports provided to BLM and other affected agencies. They have no connection with, nor will they be utilized for land use, law enforcement, or other purposes unrelated to BLM-mandated studies.

You have our assurance that:

- You may be contacted by phone (please supply your telephone number below) or mail prior to Eagle's entry on your property, if requested;
- Your permission to enter your property will be solely for purposes of conducting well tests. No materials or equipment will be left on your property. No adverse impacts or harms will be caused by these activities, and, in the event test holes are needed, they will be filled and the location restored to "as is" condition, all at no cost to you;
- Written results of studies conducted on your property will be provided to you;

- Eagle Well Drilling is fully insured and liable for its actions, including any damages caused by its activities while on your property. We can order a Certificate of Insurance from the company for you; which will list your parcel as an additional insured. If you need any details to explain this further, we will be pleased to provide it to you.

If you have additional concerns or questions regarding this request that I have not addressed in this letter, I will be happy to talk with you, please call Irene James at [redacted] her cellular telephone, or email her at [redacted]

Please just sign below and return in the provided self-addressed, stamped envelope. I have included two copies of this letter so that you can keep one for your files.

Thanks so much!

Sincerely,

Felicia L. Bellows,
Vice President of Development

For myself and on behalf of [redacted], who are also owners of record of the property identified above as APN: 0529-281-28-0000 and 0529-281-34-0000 permission to access the property for purposes of conducting water well testing is hereby granted.

Dated: 10/22/09 Signed: Kenneth C Deans

Please print your name on this line:
KENNETH C. DEANS

Your contact phone number:
[redacted]

Tessera Solar™
power from stirling energy systems

ORIGINAL

SIGN!
RETURN!

Thanks!
Steve

October 21, 2009

Thomas P. Schwier
13631 Jefferson Street
Westminster, CA92683

Regarding: Request For Permission to Enter for Water Well Testing Affecting Assessor's Parcel No. 0530-241-39-0000

Dear Mr. Schwier;

You have verbally agreed while speaking with Irene James to allow the testing of the water well on your above referenced parcel of land, located in the Mojave Desert of San Bernardino County. This letter is just a written request for both of our records and offers more of the details that you requested.

SES has hired a qualified firm, Eagle Well Drilling owned by Mr. Raymond Ware, whose reputation is well respected and the company is often used in this area for this type of work. We can provide you with a copy of the report. First Mr. Ware will visit the site to determine the best course of action. The actual testing will consist of some small pickup trucks, a drill rig and several workers to conduct the tests. The tests may take a few days to complete. All best care will be taken.

Study results will be used only for evaluation investigative purposes. They will be included in a report or reports provided to BLM and other affected agencies. They have no connection with, nor will they be utilized for land use, law enforcement, or other purposes unrelated to BLM-mandated studies.

You have our assurance that:

- You may be contacted by phone (please supply your telephone number below) or mail prior to Eagle's entry on your property, if requested;
- Your permission to enter your property will be solely for purposes of conducting well tests. No materials or equipment will be left on your property. No adverse impacts or harms will be caused by these activities, and, in the event test holes are needed, they will be filled and the location restored to "as is" condition, all at no cost to you;
- Written results of studies conducted on your property will be provided to you;
- Eagle Well Drilling is fully insured and liable for its actions, including any damages caused by its activities while on your property. We can order a Certificate of Insurance from the company for you; which will list your parcel as an additional insured. If you need any details to explain this further, we will be pleased to provide it to you.

If you have additional concerns or questions regarding this request that I have not addressed in this letter, we will be happy to talk with you, please call Irene James at [redacted] her cellular telephone, or email her at [redacted]

Please just sign below and return in the provided self-addressed, stamped envelope.

I have included two copies of this letter so that you can keep one for your files.

Thanks so much!

Sincerely,

Felicia L Bellows

Felicia L. Bellows,

Vice President of Development

For myself and on behalf of Thomas P Schwier, who is/are also owners of record of the property identified above as APN: 0530-241-39-0000 permission to access the property for purposes of conducting water well testing is hereby granted.

Dated: 10/24/09 Signed: Thomas P. Schwier

Please print your name on this line: THOMAS P. SCHWIER

Your contact phone number: [redacted]

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San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

WP 6143 SR 38344/45

DO NOT FILL IN
Permit Number 2009110710
Expiration 05-20-10
FF
FA
SN

WELL PERMIT
(Please Print)
Well #1

DO NOT FILL IN
Date 11-20-09
Amount $ 256-/88-
Receipt Number 81619
Paid by MID STATE PUMP + DRILLIN[G]
CITY 73 CK 1232

1. OWNER: Name JEROME VOIGHT SOLE BENEFICIARY KENNETH DEANS
Mailing Address W8848 STONEY BROOK RD
City WATERLOO WI Zip 53594
Site Address
City Zip
Telephone Number [redacted]

2. WELL DRILLER: Mid State Pump & Drilling
Business Name
12/1/09 Start Date
1/30/10 Completion Date

3. WELL USE (*check*):
☐ Agricultural ☐ Horizontal ☒ Test
☐ Cathodic ☐ Monitoring/Observation ☐ Dairy
☐ Ind/Domestic ☐ Community/PWS/City ☐ Other

4. TYPE OF WORK (*check*):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 9 to be estimated for new wells, exact for all other wells

5. ANNUALAR SEAL: Seal Depth 20 f[t]
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 16 in., Wall (Gage) .2
☐ Sealing Material CONCRETE Thickness 6 i[n]

6. DEPTH OF WELL (feet):
Proposed 800 Existing
DIAMETER OF BORE (in.): 12

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

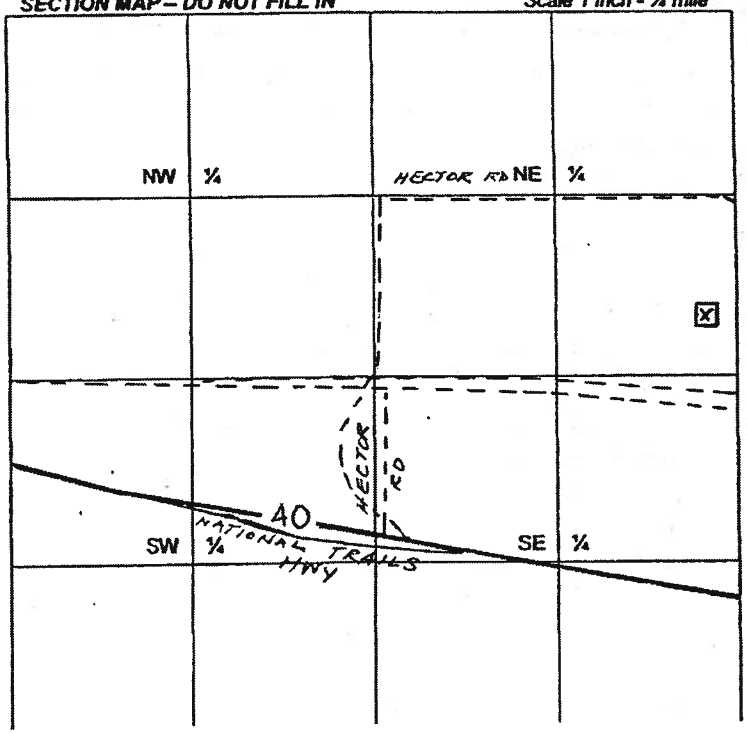
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage
0	800	8	.250

Gravel Pack: ☒ Yes ☐ No
From 20 to 800 ft.

8. PERFORATIONS (*if applicable*):
From to ft.
SEE WCR

9. SEALED ZONES (*if applicable*):
From to ft. SEE W[CR]

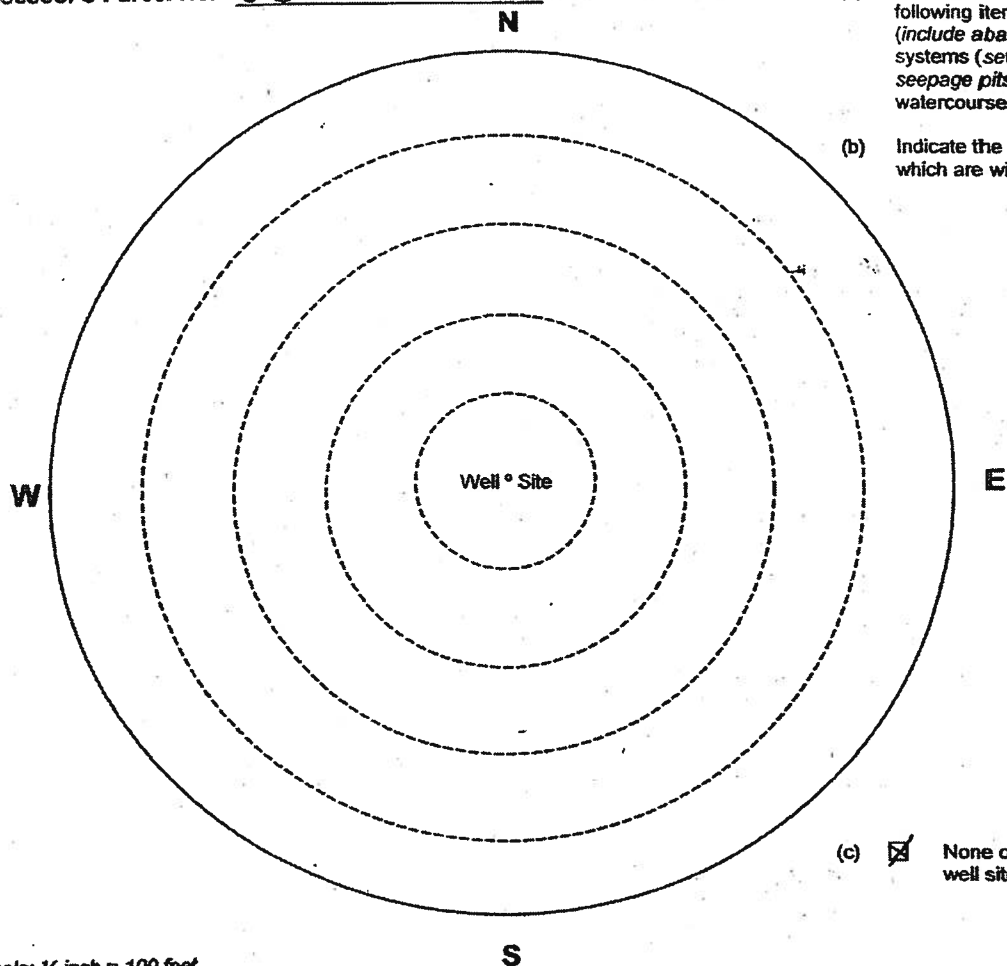
SECTION MAP – DO NOT FILL IN Scale 1 inch - ¼ mile



10. LOCATION INFORMATION TG 350 A10
(a) TOWNSHIP:
Tier 8 (N)S Range 5 (E)W Section
(b) Assessor's Parcel No. 0529-281-28
(c) Latitude and Longitude
Lat: 34 °. 48.39 '. 79972 (N)
Long: 116 °. 24.09 '. 88133 "E[/W]
(d) Solid or Liquid Disposal Site within Two Miles
☐ Yes ☒ No
Location

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Stab
Tag
Building & Safety Notified

Assessor's Parcel No. 0529-281-28



Scale: ½ inch = 100 feet

11. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells (*include abandoned wells*), sewage disposal systems (*sewers, septic tanks, leaching fields, seepage pits, cesspools*), lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 500 ft. of the well site:

Other	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Watercourses	
Animal or fowl kept	

(c) ☒ None of the above are within 500 feet of the well site.

12. I have read this application and agree to comply with all laws regulating the type of work being performed.

C-57 Contractor's Signature ____________ Date 11/18/09

County Registration No. 322 California License No. 937025

DISPOSITON OF PERMIT
(For Department Use Only)

☐ Sent to Water Agency for review.
☐ Water Agency conditions or recommendations attached.
☐ Denied ____________
☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Program, (909) 387-4666, twenty-four (24) hours in advan to make an inspection of the following operations:
- ☐ Prior to sealing of the annular space or filling of the conductor casing.
- ☒ After installation of the surface protective slab ~~and pumping equipment~~
- ☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:
- ☒ Water Well Driller's Report
- ☐ Bacterial Analysis
- ☐ Inorganic Chemical Analysis
- ☐ Radiological Analysis
- ☐ General Mineral
- ☐ Organic Chemical analysis
- ☐ General Physic

Comments ____________

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

WP 6142

SR 38342/43

DO NOT FILL IN

Permit Number 2009110709
Expiration 05-20-10
FF
FA
SN

WELL PERMIT
(Please Print)
Well #2

DO NOT FILL IN

Date 11-20-09
Amount $ 256-/88-
Receipt Number 81619
Paid by MID STATE PUMP + DRILLIN CITY 73 CK 1232

1. OWNER: Name MS. ANN DALE
Mailing Address 948 SUNSET BLVD
City ARCADIA CA Zip ~~91107~~ 91007
Site Address
City County of San Bernardino
Telephone Number [redacted]

2. WELL DRILLER: Mid State Pump + Drilling
Business Name
12/1/09 Start Date
1/30/10 Completion Date

3. WELL USE (*check*):
☐ Agricultural ☐ Horizontal ☒ Test
☐ Cathodic ☐ Monitoring/Observation ☐ Dairy
☐ Ind/Domestic ☐ Community/PWS/City ☐ Other

4. TYPE OF WORK (*check*):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 9 to be estimated for new wells, exact for all other wells

5. ANNULAR SEAL: Seal Depth 20 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 16 in., Wall (Gage) .25
☐ Sealing Material concrete Thickness 6 in.

6. DEPTH OF WELL (feet):
Proposed 800 Existing
DIAMETER OF BORE (in.): 12

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

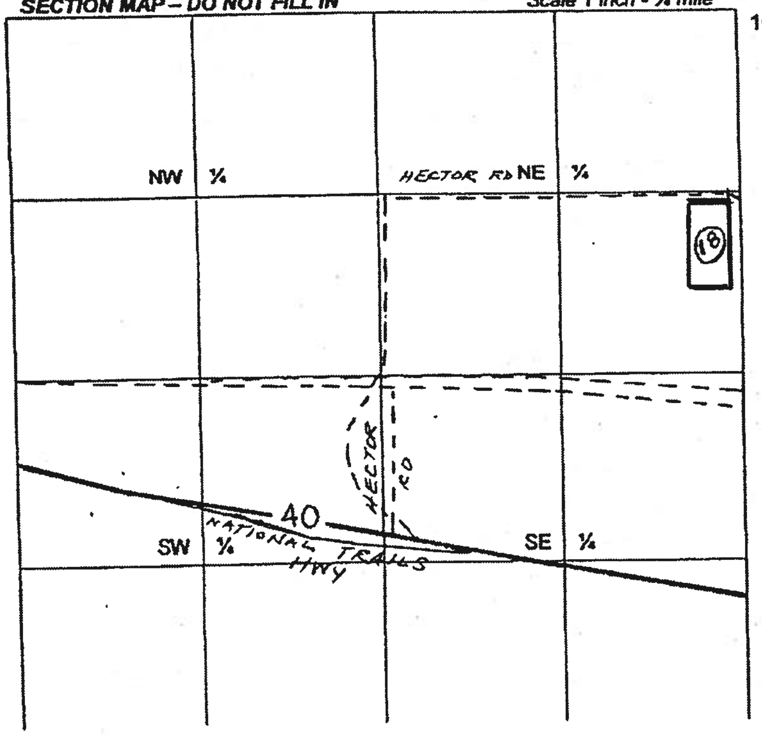
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	800	8	.250

Gravel Pack: ☒ Yes ☐ No
From 20 to 800 ft.

8. PERFORATIONS (*if applicable*):
From to ft.
SEE WCR

9. SEALED ZONES (*if applicable*):
From to ft. SEE WCR

SECTION MAP – DO NOT FILL IN *Scale 1 inch - ¼ mile*

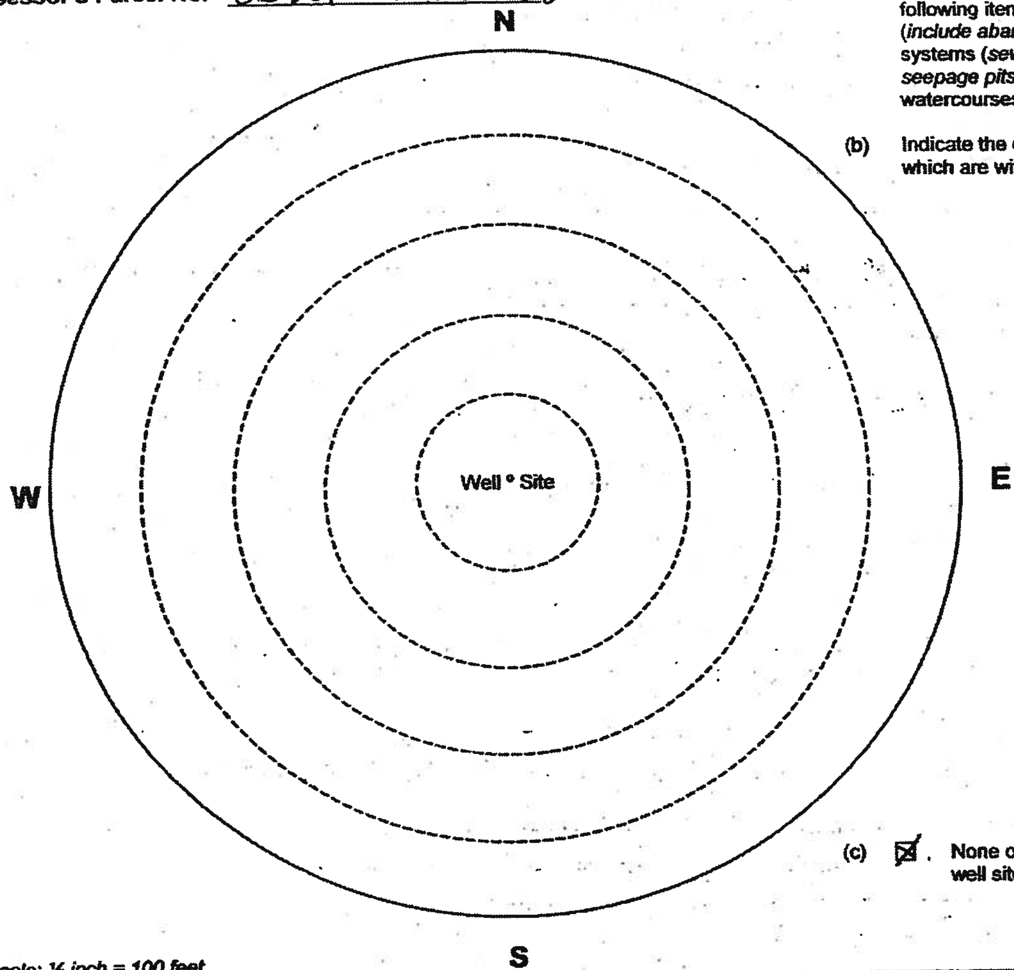


10. LOCATION INFORMATION TG 350 A 10
(a) TOWNSHIP:
Tier 8 N/S Range 5 E/W Section 1
(b) Assessor's Parcel No. 0529-281-18
(c) Latitude and Longitude
Lat: 34 °. 49.02 '. 66889 "N
Long: 116 °. 24.05 '. 59528 "E/W
(d) Solid or Liquid Disposal Site within Two Miles
☐ Yes ☒ No
Location

DO NOT FILL IN

Seal
Cap
Check Valve
Electricals
Stab
Tag
Building & Safety Notified

Assessor's Parcel No. 0529-281-18-0000



Scale: ½ inch = 100 feet

11. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells (*include abandoned wells*), sewage disposal systems (*sewers, septic tanks, leaching fields, seepage pits, cesspools*), lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 500 ft. of the well site:

Other ________

Sewers ________

Septic tanks ________

Leaching fields ________

Seepage pits ________

Cesspools ________

Lakes and ponds ________

Watercourses ________

Animal or fowl kept ________

(c) ☒ . None of the above are within 500 feet of the well site.

12. I have read this application and agree to comply with all laws regulating the type of work being performed.

C-57 Contractor's Signature [signature] Date 11/18/09

County Registration No. #322 California License No. 937025

DISPOSITON OF PERMIT

(For Department Use Only)

☐ Sent to Water Agency for review.

☐ Water Agency conditions or recommendations attached.

☐ Denied ________

☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Program, (909) 387-4666, twenty-four (24) hours in advan[ce] to make an inspection of the following operations:

☐ Prior to sealing of the annular space or filling of the conductor casing.

☒ After installation of the surface protective slab ~~and pumping equipment~~

☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report ☐ Bacterial Analysis ☐ Inorganic Chemical Analysis

☐ Radiological Analysis ☐ General Mineral ☐ Organic Chemical analysis ☐ General Physica[l]

Comments ________

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

WP 6144 SR 38349/50

DO NOT FILL IN

Permit Number 2009110711
Expiration 05-20-10
FF
FA
SN

WELL PERMIT
(Please Print)
Well #3

DO NOT FILL IN

Date 11-20-09
Amount $ 256 - / 85 -
Receipt Number 81619
Paid by MID STATE PUMP + DRILLI CITY 73 CK 1232

1. OWNER: Name JEROME VOIGHT SOLE BENEFICIARY / KENNETH DEANS
Mailing Address W8848 STONEY BROOK RD
City WATERLOO, WI Zip 53594
Site Address
City Zip
Telephone Number [redacted]

2. WELL DRILLER: Mid State Pump + Drilling
Business Name
12/1/09 — Start Date
1/30/10 — Completion Date

3. WELL USE (*check*):
- ☐ Agricultural
- ☐ Cathodic
- ☐ Ind/Domestic
- ☐ Horizontal
- ☐ Monitoring/Observation
- ☐ Community/PWS/City
- ☒ Test
- ☐ Dairy
- ☐ Other

4. TYPE OF WORK (*check*):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 9 to be estimated for new wells, exact for all other wells

5. ANNULAR SEAL: Seal Depth 20 f
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 16 in., Wall (Gage) .2
☐ Sealing Material CONCRETE Thickness 6 i

6. DEPTH OF WELL (feet):
Proposed 800 Existing
DIAMETER OF BORE (in.): 12

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

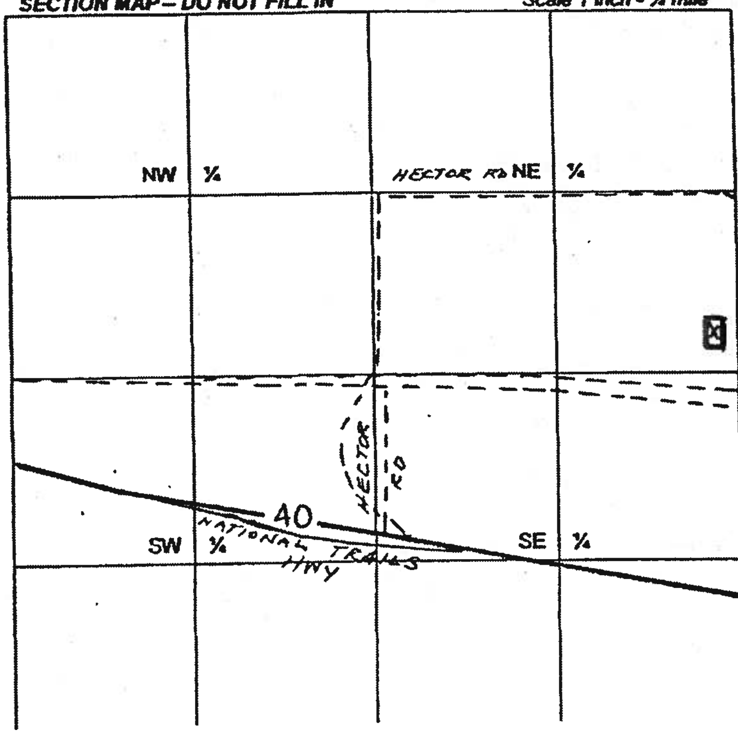
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage
0	800	8	.250

Gravel Pack: ☒ Yes ☐ No
From 20 to 800 ft.

8. PERFORATIONS (*if applicable*):
From to ft.
SEE WCR

9. SEALED ZONES (*if applicable*):
From to ft. SEE W

SECTION MAP – DO NOT FILL IN *Scale 1 inch - ¼ mile*

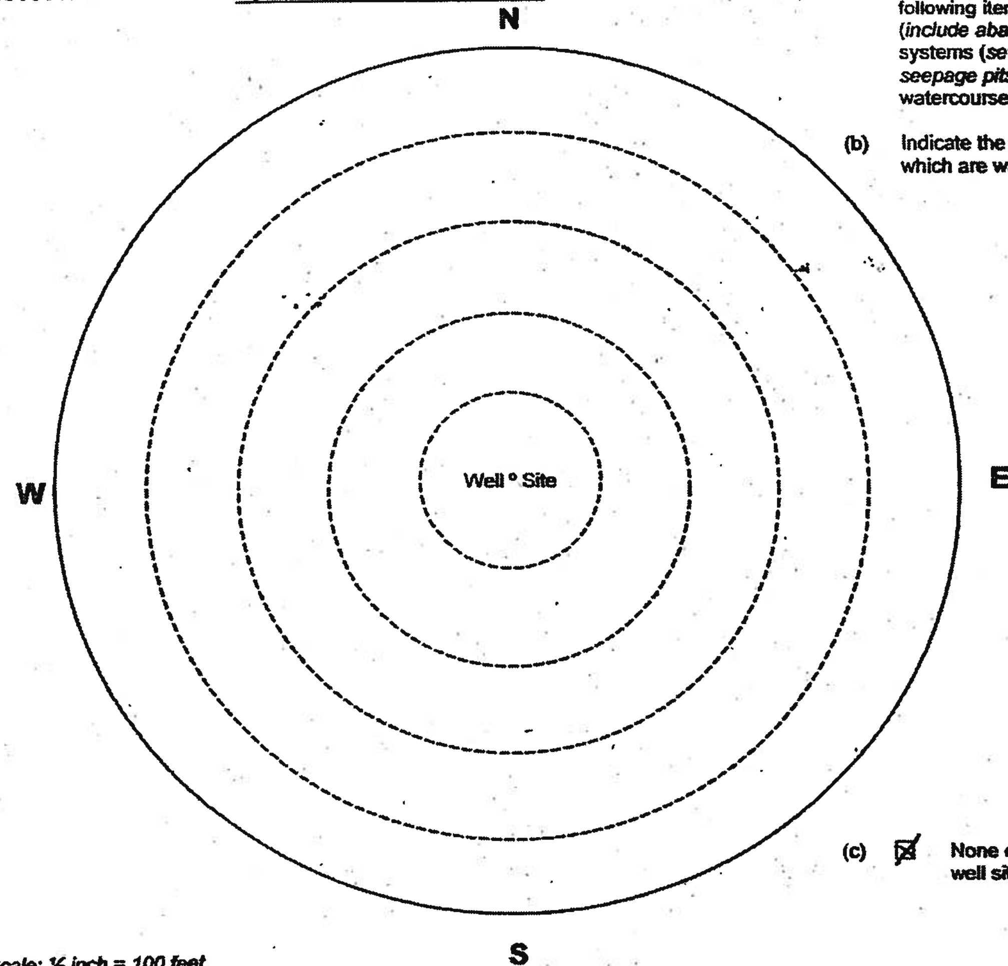


10. LOCATION INFORMATION TG 350 A 10
(a) TOWNSHIP:
Tier 8 N/S Range 5 E/W Section
(b) Assessor's Parcel No. 0529-281-3
(c) Latitude and Longitude
Lat: 34 °. 48.33 '. 25471 "N
Long: 116 °. 24.08 '. 00154 "E
(d) Solid or Liquid Disposal Site within Two Miles
☐ Yes ☒ No
Location

DO NOT FILL IN

Seal
Cap
Check Valve
Electricals
Stab
Tag
Building & Safety Notified

Assessor's Parcel No. 0529-281-34-0000



Scale: ½ inch = 100 feet

11. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells (*include abandoned wells*), sewage disposal systems (*sewers, septic tanks, leaching fields, seepage pits, cesspools*), lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 500 ft. of the well site:

Other	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Watercourses	
Animal or fowl kept	

(c) ☒ None of the above are within 500 feet of the well site.

12. I have read this application and agree to comply with all laws regulating the type of work being performed.

C-57 Contractor's Signature [signature] Date 11/18/09

County Registration No. 322 California License No. 937025

DISPOSITON OF PERMIT

(For Department Use Only)

☐ Sent to Water Agency for review.

☐ Water Agency conditions or recommendations attached.

☐ Denied

☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Program, (909) 387-4666 , twenty-four (24) hours in adv[ance] to make an inspection of the following operations:

- ☐ Prior to sealing of the annular space or filling of the conductor casing.
- ☒ After installation of the surface protective slab ~~and pumping equipment~~.
- ☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report	☐ Bacterial Analysis	☐ Inorganic Chemical Analysis	
☐ Radiological Analysis	☐ General Mineral	☐ Organic Chemical analysis	☐ General Phys

Comments

DO NOT FILL IN

Permit Number 2010030152
Record ID WP 6380
Expiration 09-09-10
FF
FA
SN

County of San Bernardino
DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SERVICES
385 N. Arrowhead Ave., 2nd Floor
San Bernardino, CA 92415-0160
(909) 884-4056
www.sbcounty.gov/dehs

WELL PERMIT

(Please Print)

DO NOT FILL IN

Date 03-09-10
Amount $ 256-
Check # 272
Receipt Number 83511
Paid by Jorge or Lisa Espinosa
City Code 73

1. OWNER: Name JEROME VEIGHT SOLE BENEFICIARY KENNETH DEANS
   Site Address
   City [redacted] Zip
   Mailing Address [redacted]
   City [redacted] Zip [redacted]
   Telephone Number [redacted]

2. WELL DRILLER: WATER DEVELOPMENT CORPORATION
   Business Name
   3/09/2010 *Start Date*
   4/30/2010 *Completion Date*

3. INTENDED WELL USE (check):
   ☐ Agricultural ☐ Horizontal ☒ Test
   ☐ Cathodic ☐ Monitoring/Observation ☐ Dairy
   ☐ Ind/Domestic ☐ Community/PWS/City ☐ Other

4. TYPE OF WORK (*check*):
   ☒ New ☐ Reconstruction ☐ Destruction

Items 5 through 9 to be estimated for new wells, exact for all other wells

5. ANNULAR SEAL: Seal Depth 20 ft.
   Furnished by: ☐ Owner ☒ Contractor
   ☐ Driven Conductor Dia. 16 in., Wall (Gage) 0.250
   ☐ Sealing Material CONCRETE, Thickness 10 in.

6. DEPTH OF WELL (feet):
   Proposed 1200 Existing
   DIAMETER OF BORE (in.): 12

7. CASING INSTALLED:
   ☒ Steel ☐ Plastic ☐ Other

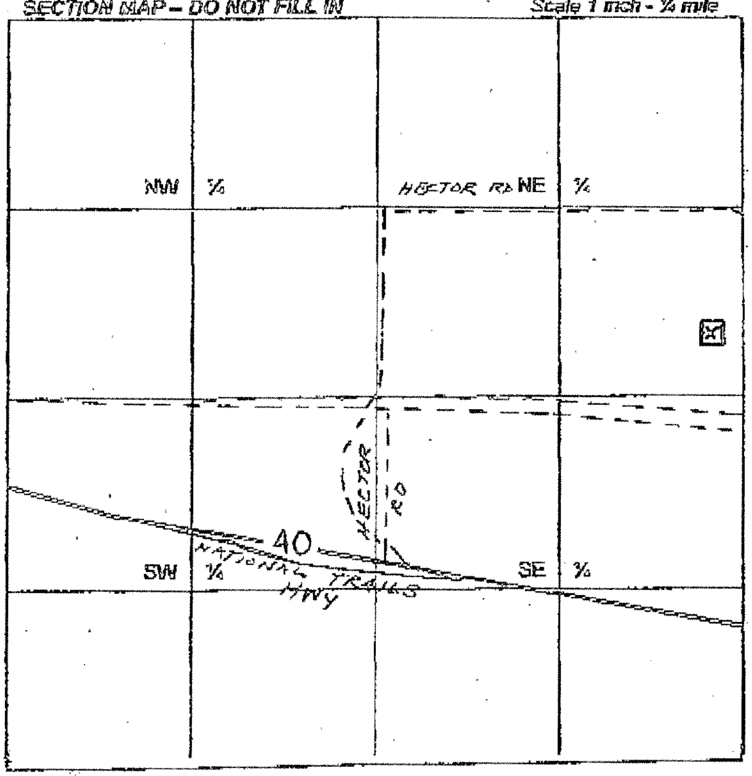
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	1200	6	0.250

   Gravel Pack: ☒ Yes ☐ No
   From 20 to 1200 ft.

8. PERFORATIONS (*if applicable*):
   From ____ to ____ ft. SEE WCR
   Pumping rate (gpm)

9. SEALED ZONES (*if applicable*):
   From ____ to ____ ft. SEE WCR

SECTION MAP – DO NOT FILL IN *Scale 1 inch - ¼ mile*

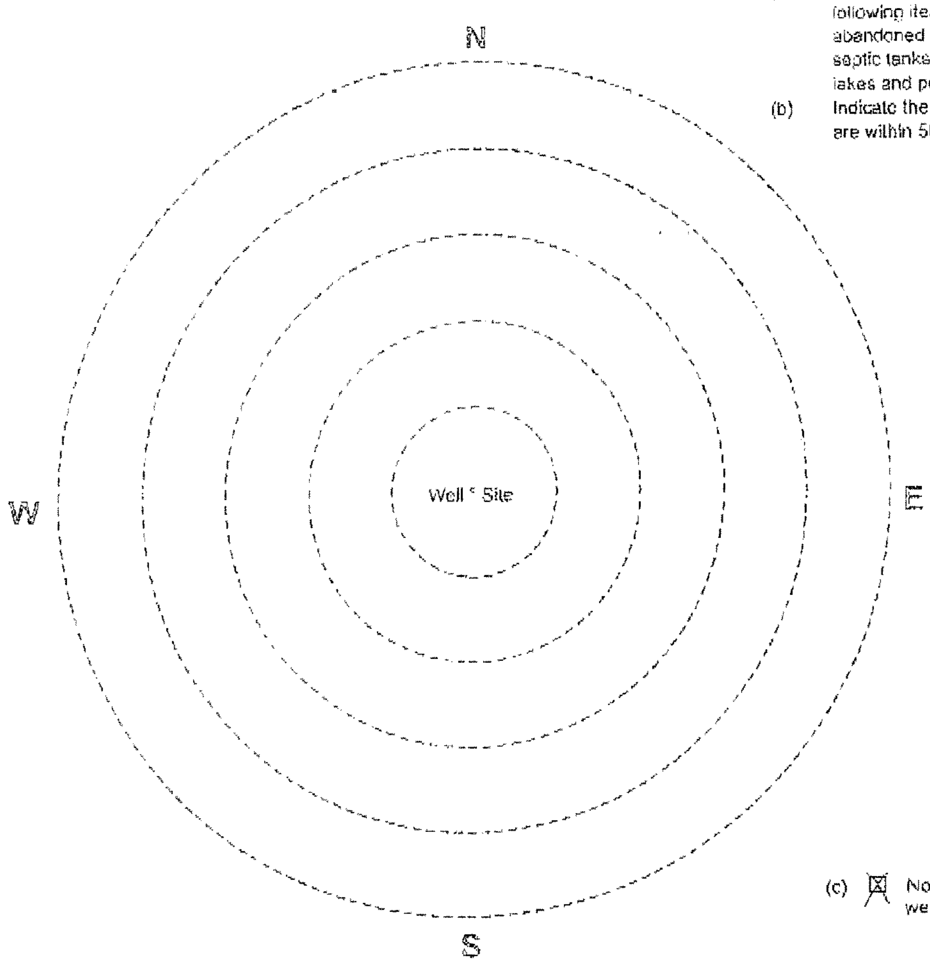


10. LOCATION INFORMATION TG 350 A10
    (a) TOWNSHIP:
    Tier 8 N/S Range 5 E/W Section 1
    (b) **Assessor's Parcel No.** 0529-281-28
    (c) Latitude and Longitude
    Lat: 34 °, 48.39 ', 399.92 " N/S
    Long: 116 °, 24.09 ', 881.33 " N/S
    (d) Solid or Liquid Disposal Site within Two Miles
    ☐ Yes ☒ No
    Location

DO NOT FILL IN

Seal
Cap
Check Valve
Electricals
Stab
Tag
Building & Safety Notified

Assessor's Parcel No. 0529-281-28



Scale: ½ inch = 100 feet

11. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells (include abandoned wells), sewage disposal systems (sewers, septic tanks, leaching fields, seepage pits, cesspools), lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 500 ft. of the well site:

Other	______
Sewers	______
Septic tanks	______
Leaching fields	______
Seepage pits	______
Cesspools	______
Lakes and ponds	______
Watercourses	______
Animal or fowl kept	______

(c) ☒ None of the above are within 500 feet of the well site.

12. I have read this application and agree to comply with all laws regulating the type of work being performed

C-57 Contractor's Signature [signature] Date 3-10-2010

County Registration No. #96 California License No. 283326

DISPOSITION OF PERMIT

(For Department Use Only)

☐ Sent to Water Agency for review.

☐ Water Agency conditions or recommendations attached.

☐ Denied

☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Program, (909) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☐ Prior to sealing of the annular space or filling of the conductor casing.

☒ After installation of the surface protective slab ~~and pumping equipment~~.

☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report ☐ Bacterial Analysis ☐ Inorganic Chemical Analysis ☐ General Physical

☐ Radiological Analysis ☐ General Mineral ☐ Organic Chemical analysis

Comments ______

550D33 Well Permit.INDD

Project: Calico Solar **Project Location: Newberry, CA** **Project Number: 27658188.30001**	# Log of Boring Well#1 Sheet 1 of 21

Date(s) Drilled	**12/14/09**	Logged By	**G. Sheldon / J. Wagenfuhe**	Checked By	
Drilling Method	**Direct Mud Rotary**	Drilling Contractor	**Mid Slate Pump & Drilling**	Total Depth of Borehole ft.bgs	**802.0**
Drill Rig Type	**Chicago Pneumatic 670**	Sampler Type		Approx.Surface Elevation ft msl	**NA**
Approx. Depth Groundwater Encountered		Drill Bit Size/Type	**8"**	Top of Casing Elevation feet	**NA**
Borehole Diameter (inches) **12"**	Diameter of Well (inches) **8"**	Type of Well Casing	**8" Mild Steel**	Screen Perforation	**1/8" Mill Slot**
Type of Sand Pack		Type and Depth of Seal(s)	**Seal Cement 0'-20', 3/8" PeaGravel Filter 20'-802'**		
Comments	**San Bernardino County Department of Public Health Permit # 2009110709**				

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	0					Soft Sand and 2-4 inches loose rock					
	5										
	10										
	15										
	20					Harder sand and smaller rock					
	25										
	30										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	30										
	35										
	40					Light Sandstone with small rock					
	45										
	50										
	55										
	60					Black lava rock					
	65					Sandstone with 6 inches rock formations					
	70										

Project: Calico Solar Project Location: Newberry, CA Project Number: 27658188.30001	Log of Boring Well#1 Sheet 3 of 21

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	70										
	75										
	80					Short rock formation with Sandstone in between					
	85										
	90										
	95										
	100										
	105										
	110										

Project: Calico Solar **Project Location: Newberry, CA** **Project Number: 27658188.30001**	**Log of Boring Well#1** Sheet 4 of 21

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	115					Hard Sandstone					
	120										
	125					Sandstone					
	130										
	135										
	140					Hard rock					
	145					Hard Sandstone					
	150										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Hard black lava rock					
						Light Sandstone					
	155										
	160					Light Sandstone					
	165										
						Hard red rock					
	170					Light Sandstone					
	175										
	180										
	185										
	190										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Lighter Sandstone					
	195										
	200										
	205										
	210										
	215										
	220					Lighter Sandstone					
	225										
	230										

Project: Calico Solar Project Location: Newberry, CA Project Number: 27658188.30001	**Log of Boring Well#1** Sheet 7 of 21

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	235										
	240					Light Sandstone					
	245										
	250										
	255										
	260										
	265					Hard Sandstone					
	270										

Project: Calico Solar		**Log of Boring Well#1**		
Project Location: Newberry, CA				
Project Number: 27658188.30001		Sheet 8 of 21		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Hard Granite with Quartz					
	275										
	280					Granite with heavy quartz					
	285										
	290					Granite with Heavy Quartz					
	295										
	300					Hard Granite					
	305										
	310										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	315										
	320					Hard Granite					
	325										
	330										
	335										
	340										
	345					Hard Granite					
	350										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	355										
	360										
	365					Hard Granite					
	370										
	375										
	380					Hard Granite					
	385										
	390										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Granite with a little clay					
	395										
	400					Hard Sandy CLAY					
	405										
	410										
	415										
	420					Hard Sandy CLAY					
	425										
	430										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	435										
	440					Black lava rock					
	445										
	450					hard granite with a little clay					
	455										
	460					Hard clay with granite					
	465										
	470										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	475					Hard clay with granite					
	480										
	485										
	490										
	495										
	500					Granite with black and red lava					
	505										
	510										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	515										
	520					Granite with black and red lava					
	525										
	530										
	535										
	540					Granite with black and red lava					
	545										
	550										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	555										
	560					Granite with black and red lava					
	565										
	570										
	575										
	580					Little softer granite					
	585										
	590										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	595										
	600					Little softer sand					
	605										
	610					Hard Granite					
	615										
	620					Black lava rock					
	625										
	630										

Project: Calico Solar	**Log of Boring Well#1**
Project Location: Newberry, CA	Sheet 17 of 21
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	635										
	640					Granite with Clay					
	645										
	650										
	655										
	660					Hard Clay					
	665										
	670										

Project: Calico Solar	Log of Boring Well#1
Project Location: Newberry, CA	
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	675										
	680					Hard Clay with black rock - more rock than clay					
	685										
	690										
	695										
	700					Hard black rock					
	705										
	710										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	715										
	720					Little Clay with hard rock - 725-727 Hard Granite					
	725										
	730					Hard Granite					
	735										
	740					Hard Granite with little more rock - 755-756 Hard Rock					
	745										
	750										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	755										
	760					Clay with Granite					
	765										
	770					Hard Clay					
	775										
	780					Hard Clay with little Granite					
	785										
	790										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#1

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Hard Rock					
						Sand					
	795										
						Soft Sticky Clay					
	800										
						Completed boring to 802 feet bgs.					
	805										
	810										
	815										
	820										
	825										
	830										

Project: Calico Solar	**Log of Boring Well#2**
Project Location: Newberry, CA	Sheet 1 of 25
Project Number: 27658188.30001	

Date(s) Drilled	**2/1/10 - 3/4/10**	Logged By	**G. Sheldon / J. Wagenfuhe**	Checked By	
Drilling Method	**Direct Mud Rotary**	Drilling Contractor	**Mid Slate Pump & Drilling**	Total Depth of Borehole (feet)	**840.0**
Drill Rig Type	**Chicago Pneumatic 670**	Borehole Diameter (inches)	**12"**	Approx. Surface Elevation (feet msl)	**NA**
Approximate Depth to Groundwater (ft bgs)		Sampler Type		Borehole Backfill	
Comments	**San Bernardino County Department of Public Health Permit # 2009110712**				

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	0					Sand / scattered Rock				
	5									
	10									
	15									
	20					Sand / 2-4 inch Rock				
	25									
	30									

Project: Calico Solar	**Log of Boring Well#2**
Project Location: Newberry, CA	Sheet 2 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION					REMARKS
	30										
	35										
	40					Sand					
	45										
	50										
	55										
	60					Hard Sand					
	65										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#2

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	65									
	70									
	75									
	80									
	85									
	90									
	95									
	100									

Project: Calico Solar **Project Location:** Newberry, CA **Project Number:** 27658188.30001	**Log of Boring Well#2** Sheet 4 of 25

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION					REMARKS
						Same					
	105										
	110										
	115										
	120					Hard Rock / Granite					
	125										
	130										
	135										

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	140					Rock / Granite				
	145									
	150									
	155									
	160					Granite				
	165									
	170									

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	175									
	180					Same				
	185									
	190									
	195									
	200									
	205									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	Sheet 7 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	210									
	215									
	220					Rock / Granite				
	225									
	230									
	235									
	240									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	Sheet 8 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	245									
	250									
	255									
	260									
	265									
	270									
	275									

Project: Calico Solar **Project Location:** Newberry, CA **Project Number:** 27658188.30001	**Log of Boring Well#2** Sheet 9 of 25

Elevation, feet MSL	Depth, feet	SAMPLES: Type	SAMPLES: Number	SAMPLES: Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	280									
	285									
	290									
	295									
	300									
	305									
	310									

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	315									
	320									
	325									
	330									
	335									
	340									
	345									

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#2

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	350									
	355									
	360									
	365									
	370									
	375									
	380									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	Sheet 12 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	385									
	390									
	395									
	400									
	405									
	410									
	415									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	Sheet 13 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	420									
	425									
	430									
	435									
	440									
	445									
	450									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	455									
	460									
	465									
	470									
	475									
	480					Rock / Lava Rock				
	485									

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	490									
	495									
	500									
	505									
	510									
	515									
	520									

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
						Same				
	525									
	530									
	535									
	540									
	545									
	550									
	555									

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	560									
	565									
	570									
	575									
	580					Granite / Red Rock				
	585									
	590									

Project: Calico Solar	**Log of Boring Well#2**
Project Location: Newberry, CA	Sheet 18 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	595									
	600									
	605									
	610									
	615									
	620									
	625									

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#2

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	630									
	635									
	640									
	645									
	650									
	655									
	660									

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	665									
	670									
	675									
	680									
	685									
	690									
	695									

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	700									
	705									
	710									
	715									
	720									
	725									
	730									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	735									
	740									
	745									
	750									
	755									
	760									
	765									

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	770									
	775									
	780									
	785									
	790									
	795									
	800									

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#2

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	805									
	810									
	815									
	820									
	825									
	830									
	835									

Project: Calico Solar	Log of Boring Well#2
Project Location: Newberry, CA	Sheet 25 of 25
Project Number: 27658188.30001	

Elevation, feet MSL	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION				REMARKS
	840					Completed boring to 840 feet bgs.				
	845									
	850									
	855									
	860									
	865									
	870									

Project: Calico Solar **Project Location: Newberry, CA** **Project Number: 27658188.30001**	**Log of Boring Well#3** Sheet 1 of 29

Date(s) Drilled	**3/9/2010 - 3/16/2010**	Logged By	**D. Orris / P. McDonald**	Checked By	**J. Liles**
Drilling Method	**Mud Rotary / Air IST 50'**	Drilling Contractor	**WDC Corp.**	Total Depth of Borehole ft.bgs	**1147.0**
Drill Rig Type	**GEFCO ARG - 50K**	Sampler Type	**NA**	Approx.Surface Elevation ft msl	**NA**
Approx. Depth Groundwater Encountered	**344.71 feet bgs**	Drill Bit Size/Type	**10" / 14.75"**	Top of Casing Elevation feet	**NA**
Borehole Diameter (inches)	**10" / 14.75"** Diameter of Well (inches) **6"**	Type of Well Casing	**6" Mild Steel**	Screen Perforation	**Fulflow 0.050"** **552'-802', 1042'-1142'**
Type of Sand Pack	**Mesh 8x20**	Type and Depth of Seal(s)	**Bentonite Cement Grout 0'-50', Bentonite Chips 50'-65', 868'-892'**		
Comments	**San Bernardino County Department of Public Health Permit # 2010030152**				

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	0										3/9/2010
						Brown (10YR 5/3), Silty fine to coarse SAND with fine Gravel (SM), moist, subangular					
	5									2045	
						Grades dry					
	10									2158	
	15									2115	
	20					Decrease in fines and gravel				2145	
	25									2155	
	30										

Depth, feet	MATERIAL DESCRIPTION		REMARKS
30		2205	
35	Brown (10YR 5/3), fine to coarse GRAVEL (GP), dry, subangular	2210	
38.5	Brown (10YR 5/3), Silty fine to coarse SAND (SM), dry		
50	With trace fine gravel	2304	
52.5			3/10/2010
55	Brown (10YR 5/3), fine to coarse SAND (SP), trace fines and gravel	1752	
60		1805	
65	Brown (10YR 5/3), fine GRAVEL (GP), trace coarse gravel	1845	
70			

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	70					Brown (10YR5/3), fine to coarse SAND with fine Gravel (SP)				1900	
											Centralizer
	75					Increase in Gravel				1910	
	80					Brown (10YR 5/3), fine to medium SAND (SP), trace fine gravel, trace fines				1915	
	85					Becomes brown (7.5YR 4/3)				1920	
	90					Becomes brown (7.5YR 5/3)				1930	
	95									1938	
	100					Medium to coarse sand				1946	
										1956	
	105					Fine to coarse sand, trace gravel				2002	
	110										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes brown (7.5YR 4/3), fine to medium sand, trace coarse sand				2010	
	115									2017	
	120									2021	
										2027	
	125									2032	
	130									2037	
											Centralizer
	135									2042	
	140									2048	
										2054	
	145									2100	
	150										

Project: Calico Solar	Log of Boring Well#3
Project Location: Newberry, CA	Sheet 5 of 29
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes fine to coarse sand, trace fine subrounded gravel, trace fines				2108	
	155									2116	
	160									2124	
										2135	
	165									2143	
	170									2152	
											Centralizer
	175									2201	
	180					Becomes reddish brown light brown, coarse sand				2244	
										2250	
	185					Trace fine gravel				2258	
	190										

Project: Calico Solar	Log of Boring Well#3
Project Location: Newberry, CA	
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark reddish gray (5YR 4/2)				2309	
	195									2322	
	200					Increase coarse sand				2354	
											3/11/2010
	205					Increase fine gravel				0013	
	210					Becomes fine gravel				0023	
	215									0032	
	220					Decrease fine gravel				0055	
	225					With caliche				0120	
	230										

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Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Dark reddish gray (5YR 4/2), SAND to Silty SAND with fine Gravel (SP-SM), angular gravel				0130	
											Centralizer
	235									0135	
	240					Increase fine to medium sand, decrease coarse sand, fine subrounded gravel				0141	
	245					Increase coarse sand and fine gravel, angular				0149	
	250									0205	
	255									0218	
	260					Decrease in fine gravel, increase coarse sand				0236	
	265									0250	
	270										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark reddish gray (5YR 4/2), fine to coarse sand, trace fine gravel, angular to subrounded				0310	
	275									0325	
	280					Decrease fine gravel				0345	
	285					Grades trace fine gravel				0400	
	290									0428	
											Centralizer
	295									0446	
	300									0515	
	305									0535	
	310										

Project: Calico Solar	Log of Boring Well#3
Project Location: Newberry, CA	Sheet 9 of 29
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										0555	
	315									0615	
	320					With caliche				0700	
	325									0725	
	330									0757	
	335									0820	
	340					Becomes dark reddish brown to light reddish brown, pink to light gray, fine gravel, angular to subangular				0855	
										0905	
	345					∇				0922	
	350										

Project: Calico Solar	Log of Boring Well#3
Project Location: Newberry, CA	Sheet 10 of 29
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Trace clay				0956	
											Centralizer
	355									1025	
	360					Increase in coarse gravel				1046	
										1100	
	365									1116	
	370									1156	
	375									1225	
	380									1308	
										1330	
	385					Increase in fines				1345	
	390										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										1359	
	395									1431	
	400									1510	
										1525	
										1527	
											Centralizer
	405									1541	
	410					Increase in dark gray and dark brown gravel fragments				1557	
	415									1610	
	420									1625	
										1638	
										1641	
	425					Trace gravel				1742	
	430										

Project: Calico Solar **Project Location: Newberry, CA** **Project Number: 27658188.30001**	**Log of Boring Well#3** Sheet 12 of 29

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark reddish gray (5YR 4/2)				1810	
	435									1645	
	440									1738	
	445					Dark reddish gray (5YR 4/2), Silty fine to medium SAND (SM), trace fine gravel				2300	
	450									2320	
	455					Caliche on gravel				2335	
											3/12/2010
	460					Trace gravel				0001	
	465					Dark reddish gray, Silty SAND to Sandy SILT (SM-ML)				0039	
	470										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark reddish brown (5YR 4/2), fine to coarse sand				0110	
											Centralizer
	475									0130	
	480									0155	
	485									0217	
	490										
	495										
	500										
	505									0318	
	510										

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
	515					Black (5YR 2.5/1) to reddish black (10R 2.5/1), medium to coarse SAND with Gravel (SP), trace fine sand and gravel, angular to subangular				0731	Loss of mud circulation. Driller added mud to reduce mud loss.
	520					Becomes fine to coarse sand, trace silt				0910	
										0920	
	525					Becomes very dark gray (5YR 3/1)				0940	
	530									1100	
											Centralizer
	535					Becomes black (5YR 2.5/1)				1146	
	540									1244	
										1248	
	545					Increase in gravel size				1327	
	550										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes very hard, fine to coarse sand with fine gravel				1410	
	555									1505	
	560									1623	
										1628	
	565									1700	
	570									1746	
	575									1853	
	580									2035	
											Centralizer
	585									2139	
	590										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes very dark gray (7.5YR 3/1), aphanitic, extrusive, fresh, very hard				2231	
	595									2310	
	600									2348	3/13/2010
	605									0024	
	610									0100	
	615									0140	
	620									0225	
	625									0325	
	630										

Project:	Calico Solar
Project Location:	Newberry, CA
Project Number:	27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										0910	
	635									0920	
	640									0620	
										0625	
	645									0707	
	650									0750	
	655									0835	
	660									0908	
										0930	
										0934	
											Centralizer
	665									1010	
	670										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes very dark gray (5YR 3/1)				1052	
	675									1219	
											Slow drilling
	680									1318	
										1324	
	685					Reddish brown (2.5YR 4/4), Sandy CLAY (CL), soft, moderately plastic				1342	
	690					Dark reddish brown (5YR 3/3), fine to coarse SAND with Gravel (SP), angular gravel				1421	
	695					Increased sand in cuttings				1504	Very slow drilling
	700					Dark brown (10YR 3/3), Silty fine to medium SAND with Gravel (SM), subrounded				1618	
										1623	
	705									1703	
	710										

URS

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										1741	
	715									1844	
	720									2020	
										2025	
											Centralizer
	725									2035	
	730									2049	
	735					Decrease gravel, increase sand				2118	
						Dark brown (7.5YR 3/2), Silty fine to medium SAND to Sandy SILT (SM-ML), trace fine gravel, trace coarse silt					
	740									2145	
	745									2200	
	750										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes fine to coarse sand				2230	
	755									2330	3/14/2010
	760									0140	
	765									0230	
	770					Coarse sand no longer present				0320	
	775					With coarse sand				0345	
	780									0405	Centralizer
	785									0435	
	790					Reddish yellow (5YR 6/8), Clayey fine to medium SAND (SC), moist,					

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										0455	
	795									0515	
	800									0540	
	805									0600	
	810					Becomes dark reddish gray (5YR 4/2)				0635	
	815					Dark reddish gray (5YR 4/2), Silty fine to medium SAND (SM)				0728	
						Dark reddish gray (5YR 4/2), Clayey fine to medium SAND (SC)					
	820					Dark reddish gray (5YR 4/2), Silty fine to medium SAND (SM)				0808	
	825					Trace coarse sand				0907	
	830										

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes fine to medium sand				0932	
	835									0956	
	840					Reddish brown (2.5YR 5/3), Clayey fine to coarse SAND (SC), trace fine gravel				1020	
										1025	
											Centralizer
	845					Decrease in clay				1047	
	850					Dark reddish gray (10YR 4/1), Silty fine to medium SAND (SM), subrounded to rounded				1116	
	855									1147	
	860					Reddish gray (5YR 5/2), Clayey fine to coarse SAND (SC), trace fine gravel, subrounded to subangular				1218	
										1222	
	865									1258	
	870										

Project: Calico Solar	Log of Boring Well#3
Project Location: Newberry, CA	Sheet 23 of 29
Project Number: 27658188.30001	

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes fine to medium sand, subrounded				1334	
						Becomes pinkish gray, subrounded to subangular					
	875					Becomes brown (7.5YR 5/2)				1414	
	880					Increase in clay, fine gravel				1522	
										1527	
	885					Decrease in gravel cuttings				1600	
	890									1633	
	895									1708	
	900									1742	
										1746	
											Centralizer
	905									1828	
	910										

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark yellowish brown (10YR 4/4), fine to coarse sand				1900	
	915									1940	
	920					Brown (7.5YR 5/3), Silty fine to medium SAND (SM)				2035	
	925									2115	
	930					Trace fine sand and clay				2238	
	935									2330	
											3/15/2010
	940									0110	
	945					Increase clay				0150	
	950										

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes silty fine to medium sand with clay				0205	
	955									0220	
	960					With coarse sand, subrounded				0330	
											Centralizer
	965					Increase clay				0420	
						Brown (7.5YR 5/3), Clayey fine to medium SAND (SC)					
	970									0435	
	975									0450	
	980									0530	
										0535	
	985					Decrease in silt and clay				0610	
	990										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes brown (7.5YR 5/2), subrounded sand				0700	
	995									0818	
	1000									0930	
										0934	
	1005									0959	
	1010					Slight increase in clay				1038	
	1015					Increased clay, sand becomes fine to coarse, subangular				1132	
	1020					Becomes grayish brown (10YR 5/2)				1220	
										1225	
											Centralizer
	1025									1303	
	1030										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Grayish brown (2.5Y 5/2), Clayey fine to coarse SAND to Sandy CLAY (SC-CL), subangular				1343	
	1035									1417	
	1040									1455	
	1045					Dark reddish gray (10R 4/1), Clayey fine to medium SAND (SC), trace coarse sand				1523	
	1050									1553	
	1055									1619	
	1060									1652	
	1065									1731	
	1070										

URS

Elevation, feet	Depth, feet	SAMPLES Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
						Becomes dark reddish gray (10R 4/1)				1840	
	1075									1915	
	1080					With coarse sand				2035	
											Centralizer
	1085									2120	
	1090									2230	
											3/16/2010
	1095									0035	
	1100									0150	
	1105					Decrease coarse sand, increase clay				0235	
	1110										

Project: Calico Solar
Project Location: Newberry, CA
Project Number: 27658188.30001

Log of Boring Well#3

Elevation, feet	Depth, feet	Type	Number	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log				REMARKS
										0330	
	1115					Becomes reddish brown (2.5YR 5/3)				0500	
	1120									0536	
										0550	
	1125										
	1130										
	1135					Becomes fine to medium sand				0620	
	1140					Decrease in clay				0702	Centralizer
										0706	
	1145					Reddish gray (5YR 5/2), Clayey fine to medium SAND to Sandy CLAY (SC-CL), moderately plastic				0813	
						Completed boring to 1147 feet bgs.					
	1150										

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welenco

5201 Woodmere Drive, Bakersfield, CA 93313-- www.welenco.com--(800) 445-9914
California Contractor's License No. 722373

ELECTRIC - GAMMA RAY LOG

FILING NO.

COMPANY URS Corporation

WELL Calico Well #2

FIELD Newberry Springs

STATE California COUNTY San Bernardino

LOCATION:

NW of I-40 off Pisgah Crater road.

OTHER SERVICES:
None

JOB NO.
13145

SEC: 1 TWP: 8N RGE: 5E LAT.: 34° 48' 59.1" LONG.: 116° 24' 6.4" MERIDIAN.: San Bernardino

Permanent Datum: Ground Level , Elev. 2150 Ft. Elev.: K.B. ____ Ft.
Log Measured From: Ground Level , 0 Ft. Above Perm. Datum D.F. ____ Ft.
Drilling Measured From: Ground Level G.L. 2150 Ft.

Run	One			
Date	Mar. 05, 2010			
Depth-Driller	840 Ft	Ft	Ft	Ft
Depth-Logger	841 Ft	Ft	Ft	Ft
Top Logged Interval	2 Ft	Ft	Ft	Ft
Btm. Logged Interval	840 Ft	Ft	Ft	Ft
Casing-Driller	20 In @ 16 Ft	In @ Ft	In @ Ft	In @ Ft
Casing-Logger	20 In @ 16 Ft	In @ Ft	In @ Ft	In @ Ft
Bit Size	12 In	In	In	In
Time On Bottom	8:40 AM			
Type Fluid In Hole	Mud/Water			
Density / Viscosity				
pH / Fluid Loss	ml	ml	ml	ml
Source of Sample	Pit			
Rm @ Measured Temp.	12.2 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Measured Temp.	11.1 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Measured Temp.	@ °F	@ °F	@ °F	@ °F
Source Rmf / Rmc	meas			
Rm @ BHT	@ °F	@ °F	@ °F	@ °F
Time Since Circulation	2 Hr	Hr	Hr	Hr
Max. Rec. Temp.	N/A °F	°F	°F	°F
Van No. / Location	LV-1 / Bfld			
Recorded By	Dan Ihde			
Witnessed By	Joe Liles			

Miscellaneous Information

A recreational GPS accurate to +/- 45 feet set for Datum NAD27 was used to calculate Latitude, Longitude & Elevation values. The Section, Township, and Range then determined using the TRS program (TRS accuracy is not guaranteed). The TRS program converts Latitude and Longitude to Section, Township, and Range. The NOTICE at the bottom of this heading also applies.

Water level in boring about 38 feet.

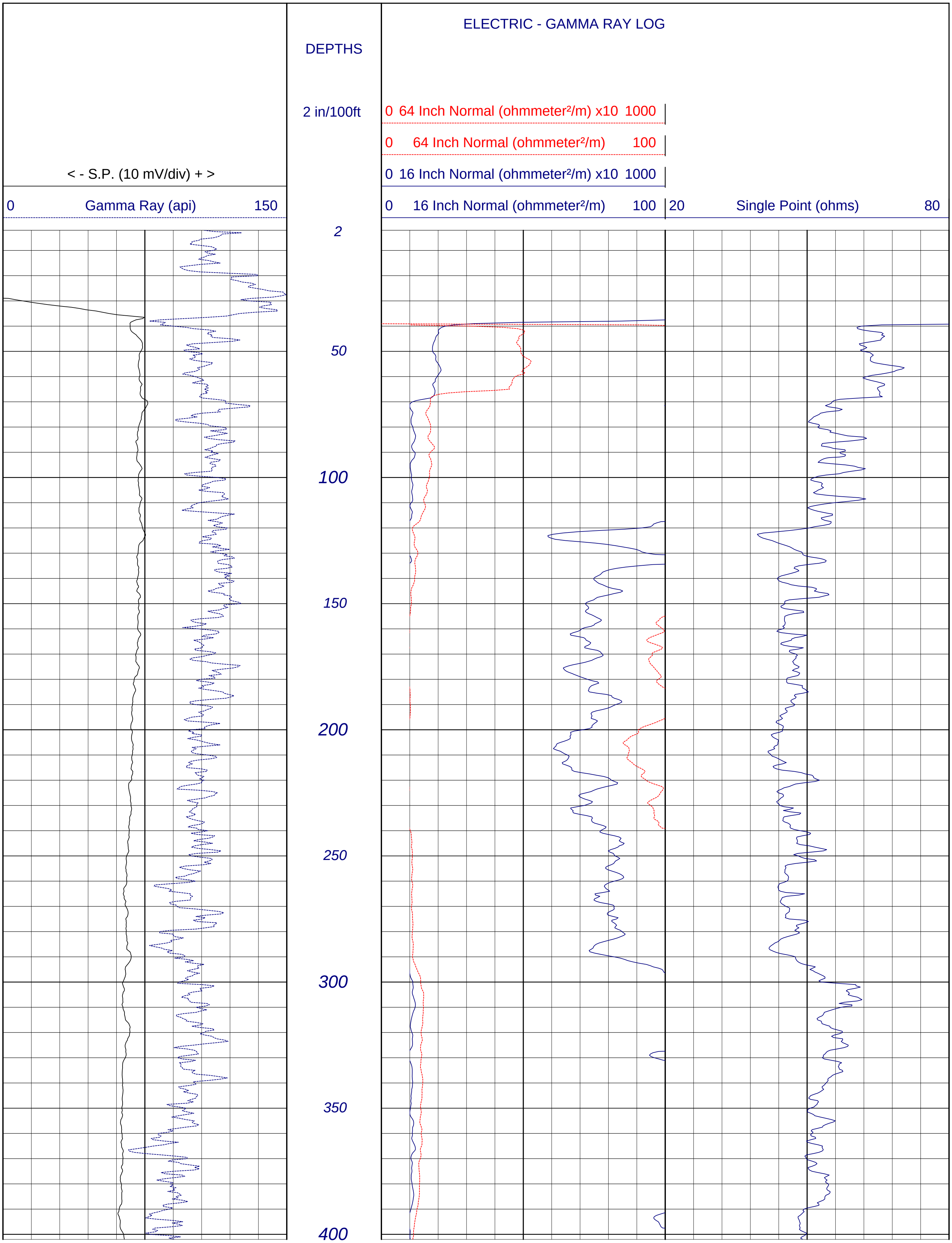
Drilled By: Mid State Pump and Drilling

NOTICE

All interpretations are opinions based on inferences from electrical and other measurements and we do not guarantee the accuracy or correctness of any verbal or written interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

welenco, inc. March 05, 2010

URS Corporation Calico Well #2 Mar 5, 2010

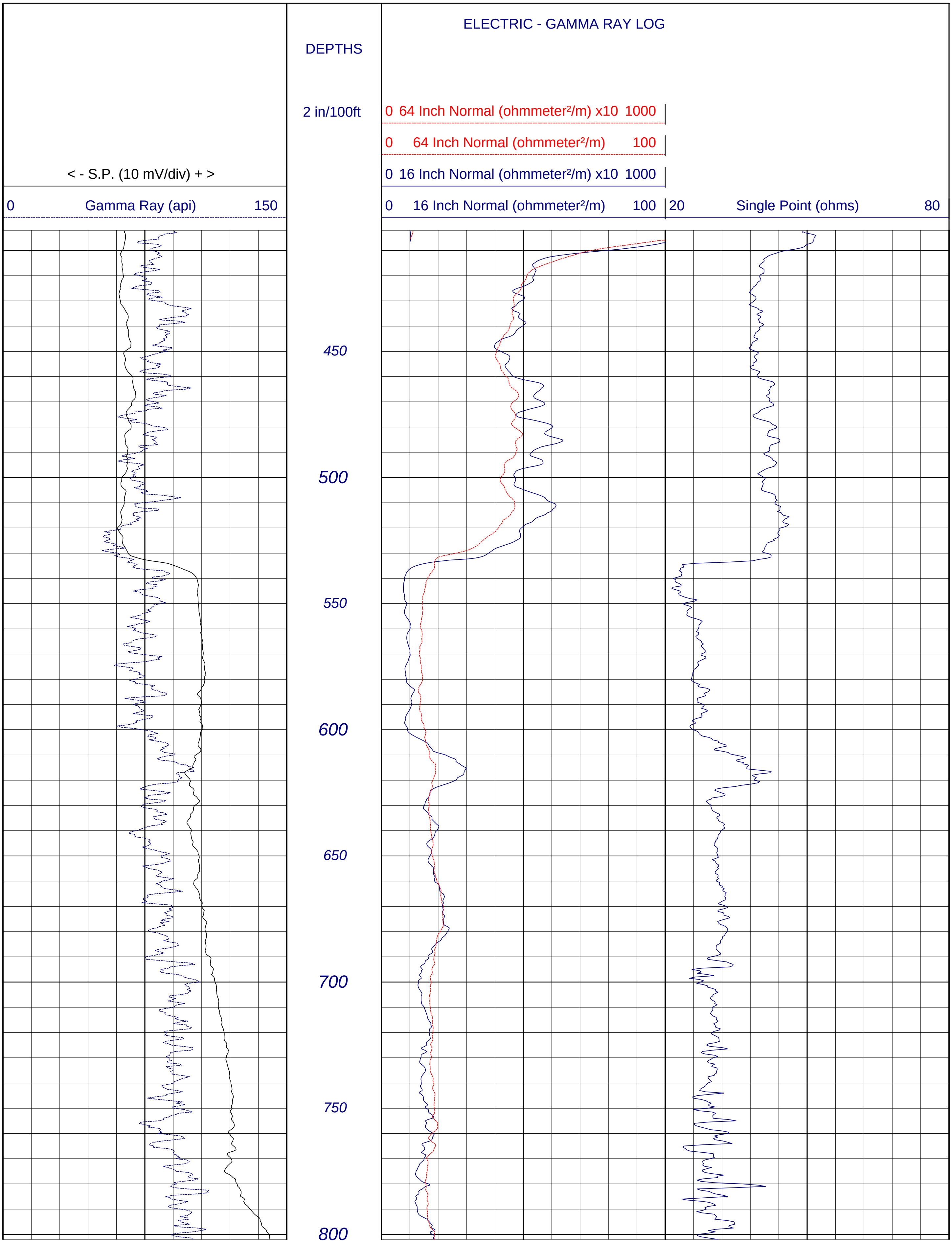


Log Page No. 1 of 3 Pages

Page Length: 2 - 402 Feet (400 Feet)

Time: 09:23:48 AM

Date: Mar 05, 2010



 Page Length: 402 - 802 Feet (400 Feet) Time: 09:23:49 AM Date: Mar 05, 2010

ELECTRIC - GAMMA RAY LOG

DEPTHS

2 in/100ft

< - S.P. (10 mV/div) + >

0 Gamma Ray (api) 150

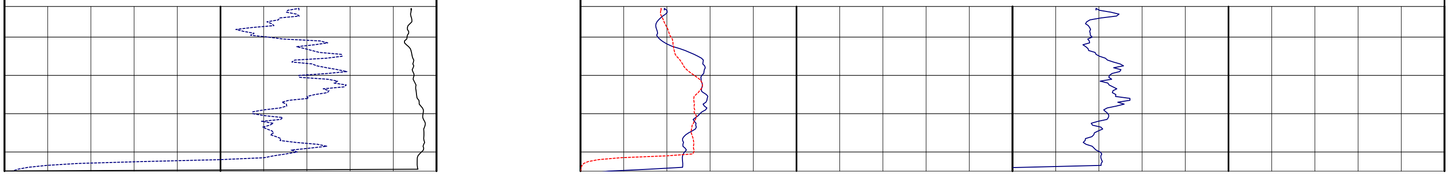
0 64 Inch Normal (ohmmeter²/m) x10 1000

0 64 Inch Normal (ohmmeter²/m) 100

0 16 Inch Normal (ohmmeter²/m) x10 1000

0 16 Inch Normal (ohmmeter²/m) 100

20 Single Point (ohms) 80



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PACIFIC SURVEYS

DEVIATION SURVEY

Job No. 15161	Company	WDC EXPLORATION & WELLS
	Well	CALICO #3
File No.	Field	PISGAH CRATER
	County	SAN BERNARDINO State CA

Location:

1.5 MILES NORTH OF I-40 OFF OF HECTOR RD
GPS: N34o 48' 34" W116o 24' 9"

Sec. Twp. Rge.

Other Services:

ELOG/GR

Permanent Datum	G.L.		Elevation above perm. datum	Elevation
Log Measured From	G.L.	0'		K.B.
Drilling Measured From	G.L.			D.F.
				G.L.

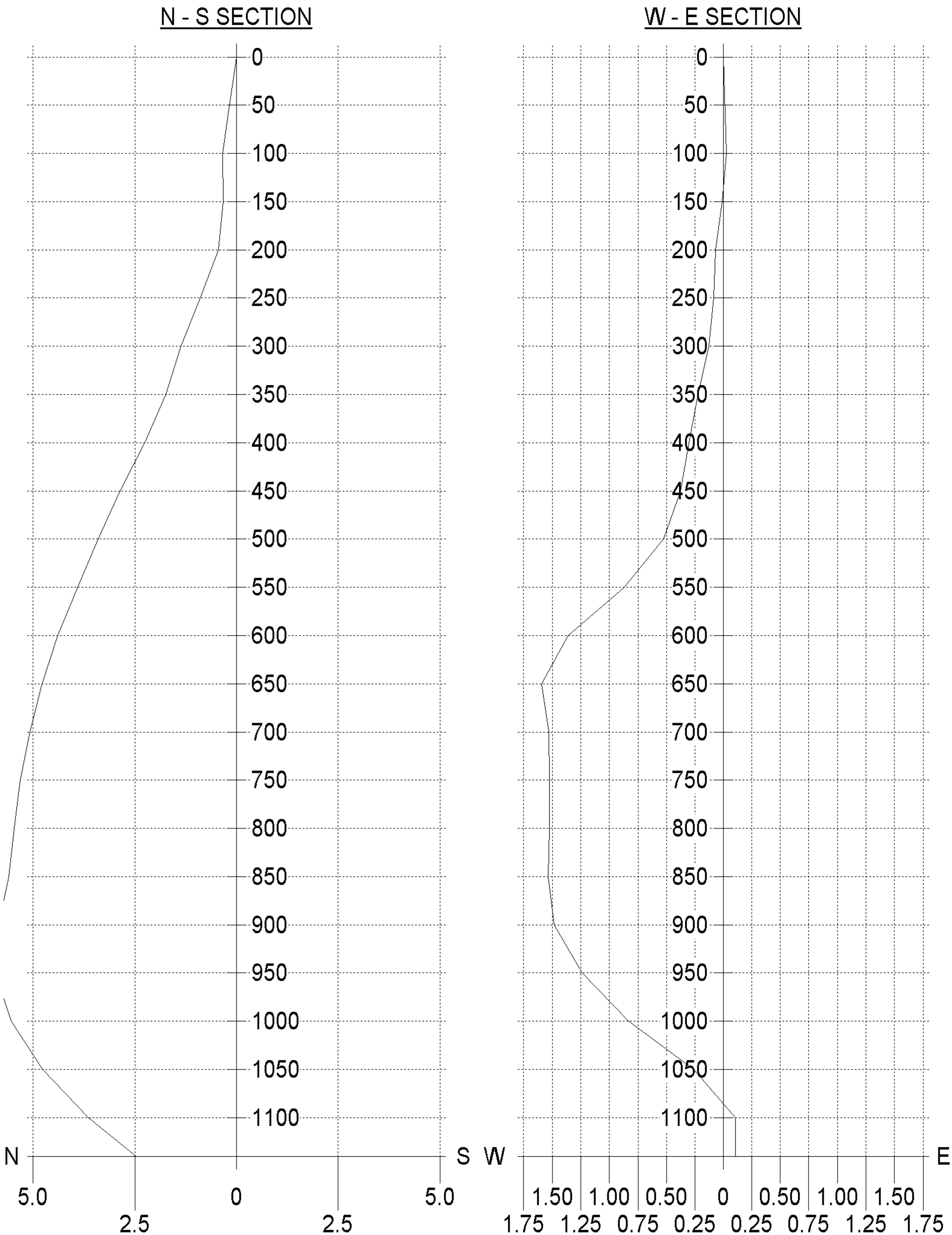
Date	03-17-2010		
Run Number	ONE		
Depth Driller	1147'		
Depth Logger	1148'		
Bottom Logged Interval	1148'		
Top Log Interval	50'		
Casing Driller	16" @ 50'		
Casing Logger	50'		
Bit Size	11"		
Type Fluid in Hole	BENTONITE		
Density / Viscosity	N/A		
pH / Fluid Loss	N/A		
Source of Sample	PIT		
Rm @ Meas. Temp	5.46 @ 77F		
Rmf @ Meas. Temp	6.45 @ 77F		
Rmc @ Meas. Temp	N/A		
Source of Rmf / Rmc	MEAS		
Rm @ BHT	N/A		
Time Circulation Stopped	2 HRS		
Time Logger on Bottom	11:10		
Max. Recorded Temperature	N/A		
Equipment Number	PS-4		
Location	L.A.		
Recorded By	RIDDER		
Witnessed By	--		

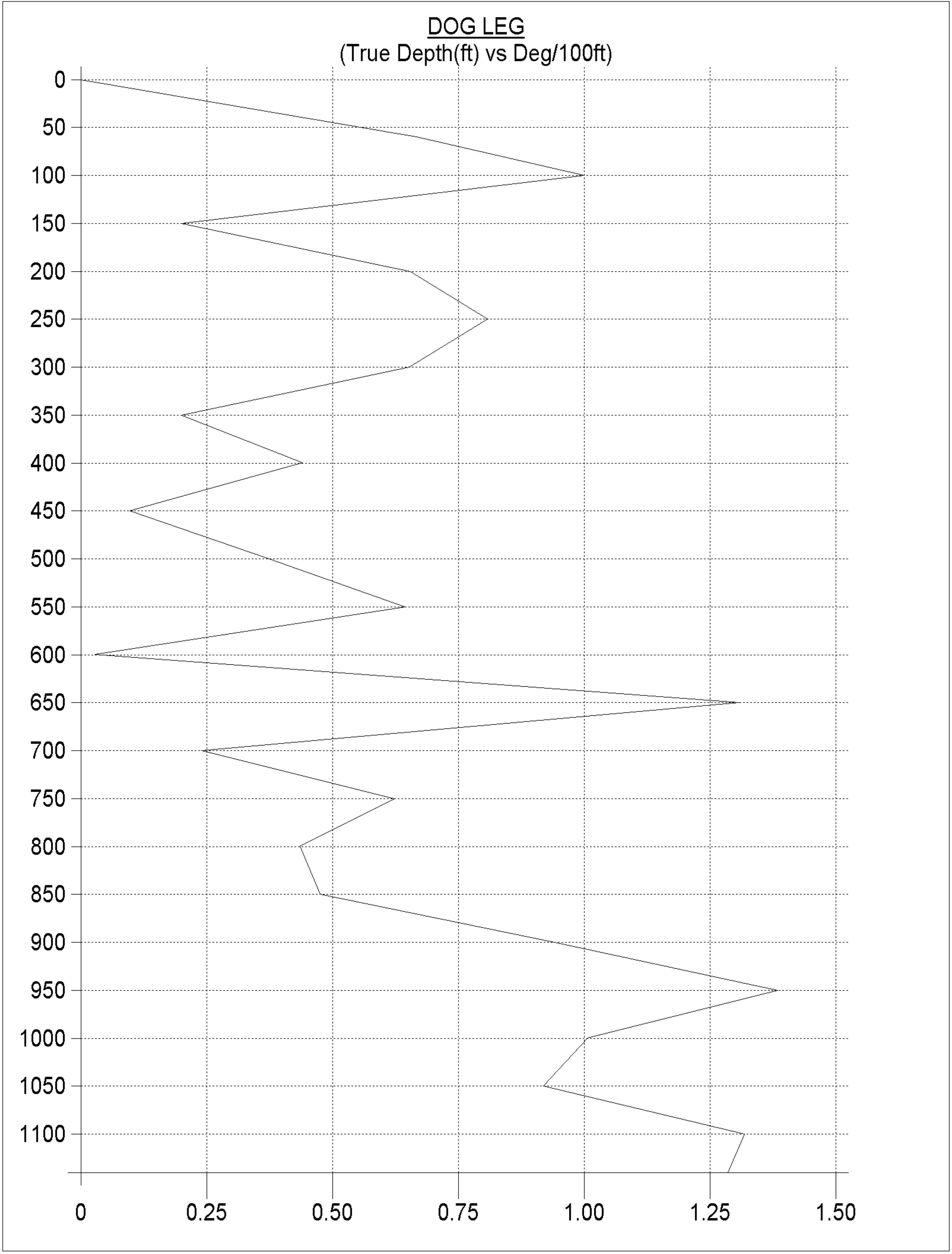
<<< Fold Here >>>

Comments


CROSS - SECTION
(Displacement in ft)
N
S
W
E
0.0
200.0
400.0
600.0
800.0
1000.0
1140.0
1
2
3
4
5
6

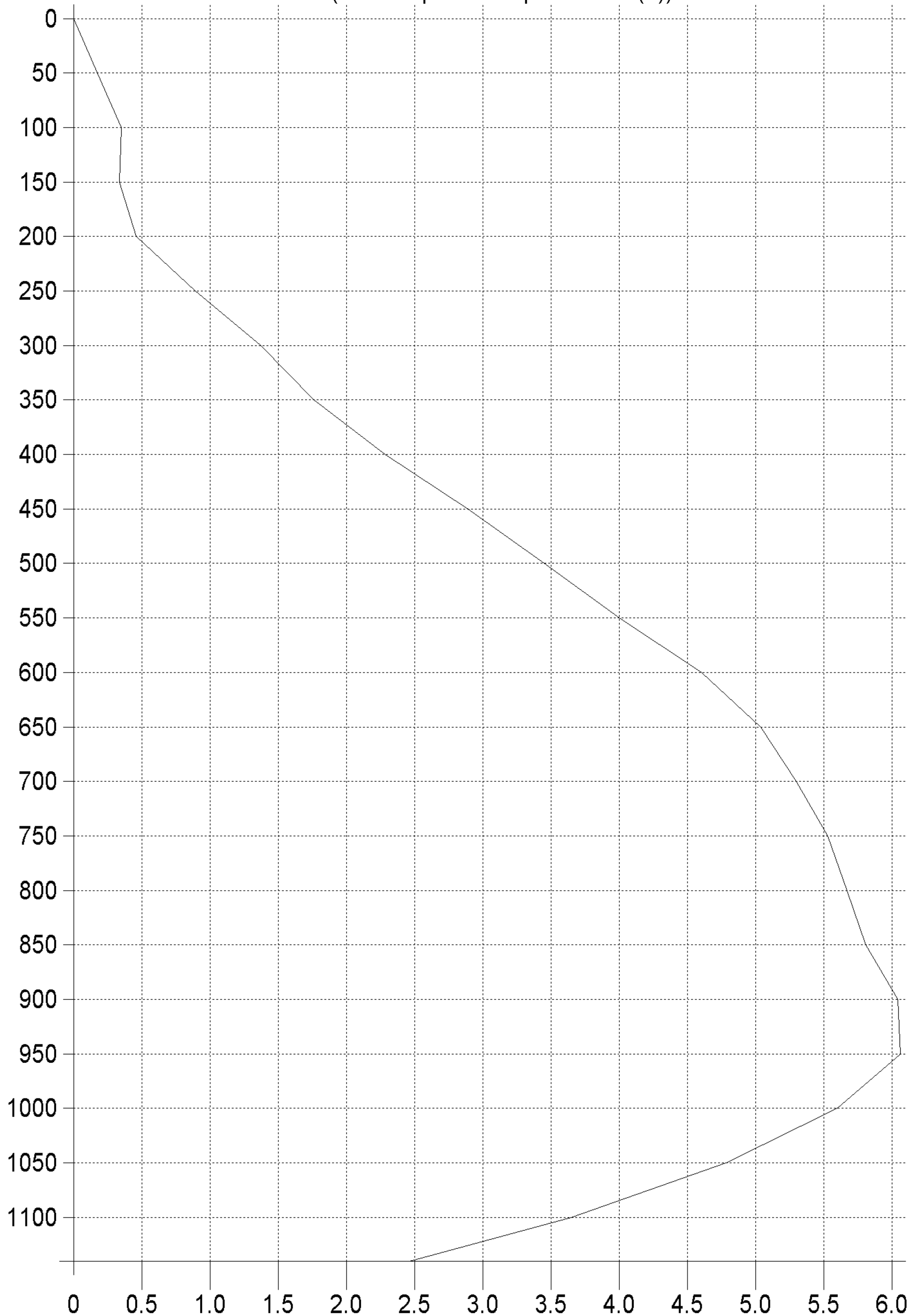
CLOSURE SECTIONS
(True Depth vs. Displacement (ft))




DOG LEG
(True Depth(ft) vs Deg/100ft)
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1000
1050
1100
0
0.25
0.50
0.75
1.00
1.25
1.50

IN THE PLANE OF CLOSURE

(True Depth vs Displacement (ft))



TVD Report (Minimum Curvature Method)

Database File: 15161.db
Dataset Pathname: ./././_tvd_/1
Dataset Creation: Wed Mar 17 12:11:11 2010

Meas. Depth (ft)	Incline	Azimuth	TVD (ft)	North (ft)	East (ft)	Dogleg	Closure Dis (ft)	Closure Dir	Vert. Sec. (ft)
		Vertical Section Direction 0.00							
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.40	5.00	60.00	0.21	0.02	0.67	0.21	5.00	0.21
100.0	0.00	251.00	100.00	0.35	0.03	1.00	0.35	5.00	0.35
150.0	0.10	256.00	150.00	0.34	-0.01	0.20	0.34	-2.02	0.34
200.0	0.30	353.00	200.00	0.46	-0.07	0.66	0.46	-8.74	0.46
250.0	0.70	360.00	250.00	0.89	-0.09	0.81	0.90	-5.52	0.89
300.0	0.40	346.00	299.99	1.37	-0.13	0.65	1.37	-5.37	1.37
350.0	0.50	346.00	349.99	1.75	-0.22	0.20	1.76	-7.28	1.75
400.0	0.70	355.00	399.99	2.26	-0.30	0.44	2.28	-7.62	2.26
450.0	0.70	351.00	449.99	2.87	-0.38	0.10	2.89	-7.49	2.87
500.0	0.60	337.00	499.98	3.41	-0.53	0.37	3.45	-8.78	3.41
550.0	0.80	316.00	549.98	3.90	-0.87	0.64	4.00	-12.59	3.90
600.0	0.80	315.00	599.97	4.40	-1.36	0.03	4.61	-17.18	4.40
650.0	0.30	6.00	649.97	4.78	-1.59	1.31	5.04	-18.45	4.78
700.0	0.40	17.00	699.97	5.08	-1.53	0.24	5.30	-16.77	5.08
750.0	0.20	327.00	749.97	5.32	-1.53	0.62	5.53	-16.02	5.32
800.0	0.20	33.00	799.97	5.46	-1.53	0.44	5.67	-15.61	5.46
850.0	0.20	320.00	849.97	5.60	-1.53	0.48	5.81	-15.32	5.60
900.0	0.50	30.00	899.97	5.86	-1.48	0.94	6.04	-14.19	5.86
950.0	0.40	130.00	949.97	5.94	-1.24	1.38	6.06	-11.79	5.94
1000.0	0.90	136.00	999.97	5.54	-0.83	1.01	5.60	-8.55	5.54
1050.0	1.30	148.00	1049.96	4.78	-0.26	0.92	4.78	-3.11	4.78
1100.0	1.50	174.00	1099.94	3.65	0.11	1.32	3.65	1.72	3.65
1140.0	1.90	185.00	1139.92	2.46	0.11	1.29	2.47	2.48	2.46

PACIFIC SURVEYS

ELECTRIC LOG
GAMMA-RAY

Job No. 15161	Company	WDC EXPLORATION & WELLS
	Well	CALICO #3
	Field	PISGAH CRATER
File No.	County	SAN BERNARDINO State CA

Location:

1.5 MILES NORTH OF I-40 OFF OF HECTOR RD
GPS: N34o 48' 34" W116o 24' 9"

Sec. Twp. Rge.

Other Services:

DEVIATION SURVEY

Permanent Datum	G.L.		Elevation	Elevation
Log Measured From	G.L.	0'	above perm. datum	K.B.
Drilling Measured From	G.L.			D.F.
				G.L.

Date	03-17-2010		
Run Number	ONE		
Depth Driller	1147'		
Depth Logger	1148'		
Bottom Logged Interval	1148'		
Top Log Interval	50'		
Casing Driller	16" @ 50'		
Casing Logger	50'		
Bit Size	11"		
Type Fluid in Hole	BENTONITE		
Density / Viscosity	N/A		
pH / Fluid Loss	N/A		
Source of Sample	PIT		
Rm @ Meas. Temp	5.46 @ 77F		
Rmf @ Meas. Temp	6.45 @ 77F		
Rmc @ Meas. Temp	N/A		
Source of Rmf / Rmc	MEAS		
Rm @ BHT	N/A		
Time Circulation Stopped	2 HRS		
Time Logger on Bottom	11:10		
Max. Recorded Temperature	N/A		
Equipment Number	PS-4		
Location	L.A.		
Recorded By	RIDDER		
Witnessed By	--		

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Calibration Report

Database File: 15161.db
Dataset Pathname: WDC/well/run1/Elog
Dataset Creation: Wed Mar 17 11:09:34 2010 by Log Open-Cased 090629

ELOG Calibration Report

Serial:	D4
Model:	DTQ
Shop Calibration Performed:	Thu Oct 08 16:35:21 2009
Before Survey Verification Performed:	Sun Sep 09 13:17:43 2007
After Survey Verification Performed:	Sun Sep 09 13:17:48 2007

Shop Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	9.251	100.988		10.200	102.200	Ohm-m	1.003	0.923
Long	7.351	97.131		10.200	102.200	Ohm-m	1.025	-17.300
IEE	22.060	6017.460	counts	0.024	6.586	A		
VSN	98.940	6820.740	counts	1.887	130.097	V		
VLN	91.980	1703.020	counts	1.754	32.483	V		

Before Survey Verification

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	40.249	101.201		40.505	101.206	Ohm-m	0.996	0.422
Long	142.638	102.842		102.858	102.858	Ohm-m	1.024	-2.408
IEE	212.960	7070.960	counts	0.233	7.738	A		
VSN	96.300	8039.720	counts	1.837	153.348	V		
VLN	85.320	2042.520	counts	1.627	38.959	V		

After Survey Verification

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	40.270	101.200		40.249	101.201	Ohm-m	1.000	-0.035
Long	142.491	102.843		102.842	102.842	Ohm-m	1.004	-0.383
IEE	213.380	7077.580	counts	0.234	7.746	A		
VSN	96.540	8047.160	counts	1.841	153.490	V		
VLN	85.400	2044.440	counts	1.629	38.995	V		

After Survey Verification compared to Before Survey Calibration

	Zero			Cal		
	Before	After		Before	After	
Short	40.505	40.249	Ohm-m	101.206	101.201	Ohm-m
Long	143.592	142.638	Ohm-m	102.858	102.842	Ohm-m

Gamma Ray Calibration Report

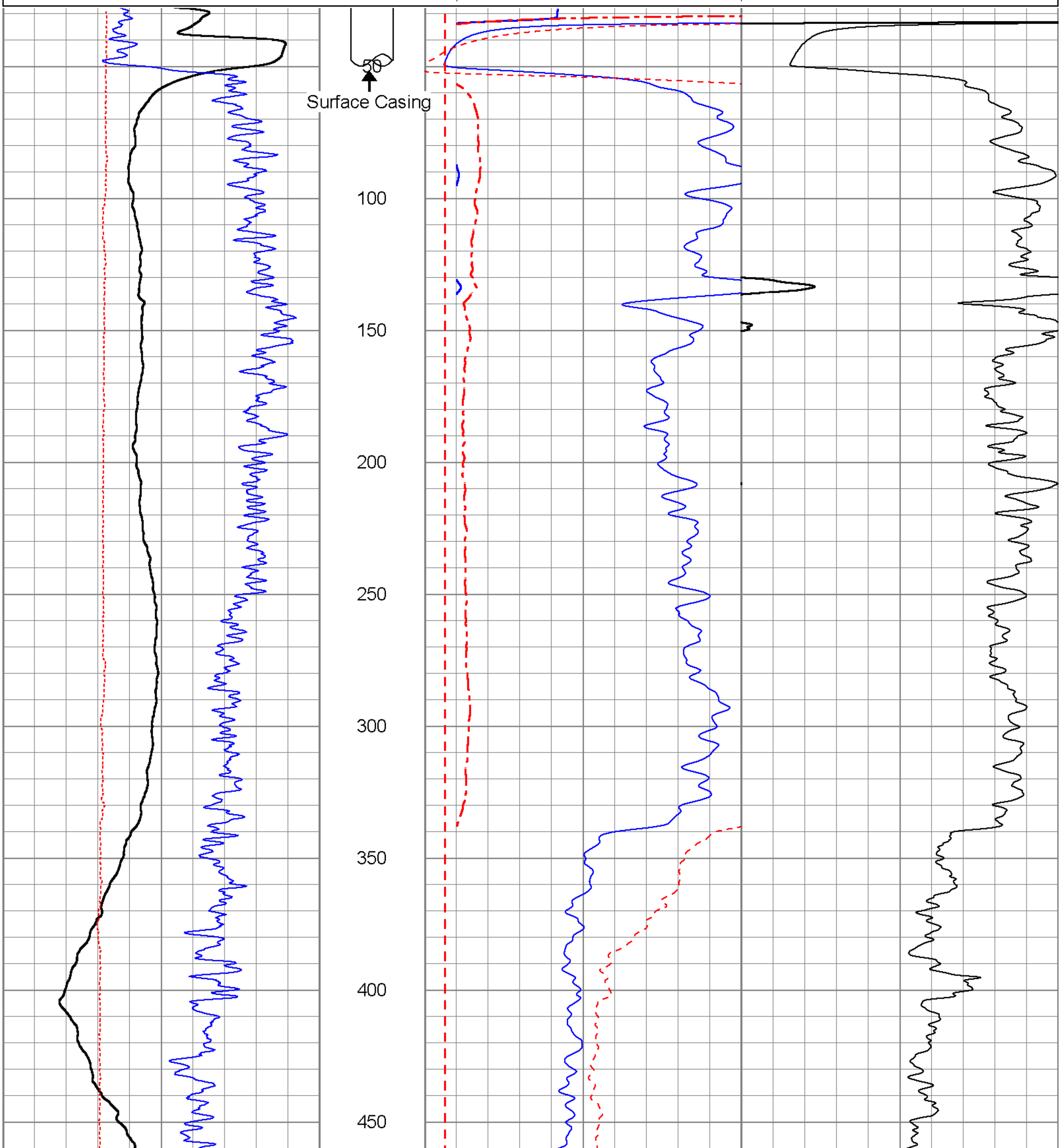
Serial Number:	D4	
Tool Model:	ELOG	
Performed:	Tue Jul 15 15:58:21 2008	
Calibrator Value:	162.0	GAPI
Background Reading:	198.6	cps
Calibrator Reading:	742.0	cps
Sensitivity:	0.2982	GAPI/cps

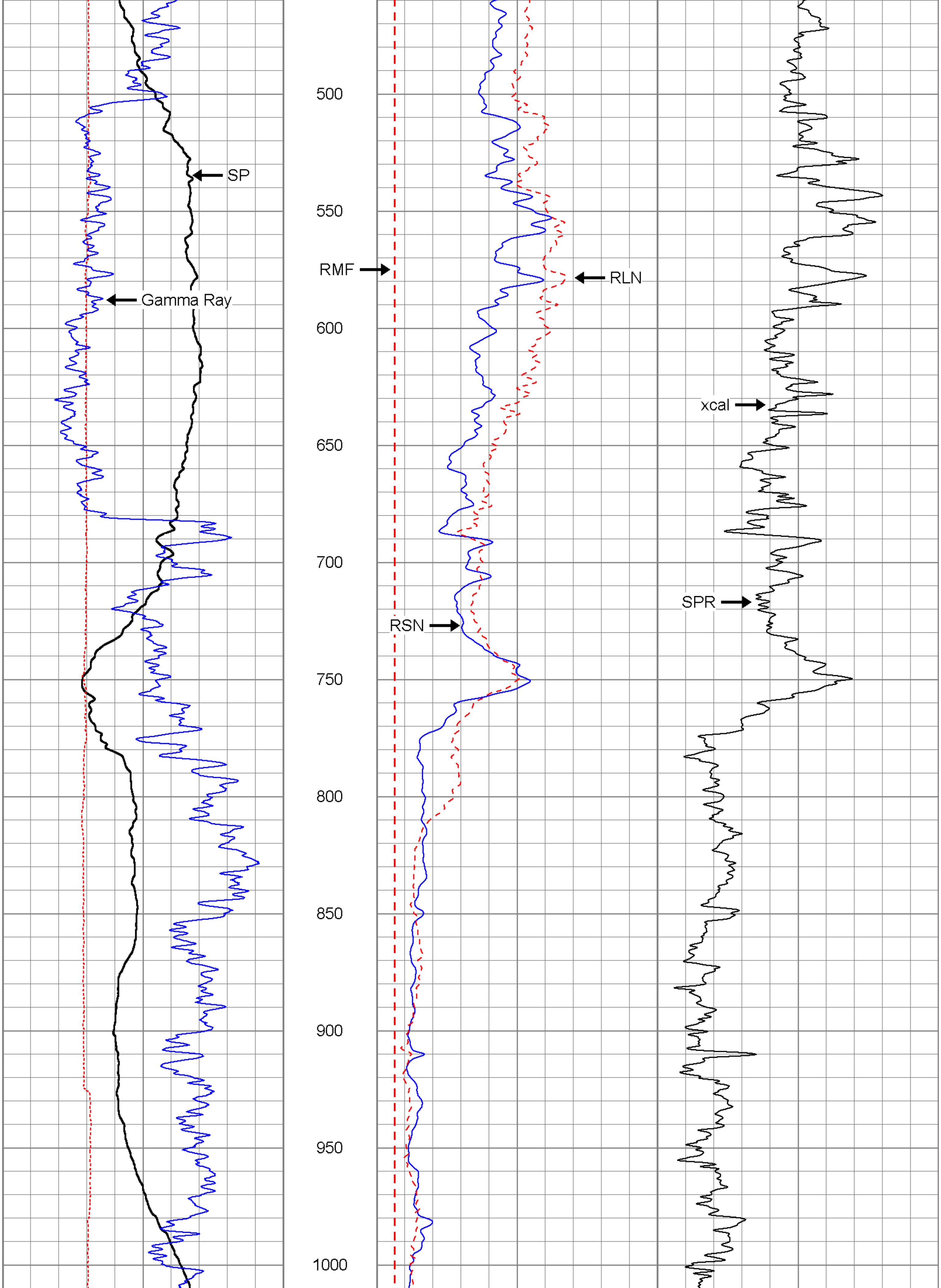
Database File:	15161.db
Dataset Pathname:	WDC/well/run1/Elog
Presentation Format:	elog
Dataset Creation:	Wed Mar 17 11:09:34 2010 by Log Open-Cased 090629
Charted by:	Depth in Feet scaled 1:600

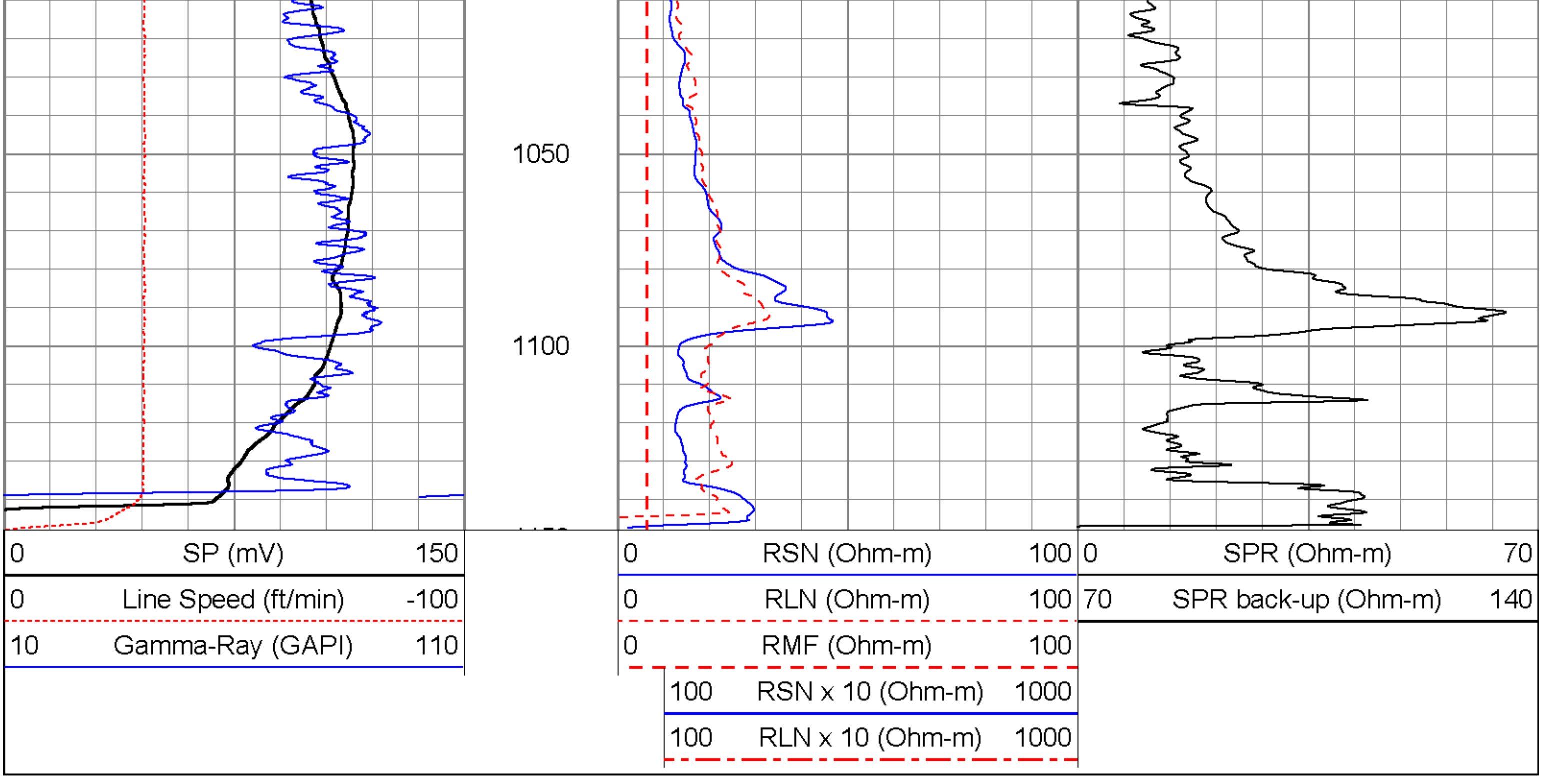
0 SP (mV) 150
0 Line Speed (ft/min) -100
10 Gamma-Ray (GAPI) 110

0 RSN (Ohm-m) 100
0 RLN (Ohm-m) 100
0 RMF (Ohm-m) 100
100 RSN x 10 (Ohm-m) 1000
100 RLN x 10 (Ohm-m) 1000

0 SPR (Ohm-m) 70
70 SPR back-up (Ohm-m) 140




SP
Gamma Ray
500
550
600
650
700
750
800
850
900
950
1000
RMF
RLN
RSN
xcal
SPR


1050
1100
0 SP (mV) 150
0 Line Speed (ft/min) -100
10 Gamma-Ray (GAPI) 110
0 RSN (Ohm-m) 100
0 RLN (Ohm-m) 100
0 RMF (Ohm-m) 100
100 RSN x 10 (Ohm-m) 1000
100 RLN x 10 (Ohm-m) 1000
0 SPR (Ohm-m) 70
70 SPR back-up (Ohm-m) 140

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FIELD REPORT

PROJECT NO. 27658188.30001

DATE OF WORK 3/31/10 – 4/3/10

REPORT NO.

PROJECT Calico Solar - Calibration of YSI 556 PAGE 1 OF 1

3/31 1015 - pH 7.0 7.08 → 7.00 pH 4.0 3.92 → 4.00 pH 10.0 9.95 → 10.00

conductivity 1000 µS/cm 472 → 1000 ORP 237.5 mV 243.2 → 237.5

4/1 0833 - pH 7.0 7.12 → 7.00 pH 4.0 4.05 → 4.00 pH 10.0 9.89 → 10.00

conductivity 1000 µS/cm 1093 → 1000 ORP 233.5 mV → 237.5

4/2 0725 - pH 7.0 6.98 → 7.00 pH 4.0 4.02 → 4.00 pH 10.0 10.07 → 10.00

conductivity 1000 µS/cm 1021 → 1000 ORP 250.5 mV 243.1 → 250.5

4/3 0750 - pH 7.0 7.07 → 7.00 pH 4.0 3.94 → 4.0 pH 10.0 10.05 → 10.00

conductivity 1000 µS/cm 982 → 1000 ORP 244.0 mV 247.7 → 244.0

TIME

CC

CC

CC

BY:

RECEIVED DATE

URS

2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CALIFORNIA 92705
(714) 835-6886
FAX (714) 667-7147

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Well Development and Sampling Log

Well Number: Well #3	Date: 3/31/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water: 343.98' Total Well Depth: 1,146.00' Water Column Height (H): 802.02' Top of Casing Elevation:

Gauging Time and initials: 1055 SP/ND Casing diameter (D)= 6 in. Pump intake depth (ft bgs) =

Groundwater Purge Data

Purge Method: Bailer/Standard Purge Purge Equipment: 10' stainless steel bailer 15' surge block Pump Id:

Depth to Water	Time	Purge Rate	Hz	Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
	1130			4	6.84	1091		25.85	2.75	102.4	1st bail off well bottom
	~~1150~~										Brown, silty water, little sand
	1207			21	7.64	2104		25.37	3.42	93.1	5 bails @ 221 gals, bailed out
											Light brown, less silty
	1240										Start surging well 25'
											intervals for 20 mins each
	1405										Finished surging 1st 100' of
											well screen. Now bail well
	1430			26	8.72	1834		26.14	0.61	73.7	2nd bail. Less fines than 1st bail
											Light brown, silty, trace sand
	1510			60	9.15	1863		25.92	1.31	82.5	8 bails @ 234 gals bailed
											Started surging well in
											25' intervals for ~15 mins each
											Gallons = ml's/3781
											Sample Rate:
											Total Casing Volumes Removed:
											Total Gallons Removed:

Sample ID.(time): ____________( ) Dup ID.: ____________( ) Rinsate ID.: ____________( )

Analytical Methods: ______________________ Sampler: __________

URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/1/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water: 344.22'	Total Well Depth: 1146.00'	Water Column Height (H): 801.78'	Top of Casing Elevation:
Gauging Time and initials: SG/ND 0905	Casing diameter (D)= 6 in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge

Purge Equipment: 10' stainless steel bailer, 10' surge block

Pump Id:

Depth to Water	Time	Purge Rate	Hz	Vol. Removed (gals)	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
	0935			5	9.90	1822		24.25	1.38	68.9	1st Bail - Brown, silty, little sand
	1013			25	10.22	2029		26.95	1.50	50.2	6 bails ~25 gals - Brown, less silty
	1054										Start surging upper 250' screen
											in 20' intervals @ 20 mins each
	1520										Completed surging
	1535										Start bailing
	1550			33	8.98	1460		28.76	0.30	95.2	2nd Bail - Brown, silty
	1635			113	8.80	1593		29.33	0.92	73.0	10 bails ~80 gals - Brown, less silty, trace sand
											Gallons = ml's/3781
											Sample Rate:
											Total Casing Volumes Removed:
											Total Gallons Removed:

Sample ID.(time): ________________( ) Dup ID.: ________________( ) Rinsate ID.: ________________( )

Analytical Methods: ________________________________ Sampler: ________

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Well Development and Sampling Log

Well Number: Well #3	Date: 4/2/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water: 344.46'	Total Well Depth: 1146.00'	Water Column Height (H): 801.54'	Top of Casing Elevation:
Gauging Time and initials: 0740 SP/MR	Casing diameter (D)= 6 in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge | Purge Equipment: 10" stainless steel bailer, 10" surge block | Pump Id:

Depth to Water	Time	Purge Rate	Hz	Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
	0815				3.52	1456		23.56	1.00	99.1	1st Bail. Brown, silty, little sand
	0903							(Bailed approx 65 gals)			Hydraulic line broke. Bailer
											still in well. Must repair.
	1555										Retrieved bailer. started surging
											well in 25' intervals for 10mins
											each

Gallons = ml's/3781

Sample Rate: ______

Total Casing Volumes Removed: ______

Total Gallons Removed: ______

Sample ID.(time): ____________( ) Dup ID.: ____________( ) Rinsate ID.: ____________( )

Analytical Methods: ______________________ Sampler: ______

1502 6980 730

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Well Development and Sampling Log

Well Number: Well #3	Date: 4/3/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water: ~~344~~ 344.28 SP	Total Well Depth: 1146.00'	Water Column Height (H): 801.72'	Top of Casing Elevation:
Gauging Time and initials: 0735 SP/ND	Casing diameter (D)= 6 in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge	Purge Equipment: 10' stainless steel bailer, 10' surge block	Pump Id: 55-65-75 22

Depth to Water	Time	Purge Rate (gpm)	Hz	Vol. Removed (gals)	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
	0746										Surging well. (continued from yesterday)
	0905										Finished surging the upper 25' screen
	0924			8	9.48	1606		28.67	0.34	96.8	Start bailing well. Brown, silty, trace sand
	1045			110	9.43	1401		29.38	0.76	46.8	Stop bailing. Light brown, less silty, trace sand.
	(1426 start pumping)			0							Setting pump in ground
	~~1540~~ 1440	10		140	9.36	1461	800	28.51	3.64	33.8	
	~~1543~~ 1443	10		220	9.51	1467	413	29.04	4.20	30.5	
	~~1553~~ 1453	10		270	9.36	1460	458	29.25	4.51	43.7	
(1456 ↑ to 15 gpm)	1503	15		~~375~~ 405	9.31	1461	346	29.62	4.30	42.1	
(1511 ↑ to 20 gpm)	1508	15		~~450~~ 455	9.30	1454	276	29.30	4.40	36.6	
	1517	20		650	9.31	1456	185	30.09	4.53	38.2	
(1526 ↑ to 22 gpm)	1525	20		810	9.15	1462	138	29.61	5.94	45.5	
	1535	22		1028	9.22	1458	133	29.15	4.63	42.9	
	1541	22		1160	9.25	1460	113	28.82	4.50	42.3	

Gallons = ml's/3781

Sample Rate: ________

Total Casing Volumes Removed: ________

Total Gallons Removed: ________

Sample ID.(time): ____________________( ) Dup ID.: ____________________( ) Rinsate ID.: ____________________( )

Analytical Methods: ____ Sampler: ____________

URS

Page ____ of ____

Job CALICO SOLAR | Project No. 27658188.30001 | Sheet 1 of 1

Description WELL #3 - PUMP REMOVAL/INSTAL-LATION | ~~Computed~~ by J. ESPINOSA | Date 4/08/10

Checked by ____ | Date ____

Reference

1100 - Called Neil D. (WDC) - He indicated that he had just completed removing the pump & will start installing the larger pump. It will take him approximately 2 hours to set the pump @ ≈ 520 ft btoc. He will call me when he completes installing the pump.

1335 - Neil called - Conference call w/ J.L., J.E, & N.D.: Neil completed installing pump @ 526 ft btoc. Per J.L., the initial pump rate will be 40 gpm; Neil will call after 30 minutes of pumping to update us.
- Initial DTW = 343.~~43~~ 41 ft btoc.

1416 - Neil called - He operated pump for ½-hour: DTW = 344.51 ft btoc
⇒ Drawdown = 1.08 feet
- Per J.L., Neil will continue test (2 hours) @ 40 gpm

1503 - Called Neil - Drawdown = 1.74 feet @ 50 minutes

1550 - Called Neil - He just completed 2-Hour stress test. Final DTW = 345.~~17~~ 14
⇒ total drawdown = 1.74 ft. J.L. instructs Neil to run the pump for 1 hour @ 65 gpm.

1656 - Neil called - He just completed 1-hour test (@ 65 gpm) ⇒ total drawdown = 3.24 feet.
- Neil asked how we wanted the well monument installed. I will contact J.L. & call Neil back

1703 - Called Neil - Per J.L., he will cut the well casing to 2 ft above ground surface, the monument will then be set. The top of the monument will be set @ 3 feet above ground surface (1 foot above the well casing).

1933 - Called Neil - Asked if he had obtained any well recharge data. He indicated that he did not, since there was no check valve installed at the pump outlet.

URS

Page ____ of ____

Job CALICO SOLAR | Project No. 27658188.30001 | Sheet 1 of 1
Description WELL #3 - WELL DEVELOPMENT | ~~Computed~~ by J. ESPINOSA | Date 4/06/10
Checked by ________ | Date ________

Reference

0630 - Met @ water tank
0710 - Conducted tailgate safety meeting
0740 - Calibrated YSI 556 & LaMotte 2020e :

Standard :	Calibration Check
Turb. : 10.0 NTU	9.93 NTU
pH : ~~7~~ 4.0	4.04
7.0	6.98
10.0	9.95
Cond. : 1000 µS/cm	991 µS/cm
ORP . 250.5 mV @ 10°C	250.9 mV

0755 - Set pump @ 924 ftbtoc & began pumping. Totalizer = 6986745
0847 - Set pump @ 987 ftbtoc.
0933 - Set pump @ 1050 ftbtoc.
1028 - Set pump @ 1092 ftbtoc
1030 - Miguel (Nieto & Sons arrives)
1035 - Totalizer stops working. Use bucket test to approximate flow rate
1103 - Totalizer working again.
1105 - Skimmed approximately 500 gallons from mud tank.
1126 - Set pump @ 1113 ftbtoc.
1215 - Set pump @ ≈ 1141 ftbtoc. Totalizer not operating.
1215 - 1245 LUNCH
~~1250~~ 1315 - Complete pumping well. Begin to raise pump
1330 - Water tank is emptied.
1335 - Approximately 4500 gallons of mud are loaded to Nieto & Sons vacuum truck.
N&S departs site
1436 - Raised & set pump @ 819 ftbtoc. Started pumping.
1510 - Collect sample: Well #3.
1555 - Departed site.
1918 - Delivered sample to Calscience

URS

Page 1 of

Job CALICO SOLAR

Project No.

Sheet 1 of 1

Description WELL #3 - REHABILITATION

~~Computed~~ by J. ESPINOSA

Date 4/05/10

Checked by

Date

Reference

1150 - Arrived onsite. Neil, Sergiah, David already there.
1155 - Calibrated YSI & LaMotte Turbidity meter:

Standard	Calibration Check
pH: 4.00	4.03
7.00	7.01
10.00	9.98
Cond.: 1000 µS/cm	1004 µS/cm
ORP: 244.0 mV	248.2 mV
Turb.: 10.0 NTU	10.6 NTU

1200 - Neil (WDC) had just lowered pump to 651 ft btoc.
1308 - Lowered pump to 714 ft btoc
1355 - Lowered pump to 756 ft btoc
1438 - Lowered pump to 798 ft btoc. Contacted J.L., he indicated to continue pumping well & not collect samples.
1550 - Lowered pump to 861 ft btoc.
1615 - Stopped pumping. Totalizer @ 6986745 gallons.
1630 - Secured & departed site.

URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/06/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water:	Total Well Depth:	Water Column Height (H):	Top of Casing Elevation:
Gauging Time and initials:	Casing diameter (D)= in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge | Purge Equipment: | Pump Id:

Depth to Water	Time	(gpm) Purge Rate	Hz	(gal) Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
343.84	0755	-	-	-	-	-	-	-	-	-	Set pump @ 924'. Totalizer = 6786745
	0758	18.0	-	54	-	-	-	-	-	-	start pump.
344.40	0804	17.0	-	207	10.13	1152	138	24.78	1.76	114.0	light brown
	0811	17.0	-	275	9.82	1187	63.4	27.04	1.74	85.0	clearing
344.39	0816	17.0	-	360	9.71	1191	55.6	27.56	1.12	72.0	stopped pump
-	0847	10.5	-	-	-	-	-	-	-	-	Set pump @ ~~Set~~ 987'. Begin pumping
-	0851	12.0	-	480	10.20	1089	>1000	29.75	0.68	20.3	chocolate brown
-	0902	14.0	-	550	10.24	1078	>1000	29.42	0.73	20.9	" "
-	0907	15.0	-	625	10.07	1186	275	29.12	1.34	25.2	light brown, clearing
-	0912	15.0	-	700	9.62	1191	56.8	28.90	2.26	33.0	clearing, stopped pump
-	0933	~~8.0~~ 8.0	-	-	-	-	-	-	-	-	Set pump @ 1050'. Begin pumping
-	0948	9.5	-	843	10.12	1098	>1000	30.85	0.21	1.3	Chocolate brown
-	0953	~~9.5~~ 10	-	890	10.16	1076	>1000	30.65	0.18	0.7	" "
-	0958	13.5	-	957.5	9.76	1182	816	29.31	0.92	17.6	light brown clearing
-	1004	14.0	-	1042	9.55	1194	52.2	~~29.56~~ 29.56	1.88	16.8	clearing
-	1010	14.0	-	1126	9.74	1190	21.3	29.84	2.04	~~24~~ 7.2	clearing - Stopped pump

Gallons = ml's/3781
Sample Rate: ______
Total Casing Volumes Removed: ______
Total Gallons Removed: ______

Sample ID.(time): ____________ ( ) Dup ID.: ____________ ( ) Rinsate ID.: ____________ ( )

Analytical Methods: ____________ Sampler: ______

URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/06/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water:	Total Well Depth:	Water Column Height (H):	Top of Casing Elevation:
Gauging Time and initials:	Casing diameter (D)= in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge	Purge Equipment:	Pump Id:

Depth to Water	Time	(gpm) Purge Rate	Hz	(gal) Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
–	1028	7.5	–	–	–	–	–	–	–	–	Set pump @ 1092'. Started pumping
–	1046	10.0	–	1270	10.13	1066	>1000	30.88	0.53	-7.8	chocolate brown. Totalizer not working
–	1050	11.0	–	1314	9.85	1070	>1000	30.74	0.39	~~8.5~~ 5.5 JE	" " . Purge rate determined by bucket test
–	1055	14.0	–	1384	9.91	1183	252	29.11	1.43	4.0	light brown. clearing
–	~~1100~~ 1103 JE	13.0	–	1488	9.81	1191	85.9	29.01	1.75	5.3	Totalizer working again.
–	1108	~~13.0~~ 13.5	–	1556	9.65	1196	32.7	29.85	1.90	16.1	stopped pump
–	1126	9.5	–	–	–	–	–	–	–	–	Set pump @ 1113'. Started pump.
–	1141	11.0	–	1721	9.92	1071	>1000	30.60	0.15	12.2	chocolate brown
–	1151	~~13.5~~ 13.0 JE	–	~~1~~856	9.31	1190	205	29.56	1.73	28.8	clearing
–	1157	13.5	–	1937	9.44	1195	38.6	28.10	2.01	27.5	clearing. stopped pump.
–	1245	6.0	–	–	–	–	–	–	–	–	Set pump @ 1141'. Started pump. Tot not working
–	1250	7.0	–	2182	9.43	1102	>1000	30.21	0.52	25.1	~~choto~~ chocolate brown
–	1253	–	–	–	9.66	1164	>1000	30.50	0.57	18.7	chocolate brown. clearing
–	1255	–	–	–	9.57	1165	>1000	30.15	0.51	27.2	" " Gallons = ml's/3781
–	~~1300~~ 1258	–	–	–	9.46	1180	>1000	29.30	1.05	25.1	clearing ~~light brown~~ Sample Rate:
–	1303	13.0	–	2351	9.59	1187	1056	28.79	1.33	15.7	light brown Total Casing Volumes Removed:
	1310	13.0	–	2442	9.57	1196	225	29.86	1.73	17.0	clearing. light brown Total Gallons Removed:

Sample ID.(time): ______________( ) Dup ID.: ______________( ) Rinsate ID.: ______________( )

Analytical Methods: ______________ Sampler: ______________

URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/06/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water:	Total Well Depth:	Water Column Height (H):	Top of Casing Elevation:
Gauging Time and initials:	Casing diameter (D)= in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge	Purge Equipment:	Pump Id:

Depth to Water	Time	Purge Rate	Hz	Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
–	1315	13.0	–	2507	9.75	1196	64.2	29.98	1.60	12.0	clearing. Stopped pump
–	1436	–	–	–	–	–	–	–	–	-	Set pump @ 819'. Started pump
343.97	1440	12.0	–	2555	9.87	1183	5869	27.10	1.80	17.7	chocolate brown
–	1445	13.0	–	2620	9.74	1186	3442	29.43	1.60	23.1	" " clearing
343.98	1448	13.0	–	2659	9.80	1193	28.7	29.31	1.89	15.2	clearing
343.98	1455	13.0	–	2750	9.82	1194	32.0	29.00	1.80	10.0	clear
343.98	1500	13.0	–	2815	9.89	1198	24.4	29.15	1.97	8.7	clear
–	1503	13.0	–	2854	9.91	1195	12.7	29.63	2.08	6.8	clear
–	1508	13.0	–	2919	9.87	1196	11.1	29.51	2.13	7.7	Clear
343.98	1510	13.0	–	2945	9.84	1194	10.0	29.64	2.09	8.3	Collect sample
											Gallons = ml's/3781
											Sample Rate:
											Total Casing Volumes Removed:
											Total Gallons Removed:

Sample ID.(time): ____________( ) Dup ID.: ____________( ) Rinsate ID.: ____________( )

Analytical Methods: ____________ Sampler: ____________

WDC EXPLORATION & WELLS | PROJECT NAME: | WELL NUMBER:

WELL DEVELOPMENT LOG | JOB NUMBER: | SITE: | PREPARED BY:

METHOD:
PUMP
BAILER
OTHER

DEVELOPMENT CRITERIA:

REPMARKS: Screen 550 800
1046 - 1146

DEVELOPMENT LOG					TOTAL	WATER QUALITY					COMMENTS
DATE	TIME	FLOW RATE (gpm)	DEPTH TO WATER (ft-btoc)	WATER REMOVAL (gal)	WATER REMOVAL (gal)	pH	SPECIFIC Conductivity (mS/cm)	TURBIDITY (NTU)	Temparture (Degrees C)		
4-5	840	~~23gpm~~	343.71								
	845	23gpm									Start pumping at 546'
	900			345		8.33	1889	600	27.6		
	915		344.51	345	690	8.14	1905	210	29.1		
	930		344.22	345	1035	8.12	1952	140	29.9		
	945		344.48	345	1380	8.11	1964	95	30.1		
	1000		344.47	345	1725	8.11	1934	90	30.2		Lower to 588
	1003			69	1794						Stop pumping
	1023										Start pumping at 588
	1030			151	1945	8.02	1917	290	28.9		
	1045			345	2290	7.99	1933	55	29.3		
	1100			345	2635	8.02	1947	45	28.6		
	~~1115~~			~~345~~	~~2980~~						Stop + lower
											~~Stop + lower to 551~~
	1105										Stop lower to [illegible]' 651
	1200	20gpm		115	2750						Resume pumping @ 651
	1205			100	~~2800~~ 2850						

URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/05/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water:	Total Well Depth:	Water Column Height (H):	Top of Casing Elevation:
Gauging Time and initials:	Casing diameter (D)= in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge	Purge Equipment:	Pump Id:

Depth to Water	Time	(gpm) Purge Rate	Hz	Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
–	1200	20	–	~~115~~	–	–	700	–	–	–	Pump set at 651 ft btoc
–	1225	20	–	500	8.64	2225	50.1	27.65	6.30	120.1	
344.43	1243	19	–	242	8.62	2017	35.0	26.73	5.70	67.7	Stopped pump
~~1308~~ (2)	1308	–	–	–	–	–	–	–	–	–	Pump set at 714 ft btoc
–	1313	18.75	–	930	8.62	1971	800	25.90	1.74	67.1	Water is brown
–	1320	19	–	1069	8.34	2001	170	27.15	3.78	75.5	Brownish, clearing
344.56	1330	19	–	1259	8.66	2004	50.3	26.43	4.33	55.5	clearing. Pump stopped
–	1355	–	–	–	–	–	–	–	–	–	Pumpset at 756 ft btoc, Started
–	1403	17	–	1395	9.13	1923	>1000	27.05	1.08	47.4	chocolate brown
344.49	1407	18.5	–	1469	8.72	1988	340	27.10	3.53	57.1	Brownish - clearing
344.53	1416	18.5	–	1634	8.73	1993	76.2	28.20	3.45	52.5	clearing, stopped pump
											Gallons = ml's/3781
~~1438~~ ~~1438~~	1438	18.0	–	–	–	–	–	–	–	–	Pump @ ~~778~~ 778 ft btoc. Start pump Sample Rate:
–	1445	–	–	1762	9.05	1873	>1000	28.15	0.75	48.7	Chocolate brown Total Casing Volumes Removed:
–	1453	18.0	–	1906	8.68	1993	115	28.00	2.70	64.4	~~Total Gallons Removed:~~
344.56	1455	18.5	–	1943	8.76	2004	66.6	28.20	2.84	57.0	Stopped pump

Sample ID.(time): ______________( ) Dup ID.: ______________( ) Rinsate ID.: ______________( )

Analytical Methods: ______________________________ Sampler: __________

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URS

Well Development and Sampling Log

Well Number: Well #3	Date: 4/05/10	Project: Solar One	Project No. 27658188.30001

Gauging Data from Top of Casing (Reference Point)

Depth to Water:	Total Well Depth:	Water Column Height (H):	Top of Casing Elevation:
Gauging Time and initials:	Casing diameter (D)= in.	Pump intake depth (ft bgs) =	

Groundwater Purge Data

Purge Method: Bailer/Standard Purge

Purge Equipment:

Pump Id:

Depth to Water	Time	Purge Rate	Hz	Vol. Removed	pH (Units)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp. (°C)	DO (mg/L)	ORP (mV)	Remarks
–	1550	–	–	–	–	–	–	–	–	–	Start pump. Pump @ 861 ft btoc
344.12	1555	16.5	–	2026	8.87	1872	>1000	28.97	0.54	62.8	Chocolate brown
–	1605	17.0	–	2196	8.67	1998	212	28.59	2.46	70.1	clearing
344.18	1610	17.0	–	2281	8.62	2006	93.8	28.43	3.33	65.1	clearing
344.19	1615	17.0	–	2366	8.68	2007	46.9	28.31	2.76	56.0	Stopped pump.
											Totalizer = 6986745

Gallons = ml's/3781

Sample Rate: ______

Total Casing Volumes Removed: ______

Total Gallons Removed: ______

Sample ID.(time): ____________( ) Dup ID.: ____________( ) Rinsate ID.: ____________( )

Analytical Methods: ______________________ Sampler: ________

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Calscience Environmental Laboratories, Inc.

March 09, 2010

Robert Scott
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Subject: **Calscience Work Order No.: 10-02-1824**
Client Reference: Calico Solar / 27658188.40001

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/22/2010 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

for

Calscience Environmental
Laboratories, Inc.
Vikas Patel
Project Manager

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

URS Corporation		Date Sampled:	02/22/10
2020 East 1st Street, Suite 400		Date Received:	02/22/10
Santa Ana, CA 92705-4032		Date Extracted:	02/23/10
		Date Analyzed:	02/23/10
		Work Order No.:	10-02-1824
Attn:	Robert Scott	Method:	EPA 6010B Filter
RE:	Calico Solar / 27658188.40001	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	SiO_2 Concentration	Reporting Limit
Calico# 1	50.3	0.107
Method Blank	ND	0.107

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

URS Corporation		Date Sampled:	02/22/10
2020 East 1st Street, Suite 400		Date Received:	02/22/10
Santa Ana, CA 92705-4032		Date Extracted:	02/23/10
		Date Analyzed:	02/23/10
		Work Order No.:	10-02-1824
Attn:	Robert Scott	Method:	EPA 6010B Total
RE:	Calico Solar / 27658188.30001	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	SiO_2 Concentration	Reporting Limit
Calico# 1	54.8	0.107
Method Blank	ND	0.107

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	02/22/10
Work Order No:	10-02-1824
Preparation:	EPA 3005A Filt. / EPA 7470A Filt.
Method:	EPA 6010B / EPA 7470A
Units:	mg/L

Project: Calico Solar / 27658188.40001

Page 1 of 2

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-M**	**02/22/10 16:00**	**Aqueous**	**ICP 5300**	**02/23/10**	**02/23/10 15:04**	**100223LA2F**

Comment(s): -Mercury analysis was performed on 02/23/10 16:56 with batch 100223L01F. Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Thallium	ND	0.0150	1	
Arsenic	0.0328	0.0100	1		Vanadium	0.0572	0.0100	1	
Barium	0.0374	0.0100	1		Mercury	ND	0.000500	1	
Beryllium	ND	0.0100	1		Aluminum	ND	0.0500	1	
Cadmium	ND	0.0100	1		Calcium	45.4	0.100	1	
Chromium	0.0310	0.0100	1		Iron	ND	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	16.5	0.100	1	
Copper	ND	0.0100	1		Manganese	0.0822	0.00500	1	
Lead	ND	0.0100	1		Potassium	18.0	0.500	1	
Molybdenum	0.212	0.0100	1		Sodium	545	0.500	1	
Nickel	ND	0.0100	1		Silicon	23.5	0.0500	1	
Selenium	ND	0.0150	1		Zinc	1.11	0.0100	1	
Silver	ND	0.00500	1						

Method Blank	**099-04-008-4,613**	**N/A**	**Aqueous**	**Mercury**	**02/23/10**	**02/23/10 12:29**	**100223L01F**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	**097-01-003-10,188**	**N/A**	**Aqueous**	**ICP 5300**	**02/23/10**	**02/23/10 14:59**	**100223LA2F**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Silver	ND	0.00500	1	
Arsenic	ND	0.0100	1		Thallium	ND	0.0150	1	
Barium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Beryllium	ND	0.0100	1		Aluminum	ND	0.0500	1	
Cadmium	ND	0.0100	1		Calcium	ND	0.100	1	
Chromium	ND	0.0100	1		Iron	ND	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	ND	0.100	1	
Copper	ND	0.0100	1		Manganese	ND	0.00500	1	
Lead	ND	0.0100	1		Potassium	ND	0.500	1	
Molybdenum	ND	0.0100	1		Sodium	ND	0.500	1	
Nickel	ND	0.0100	1		Silicon	ND	0.0500	1	
Selenium	ND	0.0150	1		Zinc	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 02/22/10
Work Order No: 10-02-1824
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Calico Solar / 27658188.40001

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-M**	**02/22/10 16:00**	**Aqueous**	**ICP 5300**	**02/23/10**	**02/23/10 15:06**	**100223LA2**

Comment(s): -Mercury analysis was performed on 02/23/10 16:54 with batch 100223L01. Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Thallium	ND	0.0150	1	
Arsenic	0.0347	0.0100	1		Vanadium	0.0584	0.0100	1	
Barium	0.0427	0.0100	1		Aluminum	0.831	0.0500	1	
Beryllium	ND	0.0100	1		Mercury	ND	0.000500	1	
Cadmium	ND	0.0100	1		Calcium	45.6	0.100	1	
Chromium	0.0342	0.0100	1		Iron	1.39	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	17.0	0.100	1	
Copper	ND	0.0100	1		Manganese	0.101	0.00500	1	
Lead	ND	0.0100	1		Potassium	17.9	0.500	1	
Molybdenum	0.213	0.0100	1		Sodium	547	0.500	1	
Nickel	ND	0.0100	1		Silicon	25.6	0.0500	1	
Selenium	ND	0.0150	1		Zinc	1.36	0.0100	1	
Silver	ND	0.00500	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-04-008-4,614**	**N/A**	**Aqueous**	**Mercury**	**02/23/10**	**02/23/10 12:29**	**100223L01**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-10,187**	**N/A**	**Aqueous**	**ICP 5300**	**02/23/10**	**02/23/10 14:59**	**100223LA2**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Silver	ND	0.00500	1	
Arsenic	ND	0.0100	1		Thallium	ND	0.0150	1	
Barium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Beryllium	ND	0.0100	1		Aluminum	ND	0.0500	1	
Cadmium	ND	0.0100	1		Calcium	ND	0.100	1	
Chromium	ND	0.0100	1		Iron	ND	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	ND	0.100	1	
Copper	ND	0.0100	1		Manganese	ND	0.00500	1	
Lead	ND	0.0100	1		Potassium	ND	0.500	1	
Molybdenum	ND	0.0100	1		Sodium	ND	0.500	1	
Nickel	ND	0.0100	1		Silicon	ND	0.0500	1	
Selenium	ND	0.0150	1		Zinc	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation		Date Received:	02/22/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L

Project: Calico Solar / 27658188.40001

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-I**	**02/22/10 16:00**	**Aqueous**	**GC 49**	**02/23/10**	**02/23/10 12:17**	**100223B02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
C6	<500	500	1		C21-C22	<500	500	1	
C7	<500	500	1		C23-C24	<500	500	1	
C8	<500	500	1		C25-C28	<500	500	1	
C9-C10	<500	500	1		C29-C32	<500	500	1	
C11-C12	<500	500	1		C33-C36	<500	500	1	
C13-C14	<500	500	1		C37-C40	<500	500	1	
C15-C16	<500	500	1		C41-C44	<500	500	1	
C17-C18	<500	500	1		C6-C44 Total	<500	500	1	
C19-C20	<500	500	1						

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	109	68-140	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-308-1,281**	**N/A**	**Aqueous**	**GC 49**	**02/23/10**	**02/23/10 11:32**	**100223B02**

Parameter	Result	RL	DF	Qual
TPH as Diesel	<500	500	1	

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	98	68-140	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	02/22/10
Work Order No:	10-02-1824
Preparation:	EPA 3510C
Method:	EPA 8270C
Units:	ug/L

Project: Calico Solar / 27658188.40001

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-Q**	**02/22/10 16:00**	**Aqueous**	**GC/MS SS**	**02/23/10**	**02/23/10 12:21**	**100223L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	<10	10	1		4-Nitrophenol	<10	10	1	
Aniline	<10	10	1		Dibenzofuran	<10	10	1	
Phenol	<10	10	1		2,4-Dinitrotoluene	<10	10	1	
Bis(2-Chloroethyl) Ether	<25	25	1		2,6-Dinitrotoluene	<10	10	1	
2-Chlorophenol	<10	10	1		Diethyl Phthalate	<10	10	1	
1,3-Dichlorobenzene	<10	10	1		4-Chlorophenyl-Phenyl Ether	<10	10	1	
1,4-Dichlorobenzene	<10	10	1		Fluorene	<10	10	1	
Benzyl Alcohol	<10	10	1		4-Nitroaniline	<10	10	1	
1,2-Dichlorobenzene	<10	10	1		Azobenzene	<10	10	1	
2-Methylphenol	<10	10	1		4,6-Dinitro-2-Methylphenol	<50	50	1	
Bis(2-Chloroisopropyl) Ether	<10	10	1		N-Nitrosodiphenylamine	<10	10	1	
3/4-Methylphenol	<10	10	1		4-Bromophenyl-Phenyl Ether	<10	10	1	
N-Nitroso-di-n-propylamine	<10	10	1		Hexachlorobenzene	<10	10	1	
Hexachloroethane	<10	10	1		Pentachlorophenol	<10	10	1	
Nitrobenzene	<25	25	1		Phenanthrene	<10	10	1	
Isophorone	<10	10	1		Anthracene	<10	10	1	
2-Nitrophenol	<10	10	1		Di-n-Butyl Phthalate	<10	10	1	
2,4-Dimethylphenol	<10	10	1		Fluoranthene	<10	10	1	
Benzoic Acid	<50	50	1		Benzidine	<50	50	1	
Bis(2-Chloroethoxy) Methane	<10	10	1		Pyrene	<10	10	1	
2,4-Dichlorophenol	<10	10	1		Pyridine	<10	10	1	
Naphthalene	<10	10	1		Butyl Benzyl Phthalate	<10	10	1	
4-Chloroaniline	<10	10	1		3,3'-Dichlorobenzidine	<25	25	1	
Hexachloro-1,3-Butadiene	<10	10	1		Benzo (a) Anthracene	<10	10	1	
4-Chloro-3-Methylphenol	<10	10	1		Bis(2-Ethylhexyl) Phthalate	<10	10	1	
2-Methylnaphthalene	<10	10	1		Chrysene	<10	10	1	
Hexachlorocyclopentadiene	<25	25	1		Di-n-Octyl Phthalate	<10	10	1	
2,4,6-Trichlorophenol	<10	10	1		Benzo (k) Fluoranthene	<10	10	1	
2,4,5-Trichlorophenol	<10	10	1		Benzo (b) Fluoranthene	<10	10	1	
2-Chloronaphthalene	<10	10	1		Benzo (a) Pyrene	<10	10	1	
2-Nitroaniline	<10	10	1		Benzo (g,h,i) Perylene	<10	10	1	
Dimethyl Phthalate	<10	10	1		Indeno (1,2,3-c,d) Pyrene	<10	10	1	
Acenaphthylene	<10	10	1		Dibenz (a,h) Anthracene	<10	10	1	
3-Nitroaniline	<10	10	1		1-Methylnaphthalene	<10	10	1	
Acenaphthene	<10	10	1		1,2,4-Trichlorobenzene	<10	10	1	
2,4-Dinitrophenol	<50	50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	57	7-121		Phenol-d6	38	1-127	
Nitrobenzene-d5	100	50-146		2-Fluorobiphenyl	104	42-138	
2,4,6-Tribromophenol	88	41-137		p-Terphenyl-d14	124	47-173	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation		Date Received:	02/22/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 3510C
		Method:	EPA 8270C
		Units:	ug/L
Project: Calico Solar / 27658188.40001			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-003-2,847**	**N/A**	**Aqueous**	**GC/MS SS**	**02/23/10**	**02/23/10 11:55**	**100223L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	<10	10	1		4-Nitrophenol	<10	10	1	
Aniline	<10	10	1		Dibenzofuran	<10	10	1	
Phenol	<10	10	1		2,4-Dinitrotoluene	<10	10	1	
Bis(2-Chloroethyl) Ether	<25	25	1		2,6-Dinitrotoluene	<10	10	1	
2-Chlorophenol	<10	10	1		Diethyl Phthalate	<10	10	1	
1,3-Dichlorobenzene	<10	10	1		4-Chlorophenyl-Phenyl Ether	<10	10	1	
1,4-Dichlorobenzene	<10	10	1		Fluorene	<10	10	1	
Benzyl Alcohol	<10	10	1		4-Nitroaniline	<10	10	1	
1,2-Dichlorobenzene	<10	10	1		Azobenzene	<10	10	1	
2-Methylphenol	<10	10	1		4,6-Dinitro-2-Methylphenol	<50	50	1	
Bis(2-Chloroisopropyl) Ether	<10	10	1		N-Nitrosodiphenylamine	<10	10	1	
3/4-Methylphenol	<10	10	1		4-Bromophenyl-Phenyl Ether	<10	10	1	
N-Nitroso-di-n-propylamine	<10	10	1		Hexachlorobenzene	<10	10	1	
Hexachloroethane	<10	10	1		Pentachlorophenol	<10	10	1	
Nitrobenzene	<25	25	1		Phenanthrene	<10	10	1	
Isophorone	<10	10	1		Anthracene	<10	10	1	
2-Nitrophenol	<10	10	1		Di-n-Butyl Phthalate	<10	10	1	
2,4-Dimethylphenol	<10	10	1		Fluoranthene	<10	10	1	
Benzoic Acid	<50	50	1		Benzidine	<50	50	1	
Bis(2-Chloroethoxy) Methane	<10	10	1		Pyrene	<10	10	1	
2,4-Dichlorophenol	<10	10	1		Pyridine	<10	10	1	
Naphthalene	<10	10	1		Butyl Benzyl Phthalate	<10	10	1	
4-Chloroaniline	<10	10	1		3,3'-Dichlorobenzidine	<25	25	1	
Hexachloro-1,3-Butadiene	<10	10	1		Benzo (a) Anthracene	<10	10	1	
4-Chloro-3-Methylphenol	<10	10	1		Bis(2-Ethylhexyl) Phthalate	<10	10	1	
2-Methylnaphthalene	<10	10	1		Chrysene	<10	10	1	
Hexachlorocyclopentadiene	<25	25	1		Di-n-Octyl Phthalate	<10	10	1	
2,4,6-Trichlorophenol	<10	10	1		Benzo (k) Fluoranthene	<10	10	1	
2,4,5-Trichlorophenol	<10	10	1		Benzo (b) Fluoranthene	<10	10	1	
2-Chloronaphthalene	<10	10	1		Benzo (a) Pyrene	<10	10	1	
2-Nitroaniline	<10	10	1		Benzo (g,h,i) Perylene	<10	10	1	
Dimethyl Phthalate	<10	10	1		Indeno (1,2,3-c,d) Pyrene	<10	10	1	
Acenaphthylene	<10	10	1		Dibenz (a,h) Anthracene	<10	10	1	
3-Nitroaniline	<10	10	1		1-Methylnaphthalene	<10	10	1	
Acenaphthene	<10	10	1		1,2,4-Trichlorobenzene	<10	10	1	
2,4-Dinitrophenol	<50	50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	53	7-121		Phenol-d6	38	1-127	
Nitrobenzene-d5	102	50-146		2-Fluorobiphenyl	109	42-138	
2,4,6-Tribromophenol	72	41-137		p-Terphenyl-d14	120	47-173	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 02/22/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-02-1824
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8081A
	Units: ug/L

Project: Calico Solar / 27658188.40001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-R**	**02/22/10 16:00**	**Aqueous**	**GC 44**	**02/23/10**	**02/23/10 17:34**	**100223L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	<0.10	0.10	1		Endrin	<0.10	0.10	1	
Gamma-BHC	<0.10	0.10	1		Endrin Aldehyde	<0.10	0.10	1	
Beta-BHC	<0.10	0.10	1		4,4'-DDD	<0.10	0.10	1	
Heptachlor	<0.10	0.10	1		Endosulfan II	<0.10	0.10	1	
Delta-BHC	<0.10	0.10	1		4,4'-DDT	<0.10	0.10	1	
Aldrin	<0.10	0.10	1		Endosulfan Sulfate	<0.10	0.10	1	
Heptachlor Epoxide	<0.10	0.10	1		Methoxychlor	<0.10	0.10	1	
Endosulfan I	<0.10	0.10	1		Chlordane	<1.0	1.0	1	
Dieldrin	<0.10	0.10	1		Toxaphene	<2.0	2.0	1	
4,4'-DDE	<0.10	0.10	1		Endrin Ketone	<0.10	0.10	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-135			2,4,5,6-Tetrachloro-m-Xylene	90	50-135		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-529-335**	**N/A**	**Aqueous**	**GC 44**	**02/23/10**	**02/23/10 14:23**	**100223L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	<0.10	0.10	1		Endrin	<0.10	0.10	1	
Gamma-BHC	<0.10	0.10	1		Endrin Aldehyde	<0.10	0.10	1	
Beta-BHC	<0.10	0.10	1		4,4'-DDD	<0.10	0.10	1	
Heptachlor	<0.10	0.10	1		Endosulfan II	<0.10	0.10	1	
Delta-BHC	<0.10	0.10	1		4,4'-DDT	<0.10	0.10	1	
Aldrin	<0.10	0.10	1		Endosulfan Sulfate	<0.10	0.10	1	
Heptachlor Epoxide	<0.10	0.10	1		Methoxychlor	<0.10	0.10	1	
Endosulfan I	<0.10	0.10	1		Chlordane	<1.0	1.0	1	
Dieldrin	<0.10	0.10	1		Toxaphene	<2.0	2.0	1	
4,4'-DDE	<0.10	0.10	1		Endrin Ketone	<0.10	0.10	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	98	50-135			2,4,5,6-Tetrachloro-m-Xylene	91	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation		Date Received:	02/22/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 3510C
		Method:	EPA 8082
		Units:	ug/L

Project: Calico Solar / 27658188.40001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-K**	**02/22/10 16:00**	**Aqueous**	**GC 31**	**02/23/10**	**02/23/10 12:46**	**100223L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	<1.0	1.0	1		Aroclor-1248	<1.0	1.0	1	
Aroclor-1221	<1.0	1.0	1		Aroclor-1254	<1.0	1.0	1	
Aroclor-1232	<1.0	1.0	1		Aroclor-1260	<1.0	1.0	1	
Aroclor-1242	<1.0	1.0	1		Aroclor-1262	<1.0	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	94	50-135			2,4,5,6-Tetrachloro-m-Xylene	88	50-135		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-533-399**	**N/A**	**Aqueous**	**GC 31**	**02/23/10**	**02/23/10 12:27**	**100223L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	<1.0	1.0	1		Aroclor-1248	<1.0	1.0	1	
Aroclor-1221	<1.0	1.0	1		Aroclor-1254	<1.0	1.0	1	
Aroclor-1232	<1.0	1.0	1		Aroclor-1260	<1.0	1.0	1	
Aroclor-1242	<1.0	1.0	1		Aroclor-1262	<1.0	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	105	50-135			2,4,5,6-Tetrachloro-m-Xylene	95	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation		Date Received:	02/22/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: Calico Solar / 27658188.40001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Calico# 1	**10-02-1824-1-A**	**02/22/10 16:00**	**Aqueous**	**GC/MS FF**	**02/23/10**	**02/23/10 16:55**	**100223L01**

Parameter	Result	RL	DF	Qual
Acetone	< 50	50	1	
Benzene	< 0.50	0.50	1	
Bromobenzene	< 1.0	1.0	1	
Bromochloromethane	< 1.0	1.0	1	
Bromodichloromethane	< 1.0	1.0	1	
Bromoform	< 1.0	1.0	1	
Bromomethane	< 10	10	1	
2-Butanone	< 10	10	1	
n-Butylbenzene	< 1.0	1.0	1	
sec-Butylbenzene	< 1.0	1.0	1	
tert-Butylbenzene	< 1.0	1.0	1	
Carbon Disulfide	< 10	10	1	
Carbon Tetrachloride	< 0.50	0.50	1	
Chlorobenzene	< 1.0	1.0	1	
Chloroethane	< 5.0	5.0	1	
Chloroform	< 1.0	1.0	1	
Chloromethane	< 10	10	1	
2-Chlorotoluene	< 1.0	1.0	1	
4-Chlorotoluene	< 1.0	1.0	1	
Dibromochloromethane	< 1.0	1.0	1	
1,2-Dibromo-3-Chloropropane	< 5.0	5.0	1	
1,2-Dibromoethane	< 1.0	1.0	1	
Dibromomethane	< 1.0	1.0	1	
1,2-Dichlorobenzene	< 1.0	1.0	1	
1,3-Dichlorobenzene	< 1.0	1.0	1	
1,4-Dichlorobenzene	< 1.0	1.0	1	
Dichlorodifluoromethane	< 1.0	1.0	1	
1,1-Dichloroethane	< 1.0	1.0	1	
1,2-Dichloroethane	< 0.50	0.50	1	
1,1-Dichloroethene	< 1.0	1.0	1	
c-1,2-Dichloroethene	< 1.0	1.0	1	
t-1,2-Dichloroethene	< 1.0	1.0	1	
1,2-Dichloropropane	< 1.0	1.0	1	
1,3-Dichloropropane	< 1.0	1.0	1	
2,2-Dichloropropane	< 1.0	1.0	1	
1,1-Dichloropropene	< 1.0	1.0	1	
c-1,3-Dichloropropene	< 0.50	0.50	1	
t-1,3-Dichloropropene	< 0.50	0.50	1	
Ethylbenzene	< 1.0	1.0	1	
2-Hexanone	< 10	10	1	
Isopropylbenzene	< 1.0	1.0	1	
p-Isopropyltoluene	< 1.0	1.0	1	
Methylene Chloride	< 10	10	1	
4-Methyl-2-Pentanone	< 10	10	1	
Naphthalene	< 10	10	1	
n-Propylbenzene	< 1.0	1.0	1	
Styrene	< 1.0	1.0	1	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	1	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	1	
Tetrachloroethene	< 1.0	1.0	1	
Toluene	8.5	1.0	1	
1,2,3-Trichlorobenzene	< 1.0	1.0	1	
1,2,4-Trichlorobenzene	< 1.0	1.0	1	
1,1,1-Trichloroethane	< 1.0	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 10	10	1	
1,1,2-Trichloroethane	< 1.0	1.0	1	
Trichloroethene	< 1.0	1.0	1	
Trichlorofluoromethane	< 10	10	1	
1,2,3-Trichloropropane	< 5.0	5.0	1	
1,2,4-Trimethylbenzene	< 1.0	1.0	1	
1,3,5-Trimethylbenzene	< 1.0	1.0	1	
Vinyl Acetate	< 10	10	1	
Vinyl Chloride	< 0.50	0.50	1	
Xylenes (total)	1.5	1.0	1	
Methyl-t-Butyl Ether (MTBE)	< 1.0	1.0	1	
Tert-Butyl Alcohol (TBA)	< 10	10	1	
Diisopropyl Ether (DIPE)	< 2.0	2.0	1	
Ethyl-t-Butyl Ether (ETBE)	< 2.0	2.0	1	
Tert-Amyl-Methyl Ether (TAME)	< 2.0	2.0	1	
Ethanol	<100	100	1	

Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	102	80-132	
Toluene-d8	100	80-120	
1,2-Dichloroethane-d4	106	80-141	
1,4-Bromofluorobenzene	97	76-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 02/22/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-02-1824
San Diego, CA 92108-4319	Preparation: EPA 5030B
	Method: EPA 8260B
	Units: ug/L

Project: Calico Solar / 27658188.40001

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-10-006-32,314**	**N/A**	**Aqueous**	**GC/MS FF**	**02/23/10**	**02/23/10 14:06**	**100223L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	< 50	50	1		1,1-Dichloropropene	< 1.0	1.0	1	
Benzene	< 0.50	0.50	1		c-1,3-Dichloropropene	< 0.50	0.50	1	
Bromobenzene	< 1.0	1.0	1		t-1,3-Dichloropropene	< 0.50	0.50	1	
Bromochloromethane	< 1.0	1.0	1		Ethylbenzene	< 1.0	1.0	1	
Bromodichloromethane	< 1.0	1.0	1		2-Hexanone	< 10	10	1	
Bromoform	< 1.0	1.0	1		Isopropylbenzene	< 1.0	1.0	1	
Bromomethane	< 10	10	1		p-Isopropyltoluene	< 1.0	1.0	1	
2-Butanone	< 10	10	1		Methylene Chloride	< 10	10	1	
n-Butylbenzene	< 1.0	1.0	1		4-Methyl-2-Pentanone	< 10	10	1	
sec-Butylbenzene	< 1.0	1.0	1		Naphthalene	< 10	10	1	
tert-Butylbenzene	< 1.0	1.0	1		n-Propylbenzene	< 1.0	1.0	1	
Carbon Disulfide	< 10	10	1		Styrene	< 1.0	1.0	1	
Carbon Tetrachloride	< 0.50	0.50	1		1,1,1,2-Tetrachloroethane	< 1.0	1.0	1	
Chlorobenzene	< 1.0	1.0	1		1,1,2,2-Tetrachloroethane	< 1.0	1.0	1	
Chloroethane	< 5.0	5.0	1		Tetrachloroethene	< 1.0	1.0	1	
Chloroform	< 1.0	1.0	1		Toluene	< 1.0	1.0	1	
Chloromethane	< 10	10	1		1,2,3-Trichlorobenzene	< 1.0	1.0	1	
2-Chlorotoluene	< 1.0	1.0	1		1,2,4-Trichlorobenzene	< 1.0	1.0	1	
4-Chlorotoluene	< 1.0	1.0	1		1,1,1-Trichloroethane	< 1.0	1.0	1	
Dibromochloromethane	< 1.0	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	< 10	10	1	
1,2-Dibromo-3-Chloropropane	< 5.0	5.0	1		1,1,2-Trichloroethane	< 1.0	1.0	1	
1,2-Dibromoethane	< 1.0	1.0	1		Trichloroethene	< 1.0	1.0	1	
Dibromomethane	< 1.0	1.0	1		Trichlorofluoromethane	< 10	10	1	
1,2-Dichlorobenzene	< 1.0	1.0	1		1,2,3-Trichloropropane	< 5.0	5.0	1	
1,3-Dichlorobenzene	< 1.0	1.0	1		1,2,4-Trimethylbenzene	< 1.0	1.0	1	
1,4-Dichlorobenzene	< 1.0	1.0	1		1,3,5-Trimethylbenzene	< 1.0	1.0	1	
Dichlorodifluoromethane	< 1.0	1.0	1		Vinyl Acetate	< 10	10	1	
1,1-Dichloroethane	< 1.0	1.0	1		Vinyl Chloride	< 0.50	0.50	1	
1,2-Dichloroethane	< 0.50	0.50	1		Xylenes (total)	< 1.0	1.0	1	
1,1-Dichloroethene	< 1.0	1.0	1		Methyl-t-Butyl Ether (MTBE)	< 1.0	1.0	1	
c-1,2-Dichloroethene	< 1.0	1.0	1		Tert-Butyl Alcohol (TBA)	< 10	10	1	
t-1,2-Dichloroethene	< 1.0	1.0	1		Diisopropyl Ether (DIPE)	< 2.0	2.0	1	
1,2-Dichloropropane	< 1.0	1.0	1		Ethyl-t-Butyl Ether (ETBE)	< 2.0	2.0	1	
1,3-Dichloropropane	< 1.0	1.0	1		Tert-Amyl-Methyl Ether (TAME)	< 2.0	2.0	1	
2,2-Dichloropropane	< 1.0	1.0	1		Ethanol	<100	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	99	80-132		1,2-Dichloroethane-d4	102	80-141	
Toluene-d8	97	80-120		1,4-Bromofluorobenzene	96	76-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 02/22/10
Work Order No: 10-02-1824

Project: Calico Solar / 27658188.40001

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Client Sample Number	Lab Sample Number	Date Collected	Matrix
Calico# 1	**10-02-1824-1**	**02/22/10**	**Aqueous**

Comment(s): (63) Sample analyzed outside recommended holding time.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Fluoride	1.4	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
Chloride	190	5.0	5		mg/L	N/A	02/23/10	EPA 300.0
Nitrate (as N)	4.0	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
o-Phosphate (as P)	< 0.10	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
Sulfate	900	20	20		mg/L	N/A	02/23/10	EPA 300.0
Turbidity	27	1.0	1		NTU	N/A	02/24/10	SM 2130 B
Alkalinity, Total (as CaCO3)	134	5.0	1		mg/L	N/A	02/23/10	SM 2320B
Bicarbonate (as CaCO3)	134	5.0	1		mg/L	N/A	02/23/10	SM 2320B
Carbonate (as CaCO3) (63)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Hydroxide (as CaCO3) (63)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Specific Conductance	2600	10	1		umhos/cm	N/A	02/23/10	SM 2510 B
Solids, Total Dissolved	1800	10	1		mg/L	02/23/10	02/23/10	SM 2540 C
Solids, Total Suspended	37	1.0	1		mg/L	02/23/10	02/23/10	SM 2540 D
pH	7.85	0.01	1		pH units	N/A	02/23/10	SM 4500 H+ B
Phosphorus, Total	<0.10	0.10	1		mg/L	02/23/10	02/23/10	SM 4500 P B/E
Cyanide, Total	<0.050	0.050	1		mg/L	02/23/10	02/23/10	SM 4500-CN E
Carbon Dioxide	2.5	1.0	1		mg/L	N/A	02/23/10	SM4500-CO2D

Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Fluoride	<0.10	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
Chloride	<1.0	1.0	1		mg/L	N/A	02/23/10	EPA 300.0
Nitrate (as N)	<0.10	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
o-Phosphate (as P)	<0.10	0.10	1		mg/L	N/A	02/23/10	EPA 300.0
Sulfate	<1.0	1.0	1		mg/L	N/A	02/23/10	EPA 300.0
Alkalinity, Total (as CaCO3)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Bicarbonate (as CaCO3)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Carbonate (as CaCO3)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Hydroxide (as CaCO3)	<1.0	1.0	1		mg/L	N/A	02/23/10	SM 2320B
Solids, Total Dissolved	<1.0	1.0	1		mg/L	02/23/10	02/23/10	SM 2540 C
Solids, Total Suspended	<1.0	1.0	1		mg/L	02/23/10	02/23/10	SM 2540 D
Phosphorus, Total	<0.10	0.10	1		mg/L	02/23/10	02/23/10	SM 4500 P B/E
Cyanide, Total	<0.050	0.050	1		mg/L	02/23/10	02/23/10	SM 4500-CN E

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 02/22/10
Work Order No: 10-02-1824
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1734-1	**Aqueous**	**ICP 5300**	**02/23/10**	**02/24/10**	**100223SA2**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	108	108	72-132	0	0-10	
Arsenic	110	113	80-140	2	0-11	
Barium	106	105	87-123	0	0-6	
Beryllium	100	101	89-119	1	0-8	
Cadmium	99	100	82-124	1	0-7	
Chromium	96	97	86-122	1	0-8	
Cobalt	105	106	83-125	2	0-7	
Copper	110	111	78-126	1	0-7	
Lead	100	102	84-120	2	0-7	
Molybdenum	102	103	78-126	1	0-7	
Nickel	101	102	84-120	1	0-7	
Selenium	109	109	79-127	0	0-9	
Silver	110	110	86-128	0	0-7	
Thallium	99	102	79-121	3	0-8	
Vanadium	103	103	88-118	0	0-7	
Aluminum	111	114	73-145	2	0-16	
Calcium	4X	4X	77-113	4X	0-11	Q
Iron	99	101	65-149	1	0-21	
Magnesium	4X	4X	56-140	4X	0-11	Q
Manganese	101	102	86-116	1	0-7	
Potassium	4X	4X	83-131	4X	0-7	Q
Sodium	4X	4X	73-127	4X	0-9	Q
Silicon	4X	4X	24-180	4X	0-15	Q
Zinc	100	104	89-131	3	0-8	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation		Date Received:	02/22/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 7470A Filt.
		Method:	EPA 7470A

Project Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1712-16	**Aqueous**	**Mercury**	**02/23/10**	**02/23/10**	**100223S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	100	101	57-141	1	0-10	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 02/22/10
Work Order No: 10-02-1824
Preparation: EPA 5030B
Method: EPA 8260B

Project Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1808-1	**Aqueous**	**GC/MS FF**	**02/23/10**	**02/23/10**	**100223S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	106	112	72-120	5	0-20	
Carbon Tetrachloride	108	113	63-135	5	0-20	
Chlorobenzene	105	106	80-120	1	0-20	
1,2-Dibromoethane	107	114	80-120	6	0-20	
1,2-Dichlorobenzene	106	104	80-120	1	0-20	
1,1-Dichloroethene	106	111	60-132	5	0-24	
Ethylbenzene	107	111	78-120	3	0-20	
Toluene	105	108	74-122	3	0-20	
Trichloroethene	101	103	69-120	3	0-20	
Vinyl Chloride	120	125	58-130	4	0-20	
Methyl-t-Butyl Ether (MTBE)	107	112	72-126	5	0-21	
Tert-Butyl Alcohol (TBA)	97	100	72-126	3	0-20	
Diisopropyl Ether (DIPE)	109	113	71-137	3	0-23	
Ethyl-t-Butyl Ether (ETBE)	107	112	74-128	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	106	109	76-124	2	0-20	
Ethanol	101	96	35-167	5	0-48	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824

Project: Calico Solar / 27658188.40001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	10-02-1887-1	02/23/10	2/23/10	103	101	70-130	2	0-25	
Fluoride	EPA 300.0	Calico# 1	02/23/10	N/A	101	102	80-120	1	0-20	
Chloride	EPA 300.0	Calico# 1	02/23/10	N/A	105	106	80-120	0	0-20	
Nitrate (as N)	EPA 300.0	Calico# 1	02/23/10	N/A	105	105	80-120	0	0-20	
o-Phosphate (as P)	EPA 300.0	Calico# 1	02/23/10	N/A	107	110	80-120	3	0-20	
Sulfate	EPA 300.0	Calico# 1	02/23/10	N/A	105	105	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824

Project: Calico Solar / 27658188.40001

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	Calico# 1	02/23/10	7.85	7.83	0	0-25	
Specific Conductance	SM 2510 B	Calico# 1	02/23/10	2600	2600	0	0-25	
Turbidity	SM 2130 B	Calico# 1	02/24/10	27	26	2	0-25	
Carbon Dioxide	SM4500-CO2D	Calico# 1	02/23/10	2.5	2.6	2	0-25	
Alkalinity, Total (as CaCO3)	SM 2320B	10-02-1103-1	02/23/10	319	319	0	0-25	
Bicarbonate (as CaCO3)	SM 2320B	10-02-1103-1	02/23/10	319	319	0	0-25	
Carbonate (as CaCO3)	SM 2320B	10-02-1103-1	02/23/10	ND	ND	NA	0-25	
Hydroxide (as CaCO3)	SM 2320B	10-02-1103-1	02/23/10	ND	ND	NA	0-25	
Solids, Total Suspended	SM 2540 D	10-02-1731-3	02/23/10	231	214	8	0-20	
Solids, Total Dissolved	SM 2540 C	10-02-1379-2	02/23/10	1410	1390	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

URS Corporation		Date Received:	N/A
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-003-10,187	**Aqueous**	**ICP 5300**	**02/23/10**	**100223-la-2**	**100223LA2**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	ME CL	Qualifiers
Antimony	0.500	0.433	87	80-120	73-127	
Arsenic	0.500	0.425	85	80-120	73-127	
Barium	0.500	0.481	96	80-120	73-127	
Beryllium	0.500	0.447	89	80-120	73-127	
Cadmium	0.500	0.479	96	80-120	73-127	
Chromium	0.500	0.463	93	80-120	73-127	
Cobalt	0.500	0.511	102	80-120	73-127	
Copper	0.500	0.468	94	80-120	73-127	
Lead	0.500	0.506	101	80-120	73-127	
Molybdenum	0.500	0.483	97	80-120	73-127	
Nickel	0.500	0.499	100	80-120	73-127	
Selenium	0.500	0.468	94	80-120	73-127	
Silver	0.250	0.243	97	80-120	73-127	
Thallium	0.500	0.474	95	80-120	73-127	
Vanadium	0.500	0.471	94	80-120	73-127	
Aluminum	0.500	0.463	93	80-120	73-127	
Calcium	0.500	0.469	94	80-120	73-127	
Iron	0.500	0.486	97	80-120	73-127	
Magnesium	0.500	0.482	96	80-120	73-127	
Manganese	0.500	0.468	94	80-120	73-127	
Potassium	5.00	4.69	94	80-120	73-127	
Sodium	5.00	4.72	94	80-120	73-127	
Silicon	0.500	0.533	107	80-120	73-127	
Zinc	0.500	0.491	98	80-120	73-127	

Total number of LCS compounds : 24
Total number of ME compounds: 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824
Preparation: EPA 3005A Filt.
Method: EPA 6010B

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-003-10,188	**Aqueous**	**ICP 5300**	**02/23/10**	**100223-la-2**	**100223LA2F**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	ME CL	Qualifiers
Antimony	0.500	0.433	87	80-120	73-127	
Arsenic	0.500	0.425	85	80-120	73-127	
Barium	0.500	0.481	96	80-120	73-127	
Beryllium	0.500	0.447	89	80-120	73-127	
Cadmium	0.500	0.479	96	80-120	73-127	
Chromium	0.500	0.463	93	80-120	73-127	
Cobalt	0.500	0.511	102	80-120	73-127	
Copper	0.500	0.468	94	80-120	73-127	
Lead	0.500	0.506	101	80-120	73-127	
Molybdenum	0.500	0.483	97	80-120	73-127	
Nickel	0.500	0.499	100	80-120	73-127	
Selenium	0.500	0.468	94	80-120	73-127	
Silver	0.250	0.243	97	80-120	73-127	
Thallium	0.500	0.474	95	80-120	73-127	
Vanadium	0.500	0.471	94	80-120	73-127	
Aluminum	0.500	0.463	93	80-120	73-127	
Calcium	0.500	0.469	94	80-120	73-127	
Iron	0.500	0.486	97	80-120	73-127	
Magnesium	0.500	0.482	96	80-120	73-127	
Manganese	0.500	0.468	94	80-120	73-127	
Potassium	5.00	4.69	94	80-120	73-127	
Sodium	5.00	4.72	94	80-120	73-127	
Silicon	0.500	0.533	107	80-120	73-127	
Zinc	0.500	0.491	98	80-120	73-127	

Total number of LCS compounds : 24
Total number of ME compounds: 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824
Preparation: EPA 3510C
Method: EPA 8015B (M)

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-308-1,281	**Aqueous**	**GC 49**	**02/23/10**	**02/23/10**	**100223B02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	110	113	75-117	3	0-13	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	N/A
Work Order No:	10-02-1824
Preparation:	EPA 7470A Total
Method:	EPA 7470A

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-4,614	**Aqueous**	**Mercury**	**02/23/10**	**02/23/10**	**100223L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	100	100	85-121	0	0-10	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

nelac

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824
Preparation: EPA 7470A Filt.
Method: EPA 7470A

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-4,613	**Aqueous**	**Mercury**	**02/23/10**	**02/23/10**	**100223L01F**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	100	100	85-121	0	0-10	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824
Preparation: EPA 3510C
Method: EPA 8270C

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-003-2,847	**Aqueous**	**GC/MS SS**	**02/23/10**	**02/23/10**	**100223L03**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Phenol	35	35	4-142	0-165	0	0-24	
2-Chlorophenol	81	82	53-113	43-123	1	0-17	
1,4-Dichlorobenzene	77	75	50-122	38-134	3	0-19	
N-Nitroso-di-n-propylamine	87	86	56-146	41-161	1	0-22	
Naphthalene	86	85	21-133	2-152	1	0-20	
4-Chloro-3-Methylphenol	72	72	55-121	44-132	1	0-18	
Dimethyl Phthalate	102	100	0-112	0-131	2	0-20	
Acenaphthylene	88	86	33-145	14-164	2	0-20	
Acenaphthene	102	101	55-139	41-153	1	0-17	
4-Nitrophenol	15	15	1-145	0-169	1	0-29	
2,4-Dinitrotoluene	96	94	41-161	21-181	2	0-22	
Fluorene	104	102	59-121	49-131	1	0-20	
Pentachlorophenol	78	78	34-130	18-146	0	0-23	
Pyrene	114	116	38-170	16-192	2	0-27	
Butyl Benzyl Phthalate	111	111	0-152	0-177	0	0-20	
1,2,4-Trichlorobenzene	85	84	49-121	37-133	1	0-19	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824
Preparation: EPA 3510C
Method: EPA 8081A

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-335	Aqueous	GC 44	02/23/10	02/23/10	100223L01

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Alpha-BHC	76	76	50-135	36-149	0	0-25	
Gamma-BHC	76	76	50-135	36-149	0	0-25	
Beta-BHC	73	73	50-135	36-149	1	0-25	
Heptachlor	73	73	50-135	36-149	1	0-25	
Delta-BHC	74	74	50-135	36-149	0	0-25	
Aldrin	73	73	50-135	36-149	0	0-25	
Heptachlor Epoxide	74	75	50-135	36-149	1	0-25	
Endosulfan I	75	76	50-135	36-149	2	0-25	
Dieldrin	76	76	50-135	36-149	1	0-25	
4,4'-DDE	77	77	50-135	36-149	0	0-25	
Endrin	59	57	50-135	36-149	3	0-25	
Endrin Aldehyde	87	86	50-135	36-149	1	0-25	
4,4'-DDD	80	80	50-135	36-149	0	0-25	
Endosulfan II	75	76	50-135	36-149	1	0-25	
4,4'-DDT	74	73	50-135	36-149	1	0-25	
Endosulfan Sulfate	74	75	50-135	36-149	0	0-25	
Methoxychlor	71	71	50-135	36-149	0	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation	Date Received: N/A
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-02-1824
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8082

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-399	**Aqueous**	**GC 31**	**02/23/10**	**02/23/10**	**100223L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	88	78	50-135	11	0-25	
Aroclor-1260	88	79	50-135	10	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation		Date Received:	N/A
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-02-1824
San Diego, CA 92108-4319		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: Calico Solar / 27658188.40001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-006-32,314	**Aqueous**	**GC/MS FF**	**02/23/10**	**02/23/10**	**100223L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	107	103	80-122	73-129	4	0-20	
Carbon Tetrachloride	105	113	68-140	56-152	7	0-20	
Chlorobenzene	109	107	80-120	73-127	2	0-20	
1,2-Dibromoethane	108	112	80-121	73-128	3	0-20	
1,2-Dichlorobenzene	108	108	80-120	73-127	0	0-20	
1,1-Dichloroethene	98	100	72-132	62-142	3	0-25	
Ethylbenzene	111	109	80-126	72-134	3	0-20	
Toluene	106	101	80-121	73-128	5	0-20	
Trichloroethene	100	97	80-123	73-130	3	0-20	
Vinyl Chloride	119	119	67-133	56-144	0	0-20	
Methyl-t-Butyl Ether (MTBE)	101	105	75-123	67-131	4	0-20	
Tert-Butyl Alcohol (TBA)	99	103	75-123	67-131	4	0-20	
Diisopropyl Ether (DIPE)	103	107	71-131	61-141	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	101	107	76-124	68-132	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	105	103	80-123	73-130	2	0-20	
Ethanol	110	103	61-139	48-152	6	0-27	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824

Project: Calico Solar / 27658188.40001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Fluoride	EPA 300.0	099-12-906-803	N/A	02/23/10	98	98	90-110	0	0-15	
Chloride	EPA 300.0	099-12-906-803	N/A	02/23/10	102	102	90-110	1	0-15	
Nitrate (as N)	EPA 300.0	099-12-906-803	N/A	02/23/10	102	102	90-110	0	0-15	
o-Phosphate (as P)	EPA 300.0	099-12-906-803	N/A	02/23/10	105	105	90-110	0	0-15	
Sulfate	EPA 300.0	099-12-906-803	N/A	02/23/10	100	100	90-110	0	0-15	
Cyanide, Total	SM 4500-CN E	099-05-061-2,800	02/23/10	02/23/10	82	82	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-02-1824

Project: Calico Solar / 27658188.40001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	099-05-098-2,110	02/23/10	02/23/10	0.400	0.401	100	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-02-1824

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Attn. Bob Scott (URS) (1824)

Clinical Laboratory of San Bernardino, Inc. Chain of Custody

Client	URS ~~MACTEC Engineering & Consulting~~	~~Client Job No.~~	27658/88.3000/
Address	~~9117 Sky Park Court, Suite A~~ ~~San Diego, CA 92123~~		
System No.		Destination Laboratory	
Phone No.	(858) 278-5300 FAX No. (858)514-7792	[X] Clinical Laboratory	
Project Name	Barstow Ground Water Samples	[ ] Other:	
Sampled By	Lijun Xu		
Comments	~~Contact Lijun Xu~~ Bob (URS)		

Analysis Requested

Date	Time	Sample Identification	Matrix	No.	Pres.	General Mineral	Inorganic	Cobalt	Silica	Turbidity	Suspended Solids	Total Phosphorus	Ortho Phosphate	Carbon Dioxide	Dissolved Title 22 Metals	Dissolved Silica	Gross Alpha			Turn Around Time
		Site 1	W	20		X	X	X	X	X	X	X	X	X	X	X	X			X
2/22/10	16:00	Calico #1																		

Preservatives: (1) $Na_2S_2O_3$ (3) Cold
(2) H_2SO_4/HCl (4)

Turn Around Time: (10) 10 Day (normal) (5) Five Day Rush (2) Two Day Rush
All turn around times are expressed as working days / Not all analyses can be processed as rush

Relinquished By (Sign)	Print Name / Company	Date / Time	Received By (Sign)	Print Name / Company
[signature]	URS	2/22/10 / 2021	Dannyle CCL	DANNY LE CCL

Rec'd at Lab By: Rec'd Date / Time: Comments:

Shipped Via [ ] Fed X [ ] Golden State [ ] UPS [ ] Client [ ] Other

Page 1 of 2

1824

Clinical Laboratory of San Bernardino, Inc. Chain of Custody

Client	URS ~~MACTEC Engineering & Consulting~~	Client Job No.
Address	~~9117 Sky Park Court, Suite A~~	
	~~San Diego, CA 92123~~	
System No.		Destination Laboratory
Phone No.	(858) 278-5300 FAX No. (858)514-7792	[X] Clinical Laboratory
Project Name	Barstow Ground Water Samples	[ ] Other:
Sampled By	Lijun Xu	
Comments	~~Contact Lijun Xu~~	

Analysis Requested

Date	Time	Sample Identification	Matrix	No.	Pres.	EPA 524	EPA 504	EPA 508	EPA 515	EPA 525	EPA 531	EPA 547	EPA 548	EPA 549	EPA 1613	Asbestos				Turn Around Time
		Site 1				X	X	X	X	X	X	X	X	X	X	X				7
2/22/10	16:00	Calico #1	W																	

Preservatives: (1) $Na_2S_2O_3$ (3) Cold (2) H_2SO_4/HCl (4)

Turn Around Time: (10) 10 Day (normal) (5) Five Day Rush (2) Two Day Rush
All turn around times are expressed as working days / Not all analyses can be processed as rush

Relinquished By (Sign)	Print Name / Company	Date / Time	Received By (Sign)	Print Name / Company
[signature]	URS / Lijun Xu	2/22/10 / 2021	Dannyle CCL	DANNY LE CCL

Rec'd at Lab By: Rec'd Date / Time: Comments:

Shipped Via [ ] Fed X [ ] Golden State [ ] UPS [ ] Client [ ] Other ______

Page 2 of 2

onsite engineer/technician to collect subsequent samples from the remaining three (3) wells (assuming sufficient water is present).

Each sample will be containerized, properly filtered, and preserved (as necessary) according to the required analysis. Samples will be packaged in lab supplied ice chests (suitable for shipping) and preserved on ice and transported under a Chain of Custody Record to a State-certified laboratory for analysis. Each sample will be transported to and analyzed by Clinical Laboratory of San Bernardino (CLSB), as specifically requested by Tessera Solar. MACTEC will receive appropriate bottles, with preservative as appropriate, for sample collection from CLSB prior to each sample event.

For the purposes of preparing this cost estimate, we assume that the following analyses will be performed on each groundwater sample.

- Anions (sulfate, chloride, nitrate, orthophosphate and fluoride)
- Dissolved and total metals (base cations, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, zinc, iron, manganese, aluminum, and silicon
- Turbidity
- Alkalinity (Total, Bicarbonate and Hydroxide)
- Specific conductance
- Total Dissolved Solids
- Total Suspended Solids
- Total phosphorus
- Carbon dioxide
- Volatile organic compounds (VOCs)
- Semivolatile organic compounds (SVOCs)
- Organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs)
- Asbestos
- Cyanide
- Radionuclides

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-02- 1 8 2 4

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: URS

DATE: 02/22/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 4 . 8 °C + 0.5 °C (CF) = 5 . 3 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: ________).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** DL

CUSTODY SEALS INTACT:

☐ Cooler ☐ ________ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** DL

☐ Sample ☐ ________ ☐ No (Not Intact) ☑ Not Present **Initial:** DL

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (____) ☐EnCores® ☐TerraCores® ☐________

Water: ☐VOA 4 ☑VOAh ☐VOAna$_2$ ☐125AGB ☐125AGBh ☐125AGBp 3 ☑1AGBh 3 ☑1AGBna$_2$ ☐1AGBs

☐500AGB ☐500AGJ ☐500AGJs ☑250AGB ☑250CGB ☐250CGBs ☑1PB (brown) 2 ☑500PB ☐500PBna

☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna$_2$ ☑ 1PBna2 2 ☑ 1.89 Liter 2 ☑ 250AGBna2

Air: ☐Tedlar® ☐Summa® **Other:** ☐______ **Trip Blank Lot#:** __________ **Checked by:** DL

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** [signature]

Preservative: h: HCL n: HNO3 na$_2$:$Na_2S_2O_3$ Na: NaOH p: H_3PO_4 s: H_2SO_4 znna: ZnAc$_2$+NaOH f: Field-filtered **Scanned by:** DL

Vikas Patel

From: Robert_Scott@URSCorp.com
Sent: Tuesday, February 23, 2010 9:14 AM
To: Vikas Patel
Cc: Joe_Liles@URSCorp.com
Subject: Re: Calico sample (02/22/10); CEL WO# 10-02-1824

Hi Vik,

Please analyze the samples in accordance with the quote using 8000 series EPA Methods. Please do not conduct the analyses that are listed on the COC and not included in quote 952227. I will have work orders to you today for this water sample and the one that will be delivered this evening. Were you able to confirm that the radionuclides analysis can be rushed and completed in 5 days?
Thank you!

Bob Scott, PG, CHg
Vice President
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
619.294.9400
fax: 619.293.7920

"Vikas Patel" <ViPatel@calscience.com>

"Vikas Patel"
<ViPatel@calscience.com>

02/23/2010 09:01 AM

To<Robert_Scott@urscorp.com>

cc<Joe_Liles@URSCorp.com>

SubjectCalico sample (02/22/10); CEL WO# 10-02-1824

Hi Bob - The list of analyses requested on the COC do not match that quote that you had request (COC reference methods for EPA 500 series, EPA 1613, etc). Please confirm you would like sample analyzed per quote 952227.

<<10-02-1824.PDF>> <<Calico Solar.pdf>>

Best regards,

Vik Patel
Project Manager

Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone: 714-895-5494 x211
Fax: 714-894-7501

Email: ViPatel@calscience.com

ENVIRONMENTAL

Analytical Chemists
March 3, 2010

Calscience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1432

Lab ID : SP 1001823
Customer : 2-17756

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
Calico #1	02/22/2010	02/24/2010	SP 1001823-001	DW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples arrived at 2 °C. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	03/02/2010:202448 All analysis quality controls are within established criteria.
	03/01/2010:202043 All preparation quality controls are within established criteria.
903.0	03/03/2010:202455 All analysis quality controls are within established criteria.
	03/02/2010:202126 All preparation quality controls are within established criteria.
905.0	03/03/2010:202457 All analysis quality controls are within established criteria.
	03/02/2010:202128 All preparation quality controls are within established criteria.
906.0	03/03/2010:202446 All analysis quality controls are within established criteria.
	03/02/2010:202129 All preparation quality controls are within established criteria, except:

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March 3, 2010
Calscience Environmental Laboratories

Lab ID : SP 1001823
Customer : 2-17756

Radio QC

906.0	The following note applies to Tritium: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
908.0	02/28/2010:202367 All analysis quality controls are within established criteria.
	02/25/2010:201953 All preparation quality controls are within established criteria.
Ra - 05	03/01/2010:202429 All analysis quality controls are within established criteria.
	02/27/2010:201954 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2010-03-03

ENVIRONMENTAL

Analytical Chemists

March 3, 2010

Lab ID : SP 1001823-001
Customer ID : 2-17756

Calscience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1432

Sampled On : February 22, 2010-16:00
Sampled By : Not Available
Received On : February 24, 2010-14:15
Matrix : Drinking Water

Description : Calico #1
Project : 10-02-1824

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[P:1]								
Gross Alpha	8.88 ± 5.54	6.30	pCi/L	15/5	900.0	03/01/10:202043	900.0	03/02/10:202448
Gross Beta	4.06 ± 5.54	4.85	pCi/L	50	900.0	03/01/10:202043	900.0	03/02/10:202448
Strontium 90	0.249 ± 0.654	0.766	pCi/L	8	905.0	03/02/10:202128	905.0	03/03/10:202457
Total Alpha Radium (226)	0.571 ± 0.355	0.353	pCi/L	3	903.0	03/02/10:202126	903.0	03/03/10:202455
Tritium	148 ± 230	381	pCi/L	20000	906.0	03/02/10:202129	906.0	03/03/10:202446
Uranium	3.61 ± 1.20	0.267	pCi/L	20	908.0	02/25/10:201953	908.0	02/28/10:202367
Ra 228	0.168 ± 0.781	0.263	pCi/L	2	Ra - 05	02/27/10:201954	Ra - 05	03/01/10:202429

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGJ) Amber Glass Jar, (G) Glass Jar, (P) Plastic Preservatives: N/A

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = (Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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ENVIRONMENTAL

Analytical Chemists

March 3, 2010
Calscience Environmental Laboratories

Lab ID : SP 1001823
Customer : 2-17756

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	03/02/2010:202448	CCV	cpm	10990	41.4 %	38 - 46	
			CCB	cpm		0.0800	0.14	
Beta	900.0	03/02/2010:202448	CCV	cpm	10990	87.8 %	83 - 101	
			CCB	cpm		0.3000	0.47	
Gross Alpha	900.0	03/01/2010:202043	Blank	pCi/L		0.82	3	
			LCS	pCi/L	150.4	95.3 %	75-125	
			MS	pCi/L	150.4	93.2 %	60-140	
		(SP 1001681-001)	MSD	pCi/L	150.4	108 %	60-140	
			MSRPD	pCi/L	150.4	14.2%	≤30	
Gross Beta	900.0	03/01/2010:202043	Blank	pCi/L		2.19	4	
			LCS	pCi/L	47.96	115 %	75-125	
			MS	pCi/L	47.96	80.6 %	80-130	
		(SP 1001681-001)	MSD	pCi/L	47.96	110 %	80-130	
			MSRPD	pCi/L	150.4	28.9%	≤30	
Alpha	903.0	03/03/2010:202455	CCV	cpm	10520	43.0 %	37 - 45	
			CCB	cpm		0.0500	0.14	
Total Alpha Radium (226)	903.0	03/02/2010:202126	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	18.17	62.9 %	52-89	
			BS	pCi/L	18.17	49.9 %	43-92	
			BSD	pCi/L	18.17	46.9 %	43-92	
			BSRPD	pCi/L	18.17	6.2%	≤35.5	
Beta	905.0	03/03/2010:202457	CCV	cpm	10990	90.7 %	82 - 100	
			CCB	cpm		0.9400	1.38	
Total Strontium	905.0	03/02/2010:202128	RgBlk	pCi/L		0.56	2	
			LRS	pCi/L	20.04	99.9 %	53-133	
			BS	pCi/L	20.04	104 %	75-125	
			BSD	pCi/L	20.04	122 %	75-125	
			BSRPD	pCi/L	20.04	16.1%	≤20	
Tritium	906.0	03/02/2010:202129	Blank	pCi/L		110	1000	
			LCS	pCi/L	2041	91.7 %	75-125	
			BS	pCi/L	2041	94.9 %	75-125	
			BSD	pCi/L	2041	74.3 %	75-125	435
			BSRPD	pCi/L	2041	22.8%	≤25	
	906.0	03/03/2010:202446	CCV	pCi/L	43330	94.4 %	90-110	
			CCB	pCi/L		-24	500	
Alpha	908.0	02/28/2010:202367	CCV	cpm	10520	41.0 %	37 - 46	
			CCB	cpm		0.100	0.15	
Uranium	908.0	02/25/2010:201953	RgBlk	pCi/L		0.20	1	
			LRS	pCi/L	20.86	70.0 %	54-105	
			BS	pCi/L	20.86	85.6 %	75-125	
			BSD	pCi/L	20.86	83.5 %	75-125	
			BSRPD	pCi/L	20.86	2.5%	≤20	
Beta	Ra - 05	03/01/2010:202429	CCV	cpm	10990	91.0 %	83 - 101	
			CCB	cpm		0.4000	0.61	
Ra 228	Ra - 05	02/27/2010:201954	RgBlk	pCi/L		-0.06	3	
			LRS	pCi/L	81.32	46.3 %	27-59	
			BS	pCi/L	81.32	89.7 %	75-125	
			BSD	pCi/L	81.32	93.8 %	75-125	
			BSRPD	pCi/L	81.32	4.5%	≤25	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.

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March 3, 2010
Calscience Environmental Laboratories

Lab ID : SP 1001823
Customer : 2-17756

Quality Control - Radio

Definition	
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
Explanation	
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

FGL Environmental
Revision Date: 10/18/07

Doc ID: F2REC005.011
Page: 1 of 1

Santa Paula - Condition Upon Receipt (Attach to COC)

Sample Receipt:

1. Number of ice chests/packages received: 1
   Note as OTC if received over the counter unpackaged.
2. Were samples received in a chilled condition? Temps: 2 / ____ / ____ / ____ / ____
   Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
3. Do the number of bottles received agree with the COC? Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
5. Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? Yes No
2. Did bottle labels correspond with the client's ID's? Yes No
3. Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
4. VOAs checked for Headspace? Yes No N/A
5. Were all analyses within holding times at time of receipt? Yes No
6. Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): [illegible]

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted:____________________ Phone Number:____________
   Initiated By:____________________ Date:____________
   Problem:

   Resolution:

2. Person Contacted:____________________ Phone Number:____________
   Initiated By:____________________ Date:____________
   Problem:

   Resolution:

Calscience Environmental Laboratories

SP 1001823

ere

Calscience Environmental Laboratories, Inc.

RUSH

GARDEN GROVE, CA 92841-1432

TEL: (714) 895-5494 . FAX: (714) 894-7501

TO: FGL

001523

CHAIN OF CUSTODY RECORD

RUSH

DATE: 02/23/10

PAGE: 1 OF 1

LABORATORY CLIENT: Calscience Environmental Laboratories, Inc.

ADDRESS: 7440 Lincoln Way

CITY: Garden Grove, CA 92841-1427

TEL: 714/895-5494 FAX: 714/894-7501 E-MAIL: vipatel@calscience.com

CLIENT PROJECT NAME / NUMBER: 10-02-1824

P.O. NO:

PROJECT CONTACT: Vik Patel

QUOTE NO.:

SAMPLER(S) (SIGNATURE):

LAB USE ONLY: ☐☐-☐☐☐☐

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 4 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL __/__/__

SPECIAL INSTRUCTIONS:

5 DAY TAT (OK per Dawn Bavero)

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	Radium 226	Radium 228	Gross Alpha & Beta	Strontium 90	Uranium ~~200.8~~ 900.8	Tritium
	Calico# 1		02/22/10	16:00	W	5	X	X	X	X	X	X

Per Vic @ Calscience - Run Uranium under Radio method

RUSH

RUSH

Relinquished by: (Signature) Wdbatin CEL	Received by: (Signature) GSO 513621918	Date: 2/23/10	Time: 1500
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/24/10	Time: 1415

2°C

LA Testing
520 Mission Street, South Pasadena, CA 91030
Phone: (323) 254-9960 Fax: (323) 254-9982 Email: pasadenalab@latesting.com

Attn: **Vik Patel**
Calscience Environmental Labs, Inc.
7440 Lincoln Way
Garden Grove, CA 92841

Fax: (714) 894-7501 Phone: (714) 895-5494
Project: **10-02-1824**

Customer ID: 32CALS51
Customer PO:
Received: 02/23/10 2:10 PM
LA Testing Order: 321002178

LA Testing Proj:
Analysis Date: 2/24/2010

Test Report: Determination of Asbestos Structures in Water Performed by the 100.2 Method (EPA/600/R-94/134)

Sample ID	Sample Prep Date	# Fibers Asbestos	# Fibers Non-Asbestos	Type(s) Of Asbestos	Analytical Sensitivity (MFL)	Confidence Limits	Concentration Of Asbestos Fibers (MFL)	Comments
Calico #1 *321002178-0001*	02/23/10 14:20	0	0		2.30	0.00-8.60	<2.30	Total area of filter examined = 0.28 mm2.

Effective filtration area = 1288 mm2.

Analyst(s)

Sherrie Ahmad (1)

Derrick Tanner, Laboratory Manager
or other approved signatory

Sample collection and containers provided by the client, acceptable bottle blank level is defined as <=0.01MFL>10um. ND=None Detected. This report relates only to those items tested.
This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted.
Samples analyzed by LA Testing 520 Mission Street, South PasadenaCA CA ELAP 2283

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

TO: LA TESTING

321002178

CHAIN OF CUSTODY RECORD

DATE: 02/23/10

PAGE: 1 OF 1

LABORATORY CLIENT	Calscience Environmental Laboratories, Inc.
ADDRESS	7440 Lincoln Way
CITY	Garden Grove, CA 92841-1427
TEL	714/895-5494
FAX	714/894-7501
E-MAIL	vipatel@calscience.com
CLIENT PROJECT NAME / NUMBER	10-02-1824
P.O. NO.	
PROJECT CONTACT	Vik Patel
QUOTE NO.	
SAMPLER(S) (SIGNATURE)	
LAB USE ONLY	

TURNAROUND TIME
☐ SAME DAY ☒ 24 HR ☐ 48HR ☐ 72 HR ☐ 4 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

24 Hour TAT

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	Asbestos (100.2) or equivalent
	Calico# 1		02/22/10	16:00	W	1	X

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
[signature]	[signature]	2/23/10	1:15 pm
[signature]	[signature] (PV)	2/23/10	2:15 PM

1°C when rec'd

Calscience Environmental Laboratories, Inc.

April 15, 2010

Robert Scott
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Subject: **Calscience Work Order No.: 10-04-0403**
Client Reference: Calico Solar / 27658188.30001

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/6/2010 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Vikas Patel

Calscience Environmental
Laboratories, Inc.
Vikas Patel
Project Manager

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

URS Corporation		Date Sampled:	04/06/10
1615 Murray Canyon Road, Suite 1000		Date Received:	04/06/10
Santa Diego, CA 92108-4319		Date Extracted:	04/07/10
		Date Analyzed:	04/07/10
		Work Order No.:	10-04-0403
Attn:	Robert Scott	Method:	EPA 6010B Filt.
RE:	Calico Solar / 27658188.30001	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	SiO_2 Concentration	Reporting Limit
Well # 3	72.3	0.107
Method Blank	ND	0.107

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

URS Corporation	Date Sampled: 04/06/10
1615 Murray Canyon Road, Suite 1000	Date Received: 04/06/10
Santa Diego, CA 92108-4319	Date Extracted: 04/07/10
	Date Analyzed: 04/07/10
	Work Order No.: 10-04-0403
Attn: Robert Scott	Method: EPA 6010B Total
RE: Calico Solar / 27658188.30001	Page 1 of 1

All concentrations are reported in mg/L (ppm).

Sample Number	SiO_2 Concentration	Reporting Limit
Well # 3	70.41	0.107
Method Blank	ND	0.107

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 04/06/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-04-0403
San Diego, CA 92108-4319	Preparation: EPA 3005A Filt. / EPA 7470A Filt.
	Method: EPA 6010B / EPA 7470A
	Units: mg/L
Project: Calico Solar / 27658188.30001	Page 1 of 3

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-F**	**04/06/10 15:10**	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10 15:14**	**100407LA2F**

Comment(s): -Mercury was analyzed on 4/7/2010 3:01:33 PM with batch 100407L02F

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Thallium	ND	0.0150	1	
Arsenic	0.0811	0.0100	1		Vanadium	0.0329	0.0100	1	
Barium	0.0220	0.0100	1		Aluminum	ND	0.0500	1	
Beryllium	ND	0.0100	1		Calcium	25.1	0.100	1	
Cadmium	ND	0.0100	1		Iron	0.316	0.100	1	
Chromium	0.0172	0.0100	1		Magnesium	6.24	0.100	1	
Cobalt	ND	0.0100	1		Manganese	0.0684	0.00500	1	
Copper	ND	0.0100	1		Potassium	12.7	0.500	1	
Lead	ND	0.0100	1		Sodium	437	0.500	1	
Molybdenum	0.321	0.0100	1		Silicon	33.8	0.0500	1	
Nickel	ND	0.0100	1		Zinc	0.190	0.0100	1	
Selenium	ND	0.0150	1		Silver	ND	0.00500	1	

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1**	**04/06/10 15:10**	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10 15:01**	**100407L02F**

Comment(s): -Mercury was analyzed on 4/7/2010 2:59:21 PM with batch 100407L02

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-04-008-4,702**	**N/A**	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10 14:45**	**100407L02F**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 04/06/10
Work Order No: 10-04-0403
Preparation: EPA 3005A Filt. / EPA 7470A Filt.
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Calico Solar / 27658188.30001

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-10,419**	**N/A**	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10 15:08**	**100407LA2F**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Silver	ND	0.00500	1	
Arsenic	ND	0.0100	1		Thallium	ND	0.0150	1	
Barium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Beryllium	ND	0.0100	1		Aluminum	ND	0.0500	1	
Cadmium	ND	0.0100	1		Calcium	ND	0.100	1	
Chromium	ND	0.0100	1		Iron	ND	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	ND	0.100	1	
Copper	ND	0.0100	1		Manganese	ND	0.00500	1	
Lead	ND	0.0100	1		Potassium	ND	0.500	1	
Molybdenum	ND	0.0100	1		Sodium	ND	0.500	1	
Nickel	ND	0.0100	1		Silicon	ND	0.0500	1	
Selenium	ND	0.0150	1		Zinc	ND	0.0100	1	

Calscience
Environmental
Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 04/06/10
Work Order No: 10-04-0403
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Calico Solar / 27658188.30001

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-G**	**04/06/10 15:10**	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10 15:16**	**100407LA2**

Comment(s): -Mercury was analyzed on 4/7/2010 2:59:21 PM with batch 100407L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Zinc	0.258	0.0100	1	
Thallium	ND	0.0150	1		Arsenic	0.0832	0.0100	1	
Vanadium	0.0330	0.0100	1		Barium	0.0236	0.0100	1	
Aluminum	0.0857	0.0500	1		Beryllium	ND	0.0100	1	
Cadmium	ND	0.0100	1		Mercury	ND	0.000500	1	
Chromium	0.0195	0.0100	1		Calcium	25.0	0.100	1	
Cobalt	ND	0.0100	1		Iron	0.752	0.100	1	
Copper	ND	0.0100	1		Magnesium	6.17	0.100	1	
Lead	ND	0.0100	1		Manganese	0.0703	0.00500	1	
Molybdenum	0.316	0.0100	1		Potassium	13.4	0.500	1	
Nickel	ND	0.0100	1		Sodium	430	0.500	1	
Selenium	ND	0.0150	1		Silicon	32.9	0.0500	1	
Silver	ND	0.00500	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-04-008-4,701**	**N/A**	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10 14:45**	**100407L02**

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-10,418**	**N/A**	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10 15:10**	**100407LA2**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Silver	ND	0.00500	1	
Arsenic	ND	0.0100	1		Thallium	ND	0.0150	1	
Barium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Beryllium	ND	0.0100	1		Aluminum	ND	0.0500	1	
Cadmium	ND	0.0100	1		Calcium	ND	0.100	1	
Chromium	ND	0.0100	1		Iron	ND	0.100	1	
Cobalt	ND	0.0100	1		Magnesium	ND	0.100	1	
Copper	ND	0.0100	1		Manganese	ND	0.00500	1	
Lead	ND	0.0100	1		Potassium	ND	0.500	1	
Molybdenum	ND	0.0100	1		Sodium	ND	0.500	1	
Nickel	ND	0.0100	1		Silicon	ND	0.0500	1	
Selenium	ND	0.0150	1		Zinc	ND	0.0100	1	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation		Date Received:	04/06/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-04-0403
San Diego, CA 92108-4319		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)
		Units:	ug/L

Project: Calico Solar / 27658188.30001

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-I**	**04/06/10 15:10**	**Aqueous**	**GC 46**	**04/07/10**	**04/07/10 15:27**	**100407B01**

Comment(s): -The Total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
C6	ND	500	1		C21-C22	ND	500	1	
C7	ND	500	1		C23-C24	ND	500	1	
C8	ND	500	1		C25-C28	ND	500	1	
C9-C10	ND	500	1		C29-C32	ND	500	1	
C11-C12	ND	500	1		C33-C36	ND	500	1	
C13-C14	ND	500	1		C37-C40	ND	500	1	
C15-C16	ND	500	1		C41-C44	ND	500	1	
C17-C18	ND	500	1		C6-C44 Total	ND	500	1	
C19-C20	ND	500	1						

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	115	68-140	

Method Blank	**099-12-308-1,303**	**N/A**	**Aqueous**	**GC 46**	**04/07/10**	**04/07/10 14:40**	**100407B01**

Parameter	Result	RL	DF	Qual
TPH as Diesel	ND	500	1	

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	112	68-140	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 04/06/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-04-0403
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8270C
	Units: ug/L

Project: Calico Solar / 27658188.30001

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-J**	**04/06/10 15:10**	**Aqueous**	**GC/MS TT**	**04/07/10**	**04/07/10 12:48**	**100407L01**

Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	ND	10	1	
Aniline	ND	10	1	
Phenol	ND	10	1	
Bis(2-Chloroethyl) Ether	ND	25	1	
2-Chlorophenol	ND	10	1	
1,3-Dichlorobenzene	ND	10	1	
1,4-Dichlorobenzene	ND	10	1	
Benzyl Alcohol	ND	10	1	
1,2-Dichlorobenzene	ND	10	1	
2-Methylphenol	ND	10	1	
Bis(2-Chloroisopropyl) Ether	ND	10	1	
3/4-Methylphenol	ND	10	1	
N-Nitroso-di-n-propylamine	ND	10	1	
Hexachloroethane	ND	10	1	
Nitrobenzene	ND	25	1	
Isophorone	ND	10	1	
2-Nitrophenol	ND	10	1	
2,4-Dimethylphenol	ND	10	1	
Benzoic Acid	ND	50	1	
Bis(2-Chloroethoxy) Methane	ND	10	1	
2,4-Dichlorophenol	ND	10	1	
Naphthalene	ND	10	1	
4-Chloroaniline	ND	10	1	
Hexachloro-1,3-Butadiene	ND	10	1	
4-Chloro-3-Methylphenol	ND	10	1	
2-Methylnaphthalene	ND	10	1	
Hexachlorocyclopentadiene	ND	25	1	
2,4,6-Trichlorophenol	ND	10	1	
2,4,5-Trichlorophenol	ND	10	1	
2-Chloronaphthalene	ND	10	1	
2-Nitroaniline	ND	10	1	
Dimethyl Phthalate	ND	10	1	
Acenaphthylene	ND	10	1	
3-Nitroaniline	ND	10	1	
Acenaphthene	ND	10	1	
2,4-Dinitrophenol	ND	50	1	
4-Nitrophenol	ND	10	1	
Dibenzofuran	ND	10	1	
2,4-Dinitrotoluene	ND	10	1	
2,6-Dinitrotoluene	ND	10	1	
Diethyl Phthalate	ND	10	1	
4-Chlorophenyl-Phenyl Ether	ND	10	1	
Fluorene	ND	10	1	
4-Nitroaniline	ND	10	1	
Azobenzene	ND	10	1	
4,6-Dinitro-2-Methylphenol	ND	50	1	
N-Nitrosodiphenylamine	ND	10	1	
4-Bromophenyl-Phenyl Ether	ND	10	1	
Hexachlorobenzene	ND	10	1	
Pentachlorophenol	ND	10	1	
Phenanthrene	ND	10	1	
Anthracene	ND	10	1	
Di-n-Butyl Phthalate	ND	10	1	
Fluoranthene	ND	10	1	
Benzidine	ND	50	1	
Pyrene	ND	10	1	
Pyridine	ND	10	1	
Butyl Benzyl Phthalate	ND	10	1	
3,3'-Dichlorobenzidine	ND	25	1	
Benzo (a) Anthracene	ND	10	1	
Bis(2-Ethylhexyl) Phthalate	ND	10	1	
Chrysene	ND	10	1	
Di-n-Octyl Phthalate	ND	10	1	
Benzo (k) Fluoranthene	ND	10	1	
Benzo (b) Fluoranthene	ND	10	1	
Benzo (a) Pyrene	ND	10	1	
Benzo (g,h,i) Perylene	ND	10	1	
Indeno (1,2,3-c,d) Pyrene	ND	10	1	
Dibenz (a,h) Anthracene	ND	10	1	
1-Methylnaphthalene	ND	10	1	
1,2,4-Trichlorobenzene	ND	10	1	

Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	64	7-121	
Nitrobenzene-d5	106	50-146	
2,4,6-Tribromophenol	119	41-137	
Phenol-d6	42	1-127	
2-Fluorobiphenyl	94	42-138	
p-Terphenyl-d14	100	47-173	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 04/06/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-04-0403
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8270C
	Units: ug/L

Project: Calico Solar / 27658188.30001

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-003-2,880**	**N/A**	**Aqueous**	**GC/MS TT**	**04/07/10**	**04/07/10 12:22**	**100407L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
N-Nitrosodimethylamine	ND	10	1		4-Nitrophenol	ND	10	1	
Aniline	ND	10	1		Dibenzofuran	ND	10	1	
Phenol	ND	10	1		2,4-Dinitrotoluene	ND	10	1	
Bis(2-Chloroethyl) Ether	ND	25	1		2,6-Dinitrotoluene	ND	10	1	
2-Chlorophenol	ND	10	1		Diethyl Phthalate	ND	10	1	
1,3-Dichlorobenzene	ND	10	1		4-Chlorophenyl-Phenyl Ether	ND	10	1	
1,4-Dichlorobenzene	ND	10	1		Fluorene	ND	10	1	
Benzyl Alcohol	ND	10	1		4-Nitroaniline	ND	10	1	
1,2-Dichlorobenzene	ND	10	1		Azobenzene	ND	10	1	
2-Methylphenol	ND	10	1		4,6-Dinitro-2-Methylphenol	ND	50	1	
Bis(2-Chloroisopropyl) Ether	ND	10	1		N-Nitrosodiphenylamine	ND	10	1	
3/4-Methylphenol	ND	10	1		4-Bromophenyl-Phenyl Ether	ND	10	1	
N-Nitroso-di-n-propylamine	ND	10	1		Hexachlorobenzene	ND	10	1	
Hexachloroethane	ND	10	1		Pentachlorophenol	ND	10	1	
Nitrobenzene	ND	25	1		Phenanthrene	ND	10	1	
Isophorone	ND	10	1		Anthracene	ND	10	1	
2-Nitrophenol	ND	10	1		Di-n-Butyl Phthalate	ND	10	1	
2,4-Dimethylphenol	ND	10	1		Fluoranthene	ND	10	1	
Benzoic Acid	ND	50	1		Benzidine	ND	50	1	
Bis(2-Chloroethoxy) Methane	ND	10	1		Pyrene	ND	10	1	
2,4-Dichlorophenol	ND	10	1		Pyridine	ND	10	1	
Naphthalene	ND	10	1		Butyl Benzyl Phthalate	ND	10	1	
4-Chloroaniline	ND	10	1		3,3'-Dichlorobenzidine	ND	25	1	
Hexachloro-1,3-Butadiene	ND	10	1		Benzo (a) Anthracene	ND	10	1	
4-Chloro-3-Methylphenol	ND	10	1		Bis(2-Ethylhexyl) Phthalate	ND	10	1	
2-Methylnaphthalene	ND	10	1		Chrysene	ND	10	1	
Hexachlorocyclopentadiene	ND	25	1		Di-n-Octyl Phthalate	ND	10	1	
2,4,6-Trichlorophenol	ND	10	1		Benzo (k) Fluoranthene	ND	10	1	
2,4,5-Trichlorophenol	ND	10	1		Benzo (b) Fluoranthene	ND	10	1	
2-Chloronaphthalene	ND	10	1		Benzo (a) Pyrene	ND	10	1	
2-Nitroaniline	ND	10	1		Benzo (g,h,i) Perylene	ND	10	1	
Dimethyl Phthalate	ND	10	1		Indeno (1,2,3-c,d) Pyrene	ND	10	1	
Acenaphthylene	ND	10	1		Dibenz (a,h) Anthracene	ND	10	1	
3-Nitroaniline	ND	10	1		1-Methylnaphthalene	ND	10	1	
Acenaphthene	ND	10	1		1,2,4-Trichlorobenzene	ND	10	1	
2,4-Dinitrophenol	ND	50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
2-Fluorophenol	55	7-121		Phenol-d6	41	1-127	
Nitrobenzene-d5	98	50-146		2-Fluorobiphenyl	93	42-138	
2,4,6-Tribromophenol	89	41-137		p-Terphenyl-d14	88	47-173	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation	Date Received: 04/06/10
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-04-0403
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8081A
	Units: ug/L

Project: Calico Solar / 27658188.30001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-K**	**04/06/10 15:10**	**Aqueous**	**GC 51**	**04/07/10**	**04/07/10 14:17**	**100407L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	116	50-135			2,4,5,6-Tetrachloro-m-Xylene	120	50-135		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-529-350**	**N/A**	**Aqueous**	**GC 51**	**04/07/10**	**04/07/10 12:55**	**100407L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	105	50-135			2,4,5,6-Tetrachloro-m-Xylene	110	50-135		

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	04/06/10
Work Order No:	10-04-0403
Preparation:	EPA 3510C
Method:	EPA 8082
Units:	ug/L

Project: Calico Solar / 27658188.30001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-K**	**04/06/10 15:10**	**Aqueous**	**GC 58**	**04/07/10**	**04/07/10 11:46**	**100407L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	118	50-135			2,4,5,6-Tetrachloro-m-Xylene	119	50-135		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-533-416**	**N/A**	**Aqueous**	**GC 58**	**04/07/10**	**04/07/10 11:29**	**100407L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	1.0	1		Aroclor-1248	ND	1.0	1	
Aroclor-1221	ND	1.0	1		Aroclor-1254	ND	1.0	1	
Aroclor-1232	ND	1.0	1		Aroclor-1260	ND	1.0	1	
Aroclor-1242	ND	1.0	1		Aroclor-1262	ND	1.0	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	111	50-135			2,4,5,6-Tetrachloro-m-Xylene	108	50-135		

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	04/06/10
Work Order No:	10-04-0403
Preparation:	EPA 5030B
Method:	EPA 8260B
Units:	ug/L

Project: Calico Solar / 27658188.30001

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Well #3	**10-04-0403-1-A**	**04/06/10 15:10**	**Aqueous**	**GC/MS QQ**	**04/06/10**	**04/06/10 20:41**	**100406L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	5.9	1.0	1	
Chloroform	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	115	80-132		1,2-Dichloroethane-d4	118	80-141	
Toluene-d8	100	80-120		1,4-Bromofluorobenzene	90	76-120	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	04/06/10
Work Order No:	10-04-0403
Preparation:	EPA 5030B
Method:	EPA 8260B
Units:	ug/L

Project: Calico Solar / 27658188.30001

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-360**	**N/A**	**Aqueous**	**GC/MS QQ**	**04/06/10**	**04/06/10 14:57**	**100406L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	ND	1.0	1	
Chloroform	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	108	80-132		1,2-Dichloroethane-d4	112	80-141	
Toluene-d8	99	80-120		1,4-Bromofluorobenzene	94	76-120	

Calscience Environmental Laboratories, Inc.

Analytical Report

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 04/06/10
Work Order No: 10-04-0403

Project: Calico Solar / 27658188.30001

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Well #3	**10-04-0403-1**	**04/06/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Fluoride	3.8	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
Chloride	78	1.0	1		mg/L	N/A	04/07/10	EPA 300.0
Nitrate (as N)	5.2	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
o-Phosphate (as P)	ND	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
Sulfate	700	10	10		mg/L	N/A	04/07/10	EPA 300.0
Turbidity	4.6	0.10	1		NTU	N/A	04/06/10	SM 2130 B
Alkalinity, Total (as CaCO3)	160	5.0	1		mg/L	N/A	04/06/10	SM 2320B
Bicarbonate (as CaCO3)	160	5.0	1		mg/L	N/A	04/06/10	SM 2320B
Carbonate (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Hydroxide (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Specific Conductance	1900	10	1		umhos/cm	N/A	04/06/10	SM 2510 B
Solids, Total Dissolved	1340	10	1		mg/L	04/06/10	04/06/10	SM 2540 C
Solids, Total Suspended	4.6	1.0	1		mg/L	04/07/10	04/07/10	SM 2540 D
pH	7.83	0.01	1		pH units	N/A	04/06/10	SM 4500 H+ B
Phosphorus, Total	ND	0.10	1		mg/L	04/07/10	04/07/10	SM 4500 P B/E
Cyanide, Total	ND	0.050	1		mg/L	04/07/10	04/07/10	SM 4500-CN E
Carbon Dioxide	5.6	1.0	1		mg/L	N/A	04/06/10	SM4500-CO2D

Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Fluoride	ND	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
Chloride	ND	1.0	1		mg/L	N/A	04/07/10	EPA 300.0
Nitrate (as N)	ND	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
o-Phosphate (as P)	ND	0.10	1		mg/L	N/A	04/07/10	EPA 300.0
Sulfate	ND	1.0	1		mg/L	N/A	04/07/10	EPA 300.0
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Bicarbonate (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Carbonate (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Hydroxide (as CaCO3)	ND	1.0	1		mg/L	N/A	04/06/10	SM 2320B
Solids, Total Dissolved	ND	1.0	1		mg/L	04/06/10	04/06/10	SM 2540 C
Solids, Total Suspended	ND	1.0	1		mg/L	04/07/10	04/07/10	SM 2540 D
Phosphorus, Total	ND	0.10	1		mg/L	04/07/10	04/07/10	SM 4500 P B/E
Cyanide, Total	ND	0.050	1		mg/L	04/07/10	04/07/10	SM 4500-CN E

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 04/06/10
Work Order No: 10-04-0403
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-04-0343-1	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10**	**100407SA2**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	106	105	72-132	1	0-10	
Arsenic	112	112	80-140	1	0-11	
Barium	21	19	87-123	2	0-6	3
Beryllium	106	103	89-119	2	0-8	
Cadmium	104	103	82-124	1	0-7	
Chromium	99	98	86-122	2	0-8	
Cobalt	107	106	83-125	1	0-7	
Copper	110	108	78-126	1	0-7	
Lead	106	103	84-120	2	0-7	
Molybdenum	105	103	78-126	2	0-7	
Nickel	105	103	84-120	1	0-7	
Selenium	106	106	79-127	0	0-9	
Silver	109	107	86-128	2	0-7	
Thallium	99	98	79-121	1	0-8	
Vanadium	108	106	88-118	2	0-7	
Aluminum	93	91	73-145	1	0-16	
Calcium	4X	4X	77-113	4X	0-11	Q
Iron	99	99	65-149	0	0-21	
Magnesium	4X	4X	56-140	4X	0-11	Q
Manganese	101	99	86-116	1	0-7	
Potassium	4X	4X	83-131	4X	0-7	Q
Sodium	4X	4X	73-127	4X	0-9	Q
Silicon	4X	4X	24-180	4X	0-15	Q
Zinc	55	52	89-131	3	0-8	3

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received:	04/06/10
Work Order No:	10-04-0403
Preparation:	EPA 7470A Total
Method:	EPA 7470A

Project Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-04-0077-1	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10**	**100407S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	40	30	57-141	21	0-10	3,4

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

URS Corporation		Date Received	04/06/10
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-04-0403
San Diego, CA 92108-4319		Preparation:	EPA 7470A Total
		Method:	EPA 7470A

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
10-04-0077-1	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10**	**100407S02**

Parameter	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	74	72	75-125	1	0-10	5

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: 04/06/10
Work Order No: 10-04-0403
Preparation: EPA 5030B
Method: EPA 8260B

Project Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-04-0265-1	**Aqueous**	**GC/MS QQ**	**04/06/10**	**04/06/10**	**100406S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	96	103	72-120	8	0-20	
Carbon Tetrachloride	102	110	63-135	8	0-20	
Chlorobenzene	93	99	80-120	6	0-20	
1,2-Dibromoethane	107	109	80-120	2	0-20	
1,2-Dichlorobenzene	97	102	80-120	5	0-20	
1,1-Dichloroethene	79	87	60-132	10	0-24	
Ethylbenzene	96	104	78-120	8	0-20	
Toluene	93	100	74-122	7	0-20	
Trichloroethene	93	101	69-120	8	0-20	
Vinyl Chloride	107	113	58-130	6	0-20	
Methyl-t-Butyl Ether (MTBE)	107	112	72-126	3	0-21	
Tert-Butyl Alcohol (TBA)	99	102	72-126	3	0-20	
Diisopropyl Ether (DIPE)	104	110	71-137	5	0-23	
Ethyl-t-Butyl Ether (ETBE)	109	114	74-128	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	109	114	76-124	5	0-20	
Ethanol	83	80	35-167	4	0-48	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403

Project: Calico Solar / 27658188.30001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	Well #3	04/07/10	4/7/10	102	100	70-130	3	0-25	
Fluoride	EPA 300.0	10-04-0310-12	04/07/10	N/A	93	96	80-120	3	0-20	
Chloride	EPA 300.0	10-04-0310-12	04/07/10	N/A	104	104	80-120	0	0-20	
Nitrate (as N)	EPA 300.0	10-04-0310-12	04/07/10	N/A	99	99	80-120	1	0-20	
o-Phosphate (as P)	EPA 300.0	10-04-0310-12	04/07/10	N/A	99	108	80-120	9	0-20	
Sulfate	EPA 300.0	10-04-0310-12	04/07/10	N/A	95	95	80-120	0	0-20	

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403

Project: Calico Solar / 27658188.30001

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	10-04-0301-1	04/06/10	6.08	6.07	0	0-25	
Specific Conductance	SM 2510 B	10-04-0301-1	04/06/10	3300	3300	0	0-25	
Turbidity	SM 2130 B	10-04-0293-1	04/06/10	1.1	1.1	1	0-25	
Carbon Dioxide	SM4500-CO2D	Well #3	04/06/10	5.6	5.3	4	0-25	
Alkalinity, Total (as CaCO3)	SM 2320B	Well #3	04/06/10	160	160	0	0-25	
Bicarbonate (as CaCO3)	SM 2320B	Well #3	04/06/10	160	160	0	0-25	
Carbonate (as CaCO3)	SM 2320B	Well #3	04/06/10	ND	ND	NA	0-25	
Hydroxide (as CaCO3)	SM 2320B	Well #3	04/06/10	ND	ND	NA	0-25	
Solids, Total Suspended	SM 2540 D	10-04-0300-1	04/07/10	170	174	2	0-20	
Solids, Total Dissolved	SM 2540 C	Well #3	04/06/10	1340	1250	7	0-20	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-10,418	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10**	**100407LA2**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	93	93	80-120	73-127	0	0-20	
Arsenic	96	95	80-120	73-127	1	0-20	
Barium	105	103	80-120	73-127	2	0-20	
Beryllium	97	95	80-120	73-127	2	0-20	
Cadmium	98	97	80-120	73-127	1	0-20	
Chromium	95	94	80-120	73-127	1	0-20	
Cobalt	103	104	80-120	73-127	0	0-20	
Copper	101	99	80-120	73-127	1	0-20	
Lead	101	101	80-120	73-127	0	0-20	
Molybdenum	97	97	80-120	73-127	0	0-20	
Nickel	100	99	80-120	73-127	1	0-20	
Selenium	92	91	80-120	73-127	1	0-20	
Silver	97	96	80-120	73-127	2	0-20	
Thallium	100	100	80-120	73-127	1	0-20	
Vanadium	99	97	80-120	73-127	2	0-20	
Aluminum	91	91	80-120	73-127	0	0-20	
Calcium	78	78	80-120	73-127	0	0-20	ME
Iron	96	98	80-120	73-127	2	0-20	
Magnesium	99	98	80-120	73-127	1	0-20	
Manganese	98	97	80-120	73-127	1	0-20	
Potassium	95	94	80-120	73-127	1	0-20	
Sodium	88	89	80-120	73-127	0	0-20	
Silicon	109	109	80-120	73-127	0	0-20	
Zinc	95	96	80-120	73-127	0	0-20	

Total number of LCS compounds : 24
Total number of ME compounds : 1
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation		Date Received:	N/A
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-04-0403
San Diego, CA 92108-4319		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-10,419	**Aqueous**	**ICP 5300**	**04/07/10**	**04/07/10**	**100407LA2F**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	93	93	80-120	73-127	0	0-20	
Arsenic	96	95	80-120	73-127	1	0-20	
Barium	105	103	80-120	73-127	2	0-20	
Beryllium	97	95	80-120	73-127	2	0-20	
Cadmium	98	97	80-120	73-127	1	0-20	
Chromium	95	94	80-120	73-127	1	0-20	
Cobalt	103	104	80-120	73-127	0	0-20	
Copper	101	99	80-120	73-127	1	0-20	
Lead	101	101	80-120	73-127	0	0-20	
Molybdenum	97	97	80-120	73-127	0	0-20	
Nickel	100	99	80-120	73-127	1	0-20	
Selenium	92	91	80-120	73-127	1	0-20	
Silver	97	96	80-120	73-127	2	0-20	
Thallium	100	100	80-120	73-127	1	0-20	
Vanadium	99	97	80-120	73-127	2	0-20	
Aluminum	91	91	80-120	73-127	0	0-20	
Calcium	78	78	80-120	73-127	0	0-20	ME
Iron	96	98	80-120	73-127	2	0-20	
Magnesium	99	98	80-120	73-127	1	0-20	
Manganese	98	97	80-120	73-127	1	0-20	
Potassium	95	94	80-120	73-127	1	0-20	
Sodium	88	89	80-120	73-127	0	0-20	
Silicon	109	109	80-120	73-127	0	0-20	
Zinc	95	96	80-120	73-127	0	0-20	

Total number of LCS compounds : 24
Total number of ME compounds : 1
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403
Preparation: EPA 3510C
Method: EPA 8015B (M)

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-308-1,303	**Aqueous**	**GC 46**	**04/07/10**	**04/07/10**	**100407B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	111	114	75-117	3	0-13	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403
Preparation: EPA 7470A Total
Method: EPA 7470A

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-4,701	Aqueous	Mercury	04/07/10	04/07/10	100407L02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	102	102	85-121	0	0-10	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403
Preparation: EPA 7470A Filt.
Method: EPA 7470A

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-4,702	**Aqueous**	**Mercury**	**04/07/10**	**04/07/10**	**100407L02F**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	102	102	85-121	0	0-10	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403
Preparation: EPA 3510C
Method: EPA 8270C

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-003-2,880	**Aqueous**	**GC/MS TT**	**04/07/10**	**04/07/10**	**100407L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Phenol	65	65	4-142	0-165	0	0-24	
2-Chlorophenol	98	97	53-113	43-123	0	0-17	
1,4-Dichlorobenzene	85	84	50-122	38-134	0	0-19	
N-Nitroso-di-n-propylamine	93	92	56-146	41-161	1	0-22	
Naphthalene	90	91	21-133	2-152	1	0-20	
4-Chloro-3-Methylphenol	104	102	55-121	44-132	2	0-18	
Dimethyl Phthalate	94	95	0-112	0-131	0	0-20	
Acenaphthylene	92	93	33-145	14-164	1	0-20	
Acenaphthene	91	93	55-139	41-153	2	0-17	
4-Nitrophenol	72	69	1-145	0-169	5	0-29	
2,4-Dinitrotoluene	121	120	41-161	21-181	1	0-22	
Fluorene	93	95	59-121	49-131	2	0-20	
Pentachlorophenol	106	103	34-130	18-146	3	0-23	
Pyrene	88	90	38-170	16-192	2	0-27	
Butyl Benzyl Phthalate	95	96	0-152	0-177	1	0-20	
1,2,4-Trichlorobenzene	94	93	49-121	37-133	2	0-19	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation		Date Received:	N/A
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-04-0403
San Diego, CA 92108-4319		Preparation:	EPA 3510C
		Method:	EPA 8081A

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-350	**Aqueous**	**GC 51**	**04/07/10**	**04/07/10**	**100407L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Alpha-BHC	98	99	50-135	36-149	1	0-25	
Gamma-BHC	101	102	50-135	36-149	1	0-25	
Beta-BHC	93	95	50-135	36-149	2	0-25	
Heptachlor	101	102	50-135	36-149	1	0-25	
Delta-BHC	98	100	50-135	36-149	3	0-25	
Aldrin	92	93	50-135	36-149	1	0-25	
Heptachlor Epoxide	95	97	50-135	36-149	1	0-25	
Endosulfan I	98	99	50-135	36-149	1	0-25	
Dieldrin	66	67	50-135	36-149	1	0-25	
4,4'-DDE	90	93	50-135	36-149	3	0-25	
Endrin	93	94	50-135	36-149	0	0-25	
Endrin Aldehyde	111	114	50-135	36-149	2	0-25	
4,4'-DDD	92	94	50-135	36-149	2	0-25	
Endosulfan II	97	99	50-135	36-149	2	0-25	
4,4'-DDT	129	132	50-135	36-149	2	0-25	
Endosulfan Sulfate	108	110	50-135	36-149	2	0-25	
Methoxychlor	112	115	50-135	36-149	2	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation	Date Received: N/A
1615 Murray Canyon Road, Suite 1000	Work Order No: 10-04-0403
San Diego, CA 92108-4319	Preparation: EPA 3510C
	Method: EPA 8082

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-533-416	Aqueous	GC 58	04/07/10	04/07/10	100407L03

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	130	128	50-135	1	0-25	
Aroclor-1260	102	102	50-135	0	0-25	

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Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation		Date Received:	N/A
1615 Murray Canyon Road, Suite 1000		Work Order No:	10-04-0403
San Diego, CA 92108-4319		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: Calico Solar / 27658188.30001

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-360	**Aqueous**	**GC/MS QQ**	**04/06/10**	**04/06/10**	**100406L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	102	101	80-122	73-129	1	0-20	
Carbon Tetrachloride	110	109	68-140	56-152	1	0-20	
Chlorobenzene	97	96	80-120	73-127	1	0-20	
1,2-Dibromoethane	108	107	80-121	73-128	1	0-20	
1,2-Dichlorobenzene	98	99	80-120	73-127	0	0-20	
1,1-Dichloroethene	111	108	72-132	62-142	3	0-25	
Ethylbenzene	102	100	80-126	72-134	1	0-20	
Toluene	99	98	80-121	73-128	0	0-20	
Trichloroethene	100	98	80-123	73-130	2	0-20	
Vinyl Chloride	114	111	67-133	56-144	2	0-20	
Methyl-t-Butyl Ether (MTBE)	116	117	75-123	67-131	1	0-20	
Tert-Butyl Alcohol (TBA)	97	100	75-123	67-131	3	0-20	
Diisopropyl Ether (DIPE)	112	111	71-131	61-141	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	118	117	76-124	68-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	116	116	80-123	73-130	0	0-20	
Ethanol	82	79	61-139	48-152	4	0-27	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403

Project: Calico Solar / 27658188.30001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Fluoride	EPA 300.0	099-12-906-885	N/A	04/07/10	94	96	90-110	2	0-15	
Chloride	EPA 300.0	099-12-906-885	N/A	04/07/10	102	102	90-110	0	0-15	
Nitrate (as N)	EPA 300.0	099-12-906-885	N/A	04/07/10	100	99	90-110	0	0-15	
o-Phosphate (as P)	EPA 300.0	099-12-906-885	N/A	04/07/10	94	98	90-110	4	0-15	
Sulfate	EPA 300.0	099-12-906-885	N/A	04/07/10	99	100	90-110	0	0-15	
Cyanide, Total	SM 4500-CN E	099-05-061-2,832	04/07/10	04/07/10	84	84	80-120	0	0-20	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4319

Date Received: N/A
Work Order No: 10-04-0403

Project: Calico Solar / 27658188.30001

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	099-05-098-2,126	04/07/10	04/07/10	0.400	0.409	102	80-120	

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-04-0403

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

URS CORPORATION
2020 East First Street, Suite 400
Santa Ana, CA 92705
(714) 835-6886
FAX (714) 667-7147

0403

CHAIN OF CUSTODY RECORD

Date: 4 / 06 / 10

Page 1 of 2

☐ Data Requested in GISKey Format

Lab Name:	CALSCIENCE
URS Project/PO Number:	27658188.30001
Client Name/Project Name/Location:	CALICO SOLAR
Geo Tracker Information:	
URS Project Manager	BOB SCOTT
EDF Reporting: Y N	Global ID:
Sampler Name and Signature	J. ESPINOSA Jorge
COELT Log Number:	

Requested Analyses:

	Sample Name	Sample Date:	Sample Time:	Preserved:	Matrix:	Container type:	# of Cont.:	Wet Chemistry – Anions, Turb, Alk, Sp Cond, pH	TDS	TSS	Asbestos	Gross Alpha & Beta	Radium 226	Radium 228	Strontium 90	Uranium	Tritium	SVOCs	Organochlorine Pesticides	PCBs	HOLD	Special Instructions:
1	Well #3	4/06/10	1510	Y N	S L G	Acetate SS. Brass Jar Encore 1000 ml Amb. Plas. Glass VOA	5	X	X	X	X	X										
2	Well #3	4/06/10	1510	Y HNO3 N	S L G	Acetate SS. Brass Jar Encore 1000 ml Amb. Plas. Glass VOA	5						X	X	X	X						
3	Well #3	4/06/10	1510	Y N	S L G	Acetate SS. Brass Jar Encore 125 ml Amb. Plas. Glass VOA	2 +JR										X					
4	Well #3	4/06/10	1510	Y $Na_2S_2O_3$ N	S L G	Acetate SS. Brass Jar Encore 1000 ml Amb. Plas. Glass VOA	3											X	X	X		
5				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																
6				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																
7				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																
8				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																
9				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																
10				Y N	S L G	Acetate SS. Brass Jar Encore ____ ml Amb. Plas. Glass VOA																

①

Relinquished By:	Date:	Received By:	Date/Time:
Jorge	4/06/10	Dannyle CSL	4/6/10 19:18
Relinquished By:	Date:	Received By:	Date/Time:
Relinquished By:	Date:	Received By:	Date/Time:

Turnaround Time: (Check)

Same Day: ____	72 Hour: ____
24 Hour: X	5 Day: ____
48 Hour: ____	Standard: ____

Lab Use Only

Cooler Temperature*: ________
*Record upon arrival

URS

S=Solid L=Liquid G=Gas White Copy in Final Report, Yellow to File, Pink to URS at Dropoff

URS CORPORATION
2020 East First Street, Suite 400
Santa Ana, CA 92705
(714) 835-6886
FAX (714) 667-7147

0403

CHAIN OF CUSTODY RECORD

Date: 4 / 06 / 10

Page 2 of 2

☐ Data Requested in GISKey Format

Lab Name: CALSCIENCE
URS Project/PO Number: 27658188.30001
Client Name/Project Name/Location: CALICO SOLAR
Geo Tracker Information:
URS Project Manager: BOB SCOTT
EDF Reporting: Y N Global ID:
Sampler Name and Signature: J. ESPINOSA
COELT Log Number:

Requested Analyses:

	Sample Name	Sample Date	Sample Time	Preserved	Matrix	Container type	# of Cont.	Metals	Metals (lab filtered)	Total Phosphorus	CO_2	8260B-VOCs	Cyanide	TPH-Diesel, Motor Oil, Carbon chain	HOLD	Special Instructions
1	Well #3	4/06/10	1510	Y HNO_3	L	250 ml Plas.	1	X								
2	Well #3	4/06/10		N	L	250 ml Plas.	1		X							
3	Well #3	4/06/10		Y H_2SO_4	L	250 ml Glass	1			X						
4	Well #3	4/06/10		N	L	250 ml Amb. Glass	1				X					
5	Well #3	4/06/10		Y HCl	L	40 ml VOA	3					X				
6	Well #3	4/06/10		Y NaOH	L	500 ml Plas.	1						X			
7	Well #3	4/06/10		N	L	500 ml Amb. Glass	1							X		
8				Y N	S L G	Acetate SS. Brass Jar Encore ___ ml Amb. Plas. Glass VOA										
9				Y N	S L G	Acetate SS. Brass Jar Encore ___ ml Amb. Plas. Glass VOA										
10				Y N	S L G	Acetate SS. Brass Jar Encore ___ ml Amb. Plas. Glass VOA										

①

Relinquished By	Date	Received By	Date/Time
[signature]	4/06/10	Danngle cal	4/6/10 19:18

Turnaround Time: (Check)
Same Day: ___ 72 Hour: ___
24 Hour: X 5 Day: ___
48 Hour: ___ Standard: ___

Lab Use Only
Cooler Temperature*: ___
*Record upon arrival

URS

S=Solid L=Liquid G=Gas

White Copy in Final Report, Yellow to File, Pink to URS at Dropoff

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-04-0403

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: URS

DATE: 04/06/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.6 °C + 0.5 °C (CF) = 4.1 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: ____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: bL

CUSTODY SEALS INTACT:

☐ Cooler ☐ ____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: bL

☐ Sample ☐ ____ ☐ No (Not Intact) ☑ Not Present Initial: WSC

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (____) ☐EnCores® ☐TerraCores® ☐____

Water: ☐VOA ☑VOAh 3 ☐VOAna$_2$ ☐125AGB ☐125AGBh ☐125AGBp ☐1AGB ☑1AGBna$_2$ 3 ☐1AGBs ☐500AGB ☑500AGJ ☐500AGJs ☑250AGB ☐250CGB ☑250CGBs ☑1PB 5 ☐500PB 2 ☑500PBna ☑250PB ☑250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna$_2$ ☑ 1PBn 5 ☑ 125AGB 2 ☐____

Air: ☐Tedlar® ☐Summa® **Other:** ☐____ **Trip Blank Lot#:**____ **Labeled/Checked by:** WSC

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** YL

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** WSC

SOP T100_090 (07/16/09)

Calscience Environmental Laboratories, Inc.

WORK ORDER #: **10-04-** 0 4 0 3

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: URS

DATE: 04/06/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 4 . 2 °C + 0.5 °C (CF) = 4 . 7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: ________).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** b.L

CUSTODY SEALS INTACT:

☐ Cooler ☐________ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** bL

☐ Sample ☐________ ☐ No (Not Intact) ☑ Not Present **Initial:** WSC

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (____) ☐EnCores® ☐TerraCores® ☐________

Water: ☐VOA ☑VOAh ☐VOAna₂ ☐125AGB ☐125AGBh ☐125AGBp ☐1AGB ☑1AGBna₂ ☐1AGBs ☐500AGB ☑500AGJ ☐500AGJs ☑250AGB ☐250CGB ☑250CGBs ☑1PB ☐500PB ☑500PBna ☑250PB ☑250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna₂ ☑ 1PB ☑ 125AGB ☐________

Air: ☐Tedlar® ☐Summa® **Other:** ☐______ **Trip Blank Lot#:**________ **Labeled/Checked by:** WSC

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** YL

Preservative: h: HCL n: HNO_3 na₂: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** WSC

SOP T100_090 (07/16/09)

LA Testing
520 Mission Street, South Pasadena, CA 91030
Phone: (323) 254-9960 Fax: (323) 254-9982 Email: pasadenalab@latesting.com

Attn: **Vik Patel**
Calscience Environmental Labs, Inc.
7440 Lincoln Way
Garden Grove, CA 92841

Fax: (714) 894-7501 Phone: (714) 895-5494
Project: **10-04-0403**

Customer ID: 32CALS51
Customer PO:
Received: 04/07/10 1:40 PM
LA Testing Order: 321004044

LA Testing Proj:
Analysis Date: 4/8/2010

Test Report: Determination of Asbestos Structures in Water Performed by the 100.2 Method (EPA/600/R-94/134)

Sample ID	Sample Prep Date	# Fibers Asbestos	# Fibers Non-Asbestos	Type(s) Of Asbestos	Analytical Sensitivity (MFL)	Confidence Limits	Concentration Of Asbestos Fibers (MFL)	Comments
Well #3 *321004044-0001*	04/07/10 14:50	0	0		0.19	0.00-0.72	<0.19	Total area of filter examined 0.22 mm2.

Effective filtration area = 1288mm2.

Analyst(s)

Sherrie Ahmad (1)

Derrick Tanner, Laboratory Manager
or other approved signatory

Sample collection and containers provided by the client, acceptable bottle blank level is defined as <=0.01MFL>10um. ND=None Detected. This report relates only to those items tested.
This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted.
Samples analyzed by LA Testing 520 Mission Street, South PasadenaCA CA ELAP 2283

321004044

Calscience Environmental Laboratories, Inc.

7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

TO: LA TESTING

CHAIN OF CUSTODY RECORD

DATE: 04/07/10

PAGE: 1 OF 1

LABORATORY CLIENT: Calscience Environmental Laboratories, Inc.
ADDRESS: 7440 Lincoln Way
CITY: Garden Grove, CA 92841-1427
TEL: 714/895-5494 FAX: 714/894-7501 E-MAIL: vipatel@calscience.com

CLIENT PROJECT NAME / NUMBER: 10-04-0403
PROJECT CONTACT: Vik Patel
SAMPLER(S): (SIGNATURE)
P.O. NO.:
QUOTE NO.:
LAB USE ONLY: ☐☐-☐☐☐☐

TURNAROUND TIME: ☐ SAME DAY ☒ 24 HR ☐ 48HR ☐ 72 HR ☐ 4 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:

24 Hour TAT

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	Asbestos (100.2) or equivalent
	Well #3		04/06/10	1510	W	1	X

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	[signature]	4/7/10	1150
[signature]	[signature]	4/7/10	[illegible]

6°C when received

ENVIRONMENTAL

April 15, 2010

Calscience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1432

Lab ID : SP 1003317
Customer : 2-17756

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
Well #3	04/06/2010	04/08/2010	SP 1003317-001	DW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples arrived at 2 °C. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	04/12/2010:204171 All analysis quality controls are within established criteria.
	04/08/2010:203482 All preparation quality controls are within established criteria.
903.0	04/12/2010:204175 All analysis quality controls are within established criteria.
	04/09/2010:203519 All preparation quality controls are within established criteria.
905.0	04/14/2010:204295 All analysis quality controls are within established criteria.
	04/12/2010:203582 All preparation quality controls are within established criteria.
906.0	04/13/2010:204297 All analysis quality controls are within established criteria.
	04/12/2010:203581 All preparation quality controls are within established criteria.

April 15, 2010
Calscience Environmental Laboratories

Lab ID : SP 1003317
Customer : 2-17756

Radio QC

908.0	04/14/2010:204298 All analysis quality controls are within established criteria.
	04/13/2010:203643 All preparation quality controls are within established criteria.
Ra - 05	04/12/2010:204178 All analysis quality controls are within established criteria.
	04/10/2010:203499 All preparation quality controls are within established criteria, except: The following note applies to Ra 228: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Michel M. Franco, B.A.** Digitally signed by Michel M. Franco, B.A. Title: Radiochemistry Lab Manager Date: 2010-04-15

ENVIRONMENTAL
Analytical Chemists

April 15, 2010

Calscience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1432

Lab ID : SP 1003317-001
Customer ID : 2-17756

Sampled On : April 6, 2010-15:10
Sampled By : Not Available
Received On : April 8, 2010-12:15
Matrix : Drinking Water

Description : Well #3
Project : 10-04-0403

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry[AGJ:1]								
Gross Alpha	4.61 ± 3.19	4.16	pCi/L	15/5	900.0	04/08/10:203482	900.0	04/12/10:204171
Gross Beta	5.79 ± 2.60	3.33	pCi/L	50	900.0	04/08/10:203482	900.0	04/12/10:204171
Strontium 90	0.129 ± 0.388	0.766	pCi/L	8	905.0	04/12/10:203582	905.0	04/14/10:204295
Total Alpha Radium (226)	0.000 ± 0.149	0.353	pCi/L	3	903.0	04/09/10:203519	903.0	04/12/10:204175
Tritium	3.44 ± 227	381	pCi/L	20000	906.0	04/12/10:203581	906.0	04/13/10:204297
Uranium	3.33 ± 1.36	0.370	pCi/L	20	908.0	04/13/10:203643	908.0	04/14/10:204298
Ra 228	0.357 ± 0.721	0.280	pCi/L	2	Ra - 05	04/10/10:203499	Ra - 05	04/12/10:204178

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGJ) Amber Glass Jar, (P) Plastic Preservatives: N/A

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = (Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: 805/392-2000
FAX: 805/525-4172
CA NELAP Certification No. 01110CA

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: 209/942-0182
FAX: 209/942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: 530/343-5818
FAX: 530/343-3807
CA ELAP Certification No. 2670

Field Office
Visalia, California
TEL: 559/734-9473
Mobile: 559/737-2399
FAX: 559/734-8435

FGL ENVIRONMENTAL

Analytical Chemists

April 15, 2010
Calscience Environmental Laboratories

Lab ID : SP 1003317
Customer : 2-17756

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	04/12/2010:204171	CCV	cpm	10950	41.1 %	38 - 46	
			CCB	cpm		0.0800	0.17	
Beta	900.0	04/12/2010:204171	CCV	cpm	10950	88.4 %	83 - 101	
			CCB	cpm		0.3400	0.61	
Gross Alpha	900.0	04/08/2010:203482	Blank	pCi/L		0.03	3	
			LCS	pCi/L	150.4	111 %	75-125	
			MS	pCi/L	150.4	90.4 %	60-140	
		(CH 1071923-001)	MSD	pCi/L	150.4	90.9 %	60-140	
			MSRPD	pCi/L	150.4	0.6%	≤30	
Gross Beta	900.0	04/08/2010:203482	Blank	pCi/L		0.50	4	
			LCS	pCi/L	47.84	99.4 %	75-125	
			MS	pCi/L	47.84	126 %	80-130	
		(CH 1071923-001)	MSD	pCi/L	47.84	108 %	80-130	
			MSRPD	pCi/L	150.4	15.5%	≤30	
Alpha	903.0	04/12/2010:204175	CCV	cpm	10480	39.3 %	37 - 45	
			CCB	cpm		0.100	0.14	
Total Alpha Radium (226)	903.0	04/09/2010:203519	RgBlk	pCi/L		0.08	2	
			LCS	pCi/L	18.17	59.6 %	52-89	
			BS	pCi/L	18.17	48.2 %	43-92	
			BSD	pCi/L	18.17	47.9 %	43-92	
			BSRPD	pCi/L	18.17	0.5%	≤35.5	
Beta	905.0	04/14/2010:204295	CCV	cpm	10950	91.7 %	82 - 101	
			CCB	cpm		0.9400	1.38	
Total Strontium	905.0	04/12/2010:203582	RgBlk	pCi/L		0.46	2	
			LRS	pCi/L	19.99	129 %	53-133	
			BS	pCi/L	19.99	102 %	75-125	
			BSD	pCi/L	19.99	99.6 %	75-125	
			BSRPD	pCi/L	19.99	2.3%	≤20	
Tritium	906.0	04/12/2010:203581	Blank	pCi/L		100	1000	
			LCS	pCi/L	2028	96.7 %	75-125	
			BS	pCi/L	2028	90.1 %	75-125	
			BSD	pCi/L	2028	99.4 %	75-125	
			BSRPD	pCi/L	2028	9.3%	≤25	
	906.0	04/13/2010:204297	CCV	pCi/L	43060	94.4 %	90-110	
			CCB	pCi/L		-10	500	
Alpha	908.0	04/14/2010:204298	CCV	cpm	10480	40.6 %	38 - 47	
			CCB	cpm		0.100	0.15	
Uranium	908.0	04/13/2010:203643	RgBlk	pCi/L		0.16	1	
			LRS	pCi/L	20.86	58.0 %	54-105	
			BS	pCi/L	20.86	96.8 %	75-125	
			BSD	pCi/L	20.86	84.9 %	75-125	
			BSRPD	pCi/L	20.86	13.1%	≤20	
Beta	Ra - 05	04/12/2010:204178	CCV	cpm	10950	88.4 %	83 - 101	
			CCB	cpm		0.3000	0.47	
Ra 228	Ra - 05	04/10/2010:203499	RgBlk	pCi/L		-0.04	3	
			LRS	pCi/L	80.20	44.9 %	27-59	
			BS	pCi/L	80.20	79.4 %	75-125	
			BSD	pCi/L	80.20	67.5 %	75-125	435
			BSRPD	pCi/L	80.20	16.2%	≤25	

Definition

CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB : Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk : Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.

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Field Office
Visalia, California
TEL: 559/734-9473
Mobile: 559/737-2399
FAX: 559/734-8435

April 15, 2010
Calscience Environmental Laboratories

Lab ID : SP 1003317
Customer : 2-17756

Quality Control - Radio

Definition	
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
Explanation	
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

RUSH

TO: FGL

10033317

CHAIN OF CUSTODY RECORD

DATE: 04/07/10
PAGE: 1 OF 1

RUSH

LABORATORY CLIENT: Calscience Environmental Laboratories, Inc.	CLIENT PROJECT NAME / NUMBER: 10-04-0403
ADDRESS: 7440 Lincoln Way	P.O. NO.:
CITY: Garden Grove, CA 92841-1427	PROJECT CONTACT: Vik Patel
TEL: 714/895-5494	QUOTE NO.:
FAX: 714/894-7501	SAMPLER(S): (SIGNATURE)
E-MAIL: vipatel@calscience.com	LAB USE ONLY:

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:

5 DAY TAT (If Possible) RUSH

REQUESTED ANALYSIS

RUSH

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	Radium 226	Radium 228	Gross Alpha & Beta	Strontium 90	Uranium (900.8)	Tritium
	Well #3		04/06/10	1510	W	8	X	X	X	X	X	X

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Wdat Cel	GSO 513903271	4/7/10	1500
		4/8/10	1015

2°C

FGL Environmental
Revision Date: 10/18/07

Doc ID: F2REC005.011
Page: 1 of 1

Santa Paula - Condition Upon Receipt (Attach to COC)

Sample Receipt:

1. Number of ice chests/packages received: 2 1
   Note as OTC if received over the counter unpackaged.
2. Were samples received in a chilled condition? Temps: ____ / ____ / ____ / ____ / ____
   Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
3. Do the number of bottles received agree with the COC? Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
5. Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? Yes No
2. Did bottle labels correspond with the client's ID's? Yes No
3. Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
4. VOAs checked for Headspace? Yes No N/A
5. Were all analyses within holding times at time of receipt? Yes No
6. Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): JB

Sbg MMF 4/8/10

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: ____________ Phone Number: ____________
   Initiated By: ____________ Date: ____________
   Problem:

   Resolution:

2. Person Contacted: ____________ Phone Number: ____________
   Initiated By: ____________ Date: ____________
   Problem:

   Resolution:

(2-17756)
Calscience Environmental Laboratories
SP 1003317
here
SRP-04/08/2010-12:36:46

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Figure F-1
Pumping and Drawdown Effects
Calico Solar
Well #1 Short-Term Stepped-Rate Test

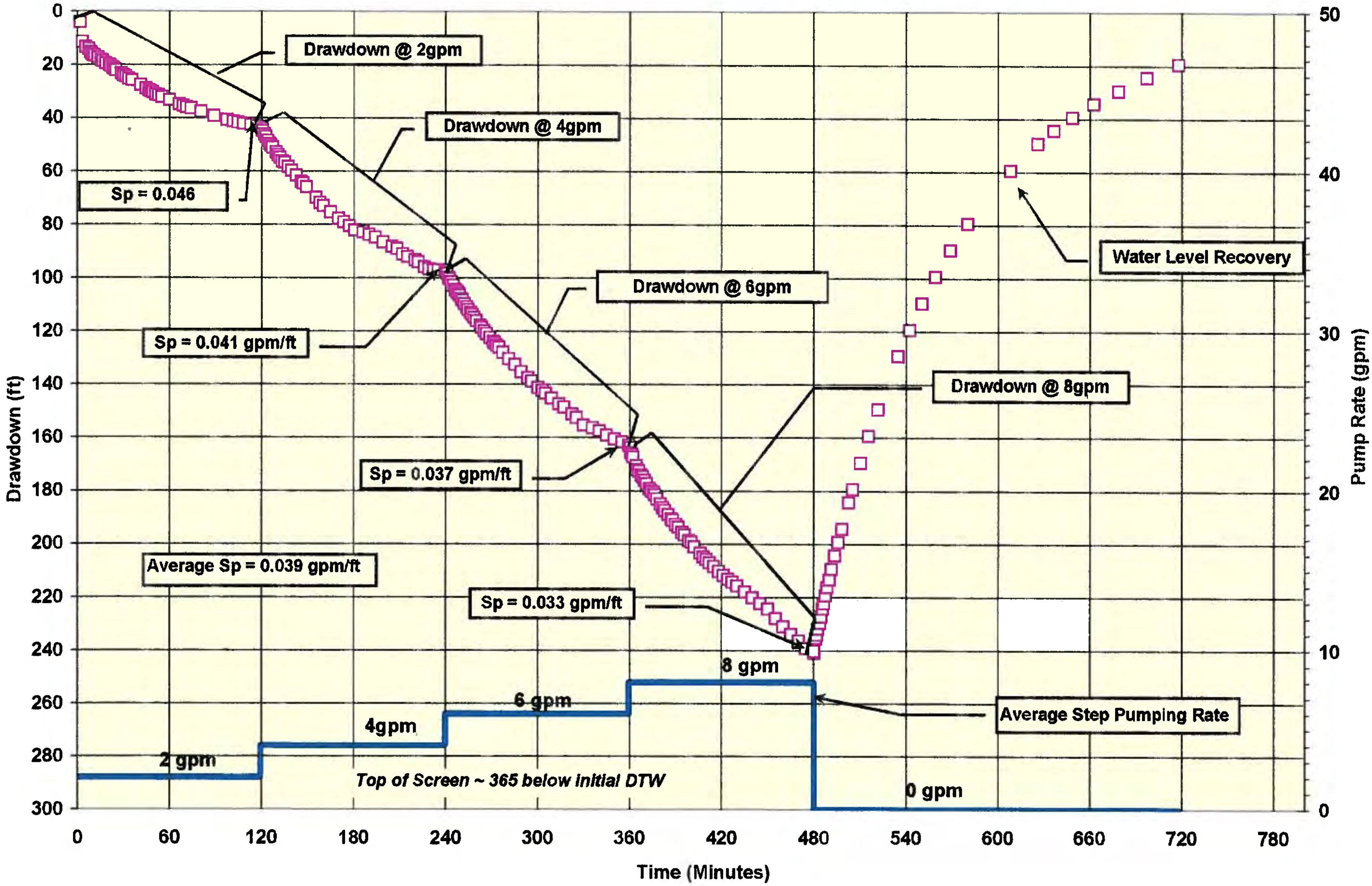
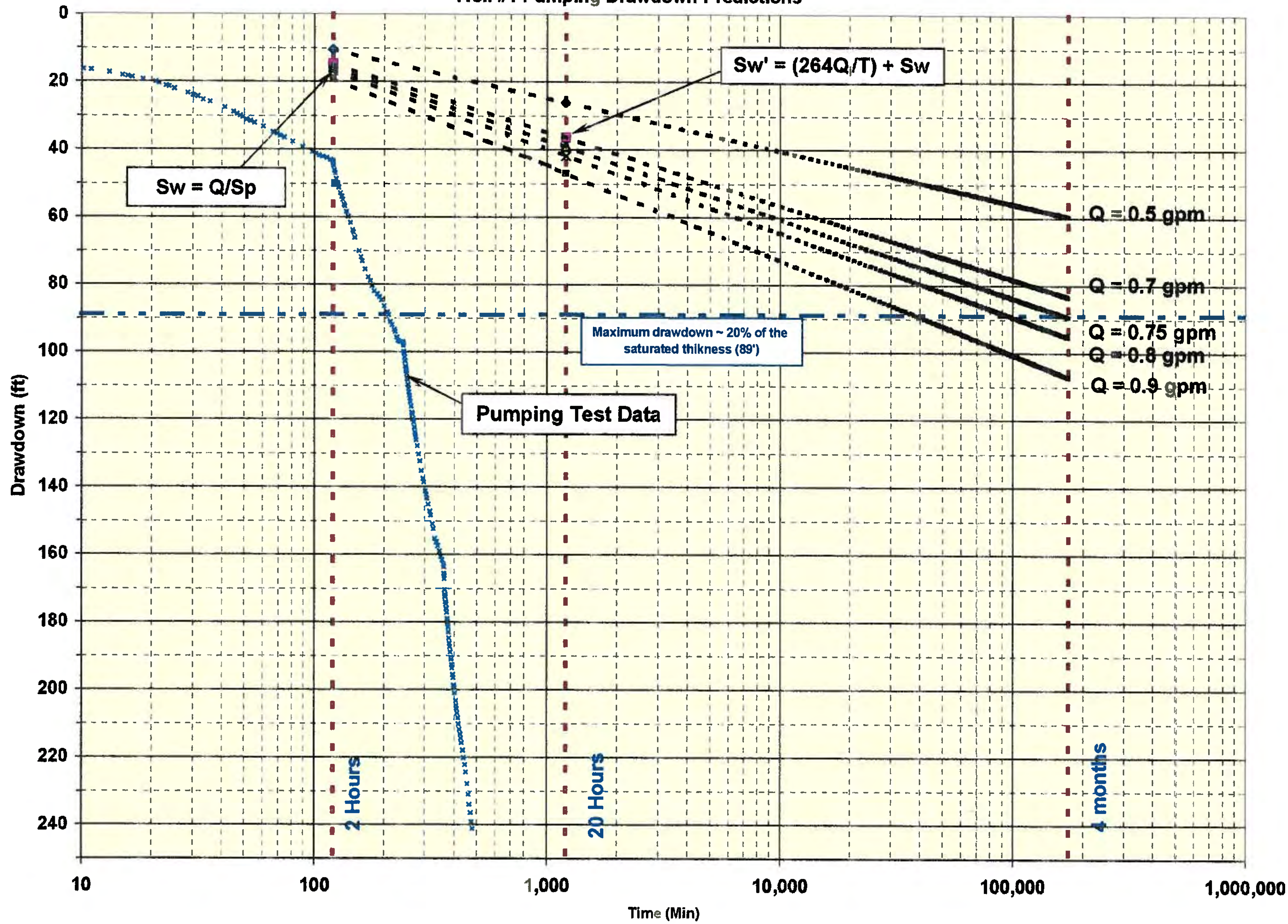
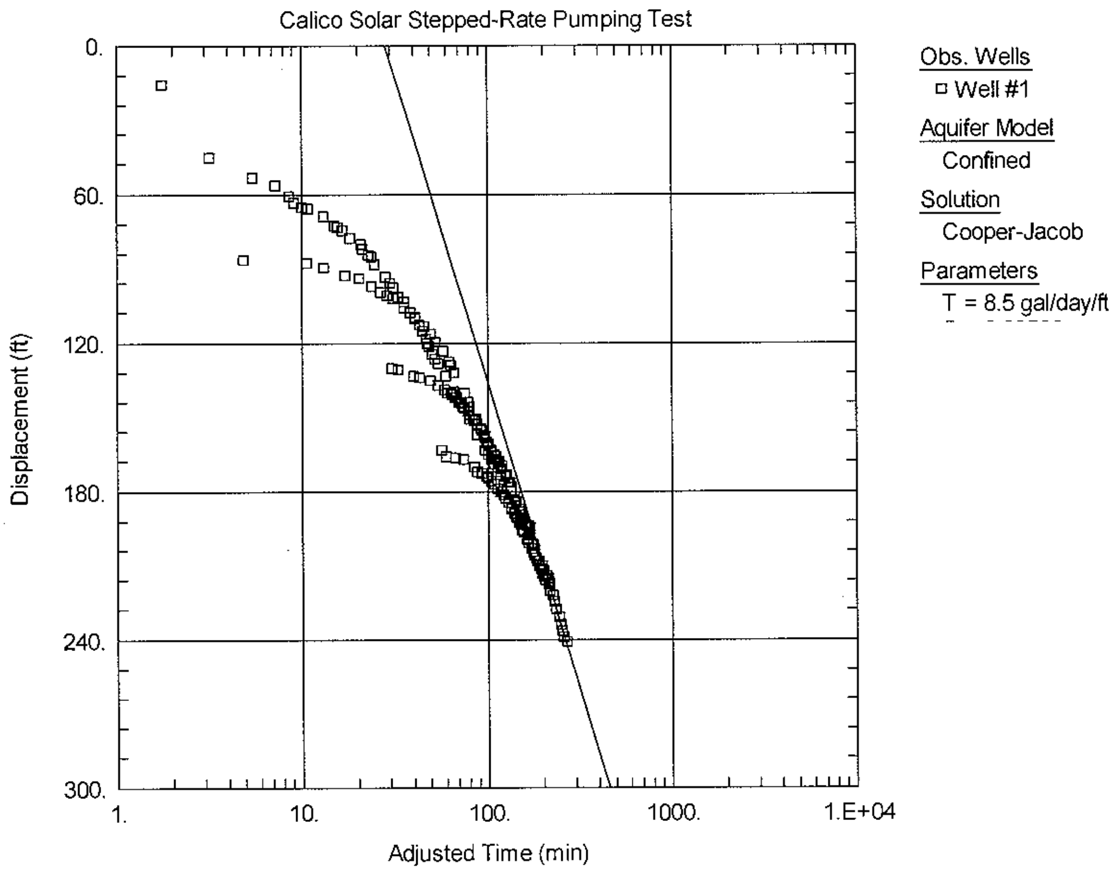


Figure F-2
Calico Solar
Well #1 Pumping Drawdown Predictions




Calico Solar Stepped-Rate Pumping Test
0.
60.
120.
180.
240.
300.
Displacement (ft)
1.
10.
100.
1000.
1.E+04
Adjusted Time (min)
Obs. Wells
Well #1
Aquifer Model
Confined
Solution
Cooper-Jacob
Parameters
T = 8.5 gal/day/ft

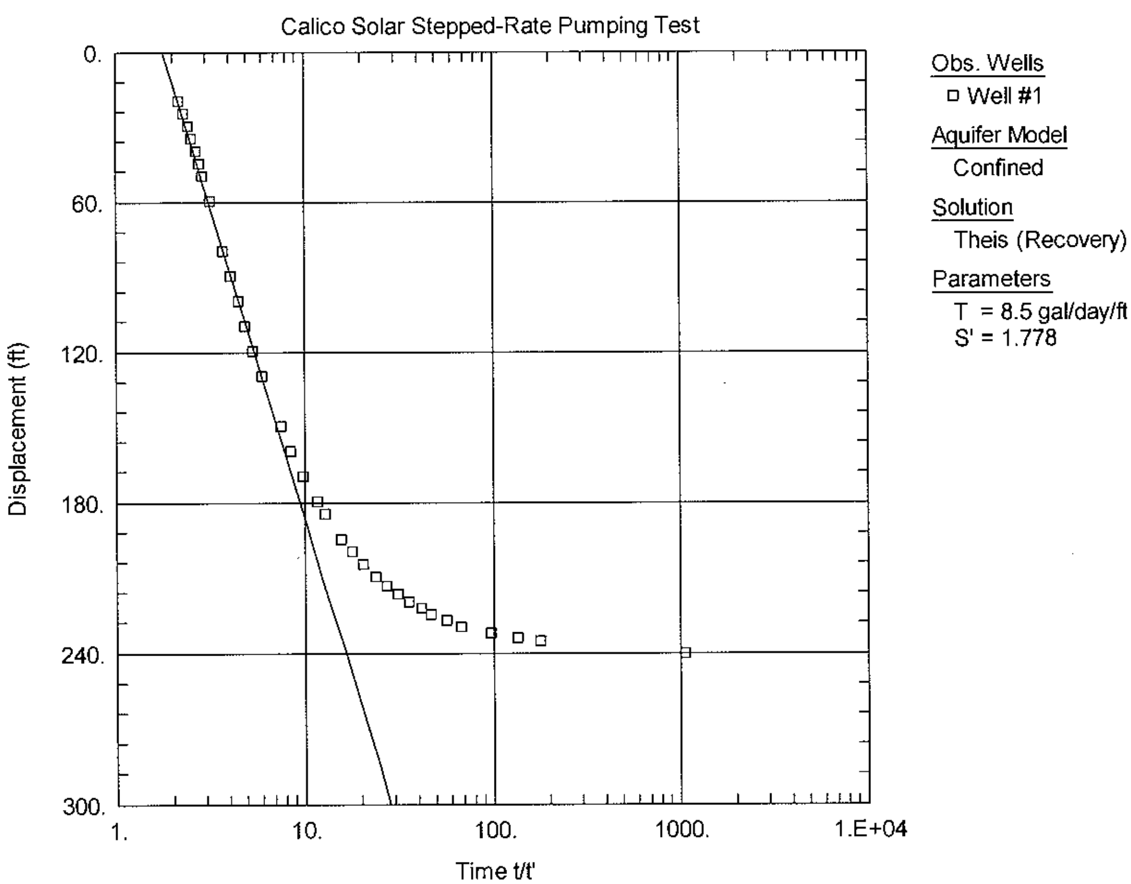

Calico Solar Stepped-Rate Pumping Test
0.
60.
120.
180.
240.
300.
Displacement (ft)
1.
10.
100.
1000.
1.E+04
Time t/t'
Obs. Wells
Well #1
Aquifer Model
Confined
Solution
Theis (Recovery)
Parameters
T = 8.5 gal/day/ft
S' = 1.778

Figure F-3
Pumping and Drawdown Effects
Calico Solar
Well #3 Constant Rate

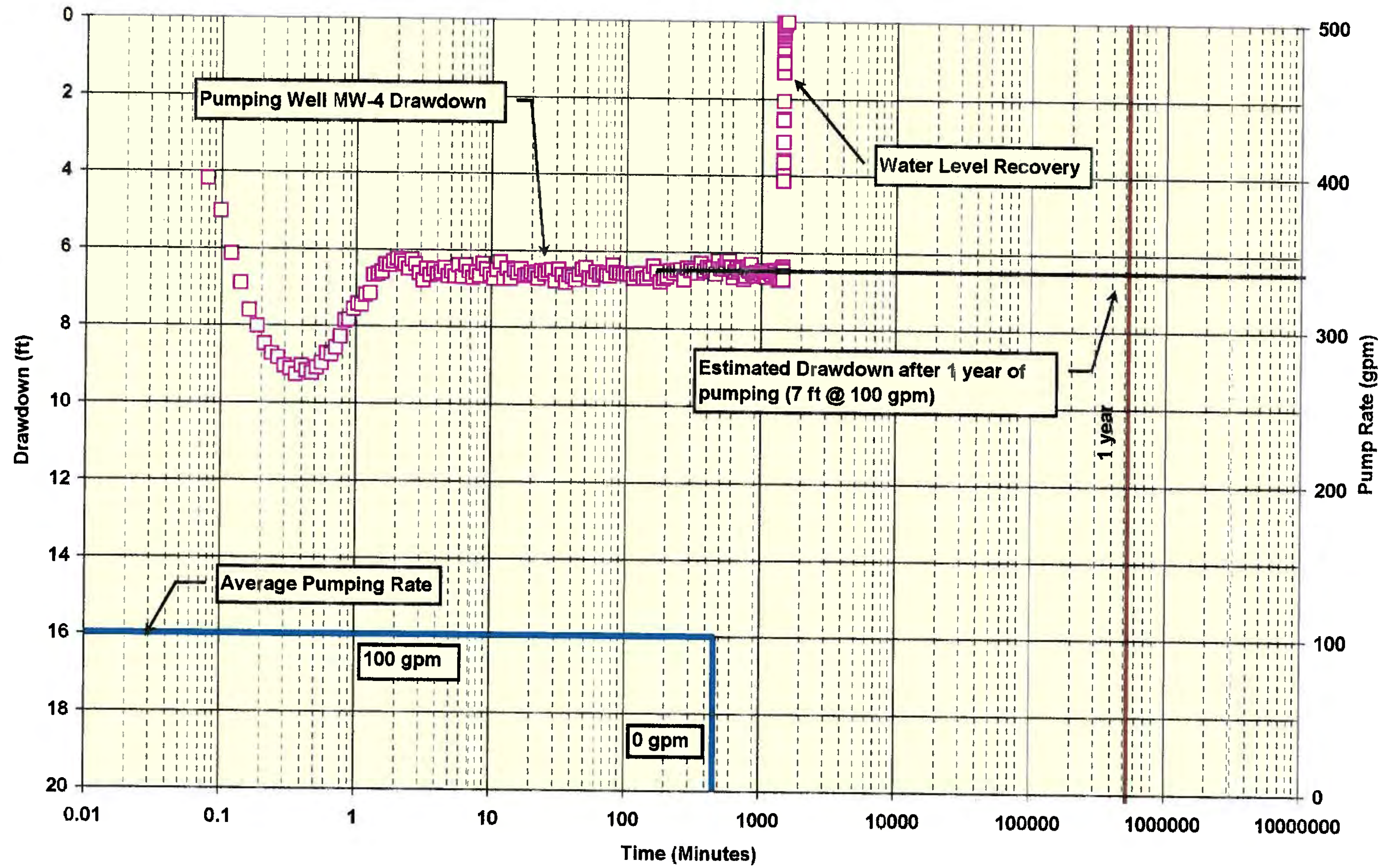
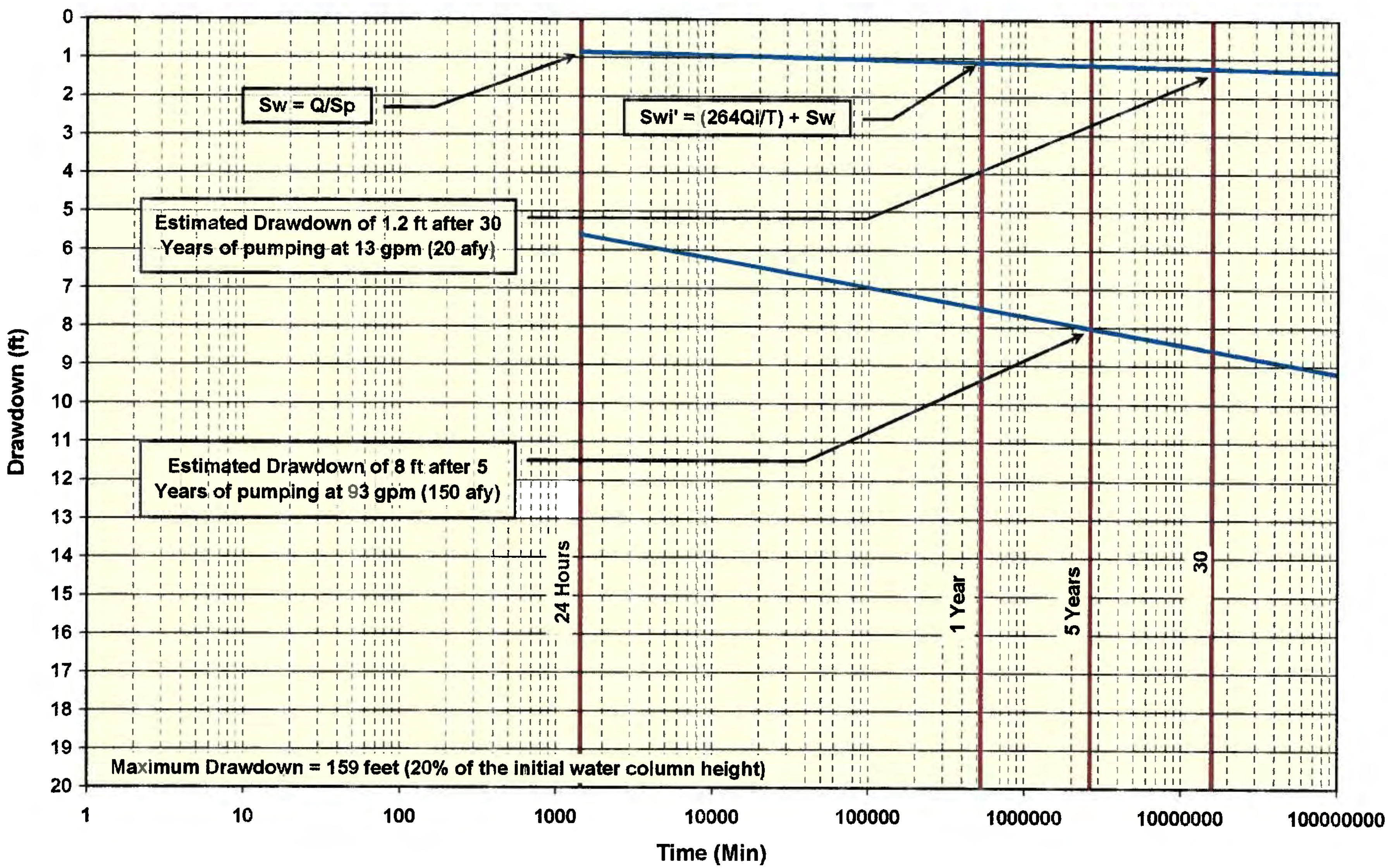


Figure F-4
Drawdown Prediction
Calico Solar
Well #3 Constant Rate



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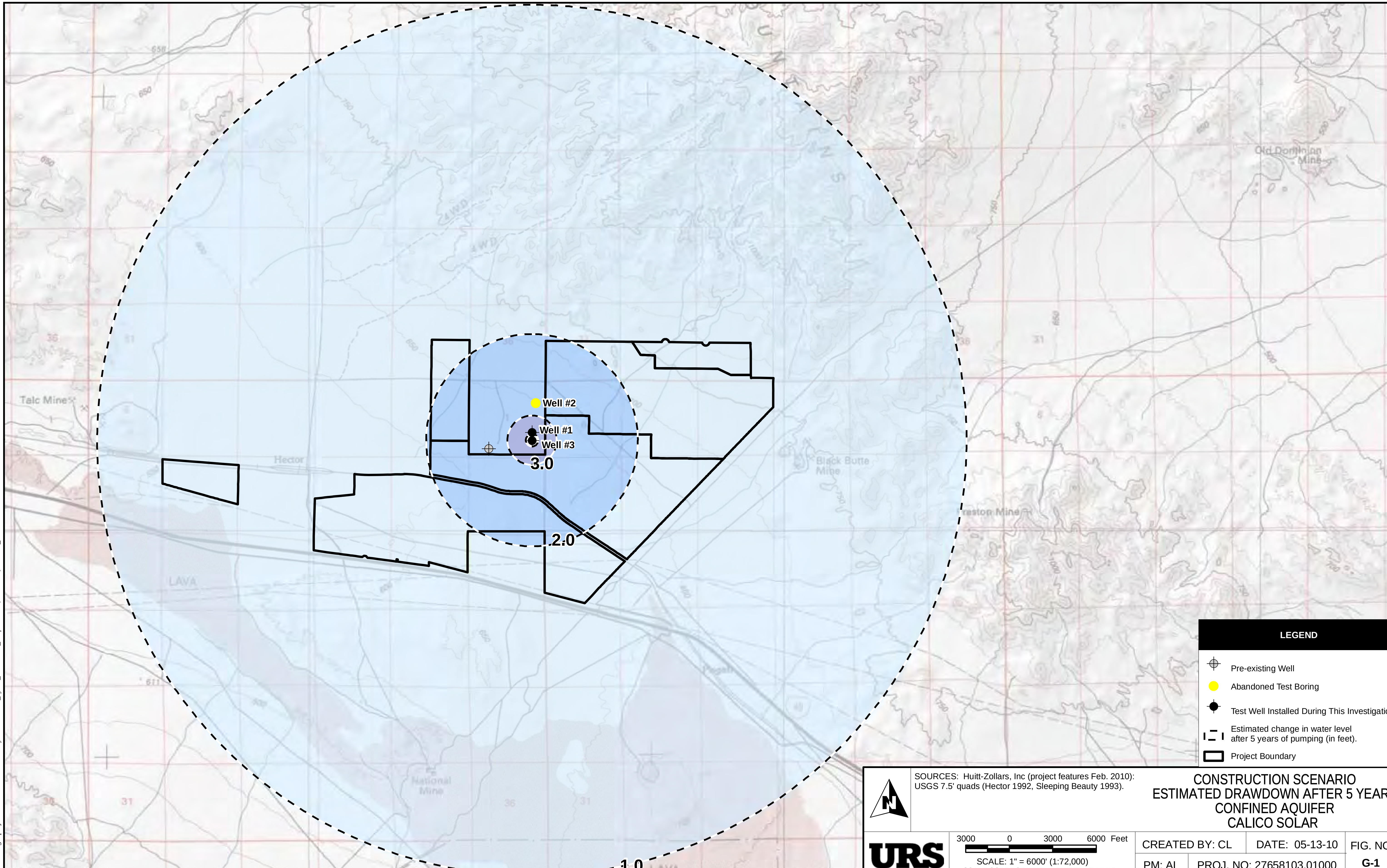


LEGEND

- Pre-existing Well
- Abandoned Test Boring
- Test Well Installed During This Investigation
- Estimated change in water level after 5 years of pumping (in feet).
- Project Boundary

SOURCES: Huitt-Zollars, Inc (project features Feb. 2010): USGS 7.5' quads (Hector 1992, Sleeping Beauty 1993).

CONSTRUCTION SCENARIO
ESTIMATED DRAWDOWN AFTER 5 YEARS
CONFINED AQUIFER
CALICO SOLAR

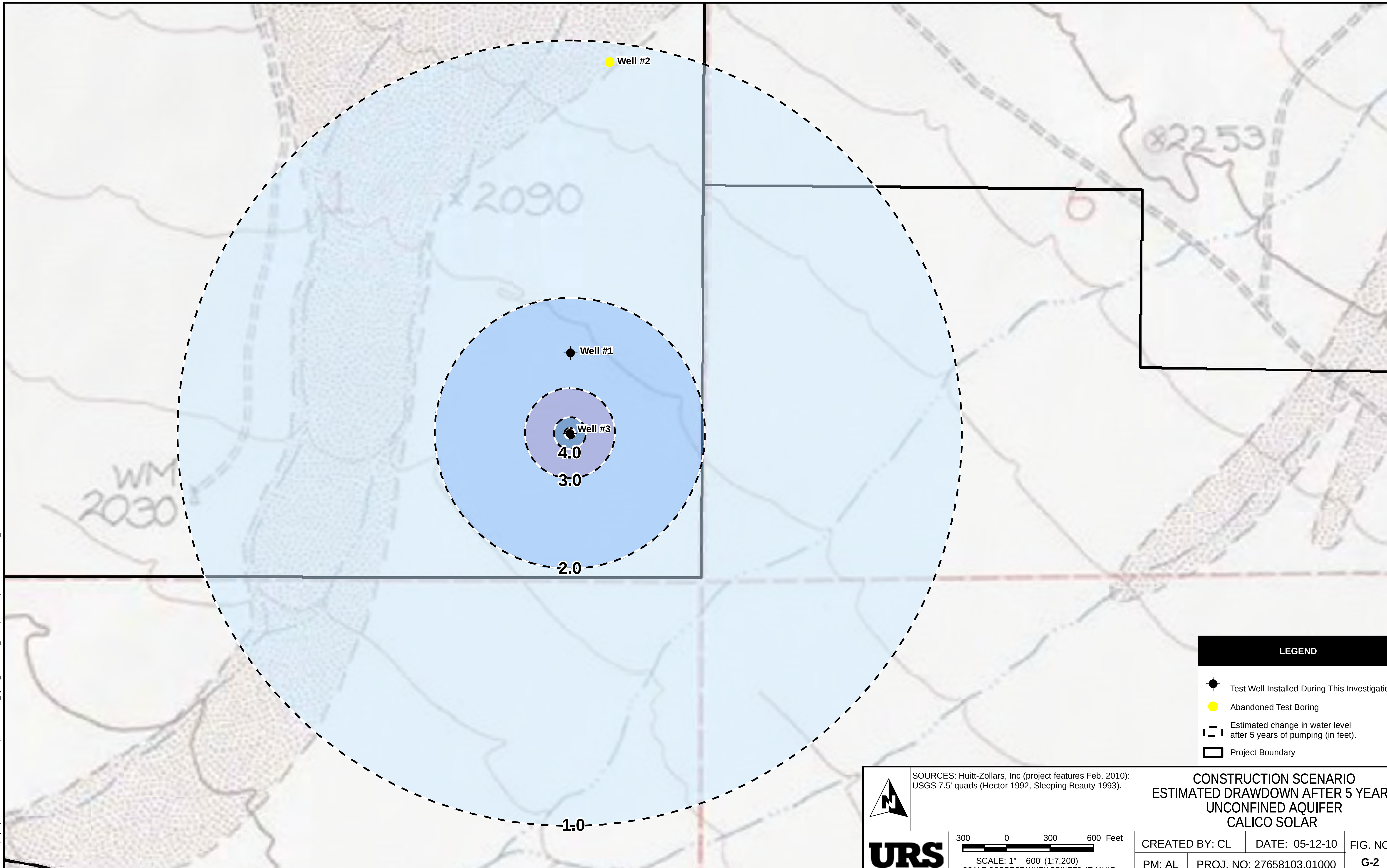
URS

3000 0 3000 6000 Feet

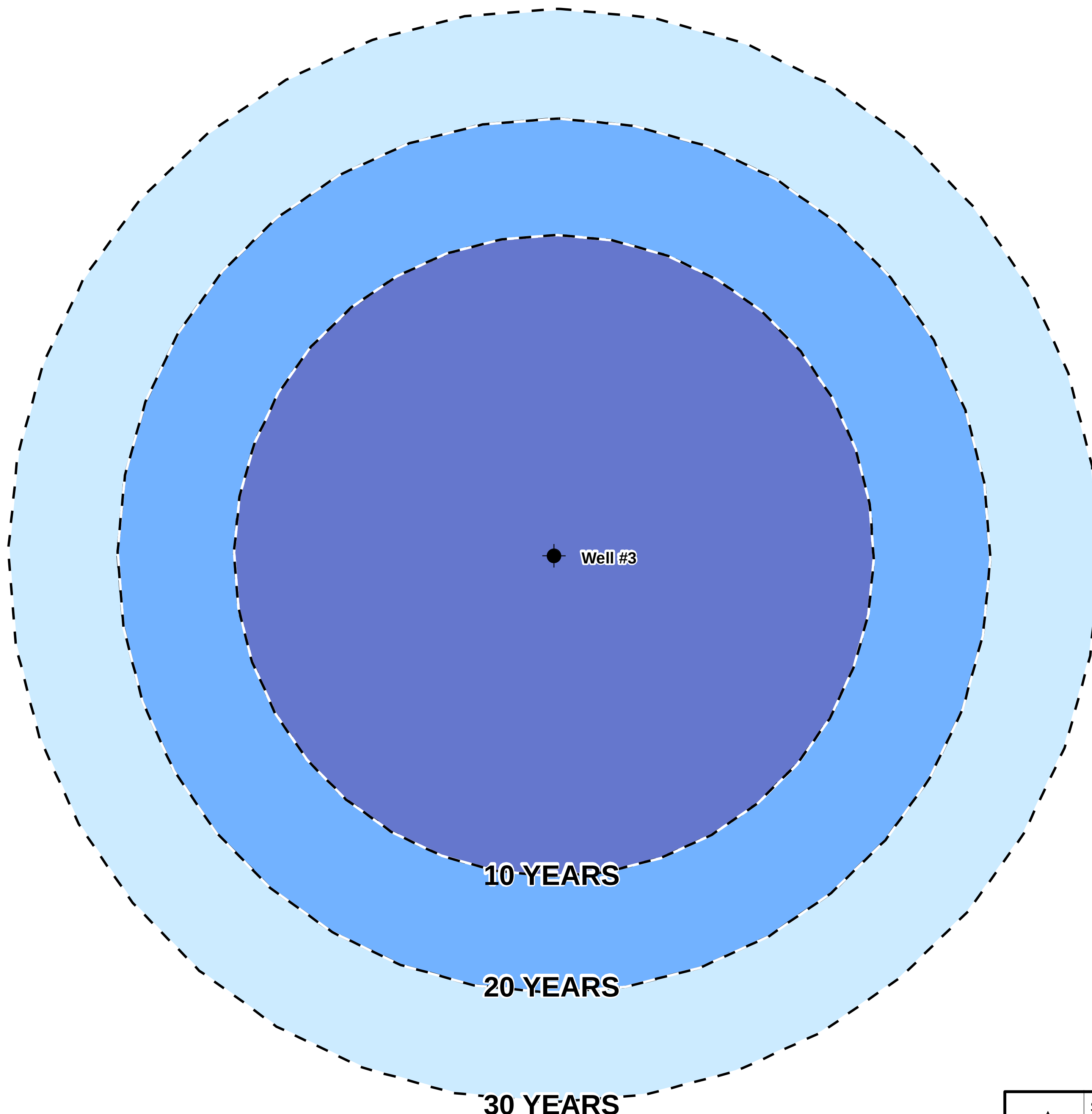
SCALE: 1" = 6000' (1:72,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CL	DATE: 05-13-10	FIG. NO:
PM: AL	PROJ. NO: 27658103.01000	G-1

Path: G:\gis\projects\1577\27658100\mxd\Hydro\Well\well_5year_drawdown_confined.mxd, 05/13/10, camille_lill



Path: G:\gis\projects\1577\27658100\mxd\Hydro\Well\well_5year_drawdown_unconfined.mxd, 05/13/10, camille_lill



LEGEND

Test Well Installed During This Investigation

1-Foot Drawdown Contours

SOURCES: Huitt-Zollars, Inc (project features Feb. 2010):
USGS 7.5' quads (Hector 1992, Sleeping Beauty 1993).

1-FOOT DRAWDOWN CONTOURS
AFTER 10, 20 AND 30 YEARS
CONFINED AQUIFER
CALICO SOLAR

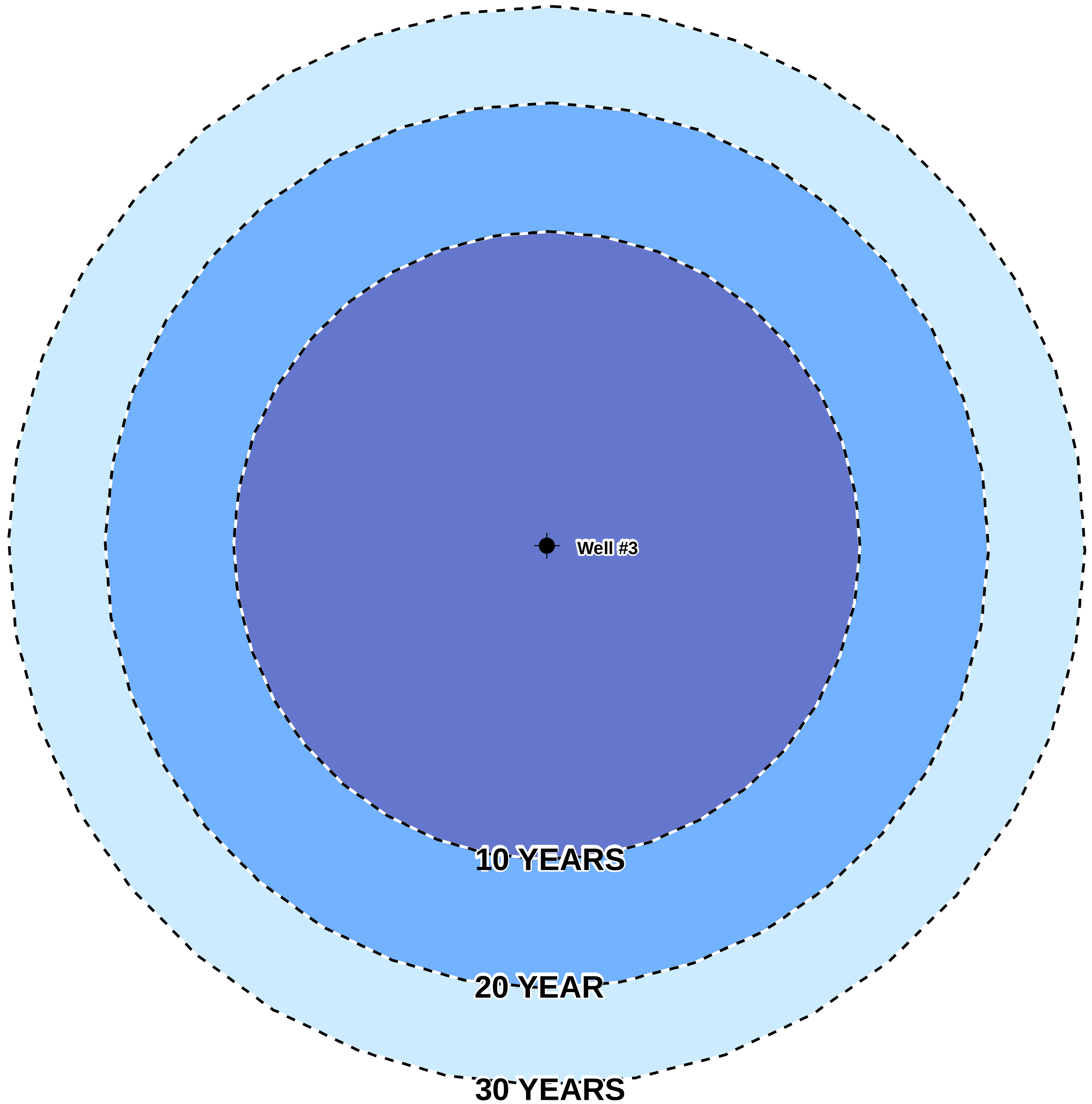
URS

1 0 1 2 Feet

SCALE: 1" = 2' (1:24)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CL	DATE: 05-12-10	FIG. NO:
PM: AL	PROJ. NO: 27658103.01000	G-3

Path: G:\gis\projects\1577\27658100\mxd\Hydro\Well\well1_1ft_drawdown_confined.mxd, 05/13/10, camille_lill



LEGEND

Test Well Installed During This Investigation

1-Foot Drawdown Contours

SOURCES: Huitt-Zollars, Inc (project features Feb. 2010):
USGS 7.5' quads (Hector 1992, Sleeping Beauty 1993).

1-FOOT DRAWDOWN CONTOURS AFTER 10, 20 AND 30 YEARS UNCONFINED AQUIFER CALICO SOLAR

URS

1 0 1 2 Feet

SCALE: 1" = 2' (1:24)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CL	DATE: 05-12-10	FIG. NO:
PM: AL	PROJ. NO: 27658103.01000	G-4

Path: G:\gis\projects\1577\27658100\mxd\Hydro\Well\well_1ft_drawdown_unconfined.mxd, 05/13/10, camille_lill

Figure G-11
Radial Cone of Depression
Unconfined Aquifer at 20 Years of Operations

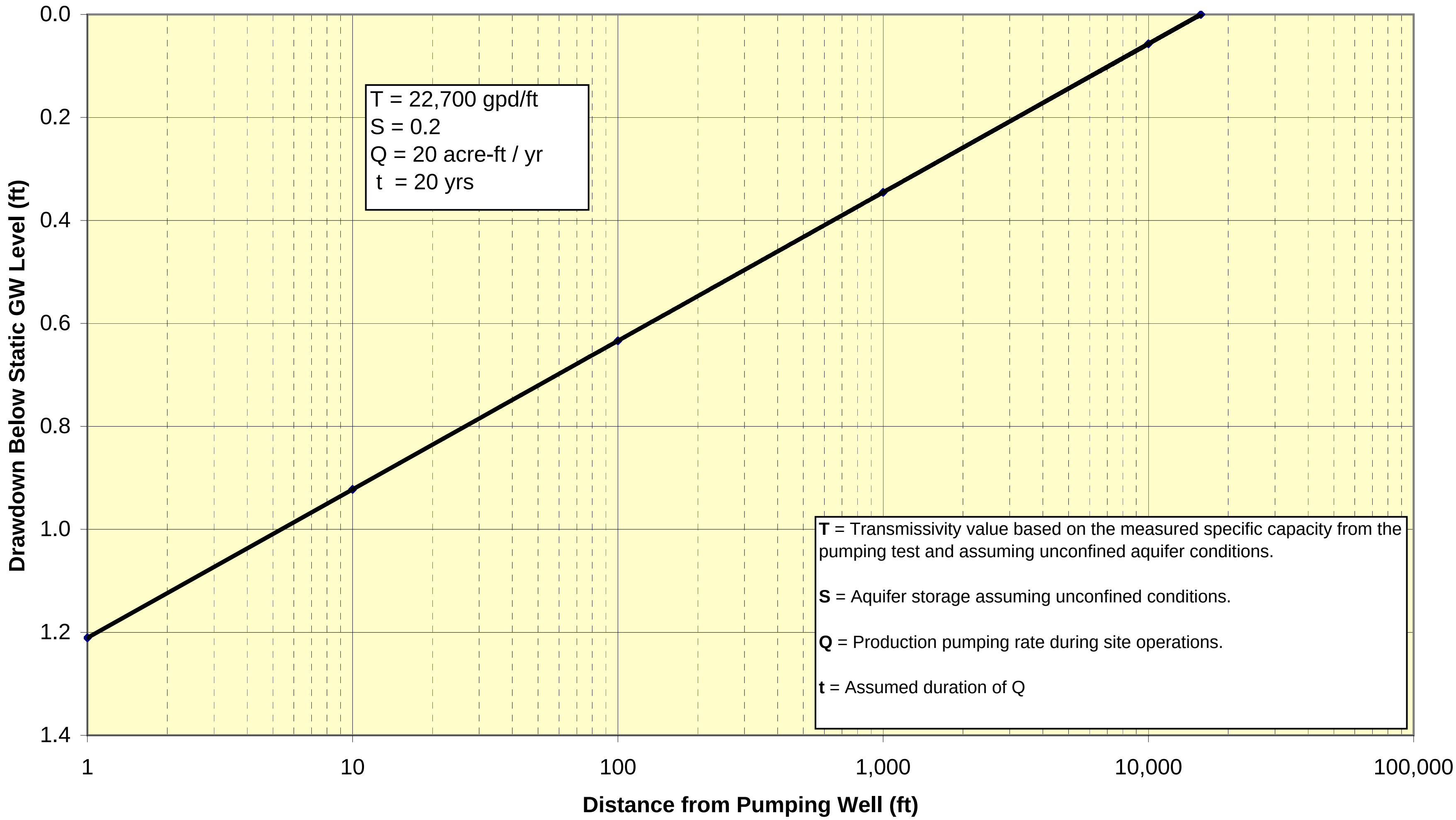


Figure G-10
Radial Cone of Depression
Unconfined Aquifer at 10 Years of Operations

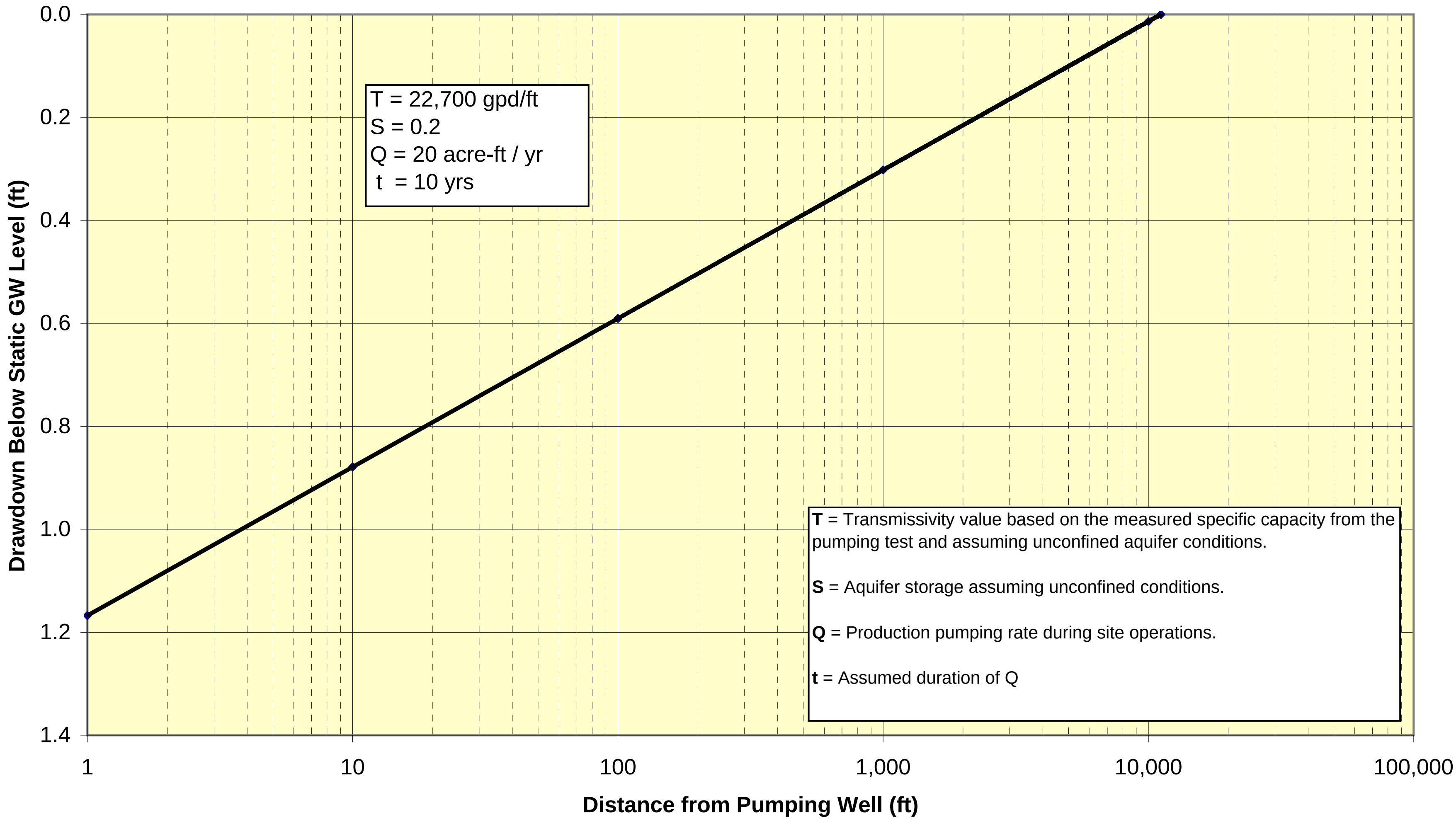


Figure G-9
Radial Cone of Depression
Unconfined Aquifer at 5 Years of Construction

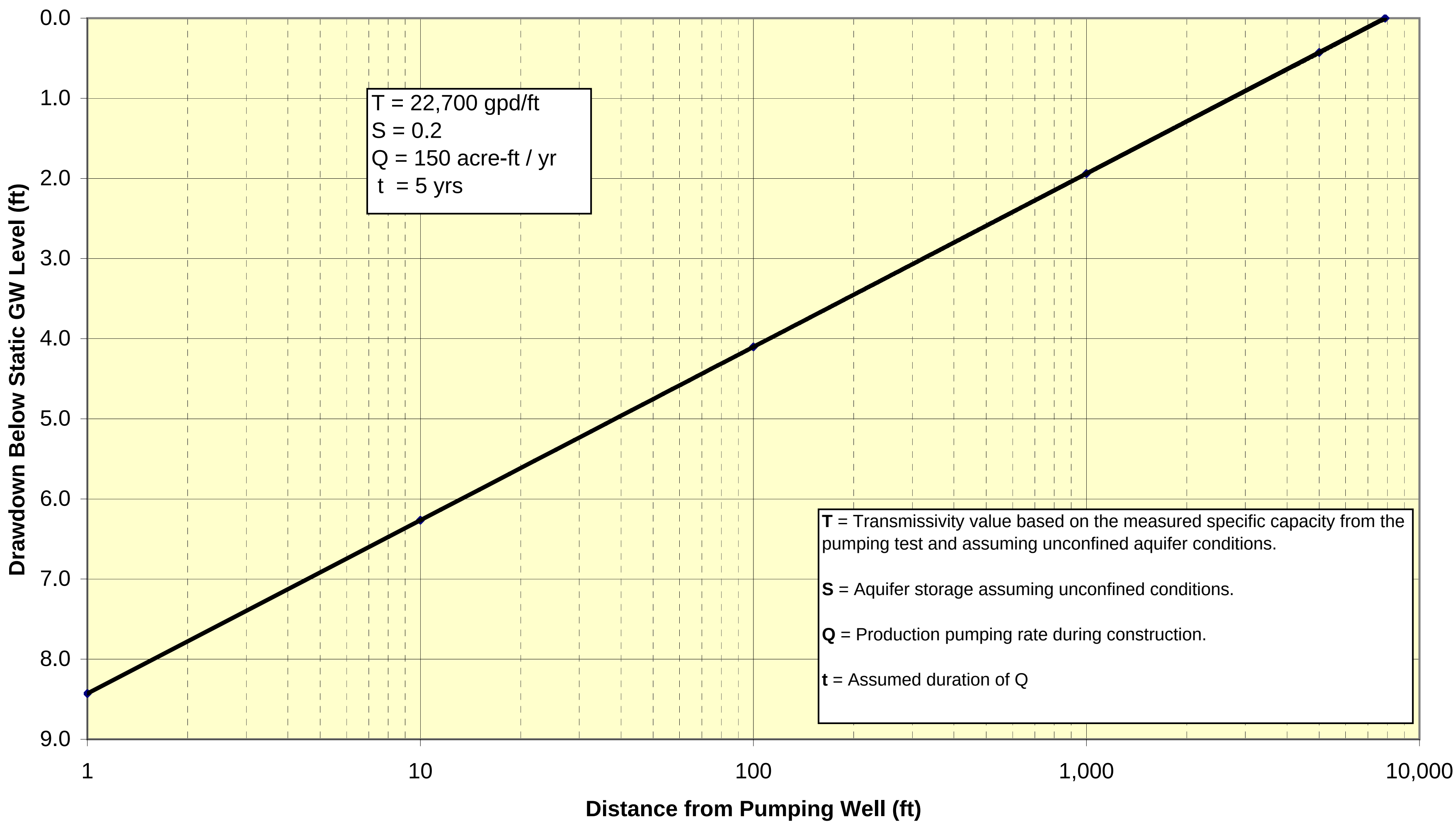


Figure G-8
Radial Cone of Depression
Confined Aquifer at 30 Years of Operations

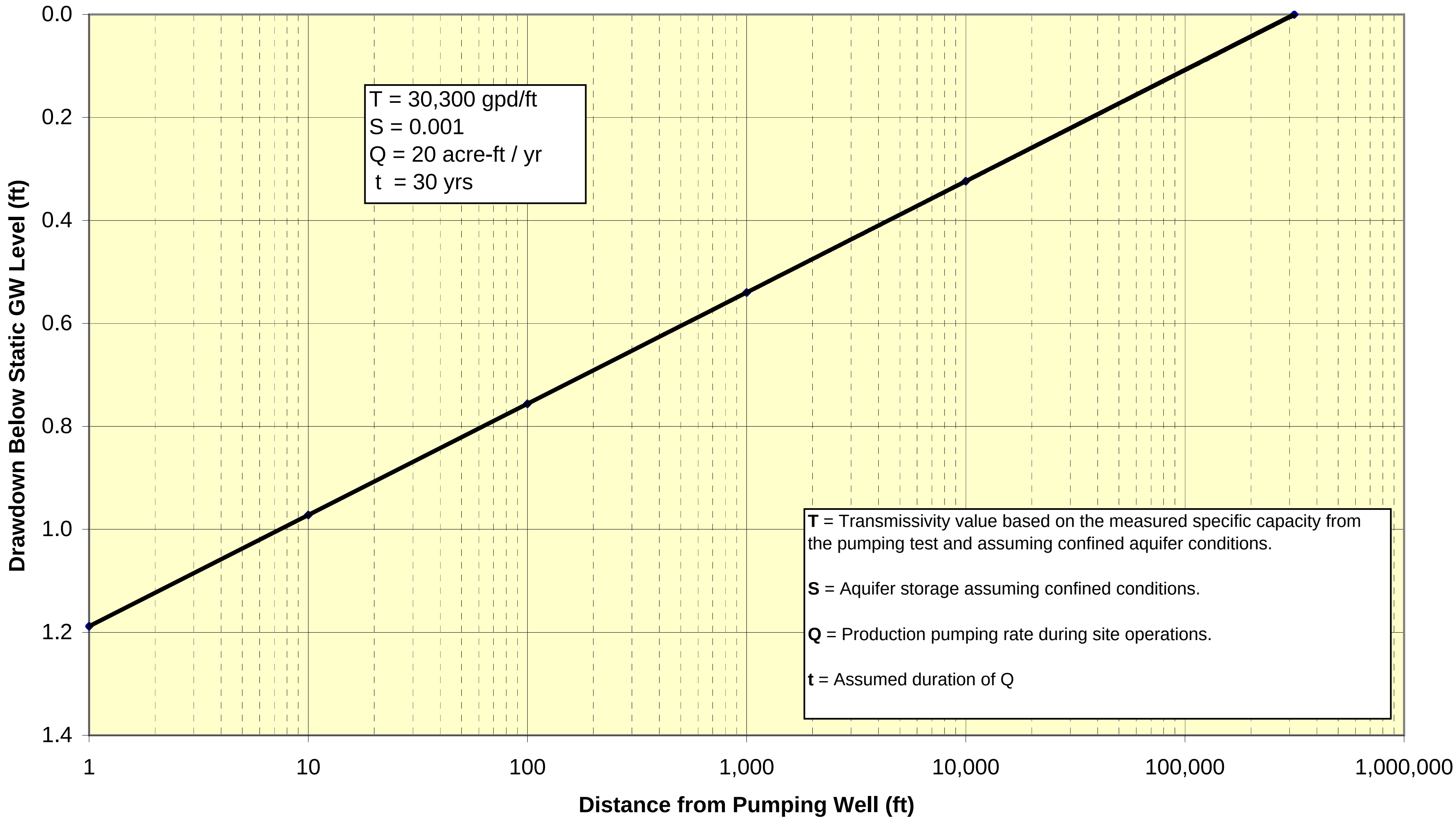


Figure G-7
Radial Cone of Depression
Confined Aquifer at 20 Years of Operations

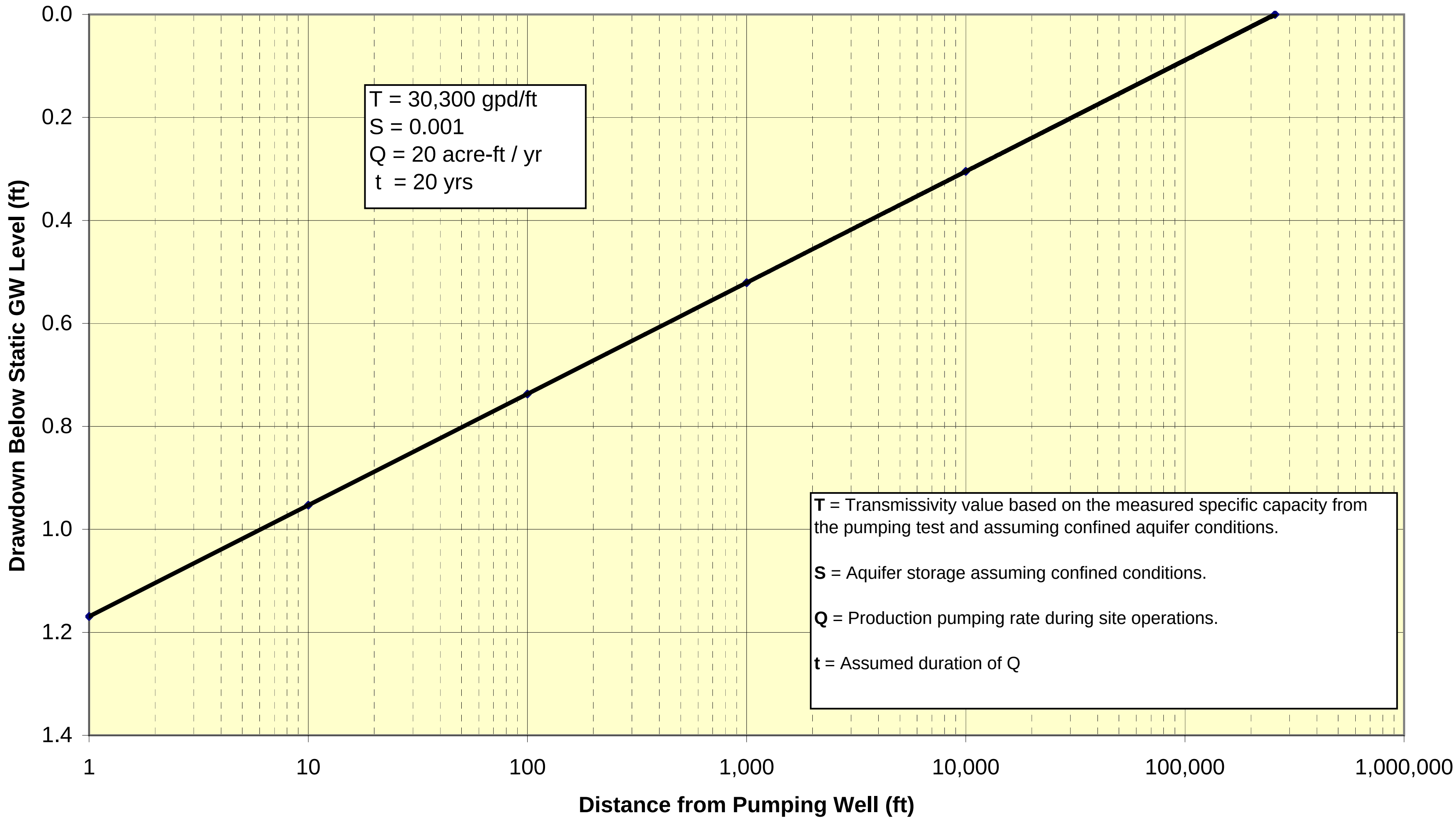


Figure G-6
Radial Cone of Depression
Confined Aquifer at 10 Years of Operations

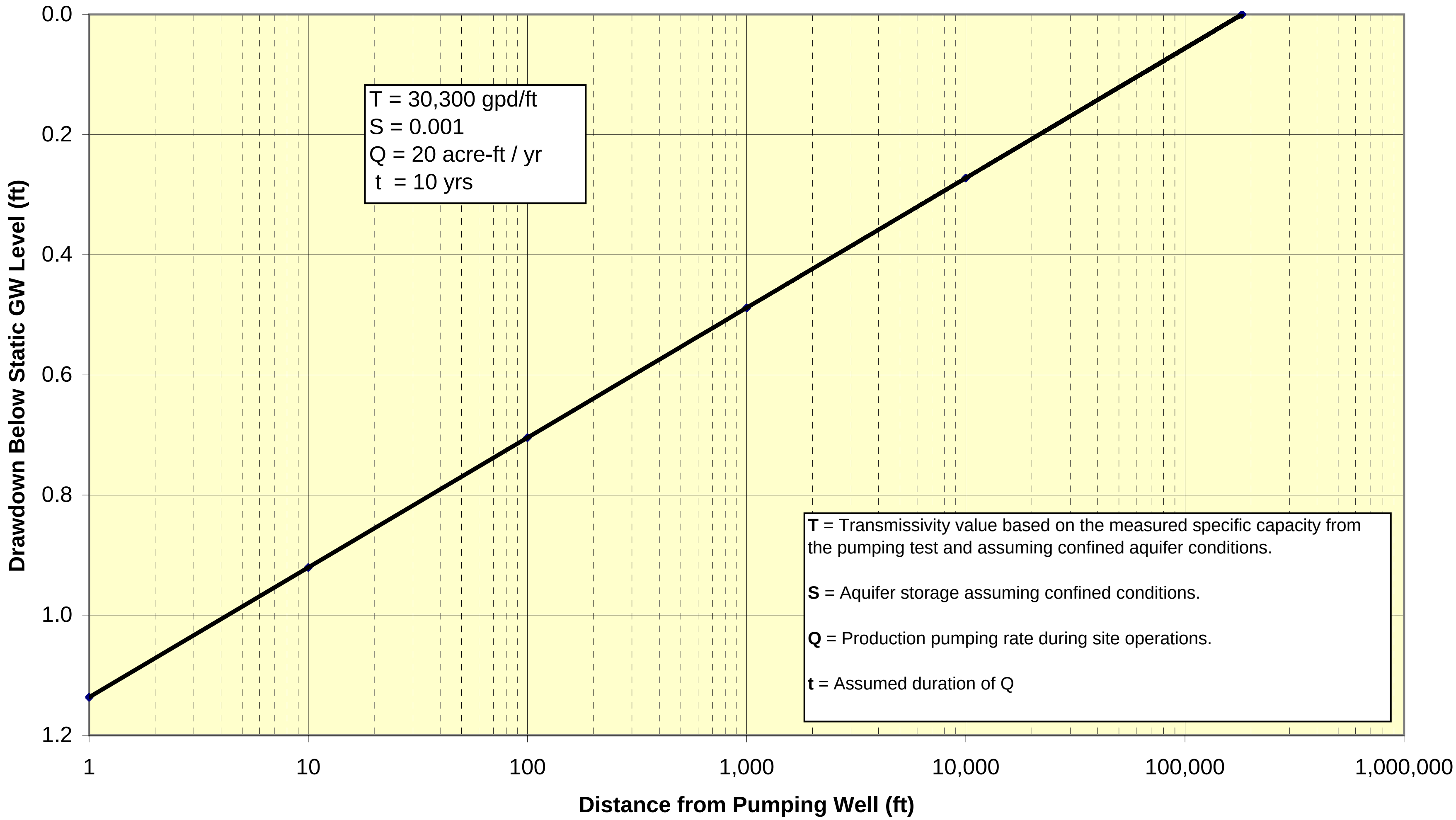


Figure G-5
Radial Cone of Depression
Confined Aquifer at 5 Years of Construction

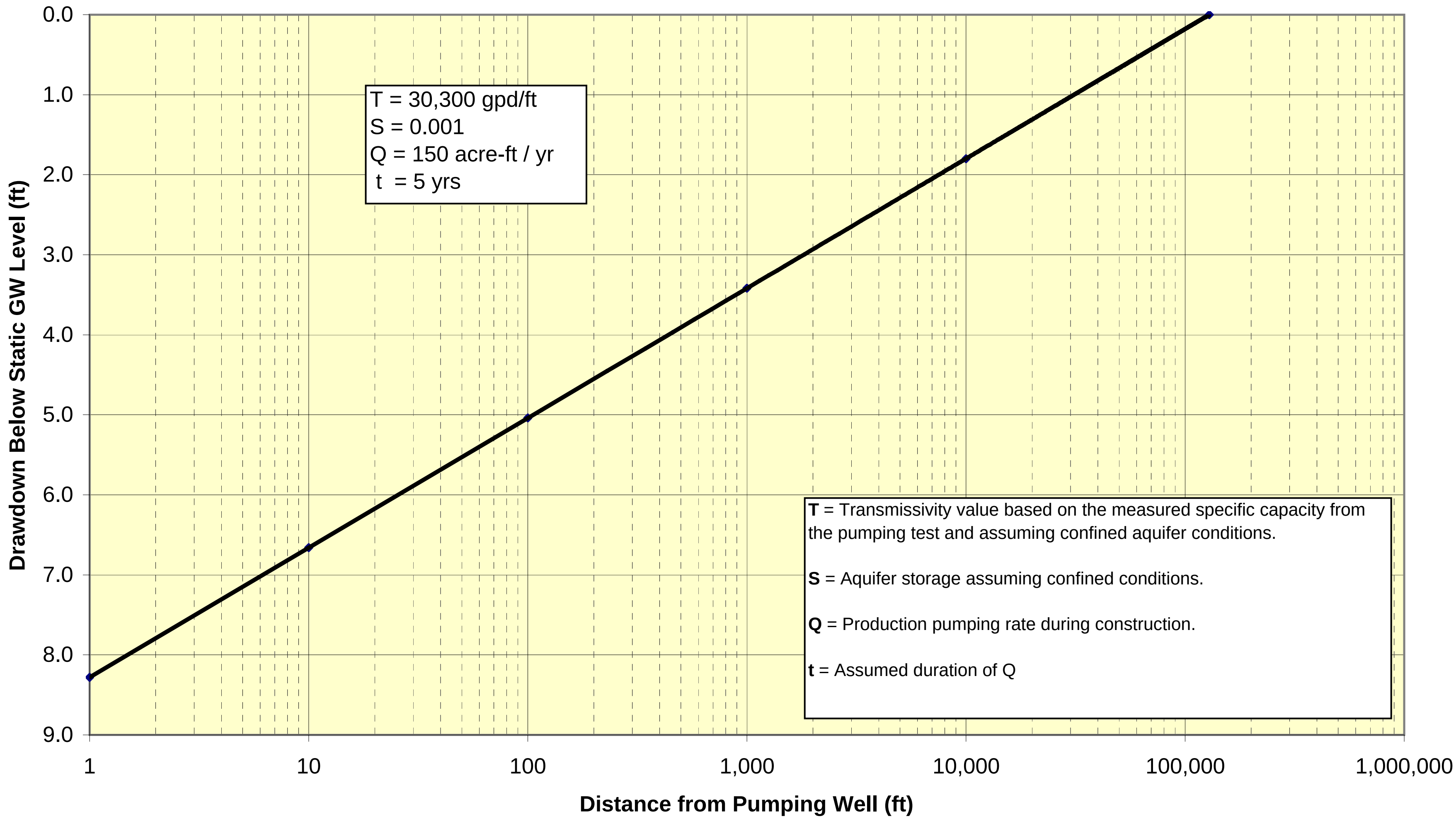
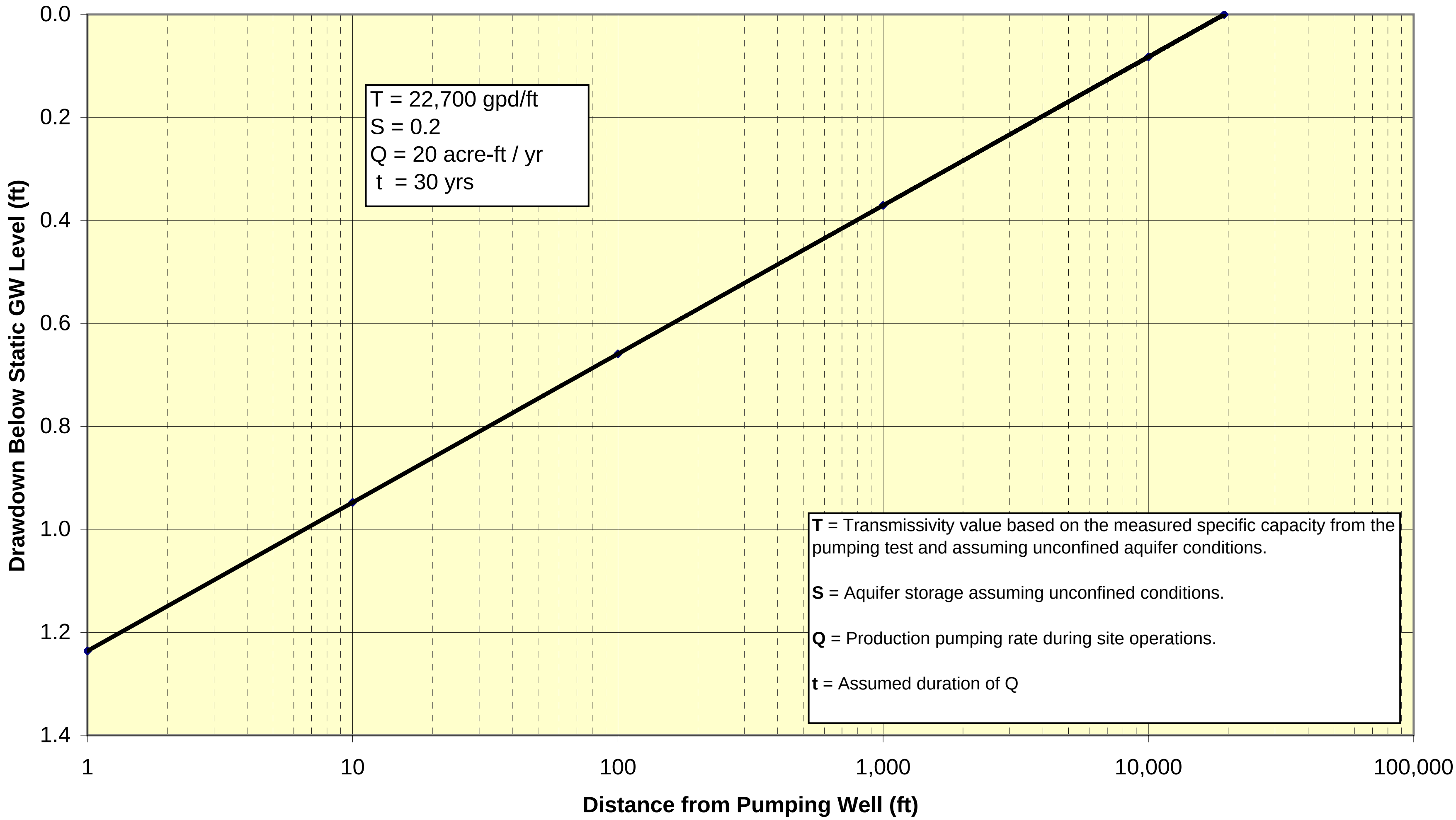


Figure G-12
Radial Cone of Depression
Unconfined Aquifer at 30 Years of Operations



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
For the CALICO SOLAR (Formerly SES Solar One)

Docket No. 08-AFC-13

PROOF OF SERVICE
(Revised 5/11/10)

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*indicates change

DECLARATION OF SERVICE

I, Jennifer Draper, declare that on May 14, 2010, I mailed hard copies of the attached Applicant's Supplement to the Calico Solar (formerly Solar One) Application for Certification, dated May 14, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/solarone].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_X___ sent electronically to all email addresses on the Proof of Service list;

____ by personal delivery;

_X___ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_X___ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original signed by
____
Jennifer Draper

*indicates change