APPENDIX A:
ASTM TERMINOLOGY

TERMINOLOGY

The following definitions and descriptions of terms are from the ASTM E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

abandoned property – property that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current owner to surrender rights to the property.

activity and use limitations – legal or physical restrictions or limitations on the use of, or access to, a site or facility: (1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls, are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil, soil vapor, groundwater, and/or surface water on a property.

actual knowledge – knowledge actually possessed by an individual who is a real person, rather than an entity. Actual knowledge is to be distinguished from constructive knowledge that is knowledge imputed to an individual or entity.

adjoining properties – any real property or properties the border of which is contiguous or partially contiguous with that of the subject property, or that would be contiguous or partially contiguous with that of the subject property but for a street, road, or other public thoroughfare separating them.

aerial photographs – photographs taken from an aerial platform with sufficient resolution to allow identification of development and activities.

all appropriate inquiry – that inquiry constituting all appropriate inquiries into the previous ownership and uses of the subject property consistent with good commercial and customary practice as defined in CERCLA, 42 U.S.C. § 9601(35)(B) and 40 C.F.R. Part 312, that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the LLPs to CERCLA liability (42 U.S.C. §§ 9601(35)(A) & (B), §

9607(b)(3), § 9607(q), and § 9607(r)), assuming compliance with other elements of the defense.

approximate minimum search distance – the area for which records must be obtained and reviewed pursuant to Section 8 subject to the limitations provided in that section. This may include areas outside the subject property and shall be measured from the nearest subject property boundary. This term is used in lieu of radius to include irregularly shaped properties.

bona fide prospective purchaser (42 U.S.C. § 9607[r]) – person may qualify as a bona fide prospective purchaser if, among other requirements, such person made "all appropriate inquiries into the previous ownership and uses of the facility in accordance with generally accepted good commercial and customary standards and practices." Knowledge of contamination resulting from all appropriate inquiries would not generally preclude this liability protection. A person must make all appropriate inquiries on or before the date of purchase. The facility must have been purchased after January 11, 2002.

brownfields Amendments – amendments to CERCLA pursuant to the Small Business Liability Relief and Brownfields Revitalization Act, Pub. L. No. 107-118 (2002), 42 U.S.C. § 9601 et seq.

building department records – those records of the local government in which the subject property is located indicating permission of the local government to construct, alter, or demolish improvements on a property.

business environmental risk – a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in ASTM E 1527-21 Standard Practice. Consideration of BER issues may involve addressing one or more non-scope considerations, some of which are identified in ASTM E 1527-21 Standard Practice Section 13.

commercial real estate – any real property except a dwelling or property with no more than four dwelling units exclusively for residential use (except that a dwelling or property with no more than four dwelling units exclusively for residential use is included in this term when it has a commercial function, as in the construction of such dwellings for profit). This term includes but is not limited to undeveloped real property and real property used for industrial, retail, office, agricultural, other commercial, medical, or educational purposes; property used for residential purposes that has more than four residential dwelling units;

and property with no more than four dwelling units for residential use when it has a commercial function, as in the building of such dwellings for profit.

commercial and real estate transaction – a transfer of title to or possession of real property or receipt of a security interest in real property, except that it does not include transfer of title to or possession of real property or the receipt of a security interest in real property with respect to an individual dwelling or building containing fewer than five dwelling units, nor does it include the purchase of a lot or lots to construct a dwelling for occupancy by a purchaser, but a commercial real estate transaction does include real property purchased or leased by persons or entities in the business of constructing or developing dwelling units.

construction debris – concrete, brick, asphalt, and other such building materials discarded in the construction of a building or other improvement to property.

contaminated public wells – public wells used for drinking water that have been designated by a government entity as contaminated by hazardous substances (for example, chlorinated solvents) or petroleum products, or as having water unsafe to drink without treatment.

contiguous property owner (42 U.S.C. § 9607[q]) – a person may qualify for the contiguous property owner liability protection if, among other requirements, such person owns real property that is contiguous to, and that is or may be contaminated by hazardous substances from other real property that is not owned by that person. Furthermore, such person conducted all appropriate inquiries at the time of acquisition of the subject property and did not know or have reason to know that the subject property was or could be contaminated by a release or threatened release from the contiguous property. The all appropriate inquiries must not result in knowledge of contamination. If it does, then such person did "know" or "had reason to know" of contamination and would not be eligible for the contiguous property owner liability protection.

controlled recognized environmental condition – recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).

data failure – failure to achieve the historical research objective in ASTM E 1527-21 Standard Practice Section 8.3.1 even after reviewing the standard historical resources in Sections

8.3.4.1 through 8.3.4.8 that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

data gap – a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to, site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.).

de minimis condition – a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be a de minimis condition is not a recognized environmental condition nor a controlled recognized environmental condition.

demolition debris – concrete, brick, asphalt, and other such building materials discarded in the demolition of a building or other improvement to a property.

drum – a container (typically, but not necessarily, holding 55 gal (208 L) of liquid) that may be used to store hazardous substances or petroleum products.

dry wells – underground areas where soil has been removed and replaced with pea gravel, coarse sand, or large rocks. Dry wells are used for drainage, to control storm runoff, for the collection of spilled liquids (intentional and nonintentional), and wastewater disposal (often illegal).

due diligence – the process of inquiring into the environmental characteristics of commercial real estate or other conditions, usually in connection with a commercial real estate transaction. The degree and kind of due diligence vary for different properties, and differing purposes.

dwelling – structure or portion thereof used for residential habitation.

engineering controls (EC) – physical modifications to a site or facility (for example, capping, slurry walls, or point of use water treatment) to reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or groundwater on a property. Engineering controls are a type of activity and use limitation (AUL).

environment – environment shall have the same meaning as the definition of environment in CERCLA 42 U.S.C. § 9601[8]).

environmental compliance audit – the investigative process to determine if the operations of an existing facility are in compliance with applicable environmental laws and regulations. This term should not be used to describe this practice, although an environmental compliance audit may include an environmental site assessment or, if prior audits are available, may be part of an environmental site assessment.

environmental lien – a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 U.S.C. §§ 9607(1) & 9607(r) and similar state or local laws.

environmental professional – a person meeting the education, training, and experience requirements as set forth in 40 C.F.R. § 312.10(b). The person may be an independent contractor or an employee of the user.

environmental site assessment (ESA) – the process by which a person or entity seeks to determine if a subject property is subject to recognized environmental conditions. At the option of the user, an environmental site assessment may include more inquiry than that constituting all appropriate inquiries or, if the user is not concerned about qualifying for the LLPs, less inquiry than that constituting all appropriate inquiries. An environmental site assessment is both different from and often less rigorous than an environmental compliance audit.

ERNS list – EPA's emergency response notification system list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 C.F.R. Parts 302 and 355.

fill dirt – dirt, soil, sand, or other earth, that is obtained off-site, that is used to fill holes or depressions, create mounds, or otherwise artificially change the grade or elevation of real property. It does not include material that is used in limited quantities for normal landscaping activities.

fire insurance maps – maps originally produced for fire insurance purposes that indicate uses of properties at specified dates.

good faith – absence of any intention to seek an unfair advantage or to defraud another party; an honest and sincere intention to fulfill one's obligations in the conduct or transaction concerned.

hazardous substance – a substance defined as a hazardous substance pursuant to CERCLA 42 U.S.C. § 9601(14), as interpreted by EPA regulations and the courts: "(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, (42 U.S.C. § 6921) (but not including any waste the regulation of which under RCRA (42 U.S.C. § 6901 et seq.) has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of Title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act (42 U.S.C. § 7412), and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator (of EPA) has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

hazardous waste – any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of RCRA, as amended, (42 U.S.C. § 6921) (but not including any waste the regulation of which under RCRA (42 U.S.C. §§ 6901-6992k) has been suspended by Act of Congress). RCRA is sometimes also identified as the Solid WasteDisposal Act. RCRA defines a hazardous waste, at 42 U.S.C. § 6903, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may: (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

hazardous waste/contaminated sites – sites on which a release has occurred, or is suspected to have occurred, of any hazardous substance, hazardous waste, or petroleum products, and that release or suspected release has been reported to a government entity.

historical recognized environmental condition – a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the

satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). A historical recognized environmental condition is not a recognized environmental condition.

IC/EC registries – databases of institutional controls or engineering controls that may be maintained by a federal, state, or local environmental agency for purposes of tracking sites that may contain residual contamination and AULs. The names for these may vary from program to program and state to state, and include terms such as, but not limited to the following: Declaration of Environmental Use Restriction database (Arizona), Land Use Restriction Sites (California Department of Toxic Substances Control), Sites with Deed Restrictions (California State Water Resources Control Board), Environmental Covenant List (Washington), Sites With Environmental Covenants and Use Restrictions (Colorado), Institutional Control Registry (Indiana), Environmental Site Tracking and Research Tool (Missouri), and the Pennsylvania Activity and Use Limitation (PA AUL) Registry.

innocent landowner defense (42 U.S.C. §§ 9601[35] and 9607[b][3]) – a person may qualify as one of three types of innocent landowners: (1) a person who "did not know and had no reason to know" that contamination existed on the subject property at the time the purchaser acquired the subject property; (2) a government entity which acquired the subject property by escheat, or through any other involuntary transfer or acquisition, or through the exercise of eminent domain authority by purchase or condemnation; or (3) a person who "acquired the facility by inheritance or bequest." To qualify for the innocent landowner defense, such person must have made all appropriate inquiries on or before the date of purchase. Furthermore, the all appropriate inquiries must not have resulted in knowledge of the contamination. If it does, then such person did "know" or "had reason to know" of contamination and would not be eligible for the innocent landowner defense.

institutional controls (IC) – a legal or administrative mechanism (for example, "deed restrictions," restrictive covenants, easements, or zoning) on the use of, or access to, a site or facility to (1) reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. An institutional control is a type of activity and use limitation (AUL).

interviews – those portions of this practice that are conducted to gather information from an individual or individuals in person, by telephone, in writing, or via other electronic media to meet the objectives of this practice.

key site manager – the person identified by the owner or operator of a subject property as having good knowledge of the uses and physical characteristics of the subject property.

land title records – records that affect the title of real estate, which may include, among other things, deeds, mortgages, leases, land contracts, court orders, easements, liens, and AULs recorded within the recording systems or land registration systems created by state statute in every state and ordinarily administered in the local jurisdiction (usually the county) in which the subject property is located, and available by performing a title search. Such records are publicly accessible, though the process of performing a title search to find land title records often requires specialized expertise or knowledge of the local system. Information about the title to the subject property that is filed or stored in any place other than where land title records are, by law or custom, recorded for the local jurisdiction in which the subject property is located, are not considered land title records.

landfill – a place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term solid waste disposal site and is also known as a garbage dump, trash dump, or similar term.

landowner Liability Protections (LLPs) – a defense to CERCLA available to bona fide prospective purchasers, contiguous property owners, and innocent landowners. See 42 U.S.C. §§ 9601(35)(A), 9601(40), 9607(q), and 9607(r).

local government agencies – those agencies of municipal or county government having jurisdiction over the subject property. Municipal and county government agencies include but are not limited to cities, parishes, townships, and similar entities.

local street directories – directories published by private or government entities that list the occupant(s) of a specific address at the time the occupant data were collected, typically within a year of the publication date of the directory.

major occupants – those tenants, subtenants, or other persons or entities each of which uses at least 40% of the leasable area of the subject property or any anchor tenant when the subject property is a shopping center.

material safety data sheet (MSDS) – See safety data sheet.

material threat – obvious threat which is likely to lead to a release and that, in the opinion of the environmental professional, would likely result in impact to public health or the environment. An example might include an aboveground storage tank system that contains a hazardous substance and which shows evidence of damage. The damage would represent a material threat if it is deemed serious enough that it may cause or contribute to tank integrity failure with a release of contents to the environment.

migrate/migration – for the purposes of the ASTM E 1527-21 Standard Practice, "migrate" and "migration" refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.

National Priorities List (NPL) – list compiled by EPA pursuant to CERCLA 42 U.S.C. § 9605(a)(8)(B) of sites with the highest priority for cleanup pursuant to EPA's Hazard Ranking System. See 40 C.F.R. Part 300.

obvious – that which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable observer.

occupants – those tenants, subtenants, or other persons or entities using a property or a portion of a property.

operator – person responsible for the overall operation of a facility.

other historical sources – any resource other than those designated in ASTM E 1527-21 Standard Practice Sections 8.3.4.1 through 8.3.4.8 that are credible to a reasonable person and that identify past uses of properties. See Section 8.3.4.9.

owner – generally the fee owner of record of a property.

petroleum exclusion – the exclusion from CERCLA liability provided in 42 U.S.C. § 9601(14), as interpreted by the courts and EPA: "The term (hazardous substance) does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

petroleum products – those substances included within the meaning of the petroleum exclusion to CERCLA, 42 U.S.C. § 9601(14), as interpreted by the courts and EPA, that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 U.S.C. § 9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (The word fraction refers to certain distillates of crude oil, including gasoline, kerosine, diesel oil, jet fuels, and fuel oil, pursuant to Standard Definitions of Petroleum Statistics.)

Phase I Environmental Site Assessment – the process described in ASTM E 1527-21 Standard Practice.

physical setting sources – resources that provide information about the geologic, hydrogeologic, hydrologic, or topographic characteristics of the area that includes the subject property. See ASTM E 1527-21 Standard Practice Section 8.2.1.

pits, ponds, or lagoons – manmade or natural depressions in a ground surface that are likely to hold liquids or sludge containing hazardous substances or petroleum products. The likelihood of such liquids or sludge being present is determined by evidence of factors associated with the pit, pond, or lagoon, including, but not limited to, discolored water, distressed vegetation, or the presence of an obvious wastewater discharge.

practically reviewable – information that is practically reviewable means that the information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the subject property without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the subject property or a geographic area in which the subject property is located are not generally practically reviewable. Most databases of public records are practically reviewable if they can be obtained from the source agency by the county, city, zip code, or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized, or maintained by the source agency only chronologically are not generally practically reviewable. Listings in publicly available records which do not have adequate address information to be located geographically are not generally considered practically reviewable. For large databases with numerous records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not practically reviewable unless they can be obtained from the source agency in the smaller geographic area of zip codes. Even when information is provided by zip code for some large databases, it is common for an unmanageable

number of sites to be identified within a given zip code. In these cases, it is not necessary to review the impact of all of the sites that are likely to be listed in any given zip code because that information would not be practically reviewable. In other words, when so much information is generated that it cannot be feasibly reviewed regarding its impact on the subject property, it is not practically reviewable.

property – real property, including buildings and other fixtures and improvements located on and affixed to the land.

property use limitation – limitation or restriction on current or future use of a property in connection with a response to a release, in accordance with the applicable regulatory authority or authorities that allows hazardous substances or petroleum products to remain in place at concentrations exceeding unrestricted use criteria.

property tax files – files kept for property tax purposes by the local jurisdiction which may include records of past ownership, appraisals, maps, sketches, photographs, or other information.

publicly available – information that is publicly available means that the source of the information allows access to the information by anyone upon request.

RCRA generators – those persons or entities that generate hazardous wastes, as defined and regulated by RCRA.

RCRA TSD facilities – those facilities on which treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA.

reasonably ascertainable – information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable.

recognized environmental conditions – (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

records review – that part that is contained in ASTM E 1527-21 Standard Practice Section 8 that addresses which records shall or may be reviewed.

release – a release of any hazardous substance or petroleum product shall have the same meaning as the definition of "release" in CERCLA 42 U.S.C. § 9601(22). There are a number of statutory exclusions from the definition of release that may impact the environmental professional's opinions and conclusions, such as the normal application of fertilizer.

report – written report prepared by the environmental professional and constituting part of a "Phase I Environmental Site Assessment," as required by the ASTM E 1527-21 Standard Practice.

safety data sheets – written or printed material that is prepared by chemical manufacturers and importers for distributors' and employers' use that provides comprehensive information regarding a hazardous chemical pursuant to OSHA's Hazard Communication Standard (HCS), 29 C.F.R. § 1910.1200.

site reconnaissance – that part that is contained in Section 9 of this practice and addresses what should be done in connection with the site visit. The site reconnaissance includes, but is not limited to, the site visit done in connection with such a Phase I Environmental Site Assessment.

significant data gap – a data gap that affects the ability of the environmental professional to identify a recognized environmental condition.

site reconnaissance – that part that is contained in ASTM E 1527-21 Standard Practice Section 9 and addresses what should be done in connection with the site visit. The site reconnaissance includes, but is not limited to, the site visit done in connection with such a Phase I Environmental Site Assessment.

site visit – the visit to the subject property during which observations are made constituting the site reconnaissance section of the ASTM E 1527-21 Standard Practice.

solid waste disposal site – a place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term landfill and is also known as a garbage dump, trash dump, or similar term.

solvent – a chemical compound that is capable of dissolving another substance and may itself be a hazardous substance, used in a number of manufacturing/industrial processes including but not limited to the manufacture of paints and coatings for industrial and

household purposes, equipment clean-up, and surface degreasing in metal fabricating industries.

standard environmental record sources – those records specified in ASTM E 1527-21 Standard Practice Section 8.2.2.

standard historical sources – those resources of information about the history of uses of properties specified in ASTM E 1527-21 Standard Practice Section 8.3.4.

standard physical setting resources – recent USGS 7.5 Minute Topographic Map (or equivalent) showing contour lines and the area on which the subject property is located, and site-specific physical setting information obtained pursuant to agency file reviews. See ASTM E 1527-21 Standard Practice Section 8.2.1.

standard practice – the activities set forth in ASTM E 1527-21 Standard Practice.

standard sources – sources of environmental, physical setting, or historical records specified in ASTM E 1527-21 Standard Practice Section 8.

subject property – the property that is the subject of the environmental site assessment described in ASTM E 1527-21 Standard Practice.

sump – pit, cistern, cesspool, or similar receptacle where liquids drain, collect, or are stored.

topographic map - graphic representation delineating natural and man-made features of an area or region in a way that shows their relative positions and elevations.

TSD facility – storage, or disposal facility. See "RCRA TSD facilities" above.

underground injection – the emplacement or discharge of fluids into the subsurface by means of a well, improved sinkhole, sewage drain hole, subsurface fluid distribution system or other system, or groundwater point source.

underground storage tank (UST) – any tank, including underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground.

user – party seeking to use ASTM E 1527-21 Standard Practice to complete an environmental site assessment of the subject property.

USGS 7.5 Minute Topographic Map – USGS Topographic Map, including the current US Topo 7.5-Minute Series or the historical 7.5-Minute Topographic Series, which is available from the United States Geologic Survey and showing the subject property.

visually and/or physically observed – during a site visit pursuant to this practice, this term means observations made by visual, auditory, or olfactory means while performing the site reconnaissance.

wastewater – water that (1) is or has been used in an industrial or manufacturing process, (2) conveys or has conveyed sewage, or (3) is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. Wastewater does not include water originating on or passing through or adjacent to a site, such as stormwater flows, that has not been used in industrial or manufacturing processes, has not been combined with sewage, or is not directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

zoning/land use records – those records of the local government of areas encompassing the subject property indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps or written records.

APPENDIX B:
DOCUMENTATION

PHASE I ESA USERS QUESTIONNAIRE

Party Administering Questionnaire:	**Name:**	Kristen Bogue, Michael Baker International
	Phone/Fax:	(949) 855-5747
	Email:	kbogue@mbakerintl.com

Date: **July 26, 2023**

Time: **9 am**

Project Name: Starlight Solar

Project Address and/or APN(s): 1758 Jewel Valley Rd, Boulevard, CA 91905

Client (or user of the Phase I Environmental Site Assessment):	**Name/Title:**
Empire II, LLC	Chris Fahey / Chief Operating Officer

Client Phone/FAX/Email:

cfahey@haagenco.com

Reason Phase I is required:

Major Use Permit

Type of property:

Ranch

Type of property transaction (e.g., sale, purchase, exchange):

N/A

Complete and Correct Address of the property and APN(s):

1758 Jewel Valley Rd, Boulevard, CA 91905 (see attached sheet for APNS)

All Parties that will rely on the Phase I report:

County of San Diego

Name and Contact Information for a Site Contact (to be referenced as the Key Site Manager in the Phase I ESA):

Shauna Dawson 619-540-5530

Any special terms or conditions:

No

Any information pertaining to any pending, threatened, or past litigation and/or administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.

None

Any information pertaining to any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

None

(1). Environmental cleanup liens that are filed or recorded against the property (40 CFR 312.25).

Have you done a search of recorded land title records (or judicial records where appropriate, see Note 1 below) to identify any environmental liens filed or recorded against the property under Federal, tribal, State, or local law? ☒ Yes ☐ No

Note 1 – In certain jurisdictions, Federal, tribal, State, or local statues, or regulations specify that environmental liens and activity and use limitations (AULs) be filed in judicial records rather than in land title records. In such cases judicial records must be searched for environmental liens and AULs.

If Yes, Describe:
No liens etc found

(2). Activity and use limitations (AULs) that are in place on the property or that have been filed or recorded against the property (40 CFR 312.26(a)(1)(v) and (iv)).

Have you done a search of recorded land title records (or judicial records where appropriate, see Note 1 above) to identify any AULs, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded against the property under Federal, tribal, State, or local law? ☒ Yes ☐ No

If Yes, Describe:
None found

(3). Specialized knowledge or experience of the person seeking to qualify for the Landowners Liability Protections (LLP) (40 CFR 312.28).

Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? ☐ Yes ☒ No

If Yes, Describe:

(4). Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? ☐ Yes ☐ No

If no, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? ☐ Yes ☐ No

If Yes, Describe:
NOT APPLICABLE

(5). Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? ☒ Yes ☐ No
For example, as user:

(a)	Do you know the past uses of the property?	☒ Yes ☐ No
(b)	Do you know of specific chemicals that are present or once were present at the property?	☒ Yes ☐ No
(c)	Do you know of spills or other chemical releases that have taken place at the property?	☐ Yes ☒ No
(d)	Do you know of any environmental cleanups that have taken place at the property?	☐ Yes ☒ No

If Yes, Describe:

A) Ranching
B) Fertilizers and pesticides for oak trees

(6). The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property? ☐ Yes ☒ No

If Yes, Describe:

(7). Do you have any other pertinent knowledge or experience with the property (e.g., prior reports, documents, correspondence concerning the environmental conditions of the property)? ☒ Yes ☐ No

(a)	Environmental site assessments?	☐ Yes ☒ No
(b)	Environmental compliance audit reports?	☐ Yes ☒ No
(c)	Environmental permits?	☐ Yes ☒ No
(d)	Registrations for underground and aboveground storage tanks?	☐ Yes ☒ No
(e)	Material safety data sheets?	☐ Yes ☒ No
(f)	Community right-to-known plan?	☐ Yes ☒ No
(g)	Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; facility response plans; etc.?	☐ Yes ☒ No
(h)	Reports regarding hydrogeologic conditions on the property or surrounding area?	☐ Yes ☒ No
(i)	Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property?	☒ Yes ☐ No
(b)	Geotechnical studies?	☒ Yes ☐ No
(c)	Risk assessments?	☐ Yes ☒ No
(d)	Recorded AULs?	☐ Yes ☒ No

County of San Diego

DEPARTMENT OF PUBLIC WORKS

RICHARD E. CROMPTON
DIRECTOR

5201 RUFFIN ROAD, SUITE D
SAN DIEGO, CALIFORNIA 92123-4310
(858) 694-2055 FAX: (858) 694-8928
Web Site: www.sdcounty.ca.gov/dpw/

March 22, 2012

File No. RFS# 10-0062794
APN NO: 612-100-17-00
612-100-18-00

Gregory Lansing
Lansing Companies
12671 High Bluff Dr., Suite 150
San Diego, CA. 92130

NOTICE OF VIOLATION OF WATERCOURSE ORDINANCE SECTION 87.603 – 1664 JEWEL VALLEY RD., BOULEVARD, CA.

Department of Public Works (DPW) recently conducted an inspection on 15 July, 2010 at APN: 612-100-17-00 & 612-100-18-00 of the watercourse, Jewel Valley Creek running through your property. Jewel Valley Creek is a tributary of Boundary Creek. Staff determined that this privately owned watercourse is in violation of Section 87.603 of the County's Watercourse Ordinance (CWO). Section 87.603 specifically requires that a permit must first be obtained. If acts pursuant to: (a) impair, impede or accelerate the flow of a watercourse; (b) alter the surface of the land, construction, excavation, embankment or otherwise; and (d) construct or place any structure in, upon or across a watercourse delineated by the 100-year flood plain.

The following items have been identified as being in violation:

1) The airstrip tangentially intersects Jewel Valley Creek and crosses three more times before the creek drains downstream. The airstrip is in a watercourse as defined in Sec. 87.803 (38) CWO.

In an effort to resolve this violation, DPW requests that you perform the following corrective actions:

A) Prepare and submit a restoration plan by a civil engineer to remove all fill material placed within the watercourse and appropriately restore the land. Because this stream was in a natural state and contained sensitive environmental resources, restoration will be required. Prior to any restoration, consultation must be initiated with the listed agencies to determine if permits are required:

a) US Army Corps of Engineers (USACE)
b) CA Dept Fish and Game (CDF&G)
c) Regional Water Quality Control Board. (RWQCB)

OR

B) If you wish to keep the airstrip, prepare and submit a grading permit application along with plans prepared by a licensed civil engineer for all existing and proposed alterations or improvement in the watercourse.

Specific conditions for the above noted corrective actions include the following:

1. Cease and desist any further grading/clearing activities within the watercourse.
2. No heavy machinery should be placed in the watercourse. Any machinery should be operated from the bank of the channel.
3. All materials removed from the watercourse shall be disposed off site.

The Department of Public Works requests that you retain the services of a licensed civil engineer and present a plan of action and schedule to resolve this violation within 14 days of this notification. In the meanwhile, the County will continue to monitor the site regarding any further un-permitted activity. If no progress during this time period is made, the County may provide you with a written warning. Subsequent warnings may include fines.

If you have any questions regarding this matter or are unable to meet the above work schedule, please contact Lawrence Cuatico, Watercourse Enforcement, at (619) 306-8157, or facsimile at (858) 694-2354. Thank you in advance for your cooperation.

Sincerely,

Glen Gundert, P.E., Senior Civil Engineer
Private Development Construction Inspection

cc: Derek Gade (0336)

Citation No. W12-02994

DEPARTMENT OF PUBLIC WORKS
ADMINISTRATIVE CITATION

Issuance Date: March 22, 2012 RFS Number 10-0062794

X WARNING	1st Citation	2nd Citation	3rd Citation	4th & Subsequent Citations
	$100	$200	$500	$1000

Payment of $0 is due no later than (See payment instructions)

Correction of the violations indicated below must be completed by: Date: April 5, 2012
If you fail to correct the violations by this date, a citation may be issued.

Person Cited: GREGORY LANSING	☑ Property Owner ☐ Tenant ☑ Business Owner ☐ Other
Mailing Address: LANSING COMPANIES 12671 HIGH BLUFF DR. SAN DIEGO, CA 92130	Business Name (If Applicable)
Violation Address 1664 Jewel Valley Rd. Bonsall, CA. 91905 / Phone #:	Grading Permit, T.P.M., or A.P.N. 612-110-17-00 612-110-18-00

Code Section Violated	Date Observed	Description of Violation
SDC87.603	22-MAR-2012	ACTS PROHIBITED UNLESS PERMIT IS OBTAIN

Corrections Required:

The following items have been identified as being in violation:
1) The airstrip tangentially intersects Jewel Valley Creek and crosses three more times before the creek drains downstream. The airstrip is in a watercourse as defined in Sec. 87.803 (38) CWO.

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a) US Army Corps of Engineers (USACE)
b) CA Dept Fish and Game (CDF&G)
c) Regional Water Quality Control Board. (RWQCB)
OR
B) If you wish to keep the airstrip, prepare and submit a grading permit application along with plans prepared by a licensed civil

ENFORCING OFFICER:

Name (Print): Lawrence Cuatico Phone: 619-306-8157 Signature:

PERSON CITED:

Name (Print): Signature: Date:

Citation Served: ☐ In Person (To:) ☐ Posted on Property ☐ By Mail
By: ☐ Other:

PRELIMINARY GEOTECHNICAL SITE EVALUATION REPORT

Prepared For
The AES Corporation

Proposed
Starlight Solar Project
Sand Diego County, California

Job No: 22-137
June 20, 2022

BRUIN GEOTECHNICAL SERVICES, INC.
44732 Yucca Avenue
Lancaster, California 93534
www.bruingsi.net

BRUIN
GEOTECHNICAL
SERVICES INC.
est. 2004

SOIL AND MATERIAL
TESTING AND INSPECTIONS

June 20, 2022 Job No.: 22-137

Ms. Sara Carroll
The AES Corporation
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

Subject: Preliminary Geotechnical Site Evaluation Report for Proposed Starlight Solar Project, Jacumba Hot Springs, County of San Diego, California

Dear Ms. Carroll:

Presented herewith is the report of our geotechnical site evaluation investigation for the subject project. Our work was performed in accordance with the scope of work outlined in our original proposal dated March 17, 2022.

This report presents the results of our field investigation, laboratory testing and our engineering judgment, opinions, conclusions and recommendations pertaining to the proposed development.

It has been a pleasure to be of service to you on this project. Should you have any questions regarding the contents of this report, or should you require additional information, please contact the undersigned at (661) 273-9078.

Respectfully submitted,

BRUIN GEOTECHNICAL SERVICES, INC.

Ryan D. Duke, P.E.
RDD/mes

REGISTERED PROFESSIONAL ENGINEER
RYAN DUKE
C070720
EXP. 9-30-22
CIVIL
STATE OF CALIFORNIA

PRELIMINARY GEOTECHNICAL EVALUATION REPORT

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PRELIMINARY GEOTECHNICAL SITE EVALUATION REPORT
STARLIGHT SOLAR PROJECT
COUNTY OF SAN DIEGO, CALIFORNIA

1.0 INTRODUCTION

This Preliminary Geotechnical Evaluation report presents the results of the limited geotechnical investigation performed by Bruin Geotechnical Services, Inc., for the potential Photovoltaic Generation or Battery Storage Facility based on the assessor's parcel maps and the Site Plan (google KMZ file) provided by the client. This report is specific to the potential developments and is intended to provide preliminary information to aid in determining if driven piles and/or conventional concrete foundations are feasible at the subject site.

Additional exploration, trenching, drilling, soil sampling, laboratory testing, and analyses are required to prepare a comprehensive "design level" geotechnical engineering report.

The following Assessors Parcels are included are included in this report:

- APN 610-120-34
- APN 612-041-02
- APN 612-060-14
- APN 612-082-12
- APN 612-100-01, 02
- APN 612-110-02, 04, 17, 18, 19, 20
- APN 612-120-01, 14
- APN 659-010-01, 15
- APN 659-020-01, 02, 05, 06, 07, 13, 23
- APN 659-030-01
- APN 659-070-08, 09, 16
- APN 659-080-01, 02, 03, 05, 06, 07, 10
- APN 659-090-06
- APN 659-130-03
- APN 659-140-01, 02

The purpose of this investigation was to evaluate the current subsurface soil conditions and to provide preliminary geotechnical recommendations relative to potential driven steel piles utilized in construction of a photovoltaic solar array or potential Battery Storage Facility (mat/slab foundations) potential soil corrosivity and thermal resistivity characteristics.

The scope of the authorized for this investigation included the following tasks:

- Performing a site reconnaissance
- Conducting a field subsurface exploration through excavations and soil sampling
- Performing laboratory soil corrosivity study on soil samples
- Performing a soil thermal analysis of the native soil samples
- Laboratory testing program of selected soil samples obtained during drilling
- Performing engineering analyses of the data obtained
- Preparing this Preliminary Geotechnical Site Evaluation Report

This study also includes a review of published and unpublished literature and geotechnical maps with respect to active and potentially active faults located in proximity to the site which may have an impact on the seismic design of the proposed development.

2.0 SITE LOCATION AND DESCRIPTION

The subject site is identified as the APNs referenced above and is located on the approximately 3,874-acre Empire Ranch property in Jacumba Springs, San Diego County, California. The northernmost portion of the site is two (2) miles south of the Interstate 8, Old Highway 80, and Campo Road (Highway 94) intersection. The southernmost portion of the site is located on the north side of the United States and Mexico International Border.

The proposed project includes two Solar Sites. Solar Site 1 is located in the northeast of the ranch and is approximately 740 acres. Solar Site 2 is located south of Solar Site 1, in the east portion of the site and is approximately 490 acres.

Solar Site 1

Solar Site 1 is primarily comprised of undeveloped land with a moderate to dense covering of vegetation. The portion south of Jewel Valley Road is developed as Empire Ranch. There appears to be graded areas for equestrian use and minor landscaped tree areas.

The Site is located in an area associated with rock outcropping.

Solar Site 2

Solar Site 2 is primarily comprised of undeveloped land with rock outcroppings similar to the rest of the site. A railroad traverses the site through the center and southwest. South of the railroad, multiple dirt roads lead to a small reservoir.

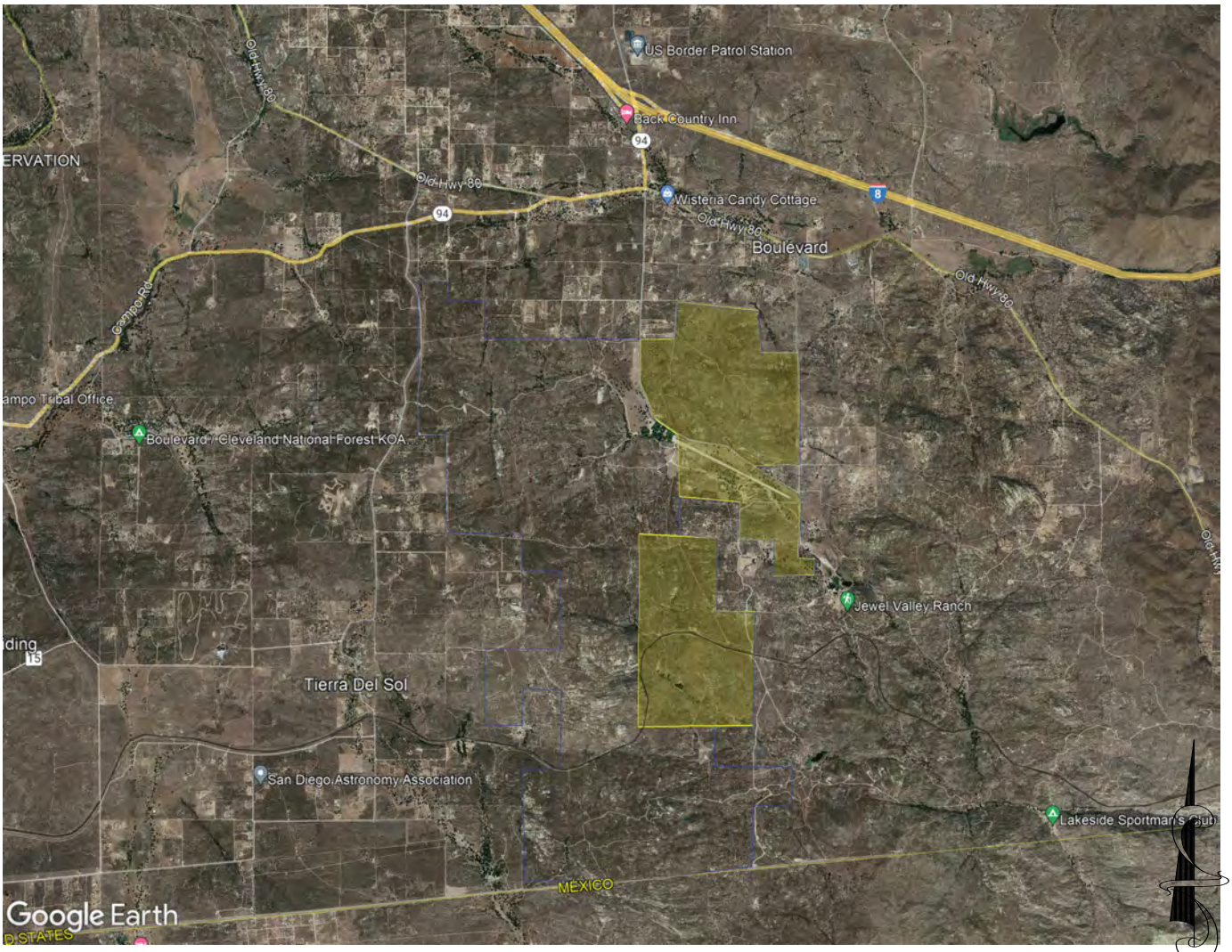
At the time of Bruin GSI's field investigation, most of the site was vacant, undeveloped land with visible rock outcropping. The vegetation consisted of a dense covering of annual weeds and shrubs with scattered trees.

The Site topography is lowest in the center between the two solar sites along a drainage course at approximately 3,450 feet above mean sea level. The elevation at Site 1 ranges from 3,450 to 3,600 feet above mean sea level with drainage toward the south (near the drainage course) and to the northwest for the remainder of the site. The elevation of Site 2 ranges from 3,450 to 3,650 with drainage to the north/northwest. The intention of the aforementioned site description is to be illustrative and is not intended for use as a legal description of the Site.

Site access is by Jewel Valley Road, which is a paved road. The general location of the subject site is shown on Figure 1.

Vicinity Map

N.T.S.



= Denotes approximate parcel boundary

BRUIN GEOTECHNICAL SERVICES INC. est. 2004 ™

www.bruingsi.net

Project:

Starlight Solar
Jacumba Hot Springs
San Diego County, CA

Job Number:

22-137

Figure 1

3.0 FLOOD HAZARD

Bruin GSI reviewed available data regarding the flood potential at the subject site. Based on our FEMA database research, a portion of the project site is located on map number 06073C2350F. Review of panel indicates the southern portion of the subject site (driveway approach) lies within the following Flood Zone:

Zone D
Areas in which flood hazards are undetermined, but possible.

Although the site does not have a determined flood level, multiple drainages traverse the site and may cause flooding after rain/storm.

4.0 POTENTIAL CONSTRUCTION

Based on our conversations with the client, it is our understanding that the potential project consists of a solar photovoltaic (PV) generation facility. The Project will utilize crystalline silicon, or thin film, PV technology on fixed-tilt or tracker mounting supports on single pole foundation supports (driven H-piles: W6x9, W6x12 are anticipated) with approximately five (5) feet above grade and anticipated embedment depths of six to twelve (6-12) feet, with thickened concrete mat foundations and driven H-Piles for switchgear equipment and inverter equipment. Construction may also include shallow infiltration basins throughout the Site for the purpose of percolating sheet-flow storm-drain water. The site may also be developed as a battery storage facility with mat/slab foundations supporting the batteries.

It is anticipated that the proposed earthwork will consist of clearing and grubbing of the vegetation, construction of shallow infiltration basins (less than 2-foot depth, with 4:1 slopes) and minor grading with cuts and fills of less than one (1) foot, maintaining the natural drainage through the site. Dirt or gravel drive areas for interior access are also anticipated.

Although construction details are not available at the time of writing this report, we anticipate allowable stress design loads for the posts downward (bearing) loads of approximately 4 kips, and wind uplift and lateral loads of approximately 2-3 kips for the photovoltaic array and dead loads of 2-3 kips for auxiliary structures.

5.0 GEOTECHNICAL INVESTIGATION

The geotechnical investigation included a field exploration program and a laboratory testing program. These programs were performed in accordance with our proposal for Preliminary Geotechnical Site Evaluation dated March 17, 2022. The scope of work did not include environmental assessment or investigation for the presence or absence of hazardous

substances or toxic materials in structures, soil, surface water, groundwater, or air, below or around the site.

5.1 Field Exploration Program

The field exploration program was initiated on April 12, 2022, under the technical supervision of our engineer. A total of thirty-one (31) exploratory trenches were excavated using a tractor-mounted backhoe equipped with a thirty-six-inch bucket. The trenches were advanced to maximum depths of fifteen (15) feet below ground surface (bgs). The approximate locations of the trenches within the area of the proposed construction were determined by sighting and pacing from existing site improvements, such as streets, and should be only considered accurate to the degree implied by the method used. The trench locations are shown on Figure 2.

Soil samples were obtained at various depth intervals, consisting of grab samples utilizing hand-sampling equipment.

Bulk samples were also collected at various depths from trench cuttings during excavation and represent a mixture of soils within the noted depths. The soil samples were returned to the laboratory for analysis and testing.

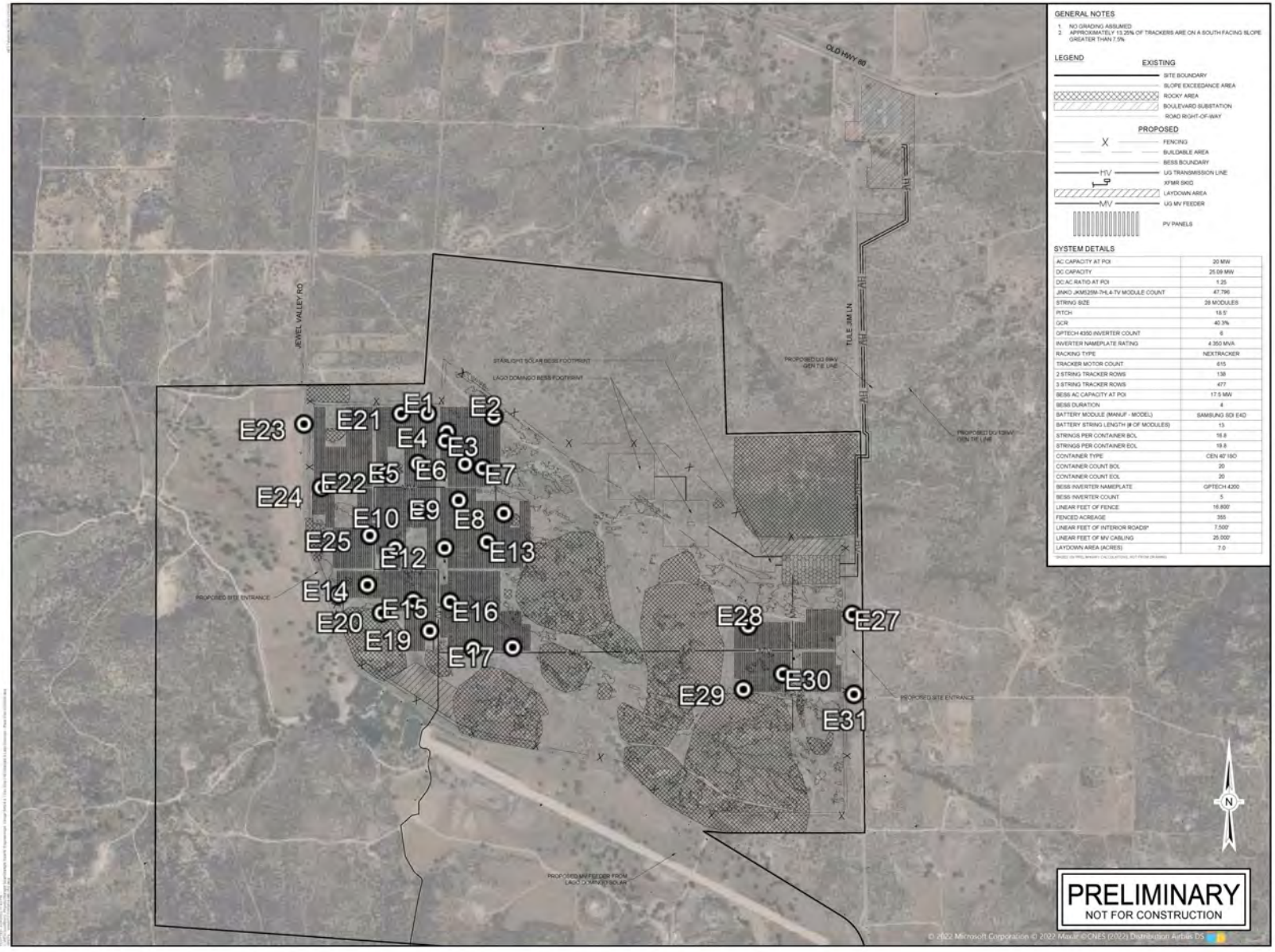
Final excavation logs presented in Appendix A are Bruin GSI's interpretation of the field logs prepared by our representative during excavation, as well as laboratory test results. The stratification lines represent approximate boundaries between soil types. The actual soil transitions may be gradual.

5.2 Laboratory Testing

Selected samples collected during drilling activities and field work were tested in the laboratory to assist in evaluating the engineering properties of subsurface materials deemed within the structural influence of the site. The field logs were reviewed, and the soil samples were classified in accordance with the Unified Soils Classification System and a testing program was established.

The samples were tested to determine the following:

- In-situ moisture and density determination — ASTM D 2937
- Consolidation potential — ASTM D 2435
- Shear strength — ASTM D 3080
- Expansion index — ASTM D 4829
- Chemical analyses — CA 422/417/643
- Thermal Resistivity — IEEE standard 442-2017



GENERAL NOTES

1. NO GRADING ASSUMED
2. APPROXIMATELY 13.25% OF TRACKERS ARE ON A SOUTH FACING SLOPE GREATER THAN 7.5%

LEGEND

EXISTING

- SITE BOUNDARY
- SLOPE EXCEEDANCE AREA
- ROCKY AREA
- BOULEVARD SUBSTATION
- ROAD RIGHT-OF-WAY

PROPOSED

- FENCING
- BUILDABLE AREA
- BESS BOUNDARY
- UG TRANSMISSION LINE
- XFMR SKID
- LAYDOWN AREA
- UG MV FEEDER
- PV PANELS

SYSTEM DETAILS

AC CAPACITY AT POI	20 MW
DC CAPACITY	25.09 MW
DC:AC RATIO AT POI	1.25
JINKO JKM525M-7HL4-TV MODULE COUNT	47,796
STRING SIZE	28 MODULES
PITCH	18.5'
GCR	40.3%
GPTECH 4350 INVERTER COUNT	8
INVERTER NAMEPLATE RATING	4.350 MVA
RACKING TYPE	NEXTRACKER
TRACKER MOTOR COUNT	615
2 STRING TRACKER ROWS	138
3 STRING TRACKER ROWS	477
BESS AC CAPACITY AT POI	17.5 MW
BESS DURATION	4
BATTERY MODULE (MANUF - MODEL)	SAMSUNG SDI E4D
BATTERY STRING LENGTH (# OF MODULES)	13
STRINGS PER CONTAINER BOL	16.8
STRINGS PER CONTAINER EOL	19.8
CONTAINER TYPE	CEN 40' HC
CONTAINER COUNT BOL	20
CONTAINER COUNT EOL	20
BESS INVERTER NAMEPLATE	GPTECH 4200
BESS INVERTER COUNT	5
LINEAR FEET OF FENCE	16,800'
FENCED ACREAGE	355
LINEAR FEET OF INTERIOR ROADS*	7,500'
LINEAR FEET OF MV CABLING	25,000'
LAYDOWN AREA (ACRES)	7.0

*BASED ON PRELIMINARY CALCULATIONS, NOT FROM DRAWING

PRELIMINARY
NOT FOR CONSTRUCTION

aes
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106-2749
(801) 679 - 3500

PE STAMP:

KEY PLAN:

REVISIONS:

NO	DATE	DESCRIPTION
1	02/24/2022	REVISED SYSTEM SIZE
2	03/04/22	MV AND SKIDS ADDED
3	03/24/2022	REVISED GEN TIE AND MV CABLE ROUTING

PROJECT TITLE:
STARLIGHT SOLAR

PROJECT LOCATION:
SAN DIEGO COUNTY, CA

SHEET TITLE & DESCRIPTION:
PRELIMINARY SITE PLAN

PROJ NUM:	
DES:	J. BRINEY
DWN:	J. BRINEY
CHK:	
APV:	
DATE:	03/04/22

SCALE AT 24" x 36"
0 200 400 600 800
1" = 400'

SHEET NO: PV - E.01.01
REV: 3

The following classification tests were performed:

- Description and Identification of Soils ASTM D 2488
- Maximum density – Optimum moisture ASTM D 1557
- Sieve Analysis of Fine and Coarse Aggregates ASTM C 136
- Sand Equivalent Value ASTM D 2419

Tabular and graphical test results are presented in Appendix B.

5.3 Corrosion and Chemical Attack

Six (6) sub-surface bulk soil samples obtained from the Site were tested to provide a preliminary screening of the potential for concrete deterioration or steel corrosion. The test results are presented below in Table 1. The soil was evaluated for minimum resistivity (ASTM 643), sulfate ion concentration (CT 417), chloride ion concentration (CT 422), and pH of soil (ASTM D 4972).

Table 1: Summary of Corrosion Test Results

Sample Location	pH	Sulfate, mg/kg	Chloride, mg/kg	Minimum Resistivity, ohm-cm	Exposure Category
E29 @ 2-6 feet bgs	6.65	N.D.	N.D.	17,000	S0
E24 @ 2-4 feet bgs	7.22	N.D.	N.D.	21,000	S0
E15 @ 5.5 feet bgs	7.10	N.D.	N.D.	11,000	S0
E27 @ 0-5 feet bgs	7.10	N.D.	N.D.	21,000	S0
E5 @ 0-5 feet bgs	7.20	N.D.	N.D.	21,000	S0
E17 @ 0-5 feet bgs	6.98	N.D.	N.D.	42,000	S0

N.D. – None Detected

The water-soluble sulfate content severity class is considered negligible to concrete (Exposure Category per Table 4.2.1 of ACI 318-11); therefore, Type II cement should be used for design of concrete structures in contact with soil.

Representative samples of the Site soil in the vicinity have a minimum resistivity ranging from 11,000 to 42,000 ohm-cm. Buried metal conduits, ferrous metal pipes, and steel should be designed in accordance with the corrosion report recommendations provided herein or manufacturer recommendations, as applicable.

Corrosivity results should be provided to design team members for their interpretation of results relative to their specific area of design and incorporated

accordingly as deemed necessary. Results from JDH Corrosion are presented in Appendix C.

5.4 Thermal Resistivity Testing

Two (2) bulk soil samples were obtained during trenching. The soil samples are a mixture of soils within the noted depths. The maximum density/ optimum moisture determinations (ASTM D1557 test method) were performed on each sample. The data and soil samples were delivered to Geotherm USA for thermal resistivity testing (RHO), as requested by the client. The selected samples were remolded by Geotherm USA to 90% relative compaction and evaluated for thermal resistivity to determine thermal dry-out curves. Results from Geotherm USA are presented in Appendix D.

6.0 CONCLUSIONS

The following conclusions for the site are based on the results of the field exploration and laboratory testing programs and represent professional opinions.

6.1 Site and Subsurface Conditions

Native materials alluvial materials were encountered within our exploratory trenches. The subsurface soil appears relatively uniform across the subject site and the soil encountered in the exploratory trenches generally consists of poorly graded sands (SP) with occasional silty sand (SM), to the maximum depth explored of fourteen (14) feet bgs. Refusal due to bedrock material was often the reason for termination of the excavations. Refusal at five (5) feet below ground surface (bgs) was encountered in fourteen (14) of the excavations. Refusal at six to eight (6-8) feet bgs was encountered in thirteen (13) of the excavations. Three (3) of the excavations exceeded the eight (8) feet bgs and refusal was encountered at nine and one-half (9.5) feet bgs and fourteen (14) feet bgs.

The subsurface materials were noted to be dry to slightly moist. No groundwater or perched water was encountered through the depth explored (20 feet bgs).

For more detailed descriptions of the subsurface materials refer to the excavation logs in Appendix A.

6.2 Groundwater Conditions

Groundwater data on the project site location was not available, however the best quality well data for the area show that groundwater levels are located approximately twenty-five (25) feet below the ground surface. Sources reviewed included the historically highest groundwater contours prepared by State of

California Department of Water Resources SGMA electronic database. Well data was gathered from California well site Station 326402N1163812W001 and the surrounding area. Well site data is attached to this report. From 1974 through 1985, the groundwater level in the project site vicinity was unstable. Groundwater levels may gradationally rise to a level of thirty (30) feet below the ground surface and drop to levels of approximately six (6) feet below ground surface. Because of groundwater pumping in an area where water is scarce, groundwater levels and flow fluctuate drastically.

No groundwater was encountered at the site to the maximum depth explored fifteen (15) feet below ground surface.

7.0 SITE GEOLOGY

The following sections address the regional geology and seismic hazards, subsurface conditions at the subject site. This information is based on the field exploration, previous reports by this firm, and published maps and reports.

7.1 Regional Geology and Seismic Hazards Assessment

Our scope of services included a review of published maps and reports to characterize the regional geology and potential for seismic hazards.

7.2 Regional Geology

The project site is located in southeast San Diego County, which makes up part of the Peninsular Ranges geomorphic province. This province extends from the Los Angeles Basin south to Baja California and is characterized by mountain ranges as high as 11,000 feet and valleys containing coastal plains, rivers, and basins.

The Peninsular Ranges batholith in San Diego County consists of plutonic rocks of Jurassic and Cretaceous age that contains minor inclusions of metamorphosed rocks. The plutonic rocks include a group of plutons that have undergone ductile deformation and yield uranium-lead (U-Pb) ages greater than 105 Ma and a second group that is chiefly undeformed and generally younger than 105 Ma (Todd, 1995). The older, deformed plutons are pre-batholithic rocks that underly the western and central parts of San Diego County. The structure is most noticeably shown by steeply dipping contacts, foliation, and the axial surfaces of folds. An exception to the regional structure occurs in the interior part of the large hypersthene-Tonalite pluton (the tonalite of La Posta, unit Klp) which underlies the proposed project site entirely. It is hypothesized that the hypersthene tonalite was emplaced during regional deformation but because it was stronger than the surrounding plutons, only localized deformation and marginal parts of the large pluton is deformed (Todd, 1995).

Normal faulting accompanied by a relatively small component of right lateral separation has continued through today in the Elsinore and San Jacinto fault zones. The area is seismically active and includes a series of sub-parallel faults that are located to the west of the San Andreas Fault Zone including the active San Jacinto, Elsinore, and Rose Canyon Fault Zones which each traverse throughout San Diego County. The nearest known active fault is the Elsinore fault, located approximately 10-15 miles northeast of the site, which is the dominant source of potential ground motion in the region.

Earthquake-related geologic hazards pose a significant threat to San Diego County and can impact broad regions of the county. Earthquakes produce and strong ground shaking which can result in fault rupture, and can trigger landslides, rockfalls, soil liquefaction, and seiches. The project site is located in a seismically active area typical of Southern California and likely to be subjected to a strong ground shaking due to earthquakes on nearby faults. However, no known active faults have been mapped across the subject site. According to current publications by the State of California, the project site is not located within the Alquist-Priolo special studies zone.

7.3 Site Geology

The site is located on the El Cajon United States Geological Survey (USGS) 7.5-minute topographic quadrangle. Elevations at the site range from approximately 3,400 feet in the to approximately 3,700 feet across the site and immediate vicinity. The project site, mapped by Todd, United States Geological Survey and California Geology Survey (2004), is underlain by mostly crystalline bedrock. Alluvial material is described as light brown alluvial gravel, sand and silt and emanates from streambeds, washes, and alluvial fans. The alluvium on-site consists of silty coarse-grained sand and may represent distal portions of older alluvial fan or sheet wash deposits.

Geologic mapping depicts that the site is underlain by units of the Peninsular Ranges Batholith, specifically the early cretaceous Tonalite of La Posta. This unit is described as hypersthene-biotite tonalite, quartz diorite, granodiorite, quartz monzodiorite, and quartz norite. This unit is medium grained and equigranularity with weak foliation. The unit is described as dark gray on fresh surfaces, weathers reddish or buff-gray, and typically forms boulder outcrops. The unit is homogeneous and generally inclusion free.

Because of the characteristics of the Tonalite of La Posta (Klp) unit, this rock is likely impenetrable. It appears that the unit is found at or near the surface uniformly across the site.

7.4 Seismic Hazards Assessment

The types of geologic and seismic hazards assessed include ground-surface fault rupture. Our scope of services did not include a 50-foot test boring or detailed analysis of liquefaction or dry sand settlement.

The purpose of the Alquist-Priolo Geologic Hazards Zone Act, as summarized in CDMG Special Publication 2 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." As indicated by SP 42, "the State Geologist is required to delineate "earthquake fault zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development 'projects' within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Zones of Required Investigation referred to as "Seismic Hazard Zones" in CCR Section 3722, are areas shown on Seismic Hazard Zone Maps where Site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. The Site is not located in a Landslide and Liquefaction Seismic Hazard Zone as specified by the State of California.

7.5 Liquefaction

Earthquake-induced ground shaking can be the cause of several significant phenomena, including liquefaction of saturated fine sands and silty sands. Loose soils can transform from a solid to a liquid state as a result of increased pore pressure during seismic loading. Liquefaction results in a complete loss of strength and can cause structures to settle or even overturn if it occurs in the bearing zone. If liquefaction occurs beneath sloping ground, a phenomenon known as lateral spreading can occur. Due to the poorly sorted and coarse-grained materials that are anticipated to underlie the Site area and the absence of a shallow groundwater table, the potential for liquefaction is low. The project site has a low susceptibility to liquefaction.

7.6 CBC Design Parameters

The following coefficients have been estimated in accordance with the requirements of the 2019 CBC, utilizing the Structural Engineers Association of California and California’s Office of Statewide Health Planning and Development Seismic Design Maps Application: *http://seismicmaps.org /*

The following seismic parameters are provided, based on the approximate latitude and longitude at the northwest corner of the subject site:

Latitude 32.658339°
Longitude -116.286564°

Type	Value	Period
Spectral Response Acceleration, Short Period) – S_s	1.061g	0.2(sec)
Spectral Response Acceleration at 1 sec. – S_1	0.358g	1.0(sec)
Mapped Spectral Response, Short period – S_{DS}	0.761g	0.2(sec)
Mapped Spectral Response at 1 sec. – S_{D1}	*	1.0(sec)
Site Coefficient – F_A	1.0	
Site Coefficient – F_V	*	
Site Modified Spectral Response Acceleration, Short period – S_{MS}	1.142g	
Site Modified Spectral Response Acceleration, Short period – S_{M1}	*	

Site Classification (2019 CBC, further defined in ASCE7-16 Chapter 20) = D Stiff Soil
Risk Category I

* The actual method of seismic design should be determined by the Structural Engineer in accordance with Section 11.4.8 Site-Specific Ground Motion Procedures of the ASCE 7-16. Refer to Appendix E for the Design Maps Summary Report provided by the Structural Engineers Association of California and California's Office of Statewide Health Planning and Development website.

7.7 Differential Soil Settlement

Differential soil settlement occurs when supporting soils are not uniform in density or soil type and one portion of soil settles more than the other. When unaccounted for in design, such settlement can result in damage to structures, pavement, and subsurface utilities. Based on the subsurface data obtained during the investigation, the on-site soils are relatively uniform, consisting of predominantly medium dense soils that should not be prone to differential settlement.

Re-compaction of the upper site soils is intended to remedy the potential for surficial differential settlement due to auxiliary structures supported on non-uniform thickness of compacted fill.

Settlement of auxiliary structures founded on compacted fill will be relatively small, less than three-quarter (3/4) inch. Differential settlement is anticipated to be on the order of 50% of the total settlement in a thirty-foot (30) span. Most settlement is anticipated to take place during construction.

8.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

Based upon the results of our investigation, the proposed development is considered feasible from a geotechnical standpoint provided the recommendations presented herein are incorporated into the design and construction. The following preliminary geotechnical engineering recommendations are based on observations from the field investigation program and the test results and our experience with sites of similar conditions.

8.1 Driven Steel Piles

Refusal due to bedrock at a depth of five (5) feet below ground surface or less in approximately half of the exploratory excavations indicates that the site may not be suitable for driven steel piles typically used for solar arrays. Soil classification of poorly-graded sand (SP) will typically require a deeper embedment of a driven pile due to low cohesion.

8.2 Concrete Mat/Slab Foundations (BESS)

Concrete mat or slab foundations typically designed for battery storage construction appear to be feasible. Some over-excavation and recompaction should be anticipated. Preliminary corrosion results indicate negligible soluble sulfates. No special considerations for concrete regarding corrosion is necessary.

8.3 Earthwork

Earthwork is expected to be minimal. Where earthwork is required to achieve design grades, the following procedures can be expected to be implemented during site preparation. The existing vegetation and deleterious materials shall be removed from the area to be graded and shall not be incorporated into the engineered fill.

8.4 Remedial Grading for Conventional Spread or Mat Foundations (Auxiliary Structures)

Subsequent to removals of the vegetation and deleterious materials in the areas to be graded, the exposed surface may need to be removed (over-excavated) a depth of three to four (3-4) feet. The horizontal limits of the excavation typically extend a minimum of five (5) feet beyond the limits of the proposed foundations.

8.5 Access Drive Areas

Subsequent to clearing and grubbing, the site scarification of the upper twelve (12) inches of the existing native soils should be anticipated. Due to the coarse-grained soil, placement of gravel or pavement in access roads may not be necessary after grading

8.6 Fill Slope Construction and Stability for Infiltration Basins

Permanent cut slopes at infiltration basin locations should be anticipated to be constructed at a slope ratio not exceeding 4:1 (horizontal: vertical) or flatter. The slopes should be planted with native vegetation as soon as possible to minimize erosion and maintenance.

8.7 Typical Fill Placement and Compaction Requirements

Native soils may be used as engineered fill. Materials for engineered fill should be free of organic material, debris, and other deleterious substances, and should not contain rocks greater than three (3) inches in maximum dimension.

All native soil fill should be placed in eight (8) inch thick maximum lifts, moisture conditioned or air dried as necessary to achieve optimum moisture condition, and then compacted in place to a minimum relative compaction of 90% **(95% for drive areas)** as determined in accordance with ASTM D 1557 test method.

A representative of the project consultant should be present on-site during grading operations to verify proper placement and compaction of all fill, as well as to verify compliance with the other geotechnical recommendations presented herein.

8.8 Native Soil Shrinkage

Shrinkage factor is not known. However, a preliminary shrinkage factor of five to ten (5-10) percent may be utilized for earthwork quantity calculations.

During compaction, an additional one-quarter (1/4) inch to one and one-half (1.5) inches subsidence of the underlying soil is estimated.

8.9 Fill Slope Construction and Stability

It is anticipated that fill and cut slopes may be constructed at a 2:1 (horizontal to vertical) gradient or flatter. Fill slopes constructed as recommended at a slope ratio not exceeding 2:1 (horizontal: vertical), are expected to be both grossly and surficially stable and are expected to remain so under normal conditions.

Proper drainage should be planned so water is not allowed to flow over the tops of slopes. The slopes should be planted as soon as possible to minimize erosion and maintenance.

If slopes are planned steeper than 2:1, the Geotechnical Consultant shall be notified for slope stability determinations as part of a more comprehensive report.

8.10 Concrete Mat/Slab Foundations

It is our opinion that at grade structures can be supported on shallow or mat foundations after recompaction of site soils.

8.11 Continuous and Isolated Spread Foundations (Preliminary)

Continuous and isolated spread footings are anticipated top have a minimum width of twelve (12) inches and twenty-four (24) inches, respectively. The minimum depth of footing embedment should be anticipated to be eighteen (18) inches. Continuous footing foundations net allowable bearing pressure of 1,500 pounds per square foot (psf) may be used for preliminary design for budget purposes. Isolated spread footing foundations may be designed using a net allowable bearing pressure of 1,800 psf. The net allowable bearing pressure applies to the dead load plus live load (DL + LL) conditions; it may be increased by one-third (1/3) for wind or seismic loads.

8.12 Mat Foundations

We understand that the structures may be supported on a concrete mat foundations. The mat foundation may be designed to impose a maximum allowable pressure of 1,500 pounds per square foot (psf) dead plus live loads. This value may be increased by one-third (1/3) for transient loads such as seismic or wind. The concrete mat foundation should be at least twelve (12) inches thick and satisfy structural considerations.

Mat foundations values may be used for grade beams provided that the minimum embedment is eighteen (18) inches below adjacent grade.

8.13 Lateral Earth Pressures

The following earth pressure parameters for footings are anticipated. The parameters shown in Table 2 below are for drained conditions of selected non-expansive engineered fill or undisturbed native soil.

Table 2: Preliminary Static Lateral Earth Pressures for Footings [F1]	
Lateral Pressure Condition	**Equivalent Fluid Density (pcf) Drained Condition**
Active Pressure	34
At Rest Pressure	50
Passive Pressure	300

For stability against lateral sliding that is resisted by combined passive pressure and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral stability against seismic loading conditions, a minimum safety factor of 1.2 is recommended.

8.14 Footing Reinforcement

Reinforcement for cast-in-place foundations should be designed by the structural engineer based on the anticipated loading conditions and expansion index of the supporting soil. Preliminary expansion index for the native soil is categorized as "very low" as determined by ASTM D 4829. Foundations should be reinforced as required by the structural engineer, once a comprehensive Geotechnical Report is proposed.

9.0 EXCAVATIONS AND BACKFILL

Soil backfill around foundations or behind walls below grade should be placed in lifts not exceeding eight (8) inches, moisture conditioned to optimum moisture content and mechanically compacted to 90% relative compaction as determined by ASTM D 1557 test method. **No flooding or jetting will be allowed.**

9.1 Excavation Stability

Soils encountered in the upper five (5) feet are generally classified as Type C soils in accordance with OSHA (Occupational Safety and Health Administration). The slopes surrounding or along temporary excavations may be vertical for excavations that are less than five feet deep and exhibit no indication of potential caving but should be no steeper than 1.5 H:1V for excavations that are deeper than five (5) feet, up to a maximum depth of fifteen (15) feet. Certified trench shields or boxes may also be used to protect workers during construction in excavations that have vertical sidewalls and are greater than five (5) feet deep.

Temporary excavations for the project construction should be left open for as short a time as possible and should be protected from water runoff. In addition, equipment

and/or soil stockpiles must be maintained at least ten (10) feet away from the top of the excavations.

Because of variability in soils, Geotechnical Consultant must be afforded the opportunity to observe and document sloping and shoring conditions at the time of construction. Slope height, slope inclination, and excavation depth (including utility trench excavations) must in no case exceed those specified in local, state, or federal safety regulations, (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations).

10.0 PRELIMINARY STRUCTURAL SECTION (FLEXIBLE PAVEMENT ENTRANCE)

For project entrances that require structural paving sections, the following recommendations are provided. Asphalt concrete pavements shall be designed per the Caltrans Highway Design Manual based on R-Value and Traffic Index. An assumed R-value of the native soil of 60 was utilized for the preliminary structural pavement section. During grading as soils are mixed, soil samples should be tested for R-Value determination.

For budgetary purposes, the preliminary flexible pavement layer thickness is as follows:

Table 4: Recommended Asphalt Pavement Section Layer Thickness

Pavement Material	Recommended Thickness (TI = 8.0)
Asphalt Concrete	5”
Class II Aggregate Base	8”
Compacted Subgrade Soils	12”

Asphalt concrete should conform to Sections 203 and 302 of the latest edition of the Standard Specifications for Public Works Construction (“Greenbook”).

Class II aggregate base should conform to Section 26 of the Caltrans Standard Specifications, latest edition. The aggregate base should be compacted to at least 95% of the maximum dry density as determined by ASTM Method D 1557.

Soil samples of the exposed subgrade at entrance approaches and areas requiring flexible pavements should be obtained during construction for R-value determination and final structural section calculations. Structural pavement sections are subject to review approval of the governing agency.

11.0 CONSTRUCTION CONSIDERATIONS

Based on our field exploration program, earthwork may be performed with conventional construction equipment.

11.1 Drainage Considerations

Bruin GSI understands the proposed project incorporates the construction of shallow basins for the purposes of infiltrating runoff water. The control surface drainage in the project areas is an important design consideration. Site drainage is the responsibility of the project civil engineer. Bruin GSI recommends that final grading around shallow foundations must provide for positive and enduring drainage away from the structures, and ponding of water must not be allowed around, or near the shallow foundations, with the exception of piles erected within designated infiltration basin areas. Ground surface profiles next to the shallow foundations other than pile foundations must have at least a 2% gradient away from the structures.

Appropriate drainage considerations should be incorporated into the project design relative to all existing and proposed drainage courses by the project civil engineer. Drainage velocity reducers, swales, riprap, etc. should be implemented as determined by the project civil engineer as deemed necessary to prevent erosion and scouring.

No water should be allowed to flow over fill slopes. A berm should be constructed at the top of the fill slope to divert drainage run-off to an approved area.

Vegetation is an important factor in minimizing erosion due to sheet flow and should be planted as soon as possible. Native indigenous plants should be used to assure sustainability of vegetation during the lifetime of the project.

12.0 ADDITIONAL SERVICES

Once construction details are proved, Bruin GSI can provide a comprehensive Geotechnical Engineering Report Specific to the proposed structures. Cost estimates can be prepared if requested. Please contact our office.

13.0 LIMITATIONS AND UNIFORMITY CONDITIONS

The subsurface conditions and characteristics described herein have been projected from individual excavations placed across the subject property. Actual variations in the subsurface conditions and characteristics may occur.

Bruin GSI is providing the preliminary data in this report to aid the client in determining potential uses in regard to solar generation facilities. This preliminary report shall not be used for design and/or construction purposes. The information provided is preliminary based on the limited exploration, sampling, and data and should not be considered at a design level report.

This preliminary geotechnical evaluation report has been prepared in accordance with generally accepted practice and standards in this community at this time. No warranties, either expressed or implied, are made as to the professional advice provided under the terms of the agreement and included in this report. This report has been prepared for the exclusive use of The AES Corporation and their authorized agents. Unauthorized reproduction of any portion of this report without expressed written permission is prohibited.

If parties other than Bruin GSI are engaged to provide construction geotechnical services, they must be notified that they will be required to assume complete responsibility for the geotechnical phase of the project by concurring with the findings and recommendations in this report or providing alternate recommendations.

14.0 CLOSURE

The conclusions, recommendations, and opinions presented herein are: (1) based upon our evaluation and interpretations of the limited data obtained from our field and laboratory programs; (2) based upon an interpolation of soil conditions between and beyond the excavations; (3) are subject to confirmation.

15.0 REFERENCES

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Todd, V.R., *Geology of the Mount Laguna Quadrangle, San Diego County, California*. Open-File Report, 1995, https://doi.org/10.3133/ofr95522.

United States Geological Survey, *Preliminary Geologic Map of the El Cajon 30' x 60' Quadrangle, Southern California*, 2004, Version 1.0

APPENDIX A

Excavation Logs and Classification Key

Client:	**AES - Starlight**	**EXCAVATION LOG 1**	
Project Location:	**Lat: 32.654104°** **Lon: -116.286582°**	Page 1 of 1	
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**8' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3363 ft.**
Project number: **22-137**	Trench Backfill	**Native Cuttings**	

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP/SM		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel Loose, moist		8.6
5'		SP		Pale brown slightly silty medium to coarse sand w/ fine sand & DG Very dense, slightly moist		3.2
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.6
10'						
				Excavation refusal @ 8' bgs No groundwater encountered No caving DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.654020°** / **Lon: -116.284487°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**3' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 2

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3672 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
	■	SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4 gravel, DG		7.0
				Dense, moist		
	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.5
				Very dense, slightly moist		
5'	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.6
				Very dense, slightly moist		
				Excavation refusal @ 5' bgs		
10'				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.653380°** / **Lon: -116.286024°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**3' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 3

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3646 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		2.8
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4 gravel, DG		2.5
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4 gravel, DG		2.6
				Very dense, slightly moist		
5'						
				Excavation refusal @ 3' bgs		
				No groundwater encountered		
				No caving		
10'				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.653617°** / **Lon: -116.285974°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 4

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3652 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4 gravel		
				Dense, moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'				Very dense, slightly moist		
				Excavation refusal @ 4' bgs		
				No groundwater encountered		
10'				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.652775°** / **Lon: -116.286881°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**6.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 5

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3627 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium w/ coarse sand & occ #4 gravel		
				Loose, moist		
		SP		Moderate brown slightly silty fine to medium w/ coarse sand & occ #4 gravel		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		3.5
5'				Medium dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		6.5
				Very dense, slightly moist		
10'				Excavation refusal @ 6.5' bgs		
				No groundwater encountered		
				No caving		
15'				DG = Decomposed granite		
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.652760°** / **Lon: -116.285397°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 6

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3636 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		5.9
				Dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'				Very dense, slightly moist		
				Excavation refusal @ 4.5' bgs		
				No groundwater encountered		
10'				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 7**	
Project Location:	**Lat: 32.652651°**	Page 1 of 1	
	Lon: -116.284839°		
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**7' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3638 ft.**
Project number:	**22-137**	Trench Backfill	**Native Cuttings**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Brown slightly silty fine to medium sand w/ coarse sand & occ #4-3/4" gravel		
				Loose, moist		
		SP		Brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'				Dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		1.9
				Very dense, dry		
10'						
				Excavation refusal @ 7' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.651452°** / **Lon: -116.284173°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 8

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3657 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
				Loose, moist		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'				Very dense, slightly moist		
				Excavation refusal @ 4' bgs		
				No groundwater encountered		
10'				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.651799°** / **Lon: -116.285600°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**7' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 9

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3620 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand		
				Loose, moist		
		SP		Moderate brown slightly silty fine to medium sand		
5'		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		3.4
				Dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 7' bgs		
				No groundwater encountered		
				No caving		
15'				DG = Decomposed granite		
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.651577°** / **Lon: -116.286891°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**3' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 10

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3605 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
5'						
				Excavation refusal @ 3' bgs		
				No groundwater encountered		
				No caving		
10'				DG = Decomposed granite		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 11**	
Project Location:	**Lat: 32.650516°**	Page 1 of 1	
	Lon: -116.287599°		
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**7.5' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3586 ft.**
Project number:	**22-137**	Trench Backfill	**Native Cuttings**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP/SM		Brown slightly silty fine to medium sand w/ coarse sand		
				Loose, moist		
5'		SP		Brown slightly silty fine to medium sand w/ coarse sand & occ #4-8" cobble		
				Medium dense, moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		1.7
				Very dense, dry		
10'						
				Excavation refusal @ 7.5' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 12**	
Project Location:	**Lat: 32.650533°**	Page 1 of 1	
	Lon: -116.286039°		
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**7' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3604 ft.**
Project number:	**22-137**	Trench Backfill	**Native Cuttings**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP/SM		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
				Moist, loose		
		SP		Pale brown medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'				Dense, slightly moist		
		SP		White medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 7' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 13**	
Project Location:	**Lat: 32.650689°**	Page 1 of 1	
	Lon: -116.284700°		
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**3' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3635 ft.**
Project number:	**22-137**	Trench Backfill	**Native Cuttings**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		
		SP		Yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		2.1
				Very dense, dry		
5'						
				Excavation refusal @ 3' bgs		
				No groundwater encountered		
				No caving		
10'				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.649559°** / **Lon: -116.288479°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 14

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3578 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG Dense, slightly moist		
		SP		Yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		1.4
5'				Very dense, slightly moist		
				Excavation refusal @ 4' bgs No groundwater encountered		
10'				No caving DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.649134°** / **Lon: -116.287029°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**5.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 15

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3562 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
	■	SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
				Loose, moist		
	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		
				Dense, slightly moist		
5'						
	■	SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'				Excavation refusal @ 5.5' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.649110°** / **Lon: -116.285868°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**9.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 16

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3572 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
				Loose, moist		
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
5'		SP		Pale brown medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		
				Dense, slightly moist		
10'		SP		Pale brown medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		2.8
				Very dense, slightly moist		
				Excavation refusal @ 9.5' bgs		
15'				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.647903°** / **Lon: -116.283892°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**13' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 17

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3554 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Brown slightly silty fine to medium sand w/ coarse sand & #4 gravel		4.3
				Loose, slightly moist		
5'						
		SP		Brown slightly silty fine to medium sand w/ coarse sand & #4 gravel		
		SP		Brown slightly silty fine to coarse sand w/ occ #4 gravel		4.4
				Loose, slightly moist		
10'		SP		Brown slightly silty fine to coarse sand w/ occ #4-6" cobble		
		SP		Brown slightly silty medium to coarse sand w/ fine sand & occ #4-1" gravel, DG		4.2
		SP		Pale yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		0.9
				Very dense, dry		
15'						
				Excavation refusal @ 13' bgs		
				No groundwater encountered		
				No caving		
20'				DG = Decomposed granite		
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.647868°** / **Lon: -116.285142°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 18

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3544 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Light brown slightly sitly medium to caorse sand w/ fine sadn & occ #4-1/2" gravel, DG		
				Dense, slightly moist		
		SP		White slightly sitly medium to caorse sand w/ fine sadn & occ #4-1/2" gravel, DG		
5'				Very dense, slightly mosit		
				Excavation refusal @ 4' bgs		
				No groundwater encountered		
10'				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.648340°** / **Lon: -116.286510°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**4' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 19

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3551 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
				Loose, moist		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		1.0
5'				Very dense, dry		
				Excavation refusal @ 4' bgs		
				No groundwater encountered		
10'				No caving		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 20**	
Project Location:	**Lat: 32.648817°**	Page 1 of 1	
	Lon: -116.288034°		
Date(s) trenched	**4/12/2022**		
Total Depth of Trench	**7' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3565 ft.**
Project number: **22-137**	Trench Backfill	**Native Cuttings**	

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
				Loose, moist		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4 gravel, DG		
				Medium dense, slightly moist		
5'						
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4 gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 7' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

Client:	**AES - Starlight**	**EXCAVATION LOG 21**	
Project Location:	**Lat: 32.654100°** / **Lon: -116.287413°**	Page 1 of 1	
Date(s) trenched	**4/13/2022**		
Total Depth of Trench	**6' bgs**	Logged By	**AM**
Trenching Equipment	**Backhoe**	Checked By:	**MS**
Sampling Method(s)	**Hand-Sampler**	Notes:	**Elevation 3649 ft.**
Project number: **22-137**	Trench Backfill	**Native Cuttings**	

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP/SM		Brown sslightly silty fine to coarse sand w/ occ #4 gravel		7.2
				Medium dense, moist		
5'		SM		Pale brown very silty fine to medium sand w/ coarse sand		2.2
		SM		Pale brown very silty fine to medium sand w/ coarse sand & #4-1/2" gravel		2.6
				Very dense, slightly moist		
10'				Excavation refusal @ 6' bgs		
				No groundwater encountered		
				No caving		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.652516°** / **Lon: -116.2879141°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 22

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3600 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
		SP		Yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Dense, slightly moist		
5'		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
				Excavation refusal @ 5' bgs		
10'				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.653827°** / **Lon: -116.290480°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**6.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 23

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3626 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		9.3
				dense, moist		
5'						
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		4.0
				Very dense, slightly moist		
10'				Excavation refusal @ 6.5' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.652141°** / **Lon: -116.289929°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**14' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 24

Page 1 of 1

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3589 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
	■	SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
				Loose, moist		
5'						
	■	SP		Light brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel		
				Loose, slightly moist		
10'	■	SP		Light brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gravel, DG		3.5
				Medium dense, slightly moist		
	■	SP		Yellowish-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		3.0
				Dense, slightly moist		
	■	SP		Pale-brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.0
15'				Very dense, dry		
				Excavation refusal @ 14' bgs		
				No groundwater encountered		
20'				No caving		
				DG = Decomposed granite		
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.650862°** / **Lon: -116.288401°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**8.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 25

Logged By: **AM**

Checked By: **MS**

Notes:

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
	■	SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
				Loose, moist		
5'	■	SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				dense, slightly moist		
	■	SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 8.5' bgs		
				No groundwater encountered		
				No caving		
15'				DG = Decomposed granite		
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.649304°** / **Lon: -116.289388°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**6' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 26

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3564 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		5.3
				Dense, slightly moist		
5'						
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		3.0
				Very dense, slightly moist		
10'				Excavation refusal @ 6' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.648775°** / **Lon: -116.273174°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**8' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 27

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3632 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Yellowish-brown slightly silty fine to medium sand w/ coarse sand & #4 gravel		
				Medium dense, moist		
5'		SP		Light yellowish-brown medium to coarse sand w/ occ #4-1/2" gravel, DG		1.0
				Dense, dry		
		SP		White medium to coarse sand w/ occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 8' bgs		
				No groundwater encountered		
				No caving		
15'				DG = Decomposed granite		
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.648469°** / **Lon: -116.276458°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 28

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3658**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel		
				Dense, slightly moist		
	■	SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		
5'	■	SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-3/4" gravel, DG		2.0
				Very dense, dry		
				Excavation refusal @ 5' bgs		
10'				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.646781°** / **Lon: -116.276610°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**6' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 29

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3616 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
5'						
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'				Excavation refusal @ 6' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.647190°** / **Lon: -116.275364°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**7.5' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 30

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3600 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		3.4
				Dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		
5'						
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		
				Very dense, slightly moist		
		SP		White slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel		1.8
10'						
				Excavation refusal @ 7.5' bgs		
				No groundwater encountered		
				No caving		
15'						
20'						
25'						
30'						

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Client:	**AES - Starlight**
Project Location:	**Lat: 32.646651°** / **Lon: -116.273119°**
Date(s) trenched	**4/12/2022**
Total Depth of Trench	**7' bgs**
Trenching Equipment	**Backhoe**
Sampling Method(s)	**Hand-Sampler**
Trench Backfill	**Native Cuttings**

EXCAVATION LOG 31

Logged By	**AM**
Checked By:	**MS**
Notes:	**Elevation 3578 ft.**

Project number: **22-137**

Depth	Sample	USCS	Graphic Log	Material Description	Dry Unit Weight pcf	Water Content %
		SP		Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.4
				Dense, slightly moist		
		SP		Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		2.8
5'						
		SP		Pale brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel, DG		
				Very dense, slightly moist		
10'						
				Excavation refusal @ 7' bgs		
				No groundwater encountered		
				No caving		
				DG = Decomposed granite		
15'						
20'						
25'						
30'						

APPENDIX B

Laboratory Test Results

SUMMARY OF LABORATORY TEST RESULTS

SIEVE ANALYSIS

Percent passing individual sieves

Sample I.D.	1/2"	3/8"	#4	#10	#40	#100	#200
E1@1	100	100	98	74	34	20	13
E3@1	100	100	95	69	29	14	8
E6@2	100	98	88	61	28	16	10
E2@3	100	99	89	63	25	11	6
E3@3	98	95	76	46	11	3	0
E14@4	100	100	88	49	18	7	3
E1@5	100	100	97	63	23	12	7
E2@5	100	95	73	45	14	6	3
E9@5.5	99	96	70	44	20	10	6
E5@6.5	100	99	80	45	16	7	4
E7@7	100	98	78	50	16	7	3
E11@7.5	92	88	73	50	22	10	6
E1@8	99	99	83	49	17	7	4
E17@8	100	100	97	72	24	6	2
E16@9.5	96	95	88	63	30	14	8
E17@12	100	100	98	74	28	8	4

SAND EQUIVALENT

Sample I.D.	Sand Equivalent
E2@1’	13
E3@2’	72
E21@2’	22
E31@2’	35
E13@3’	47
E17@3’	59
E5@4’	31
E28@5’	51
E26@6’	68
E23@6.5’	26
E24@12’	36
E17@13’	59

EXPANSION INDEX

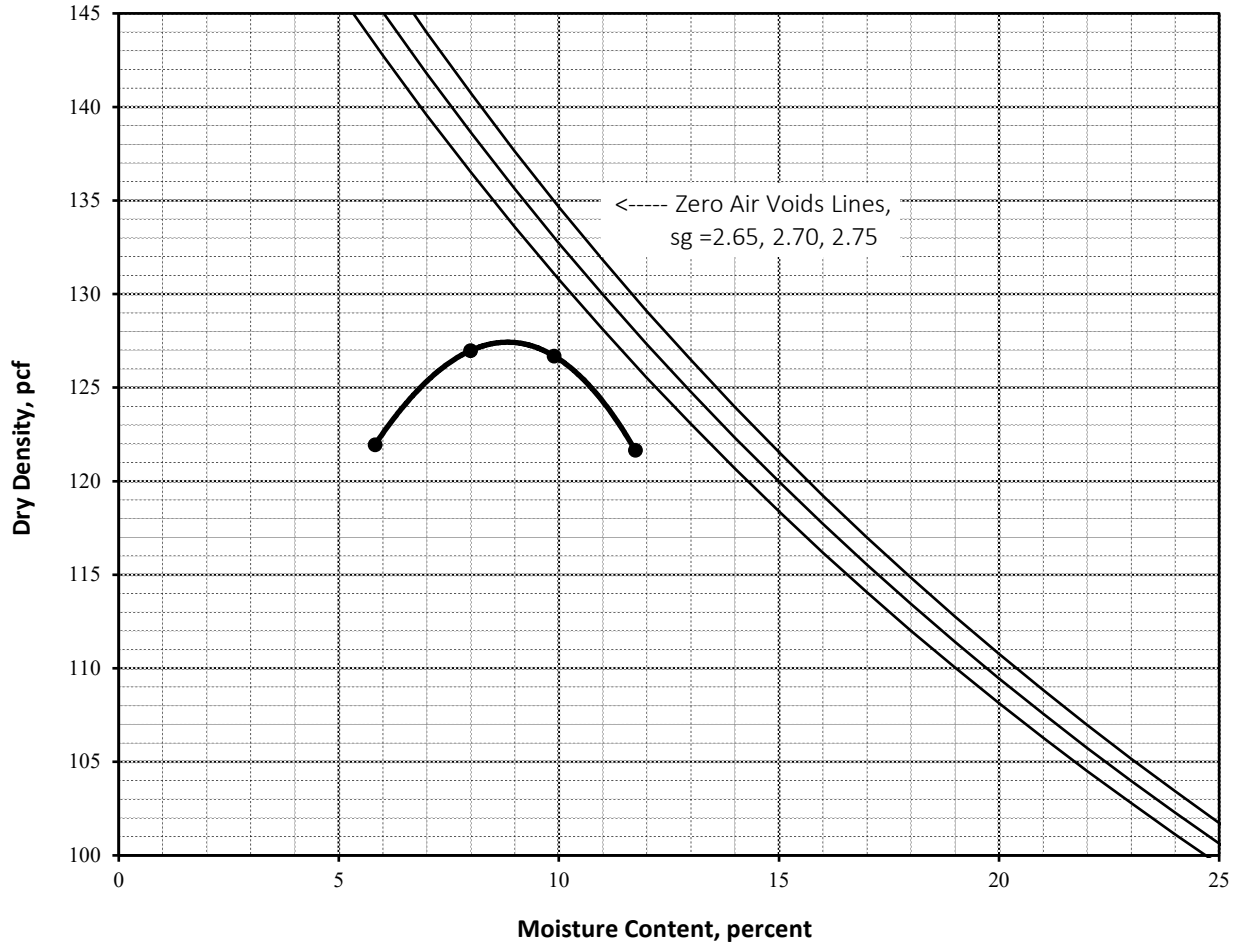
Sample	Expansion Index	Classification
E1@0-5	0	Non-Expansive
E5@0-5	0	Non-Expansive
E11@0-5	0	Non-Expansive
E17@0-5	0	Non-Expansive
E21@0-5	0	Non-Expansive
E26@0-5	0	Non-Expansive
E27@0-5	0	Non-Expansive
E29@0-6	0	Non-Expansive
E30@0-5	0	Non-Expansive
E31@0-5	0	Non-Expansive

Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534
661-273-9078

Maximum Density/Optimum Moisture Proctor ASTM D698/D1557

Job Number:	22-137	May 3, 2022
Client:	AES - Starlight	ASTM D-1557 A
Lab ID Number:	E11	Rammer Type: 10#
Sample Location:	Bulk 0'-5'	
Description:	(SP/SM) Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4-1/2" gra	

Maximum Density:	**127.5 pcf**
Optimum Moisture:	**9%**

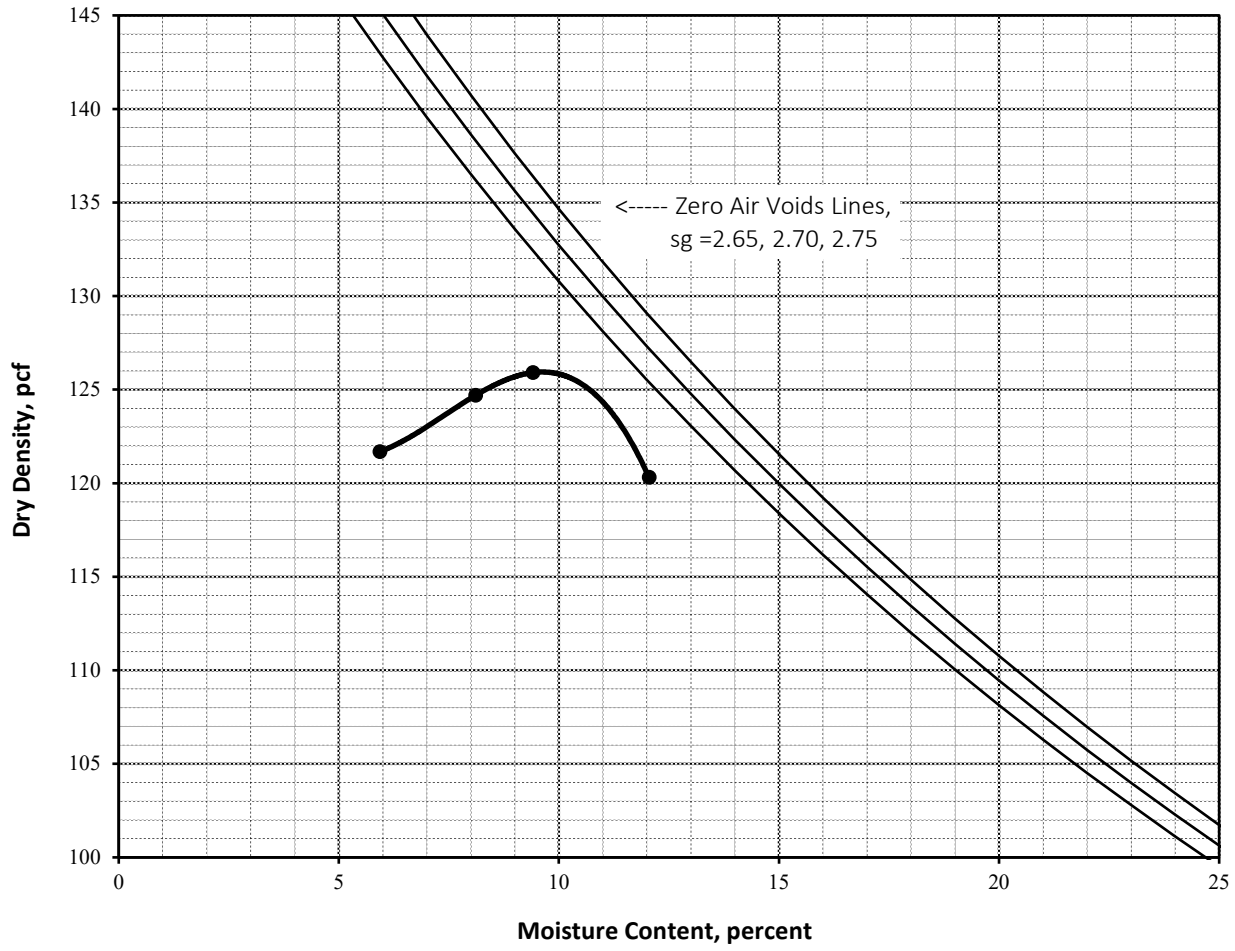


Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534
661-273-9078

Maximum Density/Optimum Moisture Proctor ASTM D698/D1557

Job Number:	22-137	May 13, 2022
Client:	AES - Starlight	ASTM D-1557 A
Lab ID Number:	E11	Rammer Type: 10#
Sample Location:	Bulk 0'-5'	
Description:	(SP/SM) Brown slightly silty fine to medium sand w/ coarse sand	

Maximum Density:	**126 pcf**
Optimum Moisture:	**9.5%**

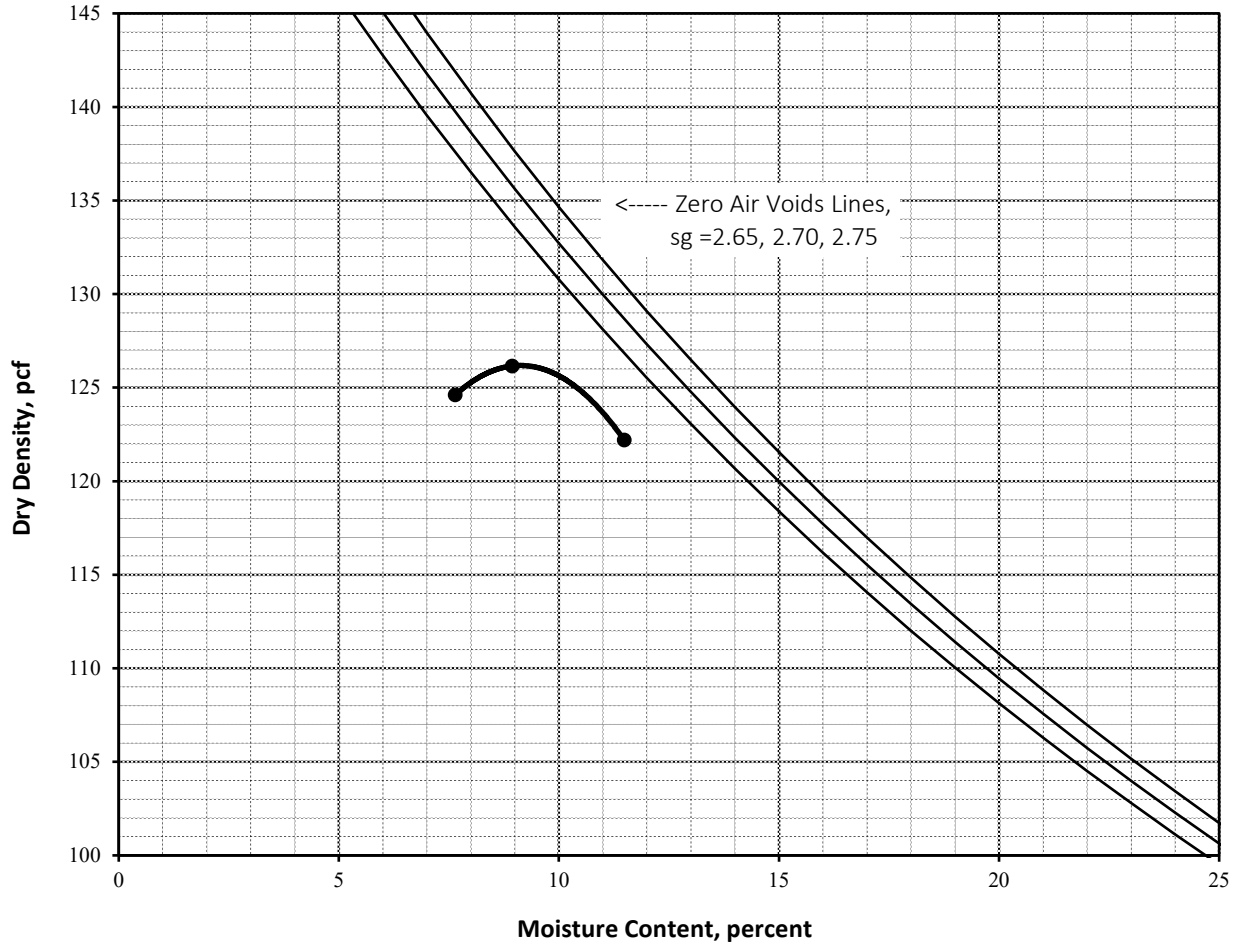


Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534
661-273-9078

Maximum Density/Optimum Moisture Proctor ASTM D698/D1557

Job Number:	22-137	May 10, 2022
Client:	AES - Starlight	ASTM D-1557 A
Lab ID Number:	E26	Rammer Type: 10#
Sample Location:	Bulk 0'-5'	
Description:	(SP) Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel	

Maximum Density: **126 pcf**
Optimum Moisture: **9%**

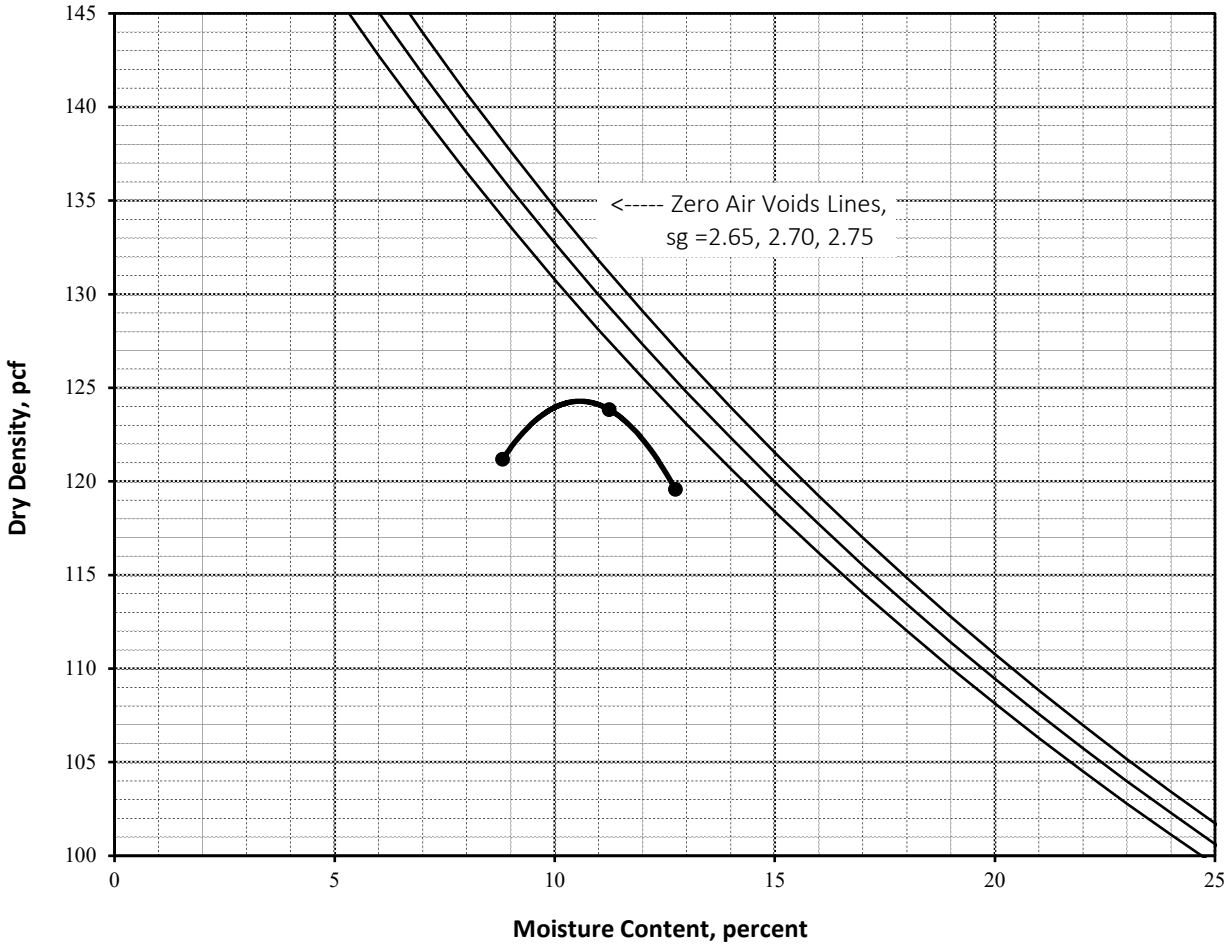


Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534
661-273-9078

Maximum Density/Optimum Moisture Proctor ASTM D698/D1557

Job Number:	22-137	April 28, 2022
Client:	AES - Starlight	ASTM D-1557 A
Lab ID Number:	E31	Rammer Type: 10#
Sample Location:	Bulk 0'-5'	
Description:	(SP) Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel	

Maximum Density:	**124.5 pcf**
Optimum Moisture:	**10.5%**

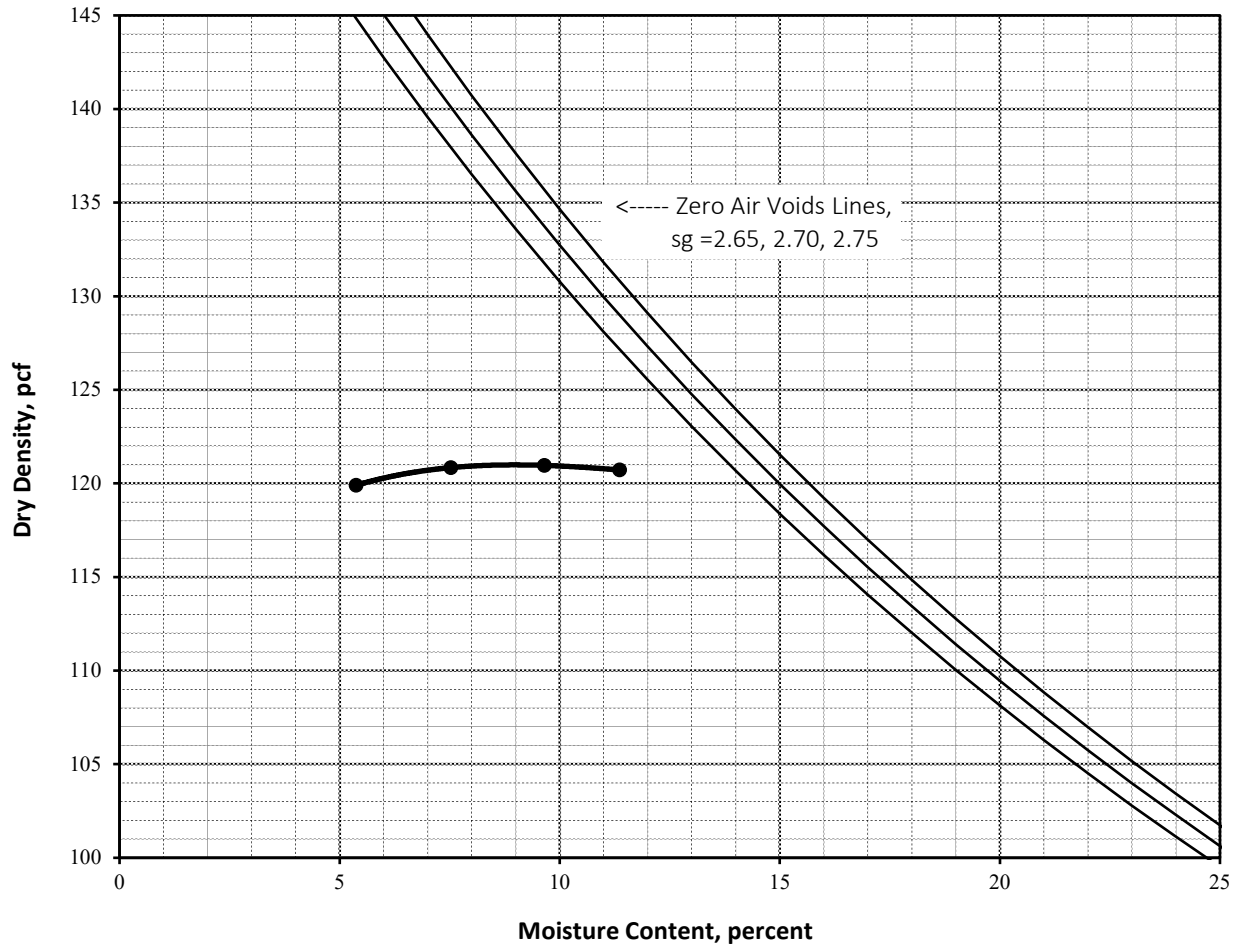


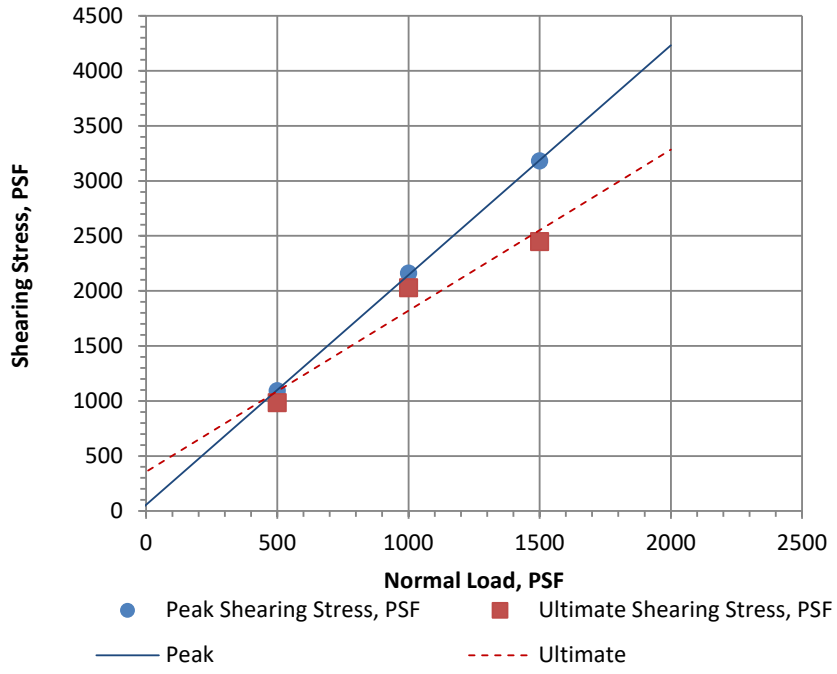
Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534
661-273-9078

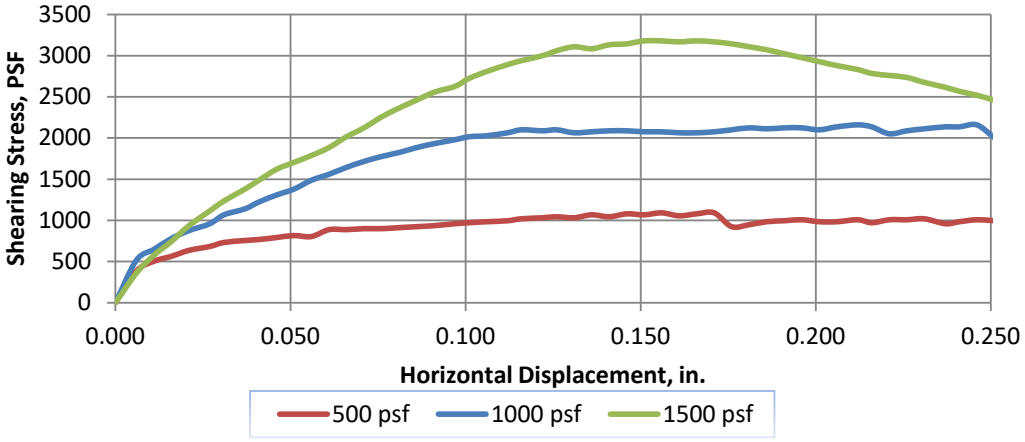
Maximum Density/Optimum Moisture Proctor ASTM D698/D1557

Job Number:	22-137	May 13, 2022
Client:	AES - Starlight	ASTM D-1557 A
Lab ID Number:	E31	Rammer Type: 10#
Sample Location:	Bulk 0'-5'	
Description:	(SP) Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel	

Maximum Density:	**121 pcf**
Optimum Moisture:	**9.5%**







Soil Classifcation: SP

Soil Description: Light brown slightly silty medium to coarse sand w/ fine sand & occ #4-1/2" gravel

SHEAR DATA

Sample ID	Symbol	Depth, feet	Dry Density, PCF *	Average deg. of saturation %
E26	●	0-5'	113	91

* Sample remolded to 90% relative compaction as determined by ASTM D-1557 Test Method

	Peak	Ultimate
Angle of friction, (degrees)	64	56
Cohesive Strength (PSF)	56	356

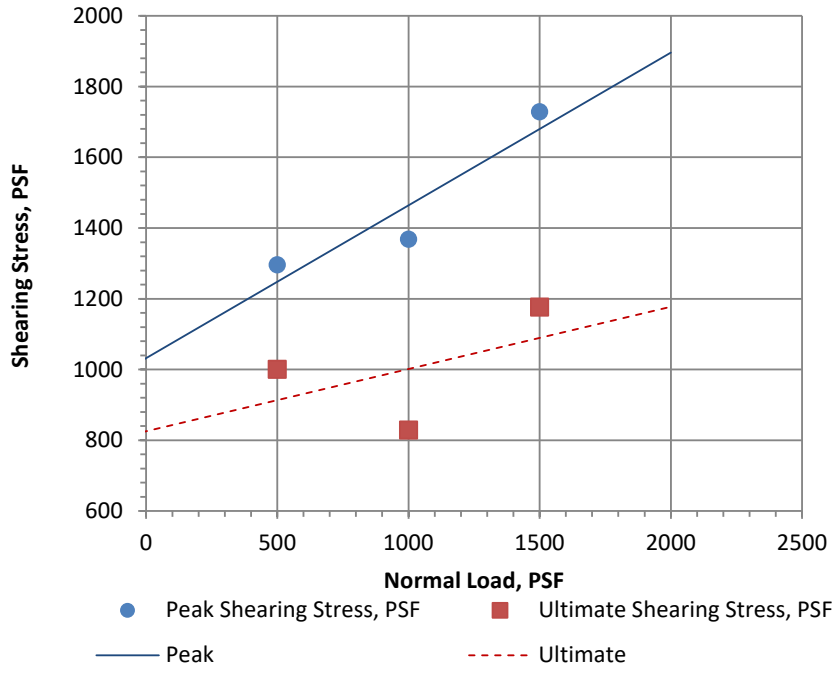
Direct Shear Test

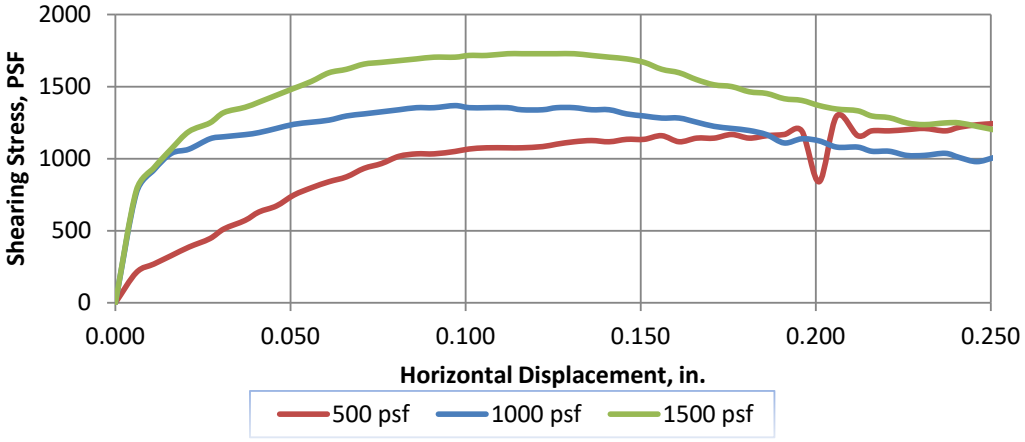
AES

Starlight Solar

BRUIN GEOTECHNICAL SERVICES INC.

5/13/2022 | **22-137**





Soil Classifcation: SP

Soil Description: Moderate brown slightly silty fine to medium sand w/ coarse sand & occ #4 gravel

SHEAR DATA

Sample ID	Symbol	Depth, feet	Dry Density, PCF *	Average deg. of saturation %
E31	●	0-5'	109	64

* Sample remolded to 90% relative compaction as determined by ASTM D-1557 Test Method

	Peak	Ultimate
Angle of friction, (degrees)	23	10
Cohesive Strength (PSF)	1032	825

Direct Shear Test

AES

Starlight Solar

BRUIN GEOTECHNICAL SERVICES INC.

5/13/2022 | **22-137**

APPENDIX C

Corrosion Report
JDH Corrosion

6/1/2022

jdh corrosion consultants, inc.

Soil Corrosivity Evaluation
AES Starlight
Boulevard, CA

SUBMITTED TO

Mr. Mark E. Stevens

Director

Bruin Geotechnical Services, Inc.

44732 Yucca Avenue

Lancaster, CA 93534

JDH JOB NUMBER

2022170

June 1, 2022

Bruin Geotechnical Services, Inc.
44732 Yucca Avenue
Lancaster, CA 93534

Attention: **Mr. Mark E. Stevens**
Director

Subject: **Preliminary Site Corrosivity Evaluation**
AES Starlite
Boulevard, CA

Dear Mr. Stevens,

Pursuant to your request, **JDH Corrosion Consultants, Inc**. has conducted a preliminary broad general site corrosivity evaluation for the above referenced project site and we have provided herein recommendations for long-term corrosion control for the proposed materials of construction at this site.

Our Scope of Work included the following:

1. Chemical analysis of six soil samples from the site which were collected by Bruin Geotechnical in order to determine the appropriate corrosivity classification for this project.

SOIL TESTING AND ANALYSIS

Soil Testing Results

Six (6) soil samples from the project site were chemically analyzed for corrosivity by **CERCO Analytical**. Each sample was analyzed for chloride and sulfate concentration, pH redox and resistivity (at 100% saturation and as received). The test results are presented in a report dated May 31, 2022. The results of the chemical analysis were as follows:

Laboratory Analysis

Chemical Analysis	Range of Results	Corrosion Classification*
Chlorides	None Detected	Non-corrosive*
pH	6.65 – 7.22	Non-corrosive*
Resistivity (as received)	>80,000 ohms-cm	Non-corrosive*
Resistivity (100% Saturation)	11,000 – 42,000 ohms-cm	Mildly Corrosive to Non-corrosive*
Sulfate	None Detected	Non-corrosive**
Redox	310 – 370 mV	Mildly Corrosive*

* With respect to bare steel or ductile iron.
** With respect to mortar coated steel

Chemical Testing Analysis

The chemical analysis provided by CERCO Analytical indicates that based on this soil data, the soils are generally classified as "mildly corrosive to non-corrosive" based on the saturated resistivity measurements. The chloride levels indicate "non-corrosive" conditions to steel and ductile iron, and the sulfate levels indicate "non-corrosive" conditions for concrete structures placed into these soils with regard to sulfate attack. The pH of the soils is alkaline which classifies them as "non-corrosive" to buried steel and concrete structures.

Reinforced Concrete Foundations

In general, due to the low levels of water-soluble sulfates found in these soils, there is no special requirement for sulfate resistant concrete to be used at this site. The type of cement used should be in accordance with 2019 California Building Code (CBC) for soils which have less than 0.10 percent by weight of water soluble sulfate (SO_4) in soil and the minimum depth of cover for the reinforcing steel should be as specified in CBC as well.

Driven H-Piles

The soils at the project site are generally considered to be "mildly corrosive to non-corrosive" to ductile/cast iron, steel and dielectric coated steel based on the saturated resistivity measurements.

Further investigations are necessary to determine the corrosion rates of steel in this soil. These will include review of geotechnical report, in-situ soil resistivity and chemical analysis of soil at pile depths, etc.

LIMITATIONS

The conclusions and recommendations contained in this report reflect the opinion of the author of this report and are based on the information and assumptions referenced herein, this report does not take grounding of the piles into consideration. All services provided herein were performed by persons who are experienced and skilled in providing these types of services and in accordance with the standards of workmanship in this profession. No other warrantees or guarantees either expressed or implied are provided.

We thank you for the opportunity to be of assistance on this important project. If you have any questions concerning this report or the analysis provided herein, please feel free to contact us at (925) 927-6630.

Respectfully submitted,

Brendon Hurley
JDH CORROSION CONSULTANTS, INC.
Field Technician

Mohammed Ali., P.E.
JDH Corrosion Consultants, Inc.
Senior Corrosion Engineer

CC: File 2022170

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: JDH Corrosion Consultants, Inc.
Client's Project No.: 2022170
Client's Project Name: Bruin Geotechnical - AES Starlight
Date Sampled: 12-May-22
Date Received: 12-May-22
Matrix: Soil
Authorization: Signed Chain of Custody

Date of Report: 31-May-2022

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Resistivity (As Received) (ohms-cm)	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2205021-001	E29 @ 2'-6'	370	6.65	>80,000	17,000	-	N.D.	N.D.
2205021-002	E24 @ 2'-4'	310	7.22	>80,000	21,000	-	N.D.	N.D.
2205021-003	E15 @ 5.5'	340	7.10	>80,000	11,000	-	N.D.	N.D.
2205021-004	E27 @ 0'-5'	320	7.10	>80,000	21,000	-	N.D.	N.D.
2205021-005	E5 @ 0'-5'	330	7.20	>80,000	21,000	-	N.D.	N.D.
2205021-006	E17 @ 0'-5'	330	6.98	>80,000	42,000	-	N.D.	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM G57	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	-	-	50	15	15
Date Analyzed:	16-May-2022 & 20-May-2022	17-May-2022 & 20-May-2022	19-May-2022	19-May-2022	-	16-May-2022 & 25-May-2022	16-May-2022 & 25-May-2022

Sherri Moore
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

Chain of Custody

2205021

Page 1 of 1

1100 Willow Pass Court
Concord, CA 94520-1006
925 462 2771
Fax: 925 462 2775
CERCO analytical

Job No.	CU#		Client Project I.D.
	10735		2022170

Schedule
Analyte

Date Sampled	Date Due

Full Name
Mr. J. Darby Howard, Jr.

Phone (925) 927-6630 X
Fax (925) 927-6634

Company and/or Mailing Address
JDH Corrosion Consultants, Inc.

Cell ☒

Sample Source
BRUIN GEOTECHNICAL-AES STARLIGHT

ANALYSIS — ASTM

Lab No.	Sample I.D.	Date	Time	Matrix	Contain.	Size	Preserv.	Qtv.	Redox Potential	pH	Sulfate	Chloride	Resistivity-As Rec'd	Resistivity-100% Saturated
1	E29@2'-6'	5/12		S	AB			1	X	X	X	X	X	X
2	E24@2'-4'	✓		✓	✓			1						
3	E15@5.5'	✓						1						
4	E27@0-5'	✓						1						
5	E5@0-5'	✓						1						
6	E17@0-5'	✓						1						

MATRIX: DW - Drinking Water; GW - Ground Water; SW - Surface Water; WW - Waste Water; Water; SL - Sludge; S - Soil; Product

ABBREVIATIONS: HB - Hosebib; PV - Petcock Valve; PT - Pressure Tank; PH - Pump House; RR - Restroom; GL - Glass; PL - Plastic; ST - Sterile

SAMPLE RECEIPT: Total No. of Containers 6; Rec'd Good Cond/Cold; Conforms to Record; Temp. a t Lab -°C; Sampler

Relinquished By: [signature] Date 5/12/22 Time 16:00

Received By: Drew Moore Date 5/12/22 Time 1600

Relinquished By: Date Time

Received By: Date Time

Relinquished By: Date Time

Received By: Date Time

Comments:
THERE IS AN ADDITIONAL CHARGE FOR METALS/POLY TUBES

Email Address: [illegible]

APPENDIX D

Results from Geotherm USA

21239 FM529 Rd., Bldg. F
Cypress, TX 77433
Tel: 281-985-9344
Fax: 832-427-1752
info@geothermusa.com
http://www.geothermusa.com

June 1, 2022

Bruin Geotechnical Services Inc.
44732 Yucca Avenue
Lancaster, CA 93534
Attn: Mark Stevens

Re: Thermal Analysis of Native Soil Samples
AES-Starlight – San Diego County, CA (Project No. 22-137)

The following is the report of thermal dryout characterization tests conducted on two (2) samples of native soil from the referenced project sent to our laboratory.

Thermal Resistivity Tests: The samples were tested at the 'optimum' moisture content and 90% of the modified Proctor dry density ***provided by Bruin***. The tests were conducted in accordance with the IEEE standard 442-2017. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 and 2.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

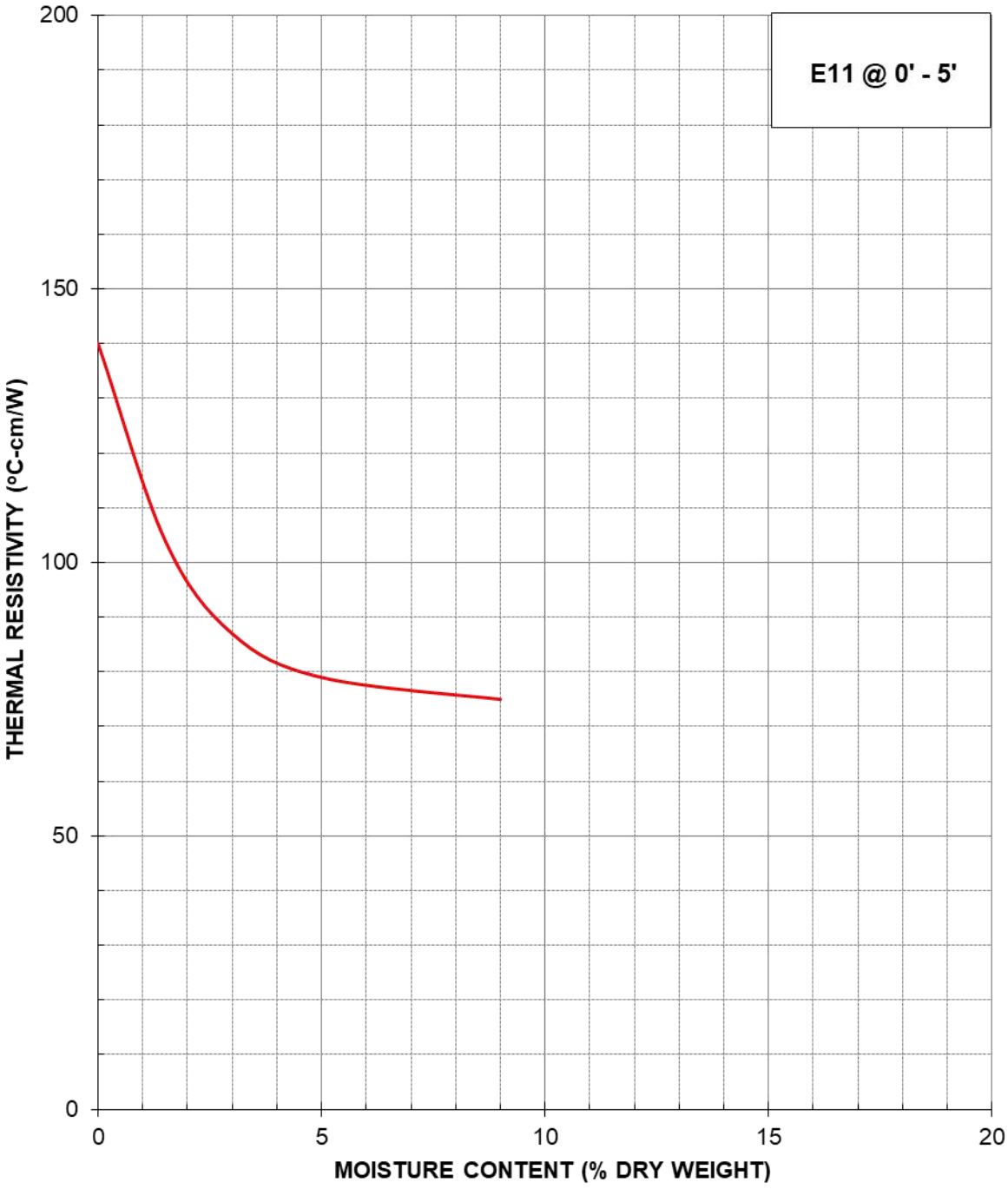
Sample ID	Depth (ft)	Description (*Bruin*)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
			Wet	Dry		
E11	0-5	Brown silty fine to medium sand	75	140	9	113
E30	0-5	Light brown fine to coarse sand with D/G	74	158	11	112

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

THERMAL DRYOUT CURVE



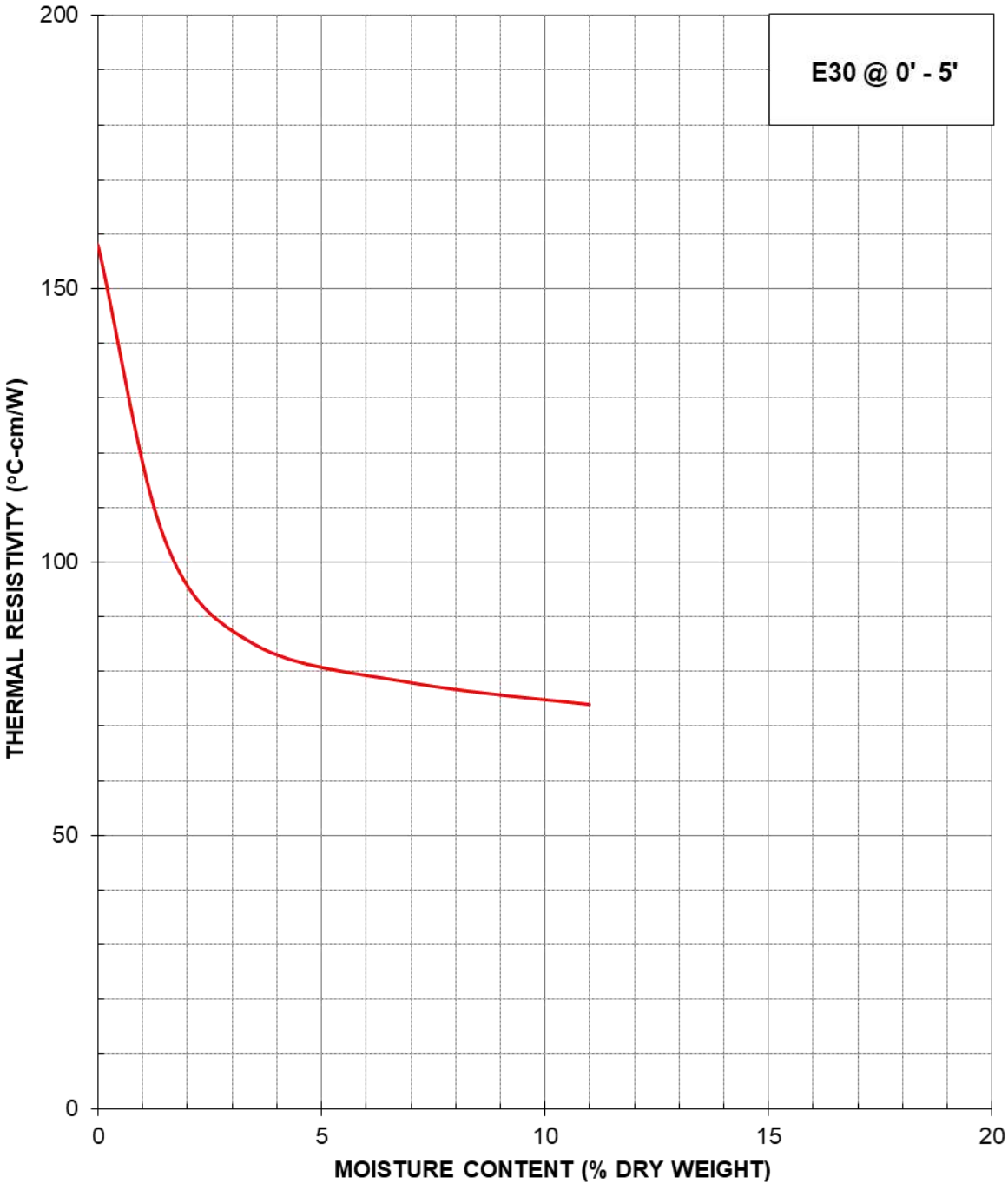
Bruin Geotechnical Services Inc. (Project # 22-137)

AES-Starlight – San Diego County, CA

Thermal Analysis of Native Soil Samples

June 2022 **Figure 1**

THERMAL DRYOUT CURVE



Bruin Geotechnical Services Inc. (Project # 22-137)

AES-Starlight – San Diego County, CA

Thermal Analysis of Native Soil Samples

June 2022 **Figure 2**

APPENDIX E

US Seismic Design Maps

22-137 AES Starlight Solar

Latitude, Longitude: 32.658339, -116.286564

Date	6/13/2022, 1:31:09 PM
Design Code Reference Document	ASCE7-16
Risk Category	I
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.061	MCE_R ground motion. (for 0.2 second period)
S_1	0.358	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.142	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.761	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.075	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.457	MCE_G peak ground acceleration
F_{PGA}	1.143	Site amplification factor at PGA
PGA_M	0.522	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.061	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.153	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.358	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.386	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.921	Mapped value of the risk coefficient at short periods
C_{R1}	0.926	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

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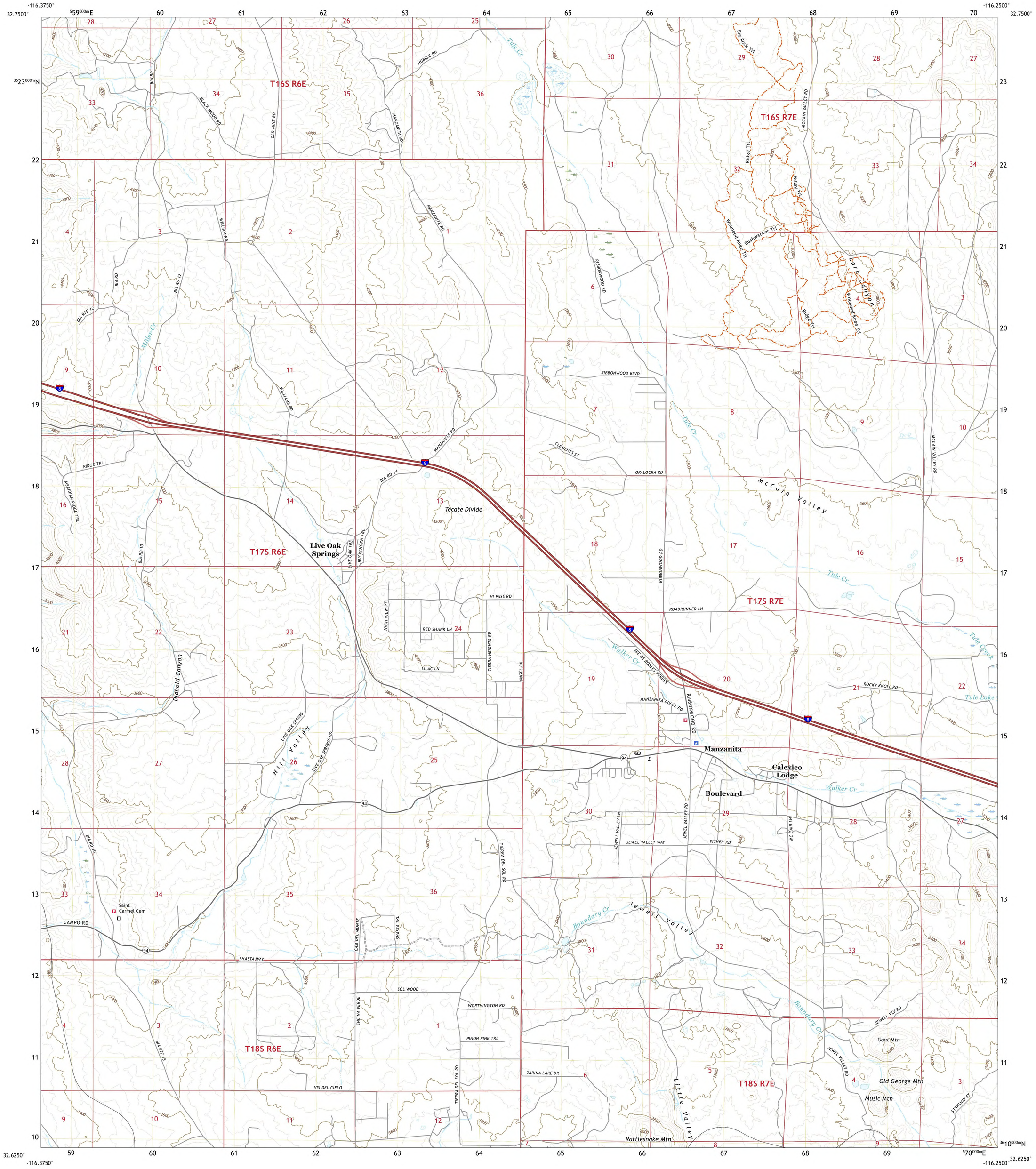
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

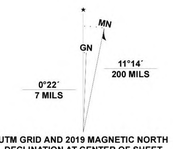
LIVE OAK SPRINGS QUADRANGLE
CALIFORNIA - SAN DIEGO COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 11S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, April 2020 - April 2020
Roads..... U.S. Census Bureau, 2016
Names.....GNIS, 1981 - 2021
Hydrography.....National Hydrography Dataset, 2001 - 2020
Contours.....National Elevation Dataset, 2018
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Public Land Survey System.....BLM, 2020
Wetlands.....FWS National Wetlands Inventory 2005 - 2014



UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NS
Grid Zone Designation
11S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Mount Laguna
2 Sombrero Peak
3 Sweeney Pass
4 Cameron Corners
5 Jacumba
6 Campo
7 Tierra del Sol
8 Jacumba OE S

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIVE OAK SPRINGS, CA
2021

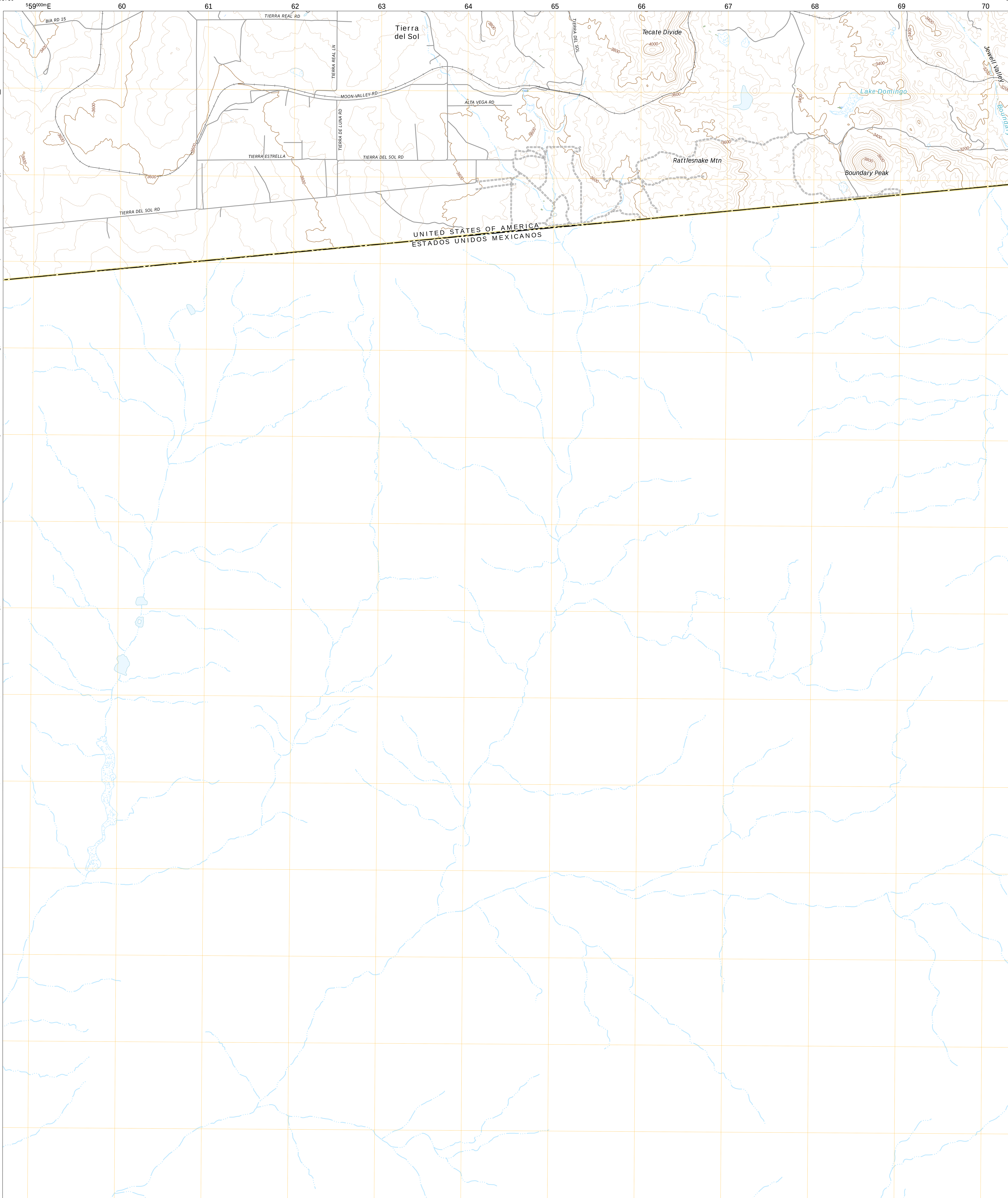
NSN. 7643016356889
NGA REF NO.USGSX24K26109

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

TIERRA DEL SOL QUADRANGLE
CALIFORNIA - SAN DIEGO COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 11S
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, April 2020 - April 2020
Roads..... U.S. Census Bureau, 2016
Names.....GNIS, 1981 - 2021
Hydrography.....National Hydrography Dataset, 2001 - 2020
Contours.....National Elevation Dataset, 2018
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Public Land Survey System.....BLM, 2020
Wetlands.....FWS National Wetlands Inventory 1985 - 2014

MN
GN
0°22´
7 MILS
11°13´
199 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NS
NR
Grid Zone Designation 11S

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

CALIFORNIA
QUADRANGLE LOCATION

1	2	3
4		5

1 Cameron Corners
2 Live Oak Springs
3 Jacumba
4 Campo
5 Jacumba OE S

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway		Local Connector	
Secondary Hwy		Local Road	
Ramp		4WD	

Interstate Route US Route State Route

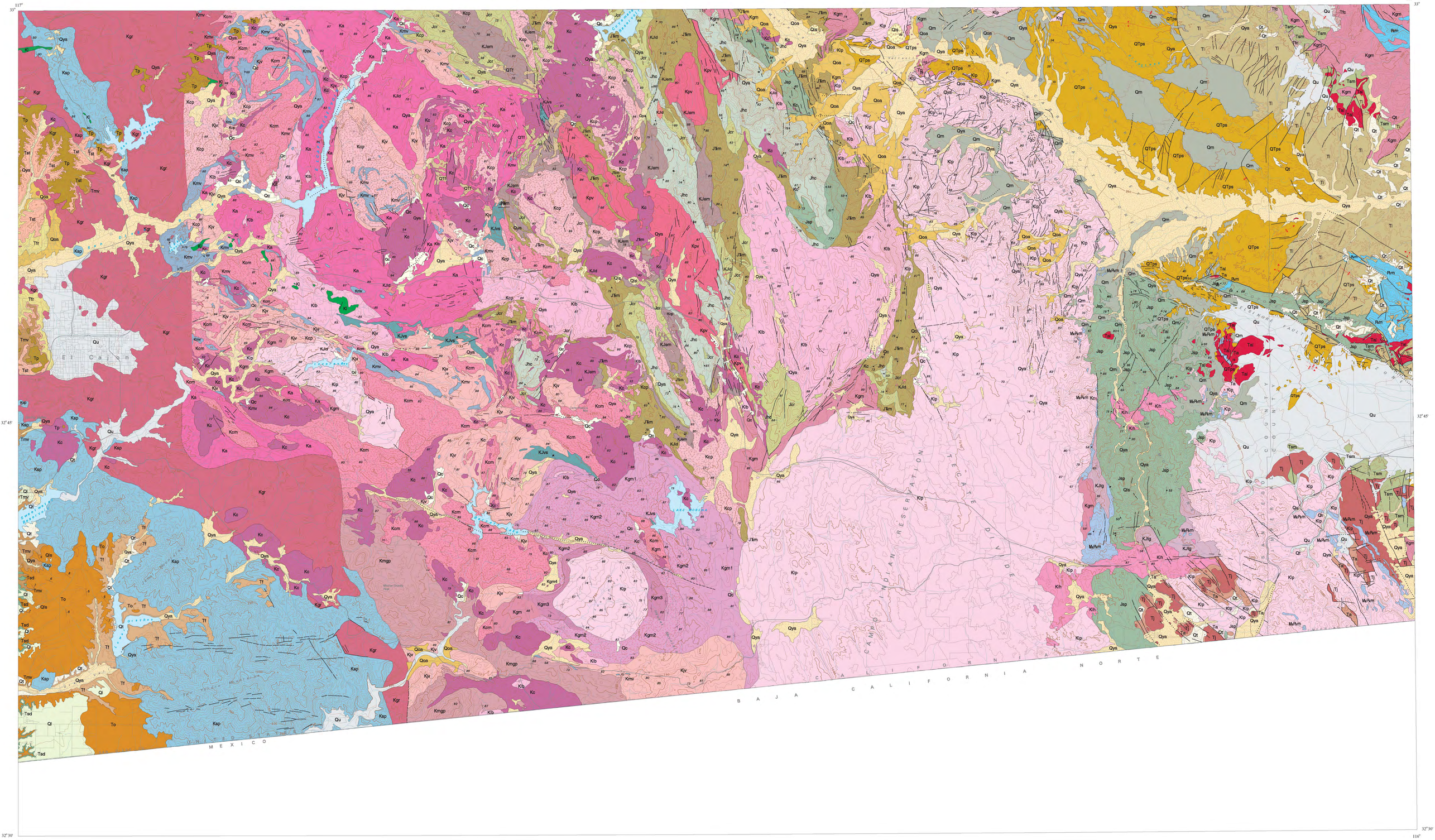
TIERRA DEL SOL, CA, BCN
2021

NSN. 7643016357990
NGA REF NO. USGSX24K 71838

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with
CALIFORNIA GEOLOGICAL SURVEY

OPEN-FILE REPORT 2004-1361
SCAMP - Southern California Areal Mapping Project
Sheet 1 of 2, Version 1.0



Base map digital layers (roads, topographic contours, and hydrography) were prepared from publicly-available digital line graph (DLG) data, El Cajon 1:100,000 metric quadrangle

Universal Transverse Mercator projection, zone 11

SCALE 1:100,000

1 .5 0 1 2 3 4 5 6 7 MILES

1 .5 0 1 2 3 4 5 6 7 KILOMETERS

GN MN

Preliminary Geologic Map of the El Cajon 30' x 60' Quadrangle, Southern California

Version 1.0

compiled by

Victoria R. Todd
2004

Digital Preparation by
Rachel M. Alvarez and TGS, Techni Graphic Systems, Inc.

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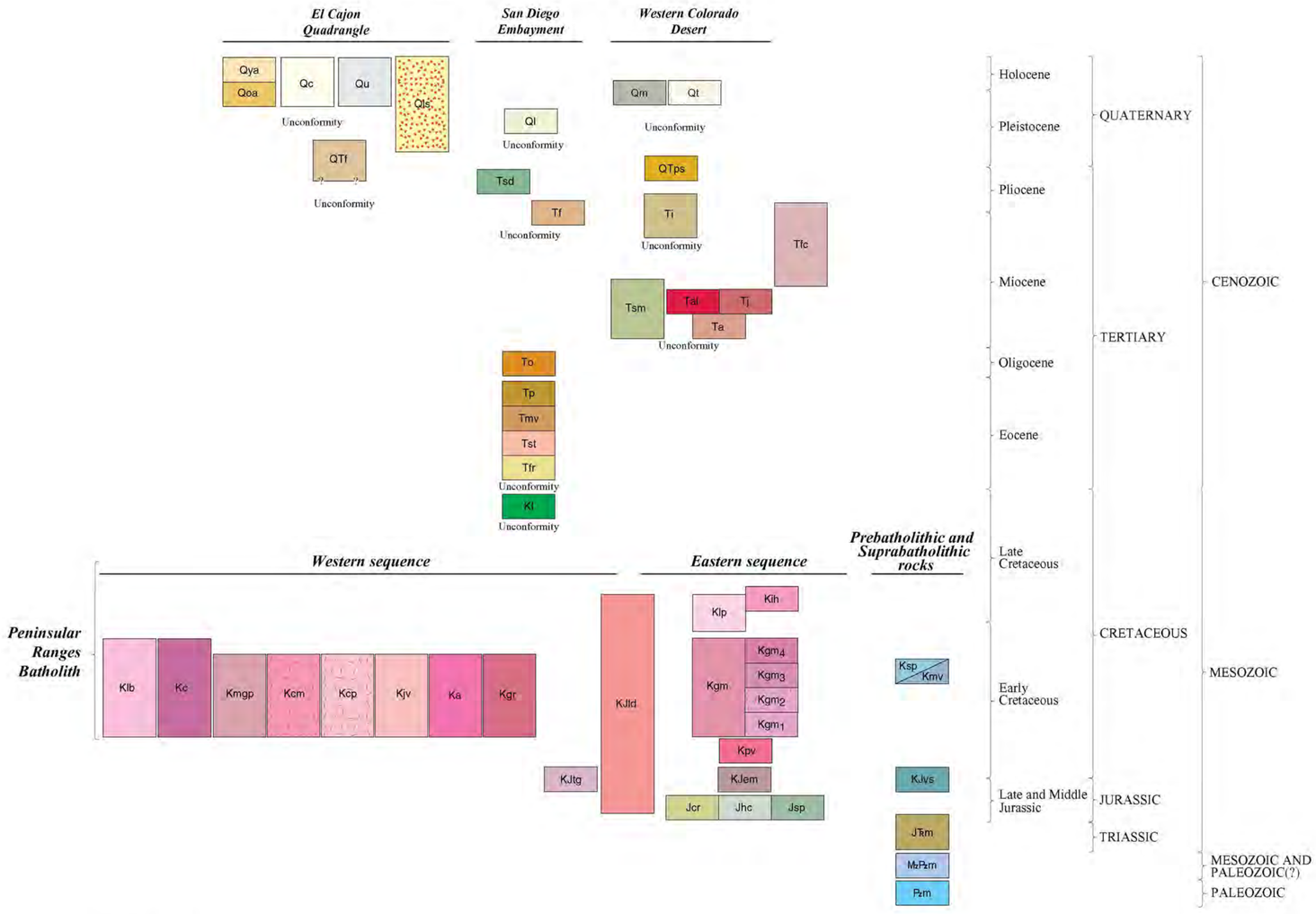
CORRELATION OF MAP UNITS



EXPLANATION

Contact—Solid where accuracy of location ranges from well located to approximately located; dashed where very poorly located or inferred. Color change without a contact shown is a scratch boundary

Fault—Solid where accurately located, dashed where approximately located, dotted where concealed. Arrow and number indicate direction and amount of dip.

Anticline—Solid where accurately located, dashed where approximately located, dotted where concealed.

Syncline—Solid where accurately located, dotted where concealed, dashed where inferred.

Strike and dip of bedding

Horizontal

Inclined

Strike and dip of foliation, primary igneous

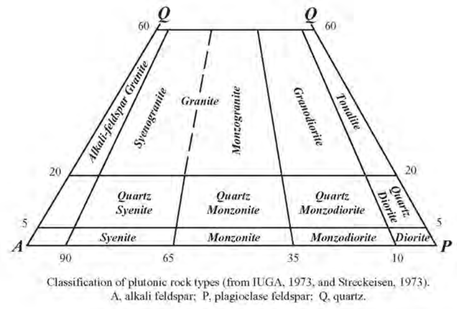
Inclined

Vertical

Strike and dip of foliation, metamorphic

Inclined

Vertical



Classification of plutonic rock types (from IUGA, 1973, and Streckeisen, 1973). A, alkali feldspar; P, plagioclase feldspar; Q, quartz.

LIST OF MAP UNITS

El Cajon quadrangle

Qya **Young alluvium (Holocene)**—Sand, silt, and gravel in modern streambeds and washes. Includes recent material accumulated on active alluvial fans

Qc **Colluvium (Holocene and Pleistocene)**—Sand and gravel of slopewash, debris-flow, and talus deposits. Grades locally into younger alluvium (Qya) and older alluvium (Qoa)

Qu **Alluvium and colluvium, undivided (Holocene and Pleistocene)**—Younger and older alluvium and colluvium not mapped separately

Qls **Landslide deposits (Quaternary)**—Localized deposits of unconsolidated to consolidated earth and rock materials that moved downslope as landslides

Qoa **Older alluvium (Holocene and Pleistocene)**—Sand, silt, and gravel; moderately dissected terraces in stream valleys. Well to poorly bedded, unconsolidated. In places, modern streams incise older alluvium to as much as 15 m. In some areas, older alluvium grades into younger alluvium

QTf **Fanglomerate (Pleistocene and Tertiary?)**—Conglomeratic sand and gravel fanglomerate; locally derived. Scattered deposits, poorly sorted, weakly indurated. Unit also includes debris-flow deposits and small landslides. Some deposits mark courses of ancient drainages

San Diego Embayment

Ql **Lindavista Formation (Pleistocene or Pliocene)**—Reddish-brown interbedded sandstone and conglomerate. Ferruginous cement, mainly hematite, gives formation characteristic color and resistance to erosion. Near-shore marine and nonmarine deposit. Molluscan fauna suggests early Pleistocene or late Pliocene age

Tsd **San Diego Formation (Pliocene)**—Marine sandstone and subaerial conglomerate (Kennedy, 1975). Sandstone is typically fine to medium grained, yellowish-brown, poorly indurated, locally containing limy cement; interfingers with conglomerate. Conglomeratic part of unit consists of pebbles, cobbles, and boulders in coarse-grained sandstone matrix. Maximum thickness is 75 m

Tf **Fanglomerate (Pliocene and Miocene)**—Boulder fanglomerate. Rests nonconformably on low-grade metavolcanic rocks; clasts locally derived. Matrix is medium- and coarse-grained, light-brown sandstone and bentonite

To **Otay Formation (Oligocene)**—Massive sandstone and claystone. Light gray and light brown, moderately well sorted, poorly indurated. Claystone is waxy, composed almost exclusively of bentonite. Correlated with Miocene-Pliocene rocks in Baja California, Mexico (Kennedy and Tan, 1977)

Poway Group

Tp **Pomerado Conglomerate (Eocene)**—Massive cobble conglomerate. Uppermost unit of Poway Group; maximum thickness is 55 m. Contains sparse beds and lenses of light-brown sandstone

Tmv **Mission Valley Formation (Eocene)**—Marine sandstone; soft, friable, light-olive-gray, fine- to medium-grained. Mostly of quartz and potassium feldspar. Maximum thickness is 60. Has interbeds of claystone. Contains molluscan fauna in western and central exposures and land-mammal fauna in eastern exposures

Tst **Stadium Conglomerate (Eocene)**—Massive cobble conglomerate having dark-yellowish-brown, coarse-grained sandstone matrix. Moderately well sorted; sandstone beds and lenses make up 50% of unit. Dominant clast type is rhyolitic to dacitic volcanic rocks. Nonmarine in east, nearshore marine and lagoonal in west. Contains late(?) Eocene fossils

Tfr **Friars Formation (Eocene)**—Sandstone and claystone; nonmarine and lagoonal. Sandstone typically massive, yellowish-gray, medium grained, and poorly indurated. Conglomerate lenses are fluvial. Maximum thickness is 50 m. Contains marine and nonmarine fossils

Kl **Lusardi Formation (Late Cretaceous)**—Cobble and boulder fanglomerate derived solely from crystalline rocks of the Peninsular Ranges batholith. Conglomerate contains thin lenses of medium-grained sandstone; clasts as much as 10 m in diameter. Restricted to northwest part of quadrangle. Maximum thickness about 125 m. Late Cretaceous because it is overlain by Late Cretaceous Point Loma Formation

Western Colorado Desert

Qm **Mesa Conglomerate (Pleistocene)**—Pooly stratified to unstratified sand and gravel of extensively dissected alluvial-fan and terrace deposits. Massively bedded. Characterized by nearly horizontal beds paved with cobbles and small boulders having well developed desert varnish. Grain size decreases away from mountains

Qt **Terrace deposits (Pleistocene)**—Sand, silt, and gravel of highly dissected alluvial terraces at elevations substantially higher than modern stream terraces; may be partly or wholly equivalent to Mesa Conglomerate (Woodard. 1967) (Qm). Terraces are capped by desert pavement. Poorly sorted, angular clasts derived from nearby mountains

QTps **Palm Spring Formation (Pleistocene and Pliocene)**—Nonmarine sandstone, siltstone, and claystone commonly containing pebble and cobble interbeds and minor marine interbeds (Woodring, 1932; Woodard, 1974); grades laterally and downward into basal boulder to cobble fanglomerate assigned by Dibblee (1954) to his Canebrake conglomerate. Sandstone commonly arkosic; contains lesser fresh-water limestone. Fluvial and alluvial-fan deposits and minor lacustrine deposits. Represents alluvial floodplain deposits marginal to the retreating Gulf of California

Ti **Imperial Formation (Pliocene and Miocene)**—Massive, poorly bedded, gray, feldspathic arenite in lower part; rhythmically bedded, gray, silty mudstone and very fine quartz arenite in middle part; siltstone and sandstone interbedded with massive biostromal limestone and calcerous arenite in upper part (Woodring, 1932). Two lower parts are marine; part of upper part is nonmarine

Tfc **Fish Creek Gypsum (Pliocene and Miocene)**—Extremely pure gypsum and anhydrite as much as 60 m thick. Rests unconformably on basement or conformably above transitional marine mudstone. Records earliest marine incursion into Salton Trough (Dean, 1988). Thin claystone interbeds contain marine microfossils; intertidal

Tsm **Split Mountain Formation (Miocene)**—Nonmarine conglomerate and sandstone containing intercalated megabreccias composed of crystalline rocks of Peninsular Ranges batholith. Lower part of unit is dark-gray, boulder and cobble fanglomerate; middle part is interlensing quartz arenite and olive-green micaceous shale, which contains lateral interbeds of Fish Creek Gypsum; upper part is massive gray fanglomerate or megabreccia similar to lower part of formation

Tal **Alverson Andesite (Miocene)**—Andesite; dark-purple-gray plagioclase-hornblende andesite interbedded with gray andesitic tuff. As much as 120 m thick. In northern Jacumba Mountains unit is flow rock, breccia, volcaniclastic rock, and air-fall deposits; flow rock is basaltic. Basalt yielded K-Ar whole-rock age of 16.9 ± 0.5 Ma (Hoggatt, 1979)

Tj **Jacumba Volcanics (Miocene)**—Alkalic and tholeiitic basalt flows, breccia, and pyroclastic rocks; andesite and andesitic breccia. Parts of unit record remnants of five cinder cones and two hypersthene andesite plugs (Minch and Abbott, 1973). K-Ar ages average about 19 Ma

Ta **Anza Formation (Miocene)**—Nonmarine arkosic sandstone and conglomerate; equivalent to basal conglomerate member of Split Mountain Formation (Tsm). Coarse conglomeratic sandstone. About 540 m thick at type locality, but only about 5 m thick in quadrangle; preserved only where covered by flows of Alverson Andesite

Peninsular Ranges Batholith

Western sequence

Klb **Tonalite of Las Bancas (Early Cretaceous)**—Hypersthene-biotite tonalite, quartz diorite, granodiorite, and lesser diorite, quartz monzodiorite, and quartz norite. Medium grained, equigranular; weak foliation, but protomylonitic at margins of some plutons. Color index ranges from 22 to 32. Poikilitic, having potassium feldspar and biotite oikocrysts

Kc **Cuyamaca Gabbro (Early Cretaceous)**—Troctolite, anorthositic gabbro, gabbronorite, hornblende gabbro; minor hornblende diorite and leucodiorite. Inner parts of bodies are hornblende-bearing troctolite; anorthositic gabbro ±amphibole ±orthopyroxene ±olivine; and amphibole-olivine gabbronorite. Margins and smaller bodies are mainly fine- to medium-grained hornblende gabbro ±orthopyroxene ±clinopyroxene ±biotite. Moderately to strongly foliated

Kmgp **Monzogranite of Mother Grundy Peak (Early Cretaceous)**—Hornblende-biotite leucomonzogranite, leucogranodiorite, and tonalite. Medium to coarse grained, locally very coarse-grained; strongly foliated. Characterized by subhedral K-feldspar phenocrysts as much as 4 cm long and hornblende prisms from 0.5 to 1 cm in length. Basaltic and gabbroic dikes abundant near contacts with gabbro plutons

Kcm **Corte Madera Monzogranite (Early Cretaceous)**—Biotite leucomonzogranite, leucogranodiorite, and syenogranite; trace hornblende. Medium to coarse grained; weakly to strongly foliated, locally protomylonitic. Forms lensoid plutons and fringing dikes. Color index varies from 1 to 11

Kcp **Chiquito Peak Monzogranite (Early Cretaceous)**—Hornblende-biotite monzogranite and granodiorite and lesser tonalite, leucogranite, alaskite, and pegmatite. Color index 2-16. Forms lenticular plutons and narrow, sheet-like bodies. Medium grained; moderately to strongly foliated. Variable from one body to another; partly dependent on lithology of nearby units

Kjv **Japatul Valley Tonalite (Early Cretaceous)**—Biotite-hornblende tonalite containing relict pyroxene; hornblende-biotite tonalite; and lesser hornblende-biotite granodiorite. Average color index about 22. Medium to coarse grained; equigranular but much is moderately to strongly foliated. Grades into tonalite of Alpine (Ka) and Chiquito Peak Monzogranite (Kcp)

Ka **Tonalite of Alpine (Early Cretaceous)**—Biotite-hornblende tonalite, lesser quartz diorite, and scarce granodioritic tonalite. Medium to coarse grained; moderately to strongly foliated; mafic inclusions. Average color index 30. Unit is heterogeneous in outcrop and hand specimen

Kgr **Granitoid rocks (Early Cretaceous)**—Undivided tonalite and granodiorite; most lithologically similar to tonalite of Alpine (Ka), Japatul Valley Tonalite (Kjv), and Corte Madera Monzogranite (Kcm). Includes lesser gabbro and metavolcanic rocks

KJtg **Tonalite and gabbro (Early Cretaceous and Jurassic)**—Mixed tonalite and gabbro of specifically defined units, undifferentiated. Includes parts of Tonalite of Las Bancas (Klb), Cuyamaca Gabbro (Kc), Jurassic gneiss of Stephenson Peak (Jsp), tonalite of Granite Mountain (Kgm), and tonalite of La Posta (Klp)

KJld **Leucocratic dikes (Late Cretaceous and Late Jurassic)**—Leucogranite, granophyre, alaskite, pegmatite, and aplite; found cutting plutonic units in quadrangle. Includes dikes of at least three ages

Eastern sequence

Kih **Indian Hill granodiorite of Parrish and others (1986) (Late Cretaceous)**—Garnetiferous muscovite-biotite leucogranodiorite and leucomonzogranite. Fine- to medium-grained, weakly foliated. Color index less than 7. Extensive, large, fine-grained muscovitic leucocratic dikes in southern parts of unit

Klp **Tonalite of La Posta (Early and Late Cretaceous)**—Hornblende-biotite trondhjemite in western part, and biotite trondhjemite and granodiorite in eastern part. Unit is leucocratic, homogeneous, largely undeformed, and inclusion-free, but locally, pluton margins are moderately to strongly foliated. Color index from 6 to 15

Kgm **Tonalite of Granite Mountain (Early Cretaceous)**—Biotite-hornblende tonalite; hornblende-biotite tonalite, lesser granodiorite; and minor quartz diorite. Medium- to coarse-grained; weak to very strong foliation. Color index from 17 to 27. Divided into four subunits in Morena Reservoir 7.5' quadrangle:

Kgm4 **Tonalite of Granite Mountain, Unit 4**—Mafic biotite-hornblende tonalite having subidiomorphic texture, scattered poikilitic biotite grains, moderate to well developed foliation, and relatively high color index

Kgm3 **Tonalite of Granite Mountain, Unit 3**—Relatively leucocratic hornblende-biotite tonalite and granodiorite having moderate to faint magmatic foliation and large, oval biotite grains ± small acicular hornblende grains

Kgm2 **Tonalite of Granite Mountain, Unit 2**—Biotite-hornblende tonalite having idiomorphic texture, moderate to faint magmatic foliation, and lower color index than marginal phase (Kgm1)

Kgm1 **Tonalite of Granite Mountain, Unit 1**—Marginal biotite-hornblende tonalite that is finer-grained, has well developed solid-state foliation (overprinting magmatic foliation), and has higher color index than average rock of interior parts of pluton

Kpv **Monzogranite of Pine Valley (Early Cretaceous)**—Hornblende-biotite leucomonzogranite, leucogranodiorite, and minor biotite-hornblende tonalite. Medium- to coarse-grained, subporphyritic, moderately to strongly foliated. Color indexfrom 4 to 10. Voluminous leucogranite, alaskite, granophyre, and pegmatite-aplite dikes associated with body

KJem **Quartz Diorite of East Mesa (Cretaceous and Jurassic)**—Fine- to medium-grained, gneissic biotite-hornblende tonalite and quartz diorite and fine-grained, locally porphyritic biotite-hornblende quartz diorite and tonalite. Texturally and compositionally heterogeneous. Strongly foliated to mylonitic. Some rocks contain hypersthene ±clinopyroxene

Jcr **Granodiorite of Cuyamaca Reservoir (Late and Middle Jurassic)**—Biotite and hypersthene-biotite granodiorite and tonalite; also contains actinolitic amphibole. Fine to medium grained, strongly foliated, locally mylonite gneiss. Average color index is 25

Jhc **Gneiss of Harper Creek (Late and Middle Jurassic)**—Gneissic to mylonitic biotite granodiorite and tonalite, and lesser monzogranite. Fine- to medium-grained; strongly foliated. Average color index is 22. Contains muscovite, cordierite, sillimanite, and garnet, and abundant, inclusions. Isoclinal folded in places

Jsp **Migmatitic schist and gneiss of Stephenson Peak (Late and Middle Jurassic)**—Granodiorite orthogneiss, paragneiss; migmatitic pelitic schist, and lesser calcsilicate-bearing quartzite, marble, and amphibolite. Layers range from several centimeters to tens of meters

Prebatholithic and Suprabatholithic rocks

Ksp **Santiago Peak Volcanics (Early Cretaceous)**—Dacitic and andesitic breccia, tuff, and flows, and lesser basalt and rhyolite. Unmetamorphosed to slightly metamorphosed

Kmv **Metavolcanic rocks (Early Cretaceous)**—Amphibolite-facies tuff, tuff-breccia, and volcanic flow rock of andesitic, dacitic, and basaltic composition. Also includes rare feldspathic metaquartzite, pelitic schist, and granitoid-cobble metaconglomerate. Typically forms screens between and within plutons in the western part of the El Cajon quadrangle

KJvs **Metavolcanic and metasedimentary rocks (Cretaceous and Jurassic?)**—Amphibolite, calcsilicate rocks, felsic tuff-breccia, biotite-rich schist, and quartzite

JTrm **Metasedimentary and metavolcanic rocks (Jurassic and Triassic)**—Interlayered semi-pelitic, pelitic, and quartzitic schists; calcsilicate-bearing feldspathic metaquartzite; and minor small-pebble metaconglomerate. Includes layers of sandstone, quartz-pebble conglomerate, mudstone, and amphibolite. Interpreted to be metamorphosed submarine fan deposits and intercalated volcanic rocks; equivalent to the Julian Schist of Hudson (1922)

MzPzm **Rocks of Jacumba Mountains (Mesozoic and Paleozoic?)**—Marble, schist, and metaquartzite. Metasedimentary and metavolcanic rocks forming screens within Jurassic granitoids and plutons of middle to Late Cretaceous tonalite. Interlayered with minor metachert and abundant hornblende schist. Metamorphosed sedimentary and volcanic rocks may be of oceanic affinity

Pzm **Metasedimentary rocks (Paleozoic)**—Greenschist, marble, schist, metaquartzite, and metaconglomerate. Mainly occurs as metamorphic screens, but some rocks preserved well enough to contain fossils. Interpreted to be metamorphosed shelf-type sedimentary strata containing thick carbonate sequences

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Version 1.0

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United States Department of Agriculture

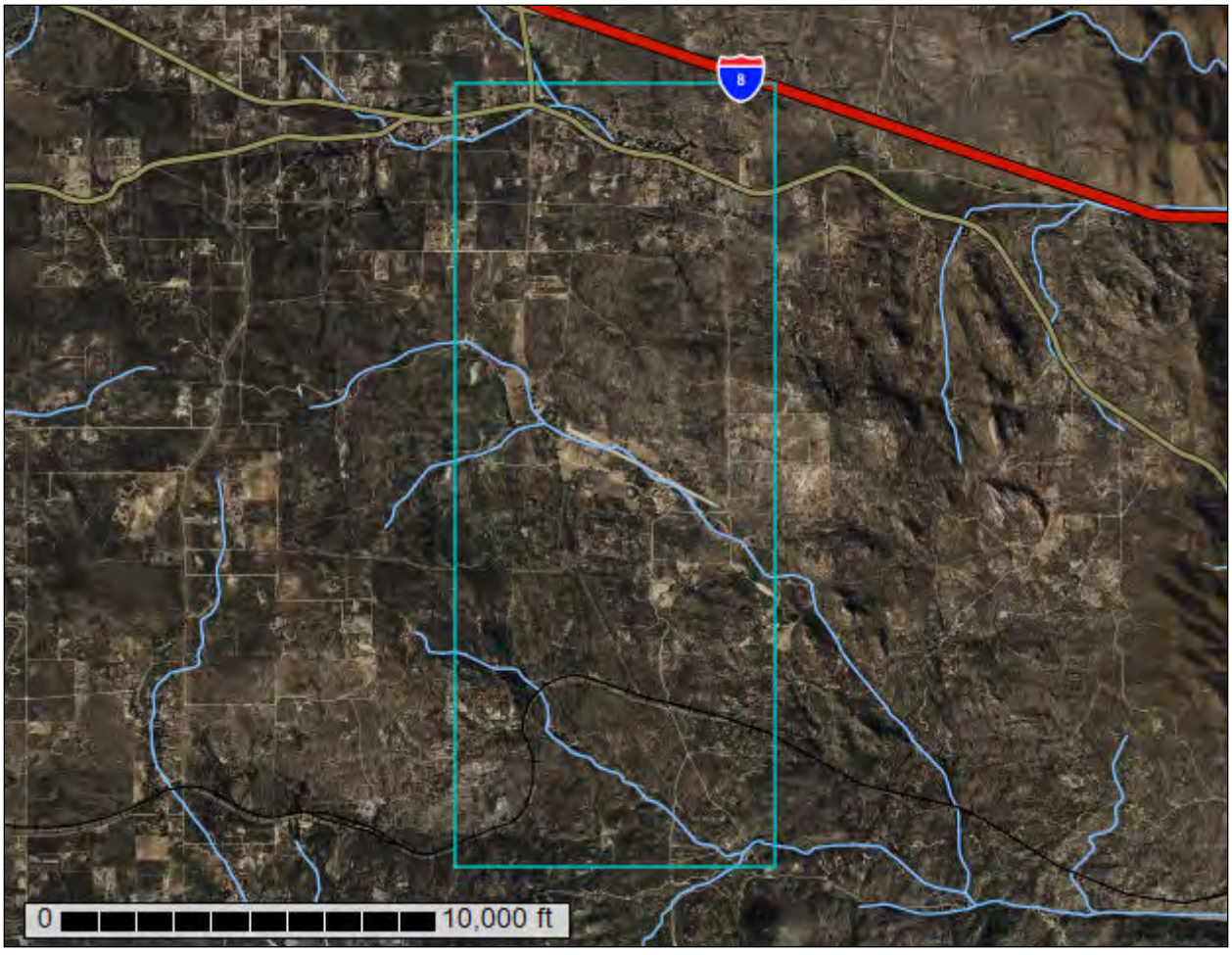
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Diego County Area, California

Starlight Solar



June 19, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:37,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 18, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 24, 2022—Apr 29, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AcG	Acid igneous rock land	142.5	3.5%
LaE2	La Posta loamy coarse sand, 5 to 30 percent slopes, eroded	1,640.9	40.1%
LaE3	La Posta loamy coarse sand, 5 to 30 percent slopes, severely eroded	60.0	1.5%
LcE2	La Posta rocky loamy coarse sand, 5 to 30 percent slopes, eroded	869.4	21.2%
Lu	Loamy alluvial land	5.1	0.1%
MvC	Mottsville loamy coarse sand, 2 to 9 percent slopes	703.2	17.2%
ToE2	Tollhouse coarse sandy loam, 5 to 35 percent slopes, eroded, very stony	647.8	15.8%
ToG	Tollhouse coarse sandy loam, 30 to 70 percent slopes, very stony	25.4	0.6%
Totals for Area of Interest		**4,094.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Diego County Area, California

AcG—Acid igneous rock land

Map Unit Setting

National map unit symbol: 2zwsj
Elevation: 1,130 to 4,380 feet
Mean annual precipitation: 6 to 24 inches
Mean annual air temperature: 55 to 67 degrees F
Frost-free period: 180 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Acid igneous rock land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Acid Igneous Rock Land

Setting

Landform: Mountains
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Acid igneous rock

Typical profile

R - 0 to 4 inches: bedrock

Properties and qualities

Slope: 7 to 75 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)

Interpretive groups

Land capability classification (irrigated): 8
Land capability classification (nonirrigated): 8
Hydric soil rating: No

LaE2—La Posta loamy coarse sand, 5 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hbd1
Elevation: 2,000 to 4,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 150 to 225 days
Farmland classification: Not prime farmland

Map Unit Composition

La posta and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of La Posta

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from granodiorite

Typical profile

H1 - 0 to 10 inches: loamy coarse sand
H2 - 10 to 29 inches: gravelly loamy coarse sand
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R019XD028CA - GRANITIC
Hydric soil rating: No

Minor Components

Kitchen creek

Percent of map unit: 5 percent
Hydric soil rating: No

Toohouse

Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

LaE3—La Posta loamy coarse sand, 5 to 30 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: hbd2
Elevation: 2,000 to 4,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 150 to 225 days
Farmland classification: Not prime farmland

Map Unit Composition

La posta and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of La Posta

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from granodiorite

Typical profile

H1 - 0 to 8 inches: loamy coarse sand
H2 - 8 to 27 inches: gravelly loamy coarse sand
H3 - 27 to 31 inches: weathered bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R019XD028CA - GRANITIC
Hydric soil rating: No

Minor Components

Kitchen creek
Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: No

Tollhouse
Percent of map unit: 5 percent
Hydric soil rating: No

LcE2—La Posta rocky loamy coarse sand, 5 to 30 percent slopes, eroded

Map Unit Setting
National map unit symbol: hbd4
Elevation: 650 to 4,500 feet
Mean annual precipitation: 8 to 20 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 110 to 225 days
Farmland classification: Not prime farmland

Map Unit Composition
La posta and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of La Posta

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from granodiorite

Typical profile
H1 - 0 to 8 inches: loamy coarse sand
H2 - 8 to 27 inches: gravelly loamy coarse sand
H3 - 27 to 31 inches: weathered bedrock

Properties and qualities
Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R019XD028CA - GRANITIC
Hydric soil rating: No

Minor Components

Kitchen creek

Percent of map unit: 5 percent
Hydric soil rating: No

Tollhouse

Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Lu—Loamy alluvial land

Map Unit Setting

National map unit symbol: 2zwsd
Elevation: 2,560 to 5,440 feet
Mean annual precipitation: 15 to 29 inches
Mean annual air temperature: 53 to 60 degrees F
Frost-free period: 155 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Loamy alluvial land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loamy Alluvial Land

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Flat
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous sandstone and shale

Typical profile

A1 - 0 to 14 inches: silt loam
A2 - 14 to 27 inches: silt loam
C - 27 to 60 inches: silty clay loam

Properties and qualities

Slope: 1 to 20 percent
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Rare
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Ecological site: R019XD030CA - WET MEADOW
Hydric soil rating: No

MvC—Mottsville loamy coarse sand, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hbf7
Elevation: 2,500 to 6,000 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 57 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Mottsville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mottsville

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser, flat
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 6 inches: loamy coarse sand
H2 - 6 to 60 inches: stratified sand to loamy sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R019XD027CA - SANDY EAST
Hydric soil rating: No

Minor Components

Calpine

Percent of map unit: 5 percent
Hydric soil rating: No

La posta

Percent of map unit: 5 percent
Hydric soil rating: No

Bull trail

Percent of map unit: 5 percent
Hydric soil rating: No

ToE2—Tollhouse coarse sandy loam, 5 to 35 percent slopes, eroded, very stony

Map Unit Setting

National map unit symbol: 2zwsg
Elevation: 2,540 to 5,330 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 56 to 60 degrees F
Frost-free period: 175 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Tollhouse and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tollhouse

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from quartz-diorite

Typical profile

Oi - 0 to 0 inches: slightly decomposed plant material
A1 - 0 to 3 inches: coarse sandy loam
A2 - 3 to 11 inches: coarse sandy loam
Cr - 11 to 21 inches: bedrock

Properties and qualities

Slope: 5 to 35 percent
Surface area covered with cobbles, stones or boulders: 5.0 percent
Depth to restrictive feature: 8 to 18 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 10 percent
Hydric soil rating: No

La posta

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mottsville

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Convex
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

Kitchen creek

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

ToG—Tollhouse coarse sandy loam, 30 to 70 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2zwsf
Elevation: 2,620 to 5,350 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 53 to 61 degrees F
Frost-free period: 170 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Tollhouse and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tollhouse

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from quartz-diorite

Typical profile

Oi - 0 to 0 inches: slightly decomposed plant material
A1 - 0 to 3 inches: coarse sandy loam
A2 - 3 to 11 inches: coarse sandy loam
Cr - 11 to 21 inches: bedrock

Properties and qualities

Slope: 30 to 70 percent
Surface area covered with cobbles, stones or boulders: 5.0 percent
Depth to restrictive feature: 8 to 18 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 10 percent
Hydric soil rating: No

La posta

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mottsville

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

Kitchen creek

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R019XD924CA - LOAMY WEST
Hydric soil rating: No

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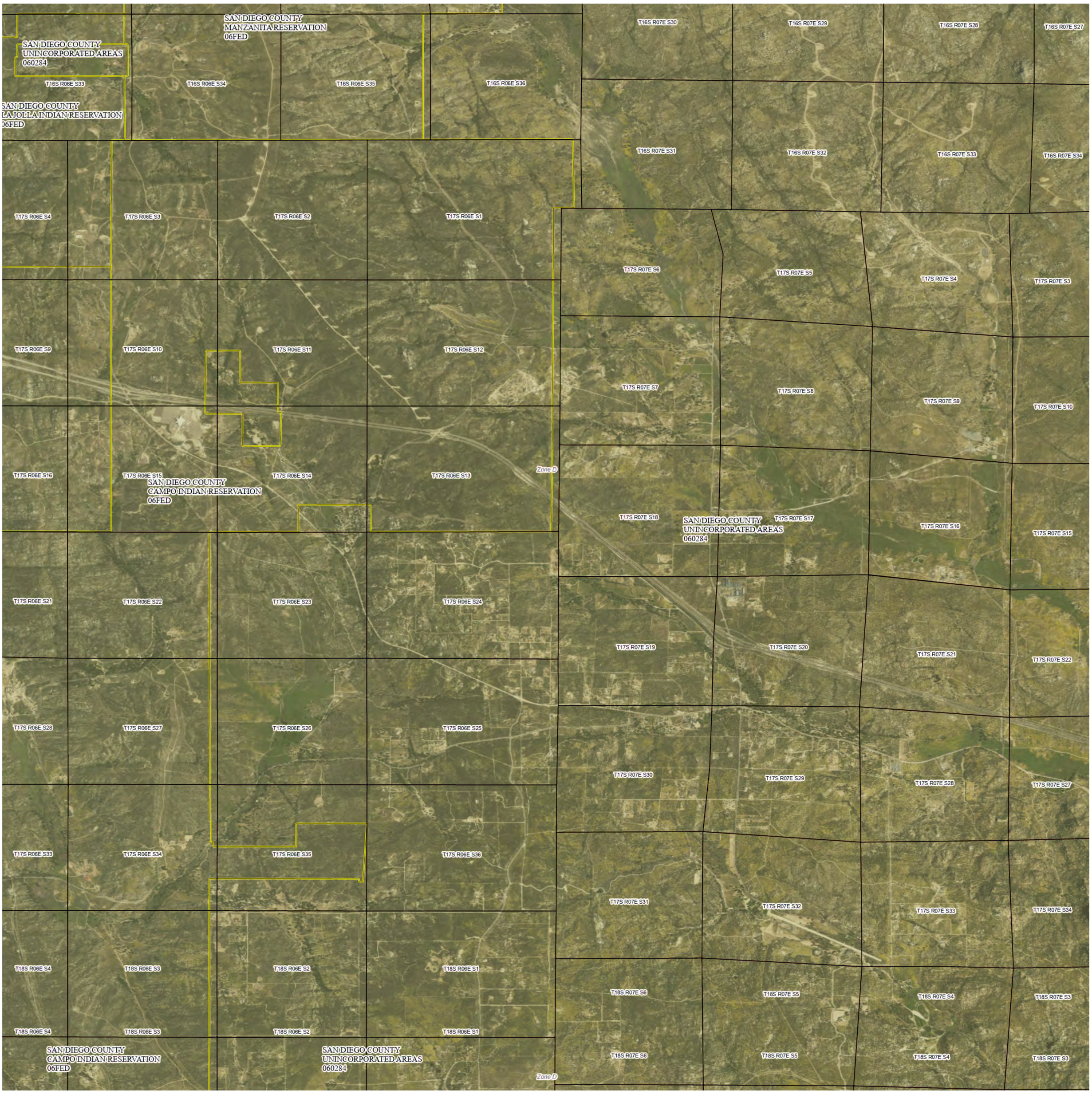
116°22'31.75"W 32°45'26.37"N



116°14'58.33"W 32°37'3.66"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **6/19/2023 1:08 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 210 420 840 1,260 1,680 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 2075 OF 2300

Panel Contains:

COMMUNITY	NUMBER	PANEL
SAN DIEGO COUNTY	06FED	2075

MAP NUMBER
06073C2075F
EFFECTIVE DATE
May 16, 2012

116°22'31.75"W 32°40'50.98"N

116°14'58.33"W 32°32'28.27"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
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- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
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- 513 Base Flood Elevation Line (BFE)
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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 210 420 840 1,260 1,680 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 2325 OF 2300

Panel Contains:

COMMUNITY	NUMBER	PANEL
SAN DIEGO COUNTY	06FED	2325

MAP NUMBER
06073C2325F
EFFECTIVE DATE
May 16, 2012

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH AND QUALITY
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261 SAN DIEGO, CA 92112-9261
PHONE: (858) 505-6880 | www.sdcdehq.org

PUBLIC RECORDS REQUEST FOR THE HAZARDOUS MATERIALS DIVSION

Requestor Name: Milena LaBarbiera **Date:** received 6/13/2023 emailed 6/15/2023

Telephone: ( ) 908-307-8205 **Fax:** ( )

Company/Organization Name: Michael Baker International

Mailing Address: 9635 Granite Ridge Drive, Suite 300, San Diego, California 92123

Email Address: milena.labarbiera@mbakerintl.com

A separate form must be completed for each address or parcel number. Email your completed form to PublicRecords.DEH@sdcounty.ca.gov.

_____ OR 659-080-02
Exact Address (Street, City and Zip Code) Assessor Parcel Number

Records requested from: received 6/13/2023 emailed 6/15/2023 to received 6/13/2023 emailed 6/15/2023 ☒ All Records
Date Date

Please indicate the purpose of your search by checking all that apply:

☒ Hazardous Materials (HMD) Permits ☒ Underground Storage Tank (UST) Files
☒ Other (explain below):

Based on EDR database report, the APN appears to be associated with mining operations unc

Please be advised that records are returned electronically via email unless otherwise requested by checking the box. Photocopy and/or scanned file fees may apply. ☒ Photocopies requested

OFFICE USE ONLY BELOW THIS LINE

A search for records requested above has been conducted by DEHQ and the following apply:

☐ HMD files for the permit number(s) listed below are available.

_____ # _____ # _____ # _____ # _____

☐ UST files for the permit number(s) listed below are available.

_____ # _____ # _____ # _____ # _____

☐ Other files for the permit number(s) listed below are available.

_____ # _____ # _____ # _____ # _____

☒ No records were found for the address/APN requested.

Files copied/scanned for: _____ of _____ Date: _____

# of pages copied/scanned:_____ Cost $_____ ☐ email ☐ mail ☐ pickup Date Completed: _____

Amelia Ceseña
Signature of DEHQ Representative

received 6/13/2023 emailed 6/15/2023
Date

County of San Diego, CA. Annual Carcinogen and Reproductive Toxin Reporting List

Sempra Energy Utilities - SDG&E > Substations - SDGE SUD and all sub-locations

PRODUCT NAME		MANUFACTURER NAME		PHYSICAL STATE	TOTAL AMOUNT	CATEGORY
	CAS#	Chemical Name	CAS%			
SDG&E > SUBSTATIONS - SDGE SUD						
HE200 Vacuum Pump Fluid		Kurt J. Lesker Company		Liquid		< 1 Gallon
	000108-88-3	TOLUENE	0.00% Wt			
Imbiber Beads Absorbant Product		Imbibitive Technolgies America		Solid		< 1 Pound
	014808-60-7	SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	99.90% Wt			
Lead Acid Battery Wet, Filled with Acid		East Penn Manufacturing Company, Inc.		Solid		< 500 Pounds
	007440-38-2	ARSENIC (INORGANIC ARSENIC COMPOUNDS)	0.01% Wt			
	007440-38-2	ARSENIC (INORGANIC ARSENIC COMPOUNDS)	0.01% Wt			
	007439-92-1	LEAD AND LEAD COMPOUNDS	70.00% Wt			
	007664-93-9	STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID	44.00% Wt			
LPS NoFlashNU Electro Contact Cleaner	LPS Laboratories		Liquid		Not Determined	< 1 Gallon
		000106-94-5	1-BROMOPROPANE (1-BP)	75.00% Wt		
Silica Sands and Gravel	Quikrete		Solid		Not Determined	< 1 Pound
		014808-60-7	SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	99.90% Wt		

Total (Count) of Products for SDG&E > Substations - SDGE SUD: 5

Total (Count) of CAS Numbers for SDG&E > Substations - SDGE SUD: 6

Total (Count) of Products for Report: 5

Total (Count) of CAS Numbers for Report: 6

This report only includes active inventory items that have been matched to an SDS or equivalent.
Regulated chemicals that do not have a specific CAS RN associated with them, such as chemical families or groupings, are not included in the results shown on this report.
The results of this report are based on a CAS RN match between the regulatory list and the ingredients listed on the SDS.
** Indicates neither density nor SpecificGravity is available, standard conversion is used.*
‡ Default CAS percentage applied.

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH-CUPA
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
1-800-253-9933 (619) 338-2222 FAX (619) 338-2377

HAZARDOUS MATERIALS BUSINESS PLAN CERTIFICATION

The California Health & Safety Code (H&SC), Division 20, Chapter 6.95, Section 25505 provides for the following:
The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD), as the administering agency, requires a business that handles hazardous materials to submit the hazardous materials inventory, a list of emergency contacts, and a site plan, **in lieu of a complete Hazardous Materials Business Plan (HMBP),** only after the initial submittal of a complete HMBP. A complete HMBP includes the items to be submitted to the HMD and an Emergency Response Plan and Employee Training Plan, as established in H&SC Section 25504. The business must annually certify that a complete HMBP has been prepared, is current and is maintained at the site where the hazardous materials are stored. See *Back* for instructions and further clarification

I. IDENTIFICATION

FACILITY ID#	3	7		0	0	0		2	1	0	3	1	7	1	

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
SAN DIEGO GAS & ELECTRIC - Boulevard sub

BUSINESS SITE ADDRESS 103
S. of Old Hwy 80 (1.1 mile east of Ribbonwood Rd.)

CITY 104		ZIP CODE 105
Boulevard	CA	91905

II. CERTIFICATION STATEMENT

☒ **CARCINOGEN/REPRODUCTIVE TOXIN ANNUAL RENEWAL WITHOUT CHANGES: This is an annual renewal to certify that the list of carcinogens and/or reproductive toxins last provided is a current list as specified in the San Diego County Code of Regulatory Ordinances Section 68.1113.**

Check only ONE of the following boxes:

☐ **INITIAL CERTIFICATION: This is to certify (H&SC Section 25505(e)(1)) that a complete HMBP, which includes the hazardous materials inventory, a list of emergency contacts, a site plan, emergency response plan, and employee training plan, has been prepared and is maintained at the site where the hazardous materials are stored.**

☒ **ANNUAL CERTIFICATION WITHOUT CHANGES: This is an annual certification (H&SC Section 25505(d) & (e)(2)) that the HMBP, which includes the hazardous materials inventory, a list of emergency contacts, a site plan, emergency response plan, and employee training plan, is current and includes all the information required in H&SC Section 25504, and 25509, and is maintained at the site where the hazardous materials are stored.**

☐ **CERTIFICATION OF CHANGES/REVISIONS: This is to certify that the HMBP has been reviewed (H&SC Section 25505(c) & 25510) and all necessary changes/revisions have been made. The HMBP is current and is maintained at the site where the hazardous materials are stored. Attached are changes to the hazardous materials inventory and/or list of emergency contacts. For site map revisions, submit only the pages that have a change or revision and attach to this certification. This submittal satisfies annual certification requirements specified in H&SC Section 25505(d) & (e)(2).**

As an Authorized Representative, I certify, under the penalty of law, that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete. By checking any of the boxes above I also certify that: a) The information contained in the hazardous materials inventory most recently submitted to the CUPA or Administering Agency is complete, accurate, and up to date; b) There has been no change in the quantity of hazardous materials reported in the most recently submitted inventory; and c) All hazardous materials subject to inventory requirements are listed on the most recently submitted inventory.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE
K Dickson	2/28/2014
NAME OF SIGNER (print)	TITLE OF SIGNER
Kevin Dickison	Environmental Specialist

OFFICE USE

INSTRUCTIONS TO CLERICAL STAFF FOR HMBP ACCEPTANCE

☐ **Site Map** ____/____/____
☐ ***Emergency Contacts** ____/____/____
☐ ***Chemical Inventory** ____/____/____

***Note:** Indicate the date that the inventory and/or ER contact information in the KIVA database was reviewed and changes were submitted for processing. If the inventory and ER contact information are exactly the same as it is recorded in KIVA, no changes need to be submitted.

Hazardous Materials Business Plan acceptance date will be changed to the acceptance date on new site map.
A letter will be mailed to business after processing of site map updates.

HIRT SITE ☐**
FIRE DIST.____

Specialist's Signature: (only required for new plans or for changes to site maps, chemical inventory and/or emergency contacts)

REMARKS:

** If HIRT box is checked, follow HIRT policy to indicate on the inventory forms which hazardous materials make this a HIRT site.

ATTENTION: HAZARDOUS MATERIALS HANDLER

Chapter 6.95 of the California Health & Safety Code (H&SC) establishes minimum standards for Hazardous Materials Business Plans (HMBP). Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material/waste in quantities greater than or equal to the following:

- 55 gallons of a liquid.
- 500 pounds of a solid substance.
- 200 cubic feet of compressed gas.
- A toxic compressed gas (TLV $\leq$10 ppm) in any amount.
- Extremely hazardous substances in quantities equal to or greater than the Threshold Planning Quantities.

A complete HMBP consists of the following elements as established in H&SC Section 25504:

- Hazardous Materials Inventory
- Site Plan (Site Map)
- List of Emergency Contacts
- Emergency Response Plan
- Employee Training Description

The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD), as the administering agency and with the concurrence of all the local fire jurisdictions, requires a business that handles hazardous materials in reportable quantities to submit changes to the hazardous materials inventory, list of emergency contacts, and site plan, in lieu of a complete HMBP, only after the initial submittal of a complete HMBP.

The business must initially certify that a complete HMBP has been prepared and is maintained at the site where the hazardous materials are stored and must also **annually** re-certify that the HMBP is current and maintained on site. If there are no significant changes after the HMBP has been submitted and certified, then follow the instructions below for "Annual Certification without Changes".

Substantial changes as listed below must be submitted to the HMD within 30 days of the change along with a certification that the HMBP is current and maintained on site:

- **A 100% or greater increase or decrease in the quantity of any hazardous material on the inventory**
- **Addition or deletion of a hazardous material to the inventory**
- **Changes in the storage, location, or use of hazardous materials**
- **Any change in business name, ownership, or address**
- **Any change in Emergency Coordinator/Contact information**

Instructions for Completing the Hazardous Materials Business Plan Certification

Note: The numbering of the instructions follows the data element numbers that are on statewide reporting forms. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, Appendix C.

1. FACILITY ID NUMBER - Enter the 6 character Permit Number from your Permit. If you do not have a Permit, leave this blank.

3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" – Doing Business As.

103. BUSINESS SITE ADDRESS - Enter the street address where the facility is located. No post office box numbers are allowed.

104. CITY - Enter the city or unincorporated area in which business site is located.

105. ZIP CODE - Enter the zip code of business site. The extra 4-digit zip may also be added.

CARCINOGEN/REPRODUCTIVE TOXIN ANNUAL RENEWAL WITHOUT CHANGES: Any business which is required to submit a HMBP and handles a material which is a carcinogen or reproductive toxin, is required to submit a list of each such material handled during the previous year to the Director of the Department of Environmental Health. The list must include all carcinogens and reproductive toxins handled in quantities less than 55 gallons or 500 pounds. The list of such materials handled shall be renewed each year. Check this box to certify that the information previously submitted is still correct and no changes, additions or deletions are necessary. See http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html and review HM-9243 (Disclosure of Hazardous Materials Information Bulletin) to find out if you are required to submit this list.

INITIAL CERTIFICATION: Check this box if you are submitting a new HMBP.

ANNUAL CERTIFICATION WITHOUT CHANGES: Check this box if you are submitting an annual certification on an existing plan.

CERTIFICATION OF CHANGES/REVISIONS: Check this box if you are submitting changes to the hazardous materials inventory, list of emergency contacts, or the site plan. All pages should include the new submittal date. For multi-page site maps, include all pages with new submittal date.

County of San Diego, CA. Annual Carcinogen and Reproductive Toxin Reporting List

Sempra Energy Utilities - SDG&E > Substations - SDGE SUD and all sub-locations

PRODUCT NAME		MANUFACTURER NAME		PHYSICAL STATE	TOTAL AMOUNT	CATEGORY
	CAS#	Chemical Name	CAS%			
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I. IDENTIFICATION

FACILITY ID#	3	7		0	0	0		2	1	0	3	1	7	1	

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
SAN DIEGO GAS & ELECTRIC - Boulevard sub

BUSINESS SITE ADDRESS 103
S. of Old Hwy 80 (1.1 mile east of Ribbonwood Rd.)

CITY 104		ZIP CODE 105
Boulevard	CA	91905

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Check only ONE of the following boxes:

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☒ **ANNUAL CERTIFICATION WITHOUT CHANGES: This is an annual certification (H&SC Section 25505(d) & (e)(2)) that the HMBP, which includes the hazardous materials inventory, a list of emergency contacts, a site plan, emergency response plan, and employee training plan, is current and includes all the information required in H&SC Section 25504, and 25509, and is maintained at the site where the hazardous materials are stored.**

☐ **CERTIFICATION OF CHANGES/REVISIONS: This is to certify that the HMBP has been reviewed (H&SC Section 25505(c) & 25510) and all necessary changes/revisions have been made. The HMBP is current and is maintained at the site where the hazardous materials are stored. Attached are changes to the hazardous materials inventory and/or list of emergency contacts. For site map revisions, submit only the pages that have a change or revision and attach to this certification. This submittal satisfies annual certification requirements specified in H&SC Section 25505(d) & (e)(2).**

As an Authorized Representative, I certify, under the penalty of law, that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete. By checking any of the boxes above I also certify that: a) The information contained in the hazardous materials inventory most recently submitted to the CUPA or Administering Agency is complete, accurate, and up to date; b) There has been no change in the quantity of hazardous materials reported in the most recently submitted inventory; and c) All hazardous materials subject to inventory requirements are listed on the most recently submitted inventory.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE
K Dickson	2/28/2014
NAME OF SIGNER (print)	TITLE OF SIGNER
Kevin Dickison	Environmental Specialist

OFFICE USE

INSTRUCTIONS TO CLERICAL STAFF FOR HMBP ACCEPTANCE

☐ **Site Map** ____/____/____
☐ ***Emergency Contacts** ____/____/____
☐ ***Chemical Inventory** ____/____/____

***Note:** Indicate the date that the inventory and/or ER contact information in the KIVA database was reviewed and changes were submitted for processing. If the inventory and ER contact information are exactly the same as it is recorded in KIVA, no changes need to be submitted.

Hazardous Materials Business Plan acceptance date will be changed to the acceptance date on new site map.
A letter will be mailed to business after processing of site map updates.

HIRT SITE ☐**
FIRE DIST.____

Specialist's Signature: (only required for new plans or for changes to site maps, chemical inventory and/or emergency contacts)

REMARKS:

** If HIRT box is checked, follow HIRT policy to indicate on the inventory forms which hazardous materials make this a HIRT site.

ATTENTION: HAZARDOUS MATERIALS HANDLER

Chapter 6.95 of the California Health & Safety Code (H&SC) establishes minimum standards for Hazardous Materials Business Plans (HMBP). Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material/waste in quantities greater than or equal to the following:

- 55 gallons of a liquid.
- 500 pounds of a solid substance.
- 200 cubic feet of compressed gas.
- A toxic compressed gas (TLV $\leq$10 ppm) in any amount.
- Extremely hazardous substances in quantities equal to or greater than the Threshold Planning Quantities.

A complete HMBP consists of the following elements as established in H&SC Section 25504:

- Hazardous Materials Inventory
- Site Plan (Site Map)
- List of Emergency Contacts
- Emergency Response Plan
- Employee Training Description

The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD), as the administering agency and with the concurrence of all the local fire jurisdictions, requires a business that handles hazardous materials in reportable quantities to submit changes to the hazardous materials inventory, list of emergency contacts, and site plan, in lieu of a complete HMBP, only after the initial submittal of a complete HMBP.

The business must initially certify that a complete HMBP has been prepared and is maintained at the site where the hazardous materials are stored and must also **annually** re-certify that the HMBP is current and maintained on site. If there are no significant changes after the HMBP has been submitted and certified, then follow the instructions below for "Annual Certification without Changes".

Substantial changes as listed below must be submitted to the HMD within 30 days of the change along with a certification that the HMBP is current and maintained on site:

- **A 100% or greater increase or decrease in the quantity of any hazardous material on the inventory**
- **Addition or deletion of a hazardous material to the inventory**
- **Changes in the storage, location, or use of hazardous materials**
- **Any change in business name, ownership, or address**
- **Any change in Emergency Coordinator/Contact information**

Instructions for Completing the Hazardous Materials Business Plan Certification

Note: The numbering of the instructions follows the data element numbers that are on statewide reporting forms. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, Appendix C.

1. FACILITY ID NUMBER - Enter the 6 character Permit Number from your Permit. If you do not have a Permit, leave this blank.

3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" – Doing Business As.

103. BUSINESS SITE ADDRESS - Enter the street address where the facility is located. No post office box numbers are allowed.

104. CITY - Enter the city or unincorporated area in which business site is located.

105. ZIP CODE - Enter the zip code of business site. The extra 4-digit zip may also be added.

CARCINOGEN/REPRODUCTIVE TOXIN ANNUAL RENEWAL WITHOUT CHANGES: Any business which is required to submit a HMBP and handles a material which is a carcinogen or reproductive toxin, is required to submit a list of each such material handled during the previous year to the Director of the Department of Environmental Health. The list must include all carcinogens and reproductive toxins handled in quantities less than 55 gallons or 500 pounds. The list of such materials handled shall be renewed each year. Check this box to certify that the information previously submitted is still correct and no changes, additions or deletions are necessary. See http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html and review HM-9243 (Disclosure of Hazardous Materials Information Bulletin) to find out if you are required to submit this list.

INITIAL CERTIFICATION: Check this box if you are submitting a new HMBP.

ANNUAL CERTIFICATION WITHOUT CHANGES: Check this box if you are submitting an annual certification on an existing plan.

CERTIFICATION OF CHANGES/REVISIONS: Check this box if you are submitting changes to the hazardous materials inventory, list of emergency contacts, or the site plan. All pages should include the new submittal date. For multi-page site maps, include all pages with new submittal date.

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

Please complete the following by entering the chemical name in the chemical column and then place a "√" in the quantity column that most closely estimates the amount on hand. If measured by volume, check the appropriate gallon column(s). If measured by weight, check the appropriate pound column(s). If the chemical is a trade secret, you should check the trade secret box. For example, if you have one pint of benzene you would write benzene in the chemical column and place a check in the "< 1 gallon" column. (**Please note**: the symbol < means less than.)

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Strong inorganic acid mists containing sulfuric acid					XX		
Arsenic				XX			

Estab. # H_____ **9/28/2017**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

SD-DEH-HMD Permit # 210317 Date: 3-1-16

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

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Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Strong inorganic acid mists containing sulfuric acid					XX		
Arsenic				XX			

Estab. # H_____ **6/27/2023**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

COUNTY OF SAN DIEGO

UPFP INSPECTION CHECKLIST

FACILITY NAME: **SDG&E - BOULEVARD SUBSTATION**
ADDRESS: **40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD RD**
CITY/ZIP: **BOULEVARD** /**91905**

INSPECTION DATE: **05/16/2017**
RECORD ID #: **DEH2009-HUPFP-210317**
TIME START: **12:00 PM** END: **12:30 PM**
SPECIALIST: **Keith Waara**
INSPECTION CONTACT: **Kevin Dickison**
TITLE: **Environmental Specialist**
PHONE: **858-967-7120**
E-MAIL: **kdickison@semprautilities.com**

FACILITY REFERENCE DATA

ACCELA

RECORD STATUS: Permit Renewed
PERMIT EXPIRATION DATE: 06/30/2017
BALANCE DUE: $679.00
INSPECTOR: Keith Waara
INSPECTION TYPE: Routine
INSPECTION STATUS: Complete

CERS

EPA ID NUMBER:
FACILITY CERS ID NUMBER: 10357561
CERS LEAD USER: Kevin Dickison
LAST CERS SUBMITTAL DATE: 10/20/2016
ENVIRONMENTAL CONTACT EMAIL: KDICKISON@SEMPRAUTILITIES.COM
ENVIRONMENTAL CONTACT PHONE: 858-967-7120

FACILITY INFORMATION

	YES	NO		YES	NO
INACTIVATION INSPECTION:	☐	☒	HAZARDOUS MATERIALS:	☒	☐
CHANGE OF OWNER:	☐	☒	HAZARDOUS WASTE:	☐	☒
CHANGE IN BUSINESS TYPE:	☐	☒	ABOVEGROUND PETROLEUM STORAGE ACT:*	☐	☒
BUSINESS TYPE: Public Utilities-Not Fleet Fuel Facility			TOTAL SHELL CAPACITY APSA:		0
ISSUE INITIAL INVOICE:	☐	☒	UNDERGROUND STORAGE TANK:	☐	☒
ASSESS NON-NOTIFICATION FEE:	☐	☒	CALARP PROGRAM (CERS):	☐	☒
ASSESS RE-INSPECTION FEE:	☐	☒	CALARP PROGRAM LEVEL: 1 2 3 N/A		
FACILITY SUBJECT TO BASE FEE:	☒	☐	MEDICAL WASTE:	☐	☒
FACILITY SUBJECT TO CUPA FEE:	☒	☐	MW FACILITY GENERATING OVER 200 LBS PER MONTH:	☐	☒
UPDATE FACILITY ADDRESS IN AA:	☐	☒	EPIC PARTICIPANT:	☐	☒
BUSINESS CLOSE DATE:			NUMBER OF TLV GASES AT THE FACILITY:		0

HW GENERATOR STATUS : LQG | SQG | CESQG | RCRA LQG | **N/A**

TIERED PERMIT LEVEL(S) : CESQT | CESW | CE-L | CE-CL | HHW | PBR | CA | **N/A**

PRIMARY BILLING CODE: Not Applicable
SECONDARY BILLING CODE: Not Applicable
TERTIARY BILLING CODE: Not Applicable

INSPECTION SCOPE:*

HAZARDOUS MATERIALS: **GEN HAZMAT** | APSA | UST
HAZARDOUS WASTE: SQG | LQG
MEDICAL WASTE: SQG | SQG - TREATS | LQG | LQG - ABBREVIATED | LQG - TREATS
CALARP: 1 | 2 | 3
TIERED PERMITTING: CESQT | CESW | CE-L | CE-CL | CA | PBR | HHW

CONSENT TO CONDUCT INSPECTION GRANTED BY: INSPECTION CONTACT ☒ NAME: Kevin Dickison TITLE: Environmental Specialist

REMOVE BLANK CHECKLISTS FROM FINAL INSPECTION REPORT ☒ REFUSED TO SIGN ☐

COUNTY OF SAN DIEGO

UPFP INSPECTION CHECKLIST

FACILITY NAME: **SDG&E - BOULEVARD SUBSTATION**
ADDRESS: **40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD RD**
CITY/ZIP: **BOULEVARD** /**91905**

INSPECTION DATE: **05/16/2017**
RECORD ID #: **DEH2009-HUPFP-210317**
TIME START: **12:00 PM** END: **12:30 PM**
SPECIALIST: **Keith Waara**
INSPECTION CONTACT: **Kevin Dickison**
TITLE: **Environmental Specialist**
PHONE: **858-967-7120**
E-MAIL: **kdickison@semprautilities.com**

INSPECTION REPORT EMAILS:

Keith.Waara@sdcounty.ca.gov

RECORD COMMENT:

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

FACILITY NAME: **SDG&E - BOULEVARD SUBSTATION**
ADDRESS: **40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD RD**
CITY/ZIP: **BOULEVARD** /**91905**

INSPECTION DATE: **05/16/2017** PAGE **1** OF **2**
RECORD ID #: **DEH2009-HUPFP-210317**
TIME START: **12:00 PM** END: **12:30 PM**
SPECIALIST: **Keith Waara**
INSPECTION CONTACT: **Kevin Dickison**
TITLE: **Environmental Specialist**
PHONE: **858-967-7120**
E-MAIL: **kdickison@semprautilities.com**

On the above date, the County inspected your facility under the authority of the California Health and Safety Code (H&SC), to determine compliance with applicable provisions of the H&SC, the California Code of Regulations (CCR), and the San Diego County Code of Regulatory Ordinances (SDCC). **This report serves as a Notice to Comply (H&SC 25187.8 & 25404.1.2) for any minor violations as defined in H&SC 25404 and 25117.6.** This report may contain both minor and more significant (Class II) violations. Minor violations do not include repeat violations or violations remaining uncorrected for more than 30 days (or as specified below). Minor violations do not include knowing, willful, intentional, or chronic violations; nor do they include violations showing a pattern of neglect or disregard. The remarks below are intended to provide guidance to correct any violations indicated on the attached violation report. You must submit a written response to this report within 30 days (or as specified below) demonstrating that all violations have been corrected or include a written notice of disagreement that clearly states the reason for any disputed violations. Prompt correction can protect you from penalties for a "minor violation". Penalties can be imposed for each day in violation for all other violations even if they are corrected promptly. However, correction within 30 days (or as specified below) will make a penalty less likely.

NOTE: Reinspection fees will be charged if additional inspections are required to determine compliance.

Yes	N/A		Yes	N/A	
☒	☐	Unified Program Facility Permit Current	☐	☒	Contingency Plan Available ☐ LQG ☐ SQG
☒	☐	Hazardous Materials Business Plan Available	☐	☒	Employee Training Records Available
☒	☐	Employee Training is Adequate	☒	☐	Universal Waste Managed Properly
☐	☒	Waste Disposal Records Available for Review	☐	☒	Waste Containers ☐ Closed ☐ Labeled
☒	☐	Emergency Contacts Current ☐ Updated today	☐	☒	Waste Containers in Good Condition
☒	☐	Chemical Inventory/Map Current ☐ Updated today			Permit Expires On 06/30/2017

CONSENT TO CONDUCT INSPECTION GRANTED BY: Kevin Dickison TITLE: Environmental Specialist

INTRODUCTION:
Facility is a SDG&E substation subject to the Hazardous Materials Business Plan (HMBP) requirements. During this routine inspection no violations were observed.

INSPECTION REMARKS:
- California Environmental Reporting System (CERS) was last re-certified on 5/15/17
- Facility is not eligible for Remote Site status due to mineral oil storage quantity and proximity to population.

Helpful Websites:
• For guidance documents on hazardous materials-related topics,
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_publications.html
• For information on the California Environmental Reporting System (CERS),
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_cers.html
• If you have questions on: permit fees, business plan requirements, or hazardous waste regulations,
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat.html
• To find out the latest San Diego County News and receive updates, subscribe to our govdelivery emails:
https://public.govdelivery.com/accounts/CASAND/subscriber/new

If you have any questions regarding this inspection, please contact Keith Waara ,619 607 8361, Keith.Waara@sdcounty.ca.gov

INSPECTION PHOTOS
None

All regulated businesses are required by law to submit their Unified Program-related information and business updates online through the California Environmental Reporting System (CERS). For additional information about CERS, go to: http://www.sandiegocounty.gov/deh/hazmat/hmd_cers.html

PRINTED NAME OF FACILITY REPRESENTATIVE **Kevin Dickison**	SIGNATURE		DATE SIGNED **05/16/2017**
TITLE OF FACILITY REPRESENTATIVE **Environmental Specialist**			

COUNTY OF SAN DIEGO

SUPPLEMENTAL COMPLIANCE INSPECTION REPORT

Department of Environmental Health, Hazardous Materials Division, P.O. Box 129261, San Diego, CA 92112-9261
Phone: (858) 505-6880 http://www.sdcdeh.org

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

Please complete the following by entering the chemical name in the chemical column and then place a "√" in the quantity column that most closely estimates the amount on hand. If measured by volume, check the appropriate gallon column(s). If measured by weight, check the appropriate pound column(s). If the chemical is a trade secret, you should check the trade secret box. For example, if you have one pint of benzene you would write benzene in the chemical column and place a check in the "< 1 gallon" column. (**Please note**: the symbol < means less than.)

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Strong inorganic acid mists containing sulfuric acid					XX		
Arsenic				XX			

Estab. # H_____ **9/28/2017**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

Griffin, Donelle

From: Griffin, Donelle
Sent: Thursday, April 11, 2019 3:39 PM
To: KDickison@semprautilities.com
Cc: Waara, Keith
Subject: DEH2009-HUPFP-210317 CERS submittal

Good Afternoon,

I am doing invoice review for your facility and noticed that the nitrogen maximum daily amount on site is 304 cu ft. and is below reportable quantity for an inert gas which 1000 cu ft. Please be advised that your permit fees are based in part on number of inventory items. If you have any questions, please call/email me at (858)260-1898 or Donelle.Griffin@sdcounty.ca.gov

Best regards,

Donelle Griffin
Environmental Health Specialist II
Hazardous Materials Division
Department of Environmental Health
County of San Diego

Phone: 858-260-1898
Donelle.griffin@sdcounty.ca.gov

Help us make sure our customers have a positive experience. Please take 60 seconds to provide us with your feedback.

SD-DEH-HMD Permit # 210317 Date: 3-1-19

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

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Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Arsenic				XX			

Estab. # H_____ **9/4/2019**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

Please complete the following by entering the chemical name in the chemical column and then place a "√" in the quantity column that most closely estimates the amount on hand. If measured by volume, check the appropriate gallon column(s). If measured by weight, check the appropriate pound column(s). If the chemical is a trade secret, you should check the trade secret box. For example, if you have one pint of benzene you would write benzene in the chemical column and place a check in the "< 1 gallon" column. (**Please note**: the symbol < means less than.)

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Strong inorganic acid mists containing sulfuric acid					XX		
Arsenic				XX			

Estab. # H_____ **9/28/2017**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

FACILITY NAME: **SDG&E - BOULEVARD SUBSTATION**
ADDRESS: **40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD RD**
CITY/ZIP: **BOULEVARD** /**91905**

INSPECTION DATE: **09/05/2019** PAGE **1** OF **2**
RECORD ID #: **DEH2009-HUPFP-210317**
TIME START: **12:00 PM** END: **12:30 PM**
SPECIALIST: **Keith Waara**
INSPECTION CONTACT: **Kevin Dickison**
TITLE: **Environmental Specialist**
PHONE: **858-967-7120**
E-MAIL: **kdickison@semprautilities.com**

On the above date, the County inspected your facility under the authority of the California Health and Safety Code (H&SC), to determine compliance with applicable provisions of the H&SC, the California Code of Regulations (CCR), and the San Diego County Code of Regulatory Ordinances (SDCC). **This report serves as a Notice to Comply (H&SC 25187.8 & 25404.1.2) for any minor violations as defined in H&SC 25404 and 25117.6.** This report may contain both minor and more significant (Class II) violations. Minor violations do not include repeat violations or violations remaining uncorrected for more than 30 days (or as specified below). Minor violations do not include knowing, willful, intentional, or chronic violations; nor do they include violations showing a pattern of neglect or disregard. The remarks below are intended to provide guidance to correct any violations indicated on the attached violation report. You must submit a written response to this report within 30 days (or as specified below) demonstrating that all violations have been corrected or include a written notice of disagreement that clearly states the reason for any disputed violations. Prompt correction can protect you from penalties for a "minor violation". Penalties can be imposed for each day in violation for all other violations even if they are corrected promptly. However, correction within 30 days (or as specified below) will make a penalty less likely.

NOTE: Reinspection fees will be charged if additional inspections are required to determine compliance.

Yes	N/A		Yes	N/A	
☒	☐	Unified Program Facility Permit Current	☐	☒	Contingency Plan Available ☐ LQG ☐ SQG
☒	☐	Hazardous Materials Business Plan Available	☐	☒	Employee Training Records Available
☒	☐	Employee Training is Adequate	☒	☐	Universal Waste Managed Properly
☐	☒	Waste Disposal Records Available for Review	☐	☒	Waste Containers ☐ Closed ☐ Labeled
☒	☐	Emergency Contacts Current ☐ Updated today	☐	☒	Waste Containers in Good Condition
☒	☐	Chemical Inventory/Map Current ☐ Updated today			Permit Expires On 06/30/2020

CONSENT TO CONDUCT INSPECTION GRANTED BY: Kevin Dickison TITLE: Environmental Specialist

INTRODUCTION:
Facility is a SDG&E substation subject to the Hazardous Materials Business Plan (HMBP) requirements. Hazardous materials reported include the following: mineral oil, lead acid batteries, nitrogen gas, hydrogen gas, and SF6 gas. During this routine inspection no violations were observed.

INSPECTION REMARKS:
- California Environmental Reporting System (CERS) was last re-certified on 9/4/19
- Operator added hydrogen gas to inventory for a back-up generator that is not yet on-line.
- Facility is not eligible for Remote Site status due to mineral oil storage quantity and proximity to population.

Helpful Websites:
• For guidance documents on hazardous materials-related topics,
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_publications.html
• For information on the California Environmental Reporting System (CERS),
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_cers.html
• If you have questions on: permit fees, business plan requirements, or hazardous waste regulations,
go to: http://www.sandiegocounty.gov/content/sdc/deh/hazmat.html
• To find out the latest San Diego County News and receive updates, subscribe to our govdelivery emails:
https://public.govdelivery.com/accounts/CASAND/subscriber/new

If you have any questions regarding this inspection, please contact Keith Waara , 619-607-8361, Keith.Waara@sdcounty.ca.gov

INSPECTION PHOTOS
None

All regulated businesses are required by law to submit their Unified Program-related information and business updates online through the California Environmental Reporting System (CERS). For additional information about CERS, go to: http://www.sandiegocounty.gov/deh/hazmat/hmd_cers.html

PRINTED NAME OF FACILITY REPRESENTATIVE **Kevin Dickison**	SIGNATURE		DATE SIGNED **09/05/2019**
TITLE OF FACILITY REPRESENTATIVE **Environmental Specialist**			

COUNTY OF SAN DIEGO

SUPPLEMENTAL COMPLIANCE INSPECTION REPORT

Department of Environmental Health, Hazardous Materials Division, P.O. Box 129261, San Diego, CA 92112-9261
Phone: (858) 505-6880 http://www.sdcdeh.org

SD-DEH-HMD Permit # 210317 Date: 3-1-19

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

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Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Arsenic				XX			

Estab. # H_____ **9/4/2019**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

SD-DEH-HMD Permit # 210317 Date: 3-1-19

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

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Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

Please complete the following by entering the chemical name in the chemical column and then place a "√" in the quantity column that most closely estimates the amount on hand. If measured by volume, check the appropriate gallon column(s). If measured by weight, check the appropriate pound column(s). If the chemical is a trade secret, you should check the trade secret box. For example, if you have one pint of benzene you would write benzene in the chemical column and place a check in the "< 1 gallon" column. (**Please note**: the symbol < means less than.)

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Arsenic				XX			

Estab. # H_____ **9/4/2019**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

SD-DEH-HMD Permit # 210317 Date: 3-1-19

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

Business Name: San Diego Gas & Electric Boulevard substation

Business Address: south of old hwy 80, 1.1 mi east of Ribbonwood Rd, Boulevard, CA 91905

Business Owner or Operator: San Diego Gas & Electric, 8315 Century Park Court; CP21L, San Diego, CA 92123

Please complete the following by entering the chemical name in the chemical column and then place a "√" in the quantity column that most closely estimates the amount on hand. If measured by volume, check the appropriate gallon column(s). If measured by weight, check the appropriate pound column(s). If the chemical is a trade secret, you should check the trade secret box. For example, if you have one pint of benzene you would write benzene in the chemical column and place a check in the "< 1 gallon" column. (**Please note**: the symbol < means less than.)

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Arsenic				XX			

Estab. # H_____ **9/4/2019**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

SD-DEH-HMD Permit # 210317 Date: 3-1-19

San Diego County Department of Environmental Health
Hazardous Materials Management Division
Annual Carcinogen and Reproductive Toxin Reporting List

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Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret
Lead and lead compounds						XX	
Arsenic				XX			

Estab. # H_____ **9/4/2019**

Chemical Name	<1 gallon	<1 pound	<10 gallons	<10 pounds	<55 gallons	<500 pounds	Trade Secret

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

FACILITY NAME: **SDG&E - BOULEVARD SUBSTATION**
ADDRESS: **40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD RD**
CITY/ZIP: **BOULEVARD** /**91905**

INSPECTION DATE: **03/16/2023** PAGE **1** OF **5**
RECORD ID #: **DEH2009-HUPFP-210317**
TIME START: **2:30 PM** END: **3:00 PM**
SPECIALIST: **George Fay**
INSPECTION CONTACT: **Kevin Dickison**
TITLE: **Environmental Specialist**
PHONE: **858-967-7120**
E-MAIL: **kdickison@semprautilities.com**

On the above date, the County inspected your facility under the authority of the California Health and Safety Code (H&SC), to determine compliance with applicable provisions of the H&SC, the California Code of Regulations (CCR), and the San Diego County Code of Regulatory Ordinances (SDCC). **This report serves as a Notice to Comply (H&SC 25187.8 & 25404.1.2) for any minor violations as defined in H&SC 25404 and 25117.6.** This report may contain both minor and more significant (Class II) violations. Minor violations do not include repeat violations or violations remaining uncorrected for more than 30 days (or as specified below). Minor violations do not include knowing, willful, intentional, or chronic violations; nor do they include violations showing a pattern of neglect or disregard. The remarks below are intended to provide guidance to correct any violations indicated on the attached violation report. You must submit a written response to this report within 30 days (or as specified below) demonstrating that all violations have been corrected or include a written notice of disagreement that clearly states the reason for any disputed violations. Prompt correction can protect you from penalties for a "minor violation". Penalties can be imposed for each day in violation for all other violations even if they are corrected promptly. However, correction within 30 days (or as specified below) will make a penalty less likely.

NOTE: Reinspection fees will be charged if additional inspections are required to determine compliance.

☒ Unified Program Facility Permit Current	☐ Contingency Plan Available ☐ LQG ☐ SQG
☒ Hazardous Materials Business Plan Available	☐ Employee Training Records Available
☒ Employee Training is Adequate	☐ Universal Waste Managed Properly
☐ Waste Disposal Records Available for Review	☐ Waste Containers ☐ Closed ☐ Labeled
☒ Emergency Contacts Current ☐ Updated today	☐ Waste Containers in Good Condition
☒ Chemical Inventory/Map Current ☐ Updated today	Permit Expires On 06/30/2023

CONSENT TO CONDUCT INSPECTION GRANTED BY: Kevin Dickison TITLE: Environmental Specialist

INTRODUCTION:
The Hazardous Materials Division (HMD) of the Department of Environmental Health & Quality (DEHQ) is the Certified Unified Program Agency (CUPA) for the County of San Diego. HMD implements the Unified Program in the County and regulates businesses that manage hazardous materials, hazardous waste, medical wastes, aboveground petroleum storage tanks, and underground storage tanks.

On 03/16/2023, I, George Fay, Environmental Health Specialist III (EHS) of HMD conducted a routine inspection at SDG&E Boulevard Substation to verify compliance with Hazardous Materials Business Plan (HMBP) regulations. This unmanned facility stores electrolytic batteries, dielectric mineral oil, sulfur Hexaflouride, and Nitrogen Gas. Compressed Hydrogen Gas is listed on the inventory in CERS but was not being stored at the facility this day. Permission to conduct this inspection including a facility walk-through and document review was granted by Kevin Dickison.

According to this inspection, the facility appears to be subject to the following requirements:
1. HMBP for handling hazardous materials at/above threshold (55 gallons, 500 pounds & 200 cubic feet)

INSPECTION REMARKS:
- No violations observed during inspection.
- California Environmental Reporting System submitted 08/29/2022

Helpful Websites:
• For guidance documents on hazardous materials-related topics,
go to: https://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_publications.html
• For information on the California Environmental Reporting System (CERS),
go to: https://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_cers.html
• If you have questions on: permit fees, business plan requirements, or hazardous waste regulations,
go to: https://www.sandiegocounty.gov/content/sdc/deh/hazmat.html
• To find out the latest San Diego County News and receive updates, subscribe to our govdelivery emails:
https://public.govdelivery.com/accounts/CASAND/subscriber/new

If you have any questions regarding this inspection, please contact George Fay ,858-247-6505, george.fay@sdcounty.ca.gov

INSPECTION PHOTOS
None

INSPECTION ATTACHMENTS
None

All regulated businesses are required by law to submit their Unified Program-related information and business updates online through the California Environmental Reporting System (CERS). For additional information about CERS, go to: https://www.sandiegocounty.gov/deh/hazmat/hmd_cers.html

PRINTED NAME OF FACILITY REPRESENTATIVE	SIGNATURE		DATE SIGNED
Kevin Dickison			**03/17/2023**
TITLE OF FACILITY REPRESENTATIVE			
Environmental Specialist			

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

Handlers of Hazardous Materials and Small and Large Quantity Generators of Hazardous Waste

FACILITY NAME: *SDG&E - BOULEVARD SUBSTATION

ADDRESS: * 40749 OLD HWY 80 (1.6 MILES E OF RIBBONWOOD R CITY/ZIP: *BOULEVARD 91905

Each violation checked below is for the section(s) of the California Health and Safety Code (HSC), California Code of Regulations (CCR), or the San Diego County Code (SDCC) indicated in italics. Incorporated provisions of Title 40 of the Code of Federal regulations (CFR) are noted for reference. All violations must be corrected. Submit documentation of return to compliance to your Specialist. You may use the Corrective Action Form (HM-926) to document your return to compliance. Please call (858) 505-6880 or your Specialist if you have any questions. HMBP = Hazardous Materials Business Plan; CUPA = Certified Unified Program Agency; CERS = California Environmental Reporting System; SQG = Small Quantity Hazardous Waste Generator; LQG = Large Quantity Hazardous Waste Generator

HAZARDOUS MATERIALS REQUIREMENTS

#	VIOLATION DESCRIPTION
☐ 1010001	Failed to establish and implement a HMBP. HSC 25505(a) and 25507(a)
☐ 1010002	HMBP not submitted in CERS within the required timeframe. HSC 25508(a)(1); 27 CCR 15188(a),(b),(d)
☐ 1010003	Business activities &/or Business Owner/Operator page not complete or accurate in CERS. 19 CCR 2652(a)(1); SDCC 68.904(b); HSC 25508(a)(1), 25508(a)(3)
☐ 1010004	Chemical inventory incomplete or not submitted in CERS. HSC 25505(a)(1); 25507(a); 25508.1(a-b); 19 CCR 2654 (a) or (d)
☐ 1010005	Site map not submitted in CERS or not sufficient. HSC 25505(a)(2); 25508.1(f); 19 CCR 2652(a)(3)
☐ 1010006	Failed to update HMBP in CERS within 30 days of a substantial change to any portion of the HMBP, including inventory changes or facility information. HSC 25508.1(a-f); 19 CCR 2654(d); SDCC 68.904(c)(6)
☐ 1010008	HMBP not certified as complete and accurate in CERS by the required due date. HSC 25508.2, 19 CCR 2654(b)
☐ 1010010	Emergency response plan and procedures to mitigate a release or threatened release not adequate, not established or not submitted in CERS. HSC 25505(a)(3), 25508(a)(1), 25508(a)(3); 19 CCR 2658
☐ 1010011	Failure to notify property owner in writing that the business is subject to the HMBP program. HSC 25505.1
☐ 1010012	Failure to provide a copy of HMBP to the property owner within five working days upon request from property owner. HSC 25505.1
☐ 1010014	Failure to submit emergency response plan in CERS, when not meeting agricultural handler exemption. HSC 25507.1(a) and 25508(a)(1); 19 CCR 2670, 2671
☐ 1010015	Failure to submit employee training plan in CERS, when not meeting agricultural handler exemption. HSC 25507.1(a), 25508(a)(1), 19 CCR 2670, 2671
☐ 1010016	HMBP not established or submitted in CERS, when not meeting the remote site exemption. HSC 25507.2 and 25508(a)(1)
☐ 1020001	Employee training and/or plan for safety procedures in the event of a release or threatened release of a hazardous material not adequate, not established or not submitted in CERS. HSC 25505(a)(4), 25508(a)(1), 25508(a)(3); 19 CCR 2659(a)
☐ 1030001	(AWM) Failure of agricultural handler to post warning signs on buildings where pesticides, petroleum, or fertilizers are stored, that are visible from any direction of probable approach, contain all required information, and are in appropriate language. HSC 6.95 25507.1(a)(2); 19 CCR 2670, 2671
☐ 1020002	Initial &/or annual employee training not conducted in safety procedures for a hazardous material release or threatened release &/or employee training records not available or not maintained for 3 years. HSC 25505(a)(4); 19 CCR 2659(b)
☐ 1040001	Hazardous materials release or threatened release not immediately reported to the CUPA and OES upon discovery. HSC 25510(a); 19 CCR 2631(a)
☐ HMD1001	Unified Program Facility permit not obtained for hazardous materials. SDCC 68.904; 68.905; 68.906, 68.907; 68.907.1
☐ HMD1005	Emergency contact not provided or current in CERS. HSC 25508.1(f); SDCC 68.904(b)
☐ HMD1007	Highly toxic gas (TLV<10 ppm) not disclosed in CERS. SDCC 68.1113(a)
☐ 1010017	HMBP not readily available to facility personnel or the CUPA. HSC 25505(c)

HAZARDOUS WASTE REQUIREMENTS FOR SQGS ONLY

#	VIOLATION DESCRIPTION
☐ HMD0226	Did not accumulate waste in a container or tank. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2)
☐ 3030007	Failed to properly label/date hazardous waste container &/or tank. 22 CCR 66262.34(f)
☐ 3030010	Failed to properly dispose of hazardous waste within 180 days (or 270 days if waste is transported over 200 miles). 22 CCR 66262.34(d); HSC 6.5 25123.3(h)(1)
☐ 3030013	Failed to accumulate hazardous waste in a container that is in good condition. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2), 265.171
☐ 3030015	Failed to accumulate or store hazardous waste in a lined &/or compatible container. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2), 265.172
☐ 3030017	Failed to properly close hazardous waste container(s). 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2), 265.173
☐ 3030019	Failed to inspect hazardous waste storage area at least weekly. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2), 265.174
☐ 3030022	Failed to properly separate incompatible waste. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(2), 265.177
☐ 3030030	Failed to maintain &/or operate facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(4), 265.31
☐ 3030036	Failed to maintain adequate aisle space. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(4), 265.35
☐ 3010022	Failed to post, next to the telephone, emergency information containing the location of emergency equipment, contact names and phone numbers. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(5)(ii)
☐ 3020001	Failure to ensure employees are thoroughly familiar with proper waste handling and emergency procedures during normal facility operations and emergencies. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(5)(iii)
☐ 3030032	Failed to maintain the following emergency response equipment or equivalent: 1) An internal communication or alarm system; 2) A communication device, such as a telephone; 3) Portable fire extinguishers, fire/spill control equipment and decontamination equipment; and 4) Water at adequate volume and pressure. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(4), 265.32
☐ 3030039	Failed to have an emergency coordinator on the premises or on call, and available during an emergency. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(5)(i)
☐ HMD0412	Failed to implement and/or coordinate emergency response measures during an emergency, spill/release. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(5)(iv)
☐ 3010030	Failed to submit an Exception Report to DTSC for hazardous waste manifest. HSC 25123.3(h)(2); 22 CCR 66262.42(a), (c-d)

HAZARDOUS WASTE TANK SYSTEMS FOR SQGS ONLY

#	VIOLATION DESCRIPTION

☐ 3030024	Failed to operate uncovered tank to ensure at least 2 ft. of freeboard to prevent overtopping, unless the tank is equipped with a containment structure, a drainage control system, or a diversion structure with a capacity that equals or exceeds the volume of the top 2 ft. of the tank. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(3), 265.201(b)(c)
☐ 3030025	Failed to provide an overfill protection device on continuously fed hazardous waste tank(s). 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(3), 265.201(b)(4)
☐ 3030027	Failed to conduct daily tank inspection of discharge control system, monitoring equipment and waste level. 22 CCR 66262.34(d)(2); 40 CFR 265.201(c)(1-3), 262.34(d)(3)
☐ 3030028	Failed to conduct weekly hazardous waste tank inspection(s) to detect signs of leakage and ensure that the construction materials, fixtures and surrounding areas of the tank are in good condition. 22 CCR 66262.34(d)(2); 40 CFR 265.201(c)(4 & 5), 262.34(d)(3)
☐ 3050007	Failed to properly remove all waste upon closure, decontaminate, and document the closure of a hazardous waste tank system. 22 CCR 67383.3; 40 CFR 262.34(d)(3), 265.201(f)
☐ HMD1612	Hazardous waste improperly stored in a tank system causing leaks, corrosion, or failure. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(3), 265.201(b)
☐ HMD1614	Failed to pre-notify the CUPA in writing prior to closing a hazardous waste tank system. 22 CCR 67383.3(a)(1)
☐ HMD1615	Failed to properly accumulate ignitable or reactive waste in a tank system. 22 CCR 66262.34(d)(2); 40 CFR 262.34(d)(3), 265.201(g)

HAZARDOUS WASTE REQUIREMENTS FOR SQGS AND LQGS

RECORD KEEPING/OPERATIONAL REQUIREMENTS

#	VIOLATION DESCRIPTION
☐ HMD0131	Unified Program Facility Permit not obtained &/or maintained for the generation of hazardous waste. SDCC 68.904; 68.905; 68.907.1
☐ HMD0150	Failed to submit complete and accurate Facility Information in CERS. 27 CCR 15188(b-c); SDCC 68.904(b)
☐ 3030053	Failed to maintain waste analysis records, analytical records &/or waste determination results for at least 3 years. 22 CCR 66262.40(c)
☐ 3010002	Failed to obtain &/or maintain an active EPA ID Number. 22 CCR 66262.12(a)
☐ 3010008	Failed to properly complete a uniform hazardous waste manifest. 22 CCR 66262.23(a)
☐ 3010009	Failed to submit an Exception Report to DTSC for hazardous waste manifest. HSC 25123.3(h)(2); 22 CCR 66262.42(b), (c), &/or (d)
☐ 3010010	Failed to maintain copies of Uniform Hazardous Waste Manifest, consolidated manifest, or Bills of Lading for 3 years. HSC 25160.2(b)(3), 25185(a)(4); 22 CCR 66262.40(a), 66262.23(a)(3)
☐ 3010011	Failed to send a copy of the uniform hazardous waste manifest that originated in paper form to DTSC within 30 days of shipment. 22 CCR 66262.23(a)(4); HSC 25160(b)(1)(c)
☐ 3010013	Failed to meet the consolidated manifesting requirements for waste shipment. HSC 25160.2(b)(3) &/or (c)
☐ 3010014	Failed to retain at the generator's place of business disposal records of spent lead-acid batteries for at least 3 years. 22 CCR 66266.81(a)(4)(A) &/or (B)
☐ 3030006	Failed to determine if a hazardous waste is restricted or prohibited from land disposal and has to be treated. 22 CCR 66268.7(a)(1)
☐ 3010016	Failure of recycler who recycles more than 100 kilograms per month of a recyclable material to submit the biennial Recyclable Materials Report (RMR) in CERS when claiming exclusion or exemption. HSC 25143.10(a), (c) &/or (d)
☐ HMD0149	Failed to keep disposal receipts for drained used oil filters and/or drained fuel filters for 3 years. HSC 25250.22; 22 CCR 66266.130(c)(5)
☐ HMD0152	Failed to report &/or update the required inventory information for hazardous waste(s) generated at the facility in CERS. SDCC 68.904(a)(2)
☐ HMD0140	Failed to have Land Disposal Restriction documentation onsite for 3 years. 22 CCR 66268.7(a)(8)
☐ 3250005	Failed to obtain a Treatment, Storage and Disposal Facility (TSDF) permit or authorization to store/treat/dispose of hazardous waste. HSC 25201(a)
☐ 3050005	Failed to properly manage a recyclable material. HSC 25143.2, 25143.9
☐ HMD0142	Failed to notify the CUPA in CERS for onsite hazardous waste treatment/tiered permitting. HSC 25201(a)
☐ HMD0138	Manifest signed by the TSDF not available for inspection. 22 CCR 66262.40(a); HSC 25185(a)(4)
☐ 3010035	Failure to annually submit notification of generator's intent to remotely consolidate hazardous waste. HSC 25110.10(d)
☐ 3010037	Failure to notify the CUPA of aerosol can processing procedures prior to commencement of operations. HSC 25201.16(j)

DISPOSAL AND TRANSPORTATION

#	VIOLATION DESCRIPTION
☐ 3010007	Failed to prepare a hazardous waste manifest for the transport of a waste for off-site transfer, treatment, storage, or disposal. HSC 25160(b)(1) or (2), 25160.2(b)(9); 22 CCR 66262.20(a)
☐ 3030005	Failed to make a proper waste determination. 22 CCR 66262.11, 66262.40(c)
☐ 3050001	Failed to use a DTSC registered hazardous waste transporter to transport hazardous waste. HSC 25163(a)
☐ 3050002	Failed to properly dispose of hazardous waste at an authorized facility. HSC 25189.5(a)
☐ HMD0308	Impermissible dilution of hazardous waste. 22 CCR 66268.3(a)
☐ HMD0305	Disposed of used oil illegally. HSC 25250.5(a), 25189.5(a)
☐ HMD0306	Failed to properly dispose of oil-based paint &/or hazardous waste latex paint liquid. HSC 25217.1, 25189.5(a)

STORAGE AND HANDLING

#	VIOLATION DESCRIPTION
☐ 3030001	Failed to meet the management requirements when handling or storing spent lead-acid batteries. 22 CCR 66266.81(a)
☐ 3030003	Failed to properly manage 'damaged' spent lead acid batteries so as to minimize the release of acid and lead and to protect the handlers and the environment 22 CCR 66266.81(b)
☐ 3030012	(RCRA LQG) Failed to properly dispose of hazardous waste within 90 days. 22 CCR 66262.34(a), (c); HSC 6.5 25123.3(b)(1)
☐ 3030004	Failure to properly manage used oil filters and/or fuel filters in accordance with the requirements. HSC 25250.22; 22 CCR 66266.130
☐ 3050004	Failure to prevent intentional contamination of used oil with other hazardous waste other than minimal amounts of vehicle fuel. HSC 25250.7(a)
☐ HMD0222	Failed to properly label Excluded Recyclable Materials (ERM) accumulated in a container or tank. HSC 25143.9(a)
☐ HMD0216	Failed to label hazardous material container within 10 days after the container was discovered to be mislabeled or inadequately labeled. HSC 25124(b)(3)(A); 22 CCR 66262.34(f)
☐ HMD0217	Failed to repackage and properly label damaged/deteriorated hazardous material container within 96 hours. HSC 25124(b)(3)(B); 22 CCR 66262.34(f)
☐ HMD0219	Failed to properly segregate used oil &/or fuel drained from filters. HSC 25250.22(b)(4); 22 CCR 66266.130(c)(6)

☐ 3030057	Failed to comply with hazardous waste satellite container regulation. 22 CCR 66262.34(e)
☐ 3030058	Failed to mark date on empty container larger than 5 gallons &/or properly manage it within one year. 22 CCR 66261.7
☐ 3030060	Failure of the owner or operator managing laboratory hazardous waste in a laboratory accumulation area to comply with the accumulation, storage, management, training, and/or record-keeping requirements. HSC 25200.3.1(b) and/or (c)

UNIVERSAL WASTE HANDLER REQUIREMENTS

#	VIOLATION DESCRIPTION
☐ 3010004	Failed to obtain a California ID Number from DTSC or federal ID Number from USEPA prior to accumulating 5,000 kgs or more of Universal Waste. 22 CCR 66273.32(a-b)
☐ HMD0151	Failed to maintain universal waste handler training records for 3 years. 22 CCR 66273.36(c),(d)
☐ 3020003	Failed to properly train handlers of universal waste in universal waste management and response procedures. 22 CCR 66273.36(a),(b)
☐ 3030008	Failed to properly label or mark Universal Waste container, package, or pallet (excluding CESQUWG) 22 CCR 66273.34
☐ 3030011	Failed to properly dispose of Universal Waste within one year. 22 CCR 66273.35(a) &/or (b)
☐ HMD0147	Failed to keep records of offsite Universal Waste shipment(s) available for inspection for 3 years. 22 CCR 66273.39(c),(d)(2)
☐ 3030051	Failed to meet accumulation, labeling, marking, &/or containment standards for Universal Waste aerosol containers. HSC 25201.16(f)
☐ 3040004	Failed to manage universal waste in a manner to prevent release(s) to the environment. 22 CCR 66273.33; 66273.33.5, 66273.33.6
☐ HMD0307	Disposal of universal waste (UW) to an unauthorized point. HSC 25189.5(a); 22 CCR 66273.31(a), 66273.8(b)
☐ 3010005	Failure of a universal handler of PV modules, electronic devices, and/or CRTs from an offsite source to notify DTSC 30 days prior to acceptance. 22 CCR 66273.32(c), (e)
☐ 3010020	Failure of a universal waste handler to submit an annual report that includes all required information to DTSC by February 1 of every year. 22 CCR 66273.32(d), (f)
☐ 3010006	Failure of the universal waste handler who sends electronic devices or CRTs to any foreign destination to notify DTSC 60 days prior to export and send a copy to the CUPA. 22 CCR 66273.40(a)(2),(3)
☐ 3110030	Failed to notify the CUPA of aerosol processing procedures prior to commencement of operations. HSC 25201.16(j)

CERTIFIED APPLIANCE RECYCLER REQUIREMENTS

#	VIOLATION DESCRIPTION
☐ 3010033	Failure to obtain Certified Appliance Recycler certification (CAR) from DTSC. HSC 25211.4
☐ 3010034	Failure of certified appliance recycler (CAR) to provide documentation that all materials that require special handling (MRSH) have been properly removed and managed. HSC 25211.2, 25211.3
☐ 3030055	Failure of certified appliance recycler (CAR) to properly remove and dispose of all materials that require special handling (MRSH). HSC 25212