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RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix J, K

Subsection(s):

- J.2 - Economic, Socioeconomic, Environmental Justice, and Growth-Inducing Impact Analysis

Conceptual Economic, Socioeconomic, Environmental Justice, and Growth-Inducing Impact Analysis

RB Inyokern Data Center Project

Kern County, California

1.0 Introduction

This Conceptual Socioeconomic, Environmental Justice (EJ), and Growth-Inducing Impact Study has been prepared in support of the RB Inyokern Data Center (RBIDC) Project and is intended to satisfy the requirements of the California Energy Commission (CEC) Small Power Plant Exemption (SPPE) process. Specifically, this study addresses the information requirements of California Code of Regulations, Title 20, Division 2, Chapter 5, Appendix B, including:

- Appendix B (g)(7)(A): Socioeconomic circumstances of the vicinity and region; and
- Appendix B (g)(7)(B): Socioeconomic impacts associated with construction and operation of the Project, including Environmental Justice impacts evaluated by technical area.

In addition, this study includes an evaluation of growth-inducing impacts consistent with the disclosure requirements of the California Environmental Quality Act (CEQA), including CEQA Guidelines Section 15126.2(d) and Appendix G (Population and Housing).

The analysis presented herein is based on the Project's current conceptual design, construction sequencing, and operational assumptions, together with publicly available demographic and economic data and standard planning-level methodologies commonly accepted by the CEC. Because the Project is undergoing SPPE review rather than a full Application for Certification (AFC), this study appropriately relies on conservative, order-of-magnitude estimates and clearly identifies assumptions where project design details remain subject to refinement.

2.0 Project Description for Socioeconomic Analysis

2.1 Project Location and Site Setting

The RBIDC Project is proposed on an approximately 50-acre site located in the Inyokern area of eastern Kern County, California, in proximity to the State Route 178 and U.S. Route 395 corridor. The Project site consists of Assessor's Parcel Numbers 084-010-43, 084-010-44, and 084-010-45. The surrounding area is characterized by a mix of industrial, infrastructure-related, and low-density rural land uses and has historically supported energy, logistics, and defense-related development.

The Project site is not located within a densely populated urban area and does not include residential uses. Access to regional services, lodging, retail, and medical facilities is primarily provided through the nearby City of Ridgecrest and the broader Indian Wells Valley.

2.2 Construction Duration and Phasing

For purposes of this socioeconomic analysis, construction of the RBIDC Project is evaluated over a 48-month duration, beginning with Notice-to-Proceed and extending through substantial completion and closeout. Construction activities would proceed in a series of overlapping phases, including:

- Early civil and site preparation activities (grading, utilities, foundations);
- Structural and vertical construction;
- Major electrical and mechanical system installation;
- Electrical integration, testing, and commissioning; and
- Closeout and demobilization.

Peak construction activity is anticipated during periods when vertical construction and mechanical/electrical installation overlap with early commissioning efforts. If schedule-driven practices such as extended work hours are proposed, they would be managed through standard construction controls (construction lighting, noise controls, traffic management, and safety protocols) and would not materially change the core socioeconomic conclusions presented in this study.

2.3 Construction Workforce Overview

Based on the Project manpower loading curve and comparable data center construction projects, construction of the RBIDC Project is expected to require an average on-site

workforce of approximately 300 workers and a peak on-site workforce of 592 workers (Month 20 of the 48-month schedule). Table SEJ-1 presents the planning-level monthly workforce profile used for Appendix B disclosure. (The total job-years implied by Table SEJ-1 are presented in Table SEJ-1B; differences from earlier preliminary job-year estimates reflect planning-level refinements and rounding.)

Construction labor would be sourced primarily from union labor pools within Kern County, with limited use of specialized regional or statewide personnel for discrete commissioning and integration activities.

2.4 Operations Workforce Overview

Upon completion, the Project would employ a relatively small permanent workforce consistent with modern hyperscale data center operations. Operational staffing would include critical facilities technicians, electrical and mechanical maintenance personnel, network and IT staff, security, and administrative support.

For planning-level analysis, ongoing staffing is conservatively estimated at approximately 30 to 60 permanent employees, supplemented by contract personnel (e.g., security, janitorial, landscaping, and specialty original equipment manufacturer [OEM] services) as needed.

2.5 Capital Cost and Assumptions for Fiscal Disclosure

For Appendix B disclosure purposes, the Project's planning-level capital cost and taxation assumptions are summarized below. Capital investment magnitude influences property tax, sales/use tax, and indirect/induced economic activity. Because procurement strategies and final assessed values are determined through separate processes, tax estimates herein are disclosed as order-of-magnitude ranges appropriate for SPPE planning-level review.

- **Conceptual Capital Cost (ROM):** \$838,900,000 (99 MW campus)
- **Illustrative Assessed Value Range (order-of-magnitude):** \$500,000,000 to \$900,000,000
- **Sales/Use Tax Rate for Illustrative Disclosure:** Applicable sales and use tax rates will be those in effect for unincorporated Kern County at the time of taxable transactions, as administered by the California Department of Tax and Fee Administration (CDTFA). Sales tax estimates are presented as order-of-magnitude

ranges, and final revenues will depend on procurement methods and the location of taxable transactions.

- **Property Tax Rate for Illustrative Disclosure:** Property tax estimates are presented at a planning level using the standard ad valorem framework applicable in Kern County. Final assessed values, tax rates, and allocations will be determined by the Kern County Assessor in accordance with Proposition 13 and applicable state law.

3.0 Socioeconomic Setting

3.1 Regional Economic Characteristics and Fiscal Context

Eastern Kern County's economy is influenced by a combination of defense and aerospace activities associated with the China Lake region, construction and skilled trades, transportation and logistics, energy production, agriculture, and supporting regional services. The region's economic base includes sectors accustomed to industrial operations and infrastructure development, and local contracting and service industries routinely support large construction projects.

From a fiscal context standpoint, the Project is located within a jurisdictional setting where county services and special districts provide core public services and utilities, and where public agency revenues derive from a combination of property tax apportionment formulas, state allocations, fees, and service charges.

3.2 Taxing Agencies and Fiscal Resources

Public services and fiscal resources relevant to the Project are provided by a combination of county agencies, school districts, and special districts, including:

- County of Kern, which receives property tax allocations and provides law enforcement, road maintenance, and other countywide services;
- Sierra Sands Unified School District (SSUSD), which serves the Project area and receives funding through a combination of state allocations, local property tax apportionments, and statutory school facilities fees; and
- Inyokern Community Services District (CSD), which provides water and wastewater services within its service area.

Table SEJ-A1. Fiscal Resources Summary

Agency	Fiscal Year	Total Revenues (Adopted/Actual)	Projected Revenues (Next FY or Forecast)	Source Document/Pages
County of Kern	FY 2024–25	\$4,401,674,913 (Total All Funds – Adopted)	\$4.5B (FY 2025–26 Recommended Budget – all funds total)	County of Kern 2024–25 Adopted Budget, <i>Schedule 1 – All Funds Summary</i> (PDF p.16) ; County of Kern FY 2025–26 Recommended Budget summary statement (all funds total \$4.5B)
Sierra Sands Unified School District (SSUSD)	FY 2024–25	\$53,028,533 (<i>General Fund Unrestricted – “Add: Revenues” in Estimated Actuals comparison</i>)	\$81,054,506 (<i>LCAP “total revenue projected”</i>)	SSUSD 2024/2025 Estimated Actuals (General Fund Unrestricted Budget Comparison Report; “Add: Revenues...\$53,028,533”) (PDF p.1) ; SSUSD 2025–26 LCAP (Budget Overview text description; “total revenue projected...\$81,054,506”)
Kern Community College District (KCCD)	FY 2024–25	\$258,709,034 (<i>Unrestricted General Fund – Total Revenue</i>)	\$280,322,802 (<i>Unrestricted General Fund – Total Revenue</i>)	KCCD 2025–26 Adopted Budget Presentation, “2025–26 General Fund Budget Summary” (PDF slide/page showing Total Revenue for FY 2024–25 and FY 2025–26)
Inyokern Community Services District (ICSD)	CY 2022 (reported)	\$392,995 (<i>annual budget, cited by Grand Jury as from 2022 CA State Controller’s Office</i>)	\$298,521 (<i>“Total Operating Incomes” – Rate Analysis model 0-Year, starting 1/1/23</i>)	Kern County Grand Jury report “Inyokern CSD – A Plethora of Inaction” (states “annual budget of \$392,995”) (PDF p.3) ; ICSD Water Rate Analysis Report (Table 3 row shows “\$204,089 \$298,521 ...” as Total Operating Incomes) (PDF p.40 approx.)

3.3 Inyokern Community Services District (Water and Wastewater)

The Inyokern CSD is a small special district whose operations are funded primarily through rate-based revenues derived from water and wastewater service charges. Although the District may receive limited property tax revenues under historic apportionment formulas applicable to certain special districts, such revenues constitute a minor component of overall funding and are not directly linked to new development or increases in assessed value.

If annexation and service are approved, the Project would contribute to the District through one-time connection and capacity fees and ongoing commercial service charges at adopted rates. Any infrastructure improvements necessary to serve the Project would be fully funded by the Applicant, ensuring that existing ratepayers would not experience increased costs or reduced service levels as a result of the Project. This funding structure is important in the Inyokern context because it maintains system equity by aligning incremental demand with applicant-funded infrastructure and adopted fee structures.

3.4 Social Characteristics and Demographic Profile

Based on American Community Survey (ACS) 2023 five-year estimates, the Inyokern community is characterized by a small, rural population with limited housing stock:

- Population: approximately 958 persons (ACS 2023 five-year estimate; 2020 Decennial Census figure is 988 – see Section 5.4)
- Households: approximately 407
- Housing units: approximately 496
- Median household income: approximately \$68,373 (ACS 2023 five-year estimate; more current Census Bureau 2024 estimate of \$72,292 is used in the EJ analysis – see Section 5.4)
- Population below the poverty level: approximately 22.5 percent (U.S. Census Bureau 2024b; consistent with Section 5.4 and Section 4.15)

Residents rely on Ridgecrest and the Indian Wells Valley for higher-order services, employment opportunities, retail, and medical facilities. The community context is therefore best characterized as rural and service-linked to nearby regional centers rather than an isolated self-contained employment/housing market.

3.5 Employment and Unemployment Conditions

Employment conditions are evaluated at the Kern County and sub-regional level. Appendix SEJ-B provides detailed unemployment data derived from the California Employment Development Department (EDD) and the U.S. Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) program, including a five-year historical trend and the most recent annual average available at the time of filing.

3.6 Availability of Skilled Labor

The Project's construction workforce requirements are consistent with the availability of unionized skilled trades within Kern County and the broader Southern and Central California labor market. Construction of a data center campus requires civil, structural, electrical, mechanical, controls/commissioning, and safety/supervision functions commonly available through established trade hiring hall structures and regional contracting networks.

Specialized commissioning and OEM personnel are expected to be drawn from regional or statewide sources on a temporary basis. This is typical of advanced industrial facilities and

does not imply a shortage of local labor; rather, it reflects the specialized nature of vendor-specific startup and integration services.

Permanent operations positions would be filled through a combination of local, regional, and specialized recruitment, with small staffing levels that do not create meaningful labor market displacement effects.

3.7 Housing Availability and Vacancy

A planning-level vacancy estimate based on ACS data indicates approximately 18 percent vacancy within Inyokern. However, due to the small absolute number of housing units, the local housing market has limited capacity to absorb temporary demand. Accordingly, short-term construction-related lodging demand is expected to be accommodated primarily within the Ridgecrest area rather than resulting in new housing development in Inyokern.

This distinction between percentage vacancy and absolute unit availability is important: even moderate vacancy rates can correspond to limited practical supply in small rural communities, and project planning therefore appropriately assumes reliance on regional lodging supply.

3.8 Utilities and Public Services: Providers, Capacity, Standards, Use Levels, and Planned Expansion

Utilities and public services serving the Project include water and wastewater, solid waste disposal, fire protection, law enforcement, emergency medical services, schools, and other community facilities. Infrastructure would be sized to meet project-serving demand only and would not create excess capacity that could induce off-site growth.

Table SEJ-A2. Utilities and Public Services

Service Area	Anticipated Provider	Capacity/Standard Metric	Current Use Level (if published)	Planned Expansion/Capital Plan (if applicable)	Project Demand Discussion
Water Supply (Potable / Industrial)	Inyokern CSD (or successor/provider if consolidation/annexation occurs)	Public water system context and constraints documented by State Water Board; consolidation communications identify system characteristics and	Not consistently published in a single “use level” metric in public sources (e.g., MGD/peak day).	Consolidation actions and milestones documented by State Water Board; continued compliance planning reflected in public materials.	Construction: temporary potable + dust-control managed through onsite BMPs; metered service and/or hauled water as needed. Operations: Project pays connection/capacity fees + ongoing commercial rates. Applicant funds all project-serving improvements (mains/storage/pressure/fire-flow

Service Area	Anticipated Provider	Capacity/Standard Metric	Current Use Level (if published)	Planned Expansion/Capital Plan (if applicable)	Project Demand Discussion
		compliance considerations.			upgrades as required) so no burden to existing ratepayers.
Wastewater / Sewer Collection & Treatment	Inyokern CSD (or permitted alternative consistent with SPPE project description)	District-level wastewater capacity metrics are not reliably available as a single public "design capacity" figure; should be confirmed via service letter/permit records for final filing.	Not publicly compiled for the district in a standardized format.	Not publicly compiled in a single capital plan source (placeholder).	Construction: portable sanitation and/or temporary connections per permitting. Operations: flows are commercial/industrial; final pathway must match SPPE project description. Any lift station, force main, pretreatment, or capacity improvements would be Applicant-funded and conditioned through permits/service letters.
Solid Waste / Recycling / Organics	Kern County franchise hauler(s) serving unincorporated areas; disposal at permitted regional facilities	Service provided through County franchise/contract framework; compliance implemented through haulers and local programs.	"Capacity" handled via service contracts + permitted disposal infrastructure; not typically published as a capacity number for CEQA.	N/A (service model is contract/franchise).	Construction: debris hauled by licensed contractors; implement construction waste management/diversion program. Operations: routine office/industrial waste with recycling/organics program via franchise hauler; volumes modest; no growth-inducing effect.
Fire Protection / Emergency Response	Kern County Fire Department (local station coverage in/near Inyokern)	Station-based emergency response availability; public listings indicate continuous service (planning proxy).	Response time standards are typically not published at the station level; Appendix SEJ-C should document mapped travel time/site-to-station.	Not identified in a single public capital plan source for the local station (placeholder).	Construction: fire prevention plan, hot work controls, and responder coordination. Operations: life-safety systems, fire access, hazardous materials procedures, and 24/7 security reduce response burden; Applicant funds any project-driven fire-flow/access improvements.
Law Enforcement	Kern County Sheriff's Office – Ridgecrest Substation	Service area explicitly includes Inyokern; substation provides regional law enforcement coverage.	Staffing/response standards are not typically published as enforceable project-level "standards"; mapped travel time can be provided in SEJ-C.	N/A	Construction: traffic control + site security reduce calls-for-service. Operations: controlled access, monitoring, and emergency communication protocols reduce incremental demand.
EMS System Oversight (Standards)	Kern County Public Health – EMS Agency	County EMS Agency sets/enforces EMS system standards and quality improvement.	Not applicable as "use level."	N/A	Construction + Operations: site emergency planning aligns with county EMS protocols; onsite first-aid/AED coverage reduces offsite EMS utilization.
Ambulance Transport	Liberty Ambulance (regional provider noted by RRH)	24/7 emergency medical transport service availability (provider statement).	Not applicable.	N/A	Construction: pre-plan routes and access points; onsite medical response protocols. Operations: small workforce limits demand; maintain clear addressing/wayfinding for responders.

Service Area	Anticipated Provider	Capacity/Standard Metric	Current Use Level (if published)	Planned Expansion/Capital Plan (if applicable)	Project Demand Discussion
Hospital / Emergency Department	Ridgecrest Regional Hospital (RRH)	24/7 ED availability; facility describes emergency care services (planning proxy).	Not applicable.	N/A	Construction: designate nearest ED, routes, and escalation protocols in emergency plan. Operations: small workforce keeps incremental demand minimal; implement occupational health/incident protocols.
Schools (K-12)	Sierra Sands Unified School District (SSUSD)	District profile provides enrollment reporting (planning proxy for system scale).	4,205 students (SY 2024-25; per SSUSD Enrollment Projections 2024 – see Table SEJ-A3).	Not applicable (Project includes no housing).	Construction + Operations: no residential component; negligible enrollment impact expected. Project pays statutory school facilities fees at permitting (fee schedule cited in fiscal appendix).

3.9 School District Setting: Enrollment and Projected Enrollment by Grade Groupings

Appendix B requires that, for projects not located in major metropolitan areas, the application include current enrollment and yearly expected enrollment for each school district within the service area, grouped by grade categories, for the duration of construction. Because the RBIDC Project does not include residential development, the Project is not expected to induce measurable enrollment increases; however, the baseline and projected enrollment table should still be provided for completeness.

Table SEJ-A3. School Enrollment Baseline and Projected Enrollment by Grade Groupings (Construction Duration)

School District	School Year	K-5 Enrollment	6-8 Enrollment	9-12 Enrollment	Total Enrollment	Source
Sierra Sands USD	SY 2024-2025	1,818	987	1,400	4,205	SSUSD Enrollment Projections 2024
Sierra Sands USD	SY 2025-2026	1,811	996	1,405	4,212	SSUSD Enrollment Projections 2024
Sierra Sands USD	SY 2026-2027	1,802	1,027	1,409	4,238	SSUSD Enrollment Projections 2024
Sierra Sands USD	SY 2027-2028	1,821	1,052	1,367	4,240	SSUSD Enrollment Projections 2024
Sierra Sands USD	SY 2028-2029	1,828	1,034	1,394	4,256	SSUSD Enrollment Projections 2024

4.0 Socioeconomic Impacts

4.1 Construction Workforce Characteristics and Labor Sourcing

For purposes of Appendix B analysis, “local” workers are defined as those residing within Kern County and the East Kern/Indian Wells Valley commuting shed who are able to commute daily to the Project site without relocating households. This definition is consistent with how construction workforce impacts are typically evaluated for rural communities with small housing inventories and strong regional commuting patterns.

Because the Applicant intends to utilize primarily local union labor, household relocation associated with construction is expected to be minimal (approximately 0 to 2 percent of the peak workforce). Non-local specialized personnel would be present only for limited durations and would rely on short-term lodging rather than permanent housing. This approach materially reduces growth-inducing effects and minimizes housing market pressure.

Table SEJ-1. Monthly Construction Workforce (Total On-Site Craft Workers)

Month	Workers	Month	Workers	Month	Workers	Month	Workers
1	80	13	342	25	442	37	242
2	114	14	378	26	424	38	226
3	148	15	414	27	407	39	211
4	182	16	449	28	389	40	195
5	216	17	485	29	371	41	180
6	250	18	521	30	353	42	164

Month	Workers	Month	Workers	Month	Workers	Month	Workers
7	250	19	556	31	335	43	149
8	270	20	592	32	318	44	133
9	290	21	542	33	300	45	118
10	310	22	492	34	282	46	102
11	330	23	442	35	264	47	87
12	350	24	392	36	242	48	72

Table SEJ-2. Representative Occupational Mix by Phase (Planning-Level)

Phase	Civil	Structural	Electrical	Mechanical	Controls/Comm.	Supervision
Early Civil	40%	25%	10%	10%	0%	15%
Vertical/MEP	10%	25%	25%	25%	5%	10%
Commissioning	5%	10%	30%	25%	20%	10%

Table SEJ-2A. Phase Month Ranges Applied for Monthly Occupational Allocation (Planning-Level Assumption)

Phase Applied	Months Applied	Basis
Early Civil mix	Months 1–6	Early civil/sitework-dominant period
Vertical/MEP mix	Months 7–24	Primary structural + MEP installation period (overlapping activities)
Commissioning mix	Months 25–30	Integration/testing/startup-dominant period

Phase Applied	Months Applied	Basis
Closeout/Demobilization mix	Months 31-48	Closeout staffing with reduced craft intensity; mix shown in Table SEJ-1A

Table SEJ-1A. Monthly Construction Workforce by Occupational Category

(Counts are rounded; supervision column adjusted to match monthly totals.)

Month	Total	Civil	Structural	Electrical	Mechanical	Controls/Comm.	Supervision
1	80	32	20	8	8	0	12
2	114	46	28	11	11	0	18
3	148	59	37	15	15	0	22
4	182	73	46	18	18	0	27
5	216	86	54	22	22	0	32
6	250	100	62	25	25	0	38
7	250	25	62	62	62	12	27
8	270	27	68	68	68	14	25
9	290	29	72	72	72	14	31
10	310	31	78	78	78	16	29
11	330	33	82	82	82	16	35
12	350	35	88	88	88	18	33
13	342	34	86	86	86	17	33
14	378	38	94	94	94	19	39
15	414	41	104	104	104	21	40
16	449	45	112	112	112	22	46
17	485	48	121	121	121	24	50
18	521	52	130	130	130	26	53

Month	Total	Civil	Structural	Electrical	Mechanical	Controls/Comm.	Supervision
19	556	56	139	139	139	28	55
20	592	59	148	148	148	30	59
21	542	54	136	136	136	27	53
22	492	49	123	123	123	25	49
23	442	44	110	110	110	22	46
24	392	39	98	98	98	20	39
25	442	22	44	133	111	88	44
26	424	21	42	127	106	85	43
27	407	20	41	122	102	81	41
28	389	19	39	117	97	78	39
29	371	19	37	111	93	74	37
30	353	18	35	106	88	71	35
31	335	17	34	84	84	34	82
32	318	16	32	80	80	32	78
33	300	15	30	75	75	30	75
34	282	14	28	70	70	28	72
35	264	13	26	66	66	26	67
36	242	12	24	60	60	24	62
37	242	12	24	60	60	24	62
38	226	11	23	56	56	23	57
39	211	11	21	53	53	21	52
40	195	10	20	49	49	20	47
41	180	9	18	45	45	18	45
42	164	8	16	41	41	16	42

Month	Total	Civil	Structural	Electrical	Mechanical	Controls/Comm.	Supervision
43	149	7	15	37	37	15	38
44	133	7	13	33	33	13	34
45	118	6	12	30	30	12	28
46	102	5	10	26	26	10	25
47	87	4	9	22	22	9	21
48	72	4	7	18	18	7	18

Table SEJ-1B. Construction Workforce Summary Metrics (Derived from Table SEJ-1)

Metric	Value
Peak monthly workforce	592 workers
Average monthly workforce	~300 workers
Total job-months (sum of monthly totals)	14,401
Total job-years (job-months / 12)	~1,200 job-years (arithmetic total from manpower curve; see Table SEJ-11 for IMPLAN-modeled direct figure of ~1,223)

4.2 Population Change and Housing Effects

Construction-related population increases would be temporary and reversible, consisting primarily of daily commuters and short-term lodging users. Because household relocation is expected to be minimal (0–2% of peak workforce), direct population increase attributable to construction is not expected to meaningfully change local population totals.

With a permanent workforce of only 30 to 60 employees, operational population increases would be minimal and would not materially affect regional housing demand. To the extent any operations staff are recruited from outside the region, the small workforce size and

regional housing availability (Ridgecrest/Indian Wells Valley) indicate the Project would not create substantial housing market pressure.

Table SEJ-3. Population Change Screening

Phase	Population Effect	Housing Effect
Construction	Temporary	Lodging-based
Operations	Minimal	No new demand
Demobilization	Reversible	Demand ends

4.3 Utilities and Public Services Impacts; Standards, Response Times, and Public Costs

Incremental demand on utilities and public services would be limited and consistent with that of other industrial facilities, largely because the Project does not include residential uses and the permanent workforce is small. The primary period of increased service interaction is anticipated during construction, when a temporary workforce is present and construction traffic and safety planning are necessary.

Emergency response services would be supported through site-specific emergency planning measures, including coordination with local responders and on-site first-aid and security protocols. Standard project commitments typically included for industrial construction include: (1) an Emergency Response Plan coordinated with local responders, (2) on-site AED/first-aid provisions and training, (3) construction traffic management and incident response protocols, and (4) 24/7 site security during operations.

Table SEJ-4. Public Services and Utilities Impact Screening

Service	Effect	Basis
Law enforcement	Minimal	Low on-site population
Fire protection	Limited	Industrial design standards
EMS / medical	Minimal	No residential population
Schools (SSUSD)	Minimal	No housing

Service	Effect	Basis
Water / wastewater	Limited	Project-serving only
Roads	Temporary	Construction traffic

Table SEJ-C1. Response Time / Travel Time Exhibit Summary

Service	Nearest Facility / Provider	Address	Approx. Distance (miles)	Approx. Travel Time (minutes)	Notes
Fire / Emergency Response	Kern County Fire Department – Station 83 (Inyokern)	6919 Monache Mountain Ave., Inyokern, CA 93527	Single-digit minutes (planning-level; in-community location).	Station is physically located in Inyokern; final exhibit should include a mapped route from the Project entrance to Station 83 with distance/time under normal conditions.	Address and 24/7 operating hours shown in 211LA agency profile.
Law Enforcement	Kern County Sheriff’s Office – Ridgecrest Substation	128 E. Coso Ave., Ridgecrest, CA 93555	14 minutes to Ridgecrest (planning proxy)	KCSO identifies Ridgecrest Substation as serving Inyokern; final exhibit should provide site-to-substation drive time and primary response route.	KCSO Ridgecrest Substation address and service area narrative.
Ambulance Dispatch / Transport	Liberty Ambulance (Ridgecrest service provider)	350 E Ridgecrest Blvd, Ridgecrest, CA 93555	~14 minutes to Ridgecrest (planning proxy)	Liberty Ambulance is identified as the ambulance provider affiliated with RRH; final exhibit should map site-to-ambulance base or dispatch coverage assumptions if provided by EMS provider.	Liberty Ambulance identified by RRH (service relationship). Address from NPI profile listing.
Hospital / Emergency Department (ED)	Ridgecrest Regional Hospital (RRH) – Emergency Department	1081 N China Lake Blvd, Ridgecrest, CA 93555	~14 minutes to Ridgecrest (planning proxy)	RRH is the primary regional hospital; final exhibit should include mapped route from Project access point to RRH ED entrance (distance/time), plus alternative routes if applicable.	RRH address on Contact page. Inyokern - Ridgecrest driving time proxy (14 min / 10.1 mi).

Service	Nearest Facility / Provider	Address	Approx. Distance (miles)	Approx. Travel Time (minutes)	Notes
Regional Travel-Time Proxy (community-to-city baseline)	Inyokern → Ridgecrest (baseline routing proxy used for planning-level Exhibit C)	N/A	~14 minutes / 10.1 miles		Used as a conservative planning-level proxy for Ridgecrest-based services until the Project-specific route map is produced (Appendix SEJ-C final exhibit).

Public Service Costs.

The Project is not expected to require expansion of public service systems funded by existing residents because it does not add residential population and has limited permanent staffing. Where costs are incurred, they are typically addressed through standard permitting, inspections, and service charges. Utility infrastructure required to serve the Project would be applicant-funded, and ongoing utility service is paid through adopted commercial rates.

4.4 School District Impacts and Applicable School Impact Fees

Because the Project does not include residential development and permanent staffing levels are limited, project-related school enrollment increases would be negligible. The Project would pay all applicable statutory school facilities fees at the time of building permit issuance.

Table SEJ-9. School Facilities Fee Estimate (Planning-Level)

School District	Fee Type	Applicable Rate (\$/sf)	Estimated Chargeable Area (sf)	Estimated Fee Amount	Payment Timing
Sierra Sands Unified School District (SSUSD)	Statutory School Facilities Fee – Commercial/Industrial (Level 1)	\$0.78 – \$0.87	800,000 – 1,200,000	\$624,000 – \$1,044,000	At building permit issuance (may be phased by building)

4.5 Payroll, Local Spending, and Fiscal Effects

Construction of the Project would generate substantial payroll and local spending, resulting in short-term economic benefits to the region. Estimated construction payroll

ranges from approximately \$110 million to \$170 million, while annual operations payroll is estimated at approximately \$3 million to \$12 million. These payroll ranges reflect prevailing wage labor markets and the skill mix required for industrial construction and data center operations.

Appendix B also requires disclosure of expenditures for locally purchased construction and operations materials. At a planning level, local expenditures consist primarily of (1) payroll paid to workers residing within Kern County and the regional commuting shed, (2) local and regional purchases such as civil materials, concrete/aggregate, hauling, equipment rental, fuel, temporary facilities, security, and certain professional services, and (3) smaller ongoing operational purchases such as maintenance services, consumables, and local vendor contracts. Major electrical and IT equipment is commonly procured from outside the county and may not generate local taxable transactions depending on procurement strategy.

Table SEJ-5. Fiscal Impact Summary

Category	Effect	Notes
Property tax	Long-term positive	High assessed value
Sales/use tax	Temporary positive	Procurement dependent
Public service costs	Minimal	Low service demand
Net fiscal balance	Favorable	Positive ratio

Table SEJ-6. Local Spending Summary

Phase	Local/Regional Spending
Construction	\$300M-\$600M (planning-level)
Operations	Ongoing services

Table SEJ-6A. Local Purchases and Expenditures (Construction and Operations) – Appendix B Disclosure Table (Planning-Level)

Category	Construction Phase (Range)	Operations Phase (Annual Range)	Notes
Total Project Capital Cost (ROM)	\$838.9M	N/A	Project ROM total for 99 MW campus (basis for all procurement split assumptions).
Local/Regional Purchases – Total	\$300M – \$600M	\$4.5M – \$20M/yr	“Local/regional” reflects Kern County/East Kern spend capture (payroll + local goods/services). Ranges reflect uncertainty in procurement plan and vendor locations; aligns with typical data center cost structure where major electrical/cooling equipment is often sourced outside the county.
Construction Payroll (local/regional labor share)	\$110M – \$170M	N/A	Planning-level union craft payroll range consistent with project job-years and prevailing wage assumptions; labor intensity is within published data center construction workforce benchmarks.
Local/Regional Non-Payroll Purchases & Services	\$190M – \$430M	\$1.5M – \$8M/yr	Construction: calculated as Local Total minus Payroll (supports Appendix B “local purchases”). Includes local/regional: civil materials, concrete/aggregate, trucking/hauling, equipment rental, fuel, fencing, temp facilities, SWPPP, security, local professional services. Operations: local service contracts + consumables + routine vendors (security/janitorial/landscape/maintenance/waste hauling).
Non-Local Procurement & Expenditures (remainder of capex)	\$238.9M – \$538.9M	N/A	Balance of capex not expected to be local: major electrical (switchgear/UPS/transformers), cooling plant equipment, controls, generators, IT/network equipment, OEM commissioning. Typical data center cost breakdown indicates electrical systems are a large share of total cost (often the largest component), supporting the non-local remainder concept.
Operations Payroll (direct)	N/A	\$3M – \$12M/yr	Based on 30–60 permanent staff with role-mix wages. Published benchmarks indicate hyperscale campuses can operate with relatively low staffing intensity (FTE per MW).
Operations Contract Services (local/regional)	N/A	\$1M – \$5M/yr	Security guards, janitorial, landscaping, routine maintenance vendors, waste hauling, minor repairs; varies by operator model and security posture.
Operations Local Goods & Services (non-labor)	N/A	\$0.5M – \$3M/yr	Consumables, small parts, local vendors, minor replacements, office supplies, local professional services; excludes major IT refresh that is often centrally procured.

4.6 Capital Cost, Sales Taxes, and Property Taxes

Appendix B requires disclosure of capital cost (plant and equipment) and estimates of sales and property taxes generated. Because taxable transaction location and assessor valuation are determined by separate processes, the values below are disclosed as planning-level ranges for SPPE review.

Table SEJ-10. Capital Cost, Sales Tax, and Property Tax – Planning-Level Disclosure

Item	Planning-Level Value	Notes/Assumptions
------	----------------------	-------------------

Total Capital Cost (Plant and Equipment) – ROM	\$838,900,000	ROM capital cost for the 99 MW campus (planning-level; final cost varies with scope, procurement, escalation, and phasing).
Local Sales/Use Tax Rate (Unincorporated Kern County)	8.25%	CDTFA published rate for Kern (Unincorporated Area) effective January 1, 2026 (rate to be applied at time of taxable transactions).
Taxable Local Purchases (Construction Period)	\$30M – \$90M	Planning-level estimate of the subset of construction purchases that are (a) taxable and (b) sourced in a way that generates local sales/use tax (major electrical/IT equipment and many large packages often procured outside the local area and/or treated differently for tax situs).
Estimated Construction-Period Sales/Use Tax	\$2.5M – \$7.4M	Calculated as Taxable Local Purchases × 8.25% → (\$30M×0.0825=\$2.475M) to (\$90M×0.0825=\$7.425M). Local rate basis per CDTFA.
Illustrative Assessed Value Range (Operations Year)	\$500M – \$900M	Planning-level assessed value range used for disclosure; final assessed values determined by the Kern County Assessor consistent with applicable rules (land vs. improvements vs. taxable personal property; Prop 13 framework).
Property Tax Rate Assumption (Ad Valorem)	~1.0% base + voter-approved debt (TRA-dependent)	Prop 13 sets a 1% general levy and allows additional rates for voter-approved indebtedness; total rate varies by Tax Rate Area (TRA). Kern County publishes TRA-specific tax rates in its annual rate book.
Illustrative Annual Property Tax (Order of Magnitude)	~\$5M – \$9M/year	Calculated at ~1% of the illustrative assessed value range (exclusive of any special assessments). Final annual tax will depend on the site’s specific TRA rate, final assessed value allocation, and applicable exemptions/assessments.

4.7 Direct, Indirect, and Induced Income and Employment Effects

Appendix B requires discussion of direct, indirect, and induced income and employment effects. Direct effects include on-site construction and operations employment associated with the Project. Indirect effects occur through the Project’s supply chain (materials, equipment, services), while induced effects occur through household spending by employees whose income is supported by the Project.

Direct construction effects are represented by the monthly workforce totals presented in Table SEJ-1 and the occupational allocations presented in Table SEJ-1A. Direct operational effects are represented by the permanent operations staffing estimate (30–60 employees) and associated contract service support as needed.

Indirect and induced effects can be quantified using an input-output model (e.g., IMPLAN) at the county or multi-county geography. If the Applicant elects to include modeled results in the SPPE filing, the model version, geography, multipliers, and dollar year should be

documented in Appendix SEJ-D and summarized in Table SEJ-11 below. If modeled results are not included, qualitative disclosure is still provided herein based on standard economic effect pathways.

Table SEJ-11. Direct, Indirect, and Induced Effects

Phase	Metric	Direct Effects	Indirect Effects	Induced Effects	Notes
Construction (48-month total)	Employment (job-years)	~1,223	~295	~222	Direct job-years from project manpower curve. Indirect + induced derived using a total employment multiplier of ~1.42 (Kern County construction IMPLAN proxy), allocating indirect vs. induced proportionally.
Construction (48-month total)	Labor Income	\$110M – \$170M	~\$18M – \$28M	~\$14.5M – \$22.3M	Direct payroll from prevailing wage assumptions. Indirect + induced labor income estimated using a total labor income multiplier of ~1.30 (Kern County construction proxy), apportioned between indirect and induced effects.
Construction (48-month total)	Total Economic Output (context)	—	—	—	Construction output effects may be disclosed optionally; Kern County construction output multiplier is approximately 1.43 (total/direct). Output not required for Appendix B but included here for context if desired.
Operations (annual)	Employment (jobs)	30 – 60	~28 – 55	~19 – 40	Direct permanent staffing assumption. Total employment derived using a total employment multiplier of ~2.58 (IMPLAN-validated data center benchmark). Indirect and induced components split proportionally.
Operations (annual)	Labor Income	\$3M – \$12M	~\$1.9M – \$7.6M	~\$1.5M – \$6.1M	Direct payroll from operations staffing assumptions. Indirect + induced labor income estimated using a total labor income multiplier of ~2.14 (data center benchmark), apportioned between indirect and induced effects.
Operations (annual)	Total Economic Output (context)	—	—	—	Optional disclosure: benchmark data center output multiplier reported at approximately 2.09 (total/direct). Output effects are not required for Appendix B compliance.

5.0 Environmental Justice Analysis

5.1 Environmental Justice Definition and Context

The State of California defines Environmental Justice (EJ) as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies” (California Government Code Section 65040.12). “Fair treatment” means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations and policies. This

analysis addresses public health risks and EJ considerations related specifically to the Inyokern Census Designated Place (CDP) area.

5.2 Project Location and Description (EJ Study Area)

The Project is located in the eastern high desert region of Kern County in the unincorporated community of Inyokern, as shown in Figures 1–2. The proposed data center site is located between U.S. Route 395 (US 395) to the east and North Brown Road to the west. The data center is located north of Inyokern Road (State Route 178 [SR 178]), while the SCE substation and aboveground transmission lines are located south of SR 178.

The Project proposes to construct and operate a continuously operational 99 MW Tier III hyperscale data center and associated infrastructure, including a project-owned substation that interconnects with Southern California Edison’s existing Inyokern substation. The data center would be approximately 238,000 square feet, single-story, with a maximum height of 30 feet, and would contain six modular data suites on an approximately 50-acre site.

The Project site is within the Inyokern Specific Plan with a map code designation of 7.2/2.5 (Service Industrial/Flood Hazard), is classified within the M-2 (Medium Industrial) zone district, and has been determined to comply with General Plan, land use, zoning, and development requirements for industrial use.

5.3 Methodology

5.3.1 CalEnviroScreen 4.0

CalEnviroScreen 4.0 is a screening tool developed by the California Office of Environmental Health Hazard Assessment (OEHHA) and used by CalEPA to identify disadvantaged communities in California. CalEnviroScreen uses 21 indicators to evaluate pollution burden and population characteristics for census tracts and calculates an overall score and percentile. Census tracts in the top 25 percent of overall CalEnviroScreen scores (percentiles 75–100) are identified as disadvantaged communities by CalEPA.

5.3.2 SB 535 Disadvantaged Communities

SB 535 tasked CalEPA with identifying disadvantaged communities for purposes of targeting investments to improve public health, quality of life, and economic opportunity. CalEPA’s designation includes census tracts meeting one or more criteria, including: (1) highest 25 percent of CalEnviroScreen 4.0 overall scores; (2) highest 5 percent cumulative

pollution burden where overall scores are unavailable; (3) tracts identified as disadvantaged in the 2017 designation; and (4) lands under the control of federally recognized Tribes.

5.4 Environmental Justice Setting and Vulnerability Indicators (Inyokern CDP)

This section summarizes indicators relevant to EJ sensitivity in the Inyokern CDP.

Population. Kern County had a population of 909,235 (2020 Decennial Census), and the Inyokern CDP has a total population of 988.

Race and Ethnicity. The largest racial/ethnic group in Inyokern CDP is White (67.5%). Other groups include Hispanic or Latino (16%), Two or More Races (10.2%), Asian (2.7%), Native American (2.0%), Black or African American (0.9%), Native Hawaiian or other Pacific Islander (0.9%), and Other Race (0.5%).

Age. Approximately 20.5% of residents are newborn–19 years, 67.8% are 20–64, and 11.5% are 65 and over. Younger and older populations are typically more susceptible to air pollution and other environmental stressors, which is relevant when evaluating potential EJ concerns.

Income, Poverty, and Unemployment. Median household income in Inyokern CDP is \$72,292. The percentage of residents in poverty is 22.5%, which is higher than Kern County (18%) and the United States (12.1%). The unemployment rate is reported at 12.4%, compared to Kern County (8.9%) and the United States (2.9%) (as cited in the EJ v2 document).

Community Health Indicators (CalEnviroScreen).

- **Asthma:** estimated 71 emergency department visits per 10,000 people; asthma percentile 79 (higher than 79% of California census tracts).
- **Cardiovascular Disease:** 23.70 emergency department visits per 10,000 people for heart attack; percentile 96 (higher than 96% of California census tracts).

These indicators inform sensitivity but do not, by themselves, demonstrate that the Project causes or contributes to these conditions.

5.5 CalEnviroScreen and SB 535 Disadvantaged Community Determinations

The Inyokern CDP has a CalEnviroScreen 4.0 percentile score of 66, which is below the 75th percentile threshold for disadvantaged community classification. The SB 535

Disadvantaged Communities Map also indicates that Inyokern is not designated as a disadvantaged community.

5.6 EJ Impact Discussion and Conclusion (Disproportionately High and Adverse Effects)

The purpose of an EJ evaluation is to identify and address potential disproportionately high and adverse human health or environmental impacts on minority and low-income populations. While the indicators summarized above show that residents experience certain health and socioeconomic stressors, the proposed Project is located in an area not classified as a disadvantaged community under CalEnviroScreen 4.0 or SB 535 criteria and is not anticipated to create significant adverse human health impacts. Therefore, construction and operation of the Project would not involve disproportionately high and adverse human health impacts on low-income or minority populations.

To ensure EJ conclusions remain supported as design and studies are finalized, the EJ determination should be confirmed through the Project’s technical analyses (e.g., air quality, noise, traffic, hazardous materials, and utilities), with any required controls/mitigation incorporated into construction and operations.

Table SEJ-7. Environmental Justice Impact Screening

Technical Area	EJ Effect	Basis
Population & Housing	None	No displacement
Employment & Income	Beneficial	Construction jobs
Air Quality	Mitigated	Modeled compliance
Noise	Mitigated	Design and controls
Traffic	Temporary	Construction management
Public Services	None	Minimal demand

6.0 Growth-Inducing Impacts

The Project does not include residential uses, does not provide excess infrastructure capacity, and employs a small permanent workforce. While the Project may contribute to

general economic activity, it would not directly induce population growth or unplanned development. Any secondary development that may occur in the broader region would be dependent on market conditions and separate discretionary approvals and therefore is not considered a direct growth-inducing effect of the Project.

Table SEJ-8. Growth-Inducing Impact Screening

Mechanism	Would It Occur?	Basis
Infrastructure-induced growth	No	Project-serving only
Population growth	No	Small workforce
Housing pressure	No	Temporary labor
Secondary development	Unlikely	Market-dependent

7.0 Conclusion

This study demonstrates that the RBIDC Project would generate substantial economic benefits while avoiding significant adverse socioeconomic, environmental justice, or growth-inducing impacts. The Project’s construction effects are temporary and reversible, with minimal household relocation expected due to the use of local/regional union labor. Operational staffing levels are small, the Project does not include housing, and utility improvements required to serve the Project would be funded by the Applicant, thereby limiting growth inducement and avoiding financial burdens on existing ratepayers.

8.0 Additional Reference Tables

Table SEJ-9A - Race/Ethnicity Demographics

Race/Ethnicity Demographics	
Race	Inyokern CDP
White	67.5%
Hispanic or Latino	16%
Two or More Races	10.2%
Asian	2.7%
Native American	2.0%
Black or African American	0.9%

Native Hawaiian or other Pacific Islander	0.9%
Other Race	0.5%

Table SEJ-9B – Age Breakdown

Age Breakdown

Age Range (Years)	Inyokern CDP
Newborn – 19 years	20.5%
20 – 64	67.8%
65 and over	11.5%

Source: (U.S. Census Bureau, 2024d)

Table SEJ-10A – Income, Poverty and Unemployment

Income, Poverty and Unemployment

	Inyokern CDP	Kern County	United States
Median Household Income	\$72,292	\$70,997	\$81,604
Population in Poverty	22.5%	18%	12.1%
Unemployment Rate	12.4%	8.9%	2.9%

Source: (U.S. Census Bureau, 2024b; U.S. Census Bureau, 2024c)

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RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix J, K

Subsection(s):

- K.1 - Soil & Geology Report



**PRELIMINARY SOIL AND GEOLOGY EVALUATION
PROPOSED DATA CENTER
PARCELS 2, 3, AND 4 OF PARCEL MAP NO. 4949
NORTH OF HIGHWAY 178 AND WEST OF HIGHWAY 395
INYOKERN, KERN COUNTY, CALIFORNIA**

BSK PROJECT G25001225

PREPARED FOR:

**QK, INC.
5080 CALIFORNIA AVENUE
SUITE 220
BAKERSFIELD, CA 93309**

December 12, 2025

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1.0 INTRODUCTION

This report presents the results of a preliminary soil and geologic evaluation for the proposed Data Center development in Kern County, California (Site). The project encompasses Parcels 2, 3, and 4 as shown on Parcel Map No. 4949 and will include construction of a 99-megawatt (MW) Data Center on approximately 55.54 acres.

As shown on the Vicinity Map (Figure 1), the Site is located directly north of Highway 178 (W. Inyokern Road), approximately 0.4 miles west of the Highway 395 on-ramp and immediately east of Brown Road. A Chevron gas station borders the south-southwest corner of the property, and a local hardware store is situated across the street from the station. The rural community of Inyokern generally lies west of Brown Road, with scattered residences farther south and southeast of the Site. A proposed utility easement will extend from the southeastern corner of the property along the north side of W. Graff Road to the Point of Interconnection (POI) with Southern California Edison (SCE).

The surrounding area is primarily vacant land with very low population density. Existing development consists of rural access roads, scattered residential properties, producing and non-producing water wells, off-highway vehicle use areas, open-range grazing, maintenance facilities, and planned or existing meteorological towers. Several renewable energy and transmission projects are either present or permitted in the region. The City of Ridgecrest and Naval Air Weapons Station (NAWS) China Lake are located approximately seven miles east of the Site. Given the rural setting and limited surrounding development, the proposed Data Center is not expected to adversely impact existing structures or infrastructure.

BSK performed site reconnaissance on November 19, 2025, to observe site features and soil conditions relevant to this geologic evaluation. Should project design changes occur, the project engineer of record may provide additional recommendations. Based on current observations and available data, the Site is considered suitable for development from a geotechnical standpoint.

1.1 Planned Construction

The proposed Data Center will be constructed on a 55.54-acre property in Kern County, California, and developed in three phases to achieve a total electrical capacity of 99 megawatts (MW). The project will utilize modular construction methods and phased expansion to accommodate future growth and operational requirements.

Site Preparation and Earthwork:

Initial site development will include clearing, grading, and elevation adjustments to mitigate flood risk, as the property is located within FEMA Special Flood Hazard Zone A. Grading activities will be designed to direct surface water away from structures and critical infrastructure, and to achieve compliance with floodplain management requirements.

Phased Construction Approach:

- Phase 1 (0–24 months): Construction of three data suites, installation of the first transformer and generator yard, and development of supporting infrastructure for an initial capacity of 30–35 MW.
- Phase 2 (24–48 months): Expansion to 65–70 MW capacity, including additional data suites, a second transformer, and expanded cooling systems.
- Phase 3 (48–72 months): Final build-out to 99 MW, completion of all suites, full substation development, and a second generator yard.

Foundation and Infrastructure:

Each phase will require the installation of foundations suitable for heavy electrical and mechanical equipment, which may include transformers, generators, chilled-water plants, and cooling towers.

Additional Geotechnical Considerations:

- The site will be prepared to support future improvements , including standardized pads for equipment installations.
- Earthwork and grading activities will be designed to mitigate floodplain impacts.
- Construction activities will be planned to minimize disturbance to the surrounding rural environment and avoid impacts to existing structures or public facilities.
- The planned construction will utilize an onsite wastewater treatment system designed and installed in accordance with the Kern County Onsite Systems Manual: Part 1 – Siting, Design, and Construction Requirements for Onsite Wastewater Treatment Systems (OWTS) (Kern County Environmental Health Division, n.d.). Compliance with these guidelines ensures proper siting, design, and construction practices that meet local and regional regulatory requirements.

1.2 Purpose and Scope of Services

The objective of the preliminary soil and geology evaluation was to provide an initial assessment of geologic conditions and soil-related issues at the Site. BSK’s scope of services for this assessment included conducting a site reconnaissance, performing a desktop review of available geologic and geotechnical information, and preparing this report to summarize the findings and recommendations.

2.0 SITE CONDITIONS

The following sections summarize the site description, surface conditions, and preliminary groundwater information. This assessment is based on BSK’s field reconnaissance and a review of published maps and reports.

2.1 Site Description and Surface Conditions

The Site is currently undeveloped and vacant, with scattered native brush and vegetation. An existing Chevron gas station is located along Highway 178, adjacent to the south-southwest boundary of the property. According to plans provided by QK, Inc., the project includes four Assessor’s Parcel Numbers (APNs) as shown on the Site Plan (Figure 2). Three APNs comprise the proposed data center footprint,



while the fourth APN contains the utility easement extending to the point of connection:

- Western portion: APN 084-010-45 (partial)
- Middle portion: APN 084-010-44
- Eastern portion: APN 084-010-43
- Utility easement: APN 084-010-48

Regionally, the Site is in the Indian Wells Valley of Kern County, California, within the western Mojave Desert region. This high desert environment is characterized by arid conditions, low annual precipitation, and significant diurnal temperature variations. According to the USGS, the average Site surface elevation is approximately 2,430 feet.

2.2 Site Observations

BSK conducted a Site reconnaissance on November 19, 2025, to observe surface features and soil conditions. Photographs of the approximate four corners of the Site are presented on Photo Plates 1 through 5 in Appendix A.

Observations include several piles of broken concrete, asphalt, and gravel located near the south-southeast portion of the property, just north of Highway 178, as well as remnants of an old paved frontage road north of the highway. The existing asphalt along this frontage road is cracked and generally deteriorated.

The majority of the Site consists of sparse, arid-type vegetation, including small shrubs and weeds. Surface soils are primarily loose silty sand or sandy silt with occasional surface gravel.

2.3 Site Topography

The Site, located west of Brown Road and Highway 178 in Inyokern, Kern County, lies within the Indian Wells Valley in the western Mojave Desert. As shown on Figure 3, the Site elevation ranges from approximately 2,435 feet on the southern side to about 2,420 feet on the northern side, indicating a gentle northeast slope across the property.

Regional topography generally trends southeast toward the Searles Basin; however, localized drainage within the project area follows a northeast gradient. The overall grade is very mild, typically less than two percent, resulting in a nearly flat to gently sloping surface. This terrain combined with the arid high desert climate influences Site drainage and development considerations.

2.4 Site Surface Soils

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey for the Site, the following soil information is provided:

TABLE 1	
SOIL INFORMATION FROM USDA NRCS WEB SOIL SURVEY	
MOJAVE DESERT AREA, NORTHWEST PART, CALIFORNIA	
45—Typic Torriorthents and Typic Haplargids; thermic fan piedmonts	
Map Unit Setting	
<ul style="list-style-type: none"> • <i>National map unit symbol:</i> 31qlk • <i>Elevation:</i> 2,610 to 4,840 feet • <i>Mean annual precipitation:</i> 5 to 8 inches • <i>Mean annual air temperature:</i> 59 to 66 degrees F • <i>Frost-free period:</i> 220 to 310 days • <i>Farmland classification:</i> Not prime farmland 	
Map Unit Composition	
<ul style="list-style-type: none"> • <i>Typic torriorthents and similar soils:</i> 40 percent • <i>Typic haplargids and similar soils:</i> 35 percent • <i>Minor components:</i> 25 percent • <i>Estimates are based on observations, descriptions, and transects of the mapunit.</i> 	
Description of Typic Torriorthents	
Setting	
<ul style="list-style-type: none"> • <i>Landform:</i> Fan aprons • <i>Landform position (two-dimensional):</i> Summit • <i>Down-slope shape:</i> Linear • <i>Across-slope shape:</i> Linear • <i>Parent material:</i> Alluvium derived from igneous rock 	
Typical profile	
<ul style="list-style-type: none"> • <i>A - 0 to 3 inches:</i> gravelly sandy loam • <i>Ckq - 3 to 22 inches:</i> very gravelly loamy coarse sand • <i>Ck - 22 to 43 inches:</i> very gravelly coarse sand • <i>C'kq - 43 to 57 inches:</i> very gravelly coarse sand • <i>Ctkq - 57 to 61 inches:</i> very gravelly loamy coarse sand 	
Properties and qualities	
<ul style="list-style-type: none"> • <i>Slope:</i> 2 to 8 percent • <i>Surface area covered with cobbles, stones or boulders:</i> 4.0 percent • <i>Depth to restrictive feature:</i> More than 80 inches • <i>Drainage class:</i> Somewhat excessively drained • <i>Capacity of the most limiting layer to transmit water (Ksat):</i> Moderately high to high (1.42 to 2.83 in/hr) • <i>Depth to water table:</i> More than 80 inches • <i>Frequency of flooding:</i> None 	

TABLE 1	
SOIL INFORMATION FROM USDA NRCS WEB SOIL SURVEY	
•	<i>Frequency of ponding:</i> None
•	<i>Calcium carbonate, maximum content:</i> 5 percent
•	<i>Maximum salinity:</i> Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
•	<i>Available water supply, 0 to 60 inches:</i> Very low (about 2.0 inches)
Interpretive groups	
•	<i>Land capability classification (irrigated):</i> None specified
•	<i>Land capability classification (nonirrigated):</i> 7c
•	<i>Hydrologic Soil Group:</i> A
•	<i>Hydric soil rating:</i> Unranked
Description of Typic Haplargids	
Setting	
•	<i>Landform:</i> Fan remnants
•	<i>Landform position (two-dimensional):</i> Summit
•	<i>Down-slope shape:</i> Linear
•	<i>Across-slope shape:</i> Linear
•	<i>Parent material:</i> Alluvium derived from igneous and sedimentary rock
Typical profile	
•	<i>A - 0 to 2 inches:</i> fine sandy loam
•	<i>Bt - 2 to 14 inches:</i> fine sandy loam
•	<i>Btk1 - 14 to 23 inches:</i> fine sandy loam
•	<i>Btk2 - 23 to 38 inches:</i> fine sandy loam
•	<i>BCKq - 38 to 47 inches:</i> gravelly loamy sand
•	<i>Ckq - 47 to 63 inches:</i> very gravelly coarse sand
Properties and qualities	
•	<i>Slope:</i> 1 to 4 percent
•	<i>Depth to restrictive feature:</i> More than 80 inches
•	<i>Drainage class:</i> Well drained
•	<i>Capacity of the most limiting layer to transmit water (Ksat):</i> Moderately high to high (1.42 to 2.83 in/hr)
•	<i>Depth to water table:</i> More than 80 inches
•	<i>Frequency of flooding:</i> None
•	<i>Frequency of ponding:</i> None
•	<i>Calcium carbonate, maximum content:</i> 2 percent
•	<i>Maximum salinity:</i> Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
•	<i>Sodium adsorption ratio, maximum:</i> 4.0
•	<i>Available water supply, 0 to 60 inches:</i> Low (about 5.7 inches)

TABLE 1	
SOIL INFORMATION FROM USDA NRCS WEB SOIL SURVEY	
Interpretive groups	
<ul style="list-style-type: none"> • <i>Land capability classification (irrigated): 2e</i> • <i>Land capability classification (nonirrigated): 7c</i> • <i>Hydrologic Soil Group: A</i> • <i>Hydric soil rating: Unranked</i> 	
Minor Components	
Typic torripsamments	
<ul style="list-style-type: none"> • <i>Percent of map unit: 15 percent</i> • <i>Landform: Fan aprons</i> • <i>Landform position (two-dimensional): Summit</i> • <i>Down-slope shape: Linear</i> • <i>Across-slope shape: Linear</i> • <i>Hydric soil rating: Unranked</i> 	
Calcic petrocalcids	
<ul style="list-style-type: none"> • <i>Percent of map unit: 5 percent</i> • <i>Landform: Fan remnants</i> • <i>Down-slope shape: Convex</i> • <i>Across-slope shape: Linear</i> • <i>Hydric soil rating: Unranked</i> 	
Typic haplocalcids	
<ul style="list-style-type: none"> • <i>Percent of map unit: 5 percent</i> • <i>Landform: Fan remnants</i> • <i>Landform position (three-dimensional): Side slope</i> • <i>Down-slope shape: Convex</i> • <i>Across-slope shape: Linear</i> • <i>Other vegetative classification: LIMY HILL 5-7" P.Z. (030XB001NV_2)</i> • <i>Hydric soil rating: Unranked</i> 	
<p>Observations made during our field reconnaissance indicate the surface soils are primarily loose silty sand or sandy silt with occasional surface gravel.</p>	

USDA and USCS Soil maps are presented on Figures 4 and 5.

2.5 Groundwater Conditions

The Site is located within the Indian Wells Valley Groundwater Basin (Basin No. 6-54), part of the South Lahontan Hydrologic Region. This closed, internally drained basin is bounded by the Sierra Nevada to the west, the Coso Range to the north, the Argus Range to the east, and the El Paso Mountains to the south. According to the California Department of Water Resources (CDWR) Bulletin 118, groundwater occurs primarily in Pleistocene to Holocene alluvial fan and lakebed deposits. The basin contains an upper aquifer with limited yield and generally poor water quality, and a lower aquifer that provides higher yields and better water quality. Average annual precipitation is low, approximately 4 to 6 inches, consistent with the arid high desert environment (CDWR, 2003).

Data from the CDWR was reviewed for wells monitored in the vicinity of the Site. No wells with groundwater level data are located directly within the Site; however, several wells nearby provide historical groundwater information. The hydrograph for California State Well ID 26S39E30C001M is presented on Figure 6. The shallowest and deepest recorded groundwater depths for this well and other nearby wells are summarized below:

Well ID	Approx. Location	Ground Elevation (ft)	Shallowest Depth (ft)	Year	Deepest Depth (ft)	Year
356522N1178032W001	0.25 mi NE of site	2,424.78	212.0	1953	—	—
26S39E30C001M	0.57 mi WSW of site	2,429.78	210.0	1944	246.56	1979
26S39E30F001M	0.59 mi WSW of site	2,436.78	220.0	1944	248.99	1989

Groundwater depths in the vicinity of the Site have historically ranged from approximately 210 feet to nearly 249 feet below ground surface, based on records from 1944 to 1989. No recent groundwater measurements were available for these wells.

A search for nearby wells was conducted using the State Water Resources Control Board (SWRCB) GeoTracker database. The search identified a report dated July 17, 2019, for the former Beck Oil Facility located at 1109 S. Brown Road, approximately 0.40 miles southwest of the subject Site. The report indicates that the depth to groundwater beneath the Beck Oil site is approximately 275 feet. Groundwater was not encountered in soil borings drilled to a depth of 110 feet at that location.

According to the CDWR Well Completion Report Map Application, well WCR2018-008518, located at 1245 Broadway Street, approximately 0.25 miles southwest of the Site, reported a static water level of 292 feet below ground surface on April 10, 2018. The well was completed on the same date with a total depth of

596 feet and is classified as a public water supply well (CDWR, 2018).

2.6 Geology and Site Setting

According to California Geological Survey (CGS) Note 36, the Site lies within the Basin and Range geomorphic province, near its boundary with the Mojave Desert province and close to the Sierra Nevada province. The Basin and Range province is characterized by broad valleys separated by fault-block mountain ranges formed by crustal extension. These valleys typically contain thick sequences of alluvial deposits derived from surrounding highlands. The location near the Sierra Nevada and within a high desert setting contributes to an arid climate, geomorphic complexity, and regional seismic activity.

Locally, the Site is situated on the western portion of Indian Wells Valley, along the eastern flank of the Sierra Nevada. This area forms part of the western Mojave Desert physiographic province. Surface geology consists primarily of Quaternary alluvial deposits composed of sand, silt, and gravel derived from surrounding mountains. Bedrock exposures in nearby ranges include granitic rocks of the Sierra Nevada batholith and metamorphic units of Paleozoic age, with localized volcanic deposits. The region is characterized by interior drainage with lakes and playas. The region is tectonically active and influenced by the Eastern California Shear Zone, which accommodates significant strike-slip faulting. Nearby faults include the Little Lake and Airport Lake fault zones, which have produced large earthquakes in recent history, such as the 2019 Ridgecrest sequence. Although the Site is not located within an Alquist-Priolo Earthquake Fault Zone, strong ground shaking is anticipated during major seismic events in Kern County and adjacent regions. Figure 7 shows the geologic map illustrating the geology of the Site area.

3.0 GEOLOGIC/SEISMIC HAZARDS

The types of geologic and seismic hazards assessed include surface ground fault rupture, liquefaction, seismically-induced settlement, slope failure, flood hazards and inundation hazards.

3.1 Kern County General Plan Physical Constraints

According to the Kern County General Plan and FEMA mapping (Figures 8 and 9), the Site is located within a designated flood hazard Zone A, which represents areas subject to inundation by the 1-percent annual chance flood (100-year flood) without detailed base flood elevations provided. The Site is bordered by Zone D to the north and by Zone X to the west. Zone D represents areas with undetermined flood hazards, but is still considered possible and Zone X represents a 0.2% annual chance of flooding (500-year flood). The Site is not within a mapped seismic hazard zone, landslide hazard zone, or steep slope area. No other physical constraint hazard zones have been identified at the Site.

3.2 Fault Rupture Hazard Zones in California

The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code, Sections 2621 through 2630) was enacted in 1972 to reduce hazards associated with surface fault rupture. The Act prohibits construction of structures intended for human occupancy across active fault traces and requires local agencies to regulate development within designated Earthquake Fault Zones (EFZs). An active fault is

defined as one that has ruptured during the Holocene epoch, which covers approximately the last eleven thousand years. The California Geological Survey (CGS) delineates EFZs on official maps that are periodically updated.

A review of the latest CGS Earthquake Fault Zone maps and associated GIS data indicates that the subject property is not located within an Alquist-Priolo Earthquake Fault Zone as shown in Figure 10. The nearest mapped EFZ is approximately 2.6 miles east of the Site and is associated with the Little Lake Fault Zone system. Based on current mapping, no regulatory setbacks apply to the proposed development.

To confirm these findings, a site-specific geologic reconnaissance was conducted on November 17, 2025. This included a visual inspection for fault-related geomorphic features such as scarps, lineaments, and offset drainage. CGS maps, USGS fault databases, and aerial imagery were also reviewed to identify potential fault traces. No evidence of active faulting was observed within the Site boundaries.

Based on the mapping review and site-specific investigation, the proposed development complies with the requirements of the Alquist-Priolo Act and no additional fault hazard mitigation measures are warranted at this time. If future mapping or investigations identify fault-related hazards, supplemental studies such as detailed trenching may be required prior to permit issuance. The closest Earthquake Fault Zones to the Site are summarized in the table below.

Little Lake Fault Zone	2.6 miles, north-northeast
Southern Sierra Nevada Fault Zone	3.5 miles, northwest
Little Lake Fault Zone	4.3 miles, northeast
Garlock Fault Zone	15.4 miles, south
San Andreas Fault Zone	75 miles, south-southwest

3.3 State of California Seismic Hazard Zones (Liquefaction and Landslides)

Zones of Required Investigation, referred to as Seismic Hazard Zones in California Code of Regulations Article 10, Section 3722, are areas shown on official Seismic Hazard Zone Maps where site investigations are required to determine the need for mitigation of potential liquefaction and earthquake-induced landslide ground displacements.

As shown on Figure 10, there are no mapped Seismic Hazard Zones within the subject property in Inyokern, California. The nearest mapped liquefaction hazard zone is located in Rosamond approximately 60 miles southwest of the Site. Based on current mapping, no regulatory requirements for liquefaction or earthquake-induced landslide mitigation apply to the proposed development.



The absence of Seismic Hazard Zones at the Site is consistent with regional geologic conditions. Inyokern is situated within the Indian Wells Valley on alluvial fan deposits that generally exhibit coarse-grained textures and relatively deep groundwater levels. These conditions significantly reduce the potential for liquefaction. Additionally, the Site is located on gently sloping terrain with no nearby steep slopes, which minimizes the risk of earthquake-induced landslides.

Based on this review, the proposed development complies with the requirements of the Seismic Hazard Mapping Act. No additional mitigation measures related to liquefaction or earthquake-induced landslides are warranted at this time.

3.4 Slope Stability and Potential for Slope Failure

The Site and surrounding area are generally flat with very gentle gradients across the property. There are no significant natural or man-made slopes within or adjacent to the Site, and no evidence of landslides, erosion scarps, or other indicators of instability was observed during field reconnaissance. The underlying soils consist of relatively uniform alluvial deposits, which further reduce the likelihood of localized slope movement.

Based on these conditions, the potential for slope instability or slope failure at the Site is considered low. No additional mitigation measures related to slope stability are warranted for the proposed development.

3.5 Land Subsidence and Hydrocompaction Potential

Land subsidence in California generally occurs in areas where fluids such as petroleum or groundwater are withdrawn, and in arid regions where hydrocompaction of loose near-surface soils can occur. Subsidence caused by groundwater withdrawal has been documented extensively in the Central Valley and other parts of California, where excessive pumping leads to compaction of fine-grained aquifer sediments and permanent lowering of land surface elevations.

The subject property in Inyokern is located within the Indian Wells Valley Groundwater Basin, an arid region that relies heavily on groundwater for municipal and agricultural use. Although groundwater levels in the basin have declined over time, documented subsidence has primarily occurred in the southern Antelope Valley and portions of the San Joaquin Valley, where pumping rates and fine-grained aquifer systems are more pronounced. According to USGS and CDWR data, no significant subsidence zones have been mapped in the immediate vicinity of Inyokern, and the Site is not located within an area currently identified as susceptible to subsidence from petroleum or groundwater withdrawal. Therefore, subsidence due to groundwater withdrawal is not expected to impact the Site under current conditions.

Hydrocompaction is the collapse and consolidation of loose, dry, low-density soils when they become saturated with water. This process is common in arid regions where wind-deposited sediments or mudflow materials were originally placed in a moisture-deficient state. When these soils are thoroughly wetted, they can undergo significant settlement.

Preliminary evaluation indicates that soils at the Site may have some potential for hydrocompaction, which will require further assessment. A detailed geotechnical investigation will be performed once the final layout of structures is defined to confirm the presence and extent of collapsible soils.

If hydrocompaction-prone soils are encountered, mitigation measures may include over-excavation and recompaction of the affected materials or designing foundations to extend below the hydrocompaction zone. These approaches help reduce the risk of differential settlement and maintain structural integrity.

3.6 Expansive Soils

Expansive soils are fine-grained soils that contain clay minerals capable of significant volume changes with variations in moisture content. When these soils absorb water, they swell, and when they dry, they shrink. This shrink and swell cycle can cause differential movement, which may damage surface improvements such as slab-on-grade floors, pavements, and foundations.

Near-surface soils observed at the Site and mapped by the United States Department of Agriculture are primarily granular alluvial fan deposits with low clay content. These soil types generally indicate a low potential for expansive behavior. According to USDA soil survey data for Kern County and the Indian Wells Valley, the dominant soil series in the area exhibit low shrink and swell ratings, meaning expansive soils are not considered a significant hazard at this location.

Although the likelihood of expansive soils at the Site is low, a design-level geotechnical investigation will be required to confirm these conditions. Laboratory testing such as Atterberg limits, free swell tests, and moisture-density relationships will be performed to verify the absence of highly plastic clays.

If expansive soils are encountered during detailed investigation, mitigation measures may include moisture control through proper site drainage and landscaping, use of moisture barriers beneath slabs, deepened foundations to bypass active soil zones, or over-excavation and replacement with non-expansive engineered fill. These measures help reduce the risk of differential movement and maintain structural integrity.

3.7 Flooding Scour

Intermittent stream channels and arroyos in the Inyokern area can experience significant flow volumes and high velocities during short-duration, high-intensity storm events, particularly following intense rainfall (Wyckoff, 2007; CDWR, 2003).

Although evidence of scour was not observed within the Site during field reconnaissance, the potential for scour exists if structures are placed in or near active channels without adequate protection. Scour can undermine foundations and cause structural damage when concentrated flows erode supporting soils.

To minimize this risk, site development should incorporate proper drainage design and erosion control measures. Recommended practices include maintaining setbacks from natural channels, stabilizing

channel banks where necessary, and installing energy dissipation features at discharge points. Additional measures such as riprap, reinforced concrete aprons, or vegetative stabilization may be considered for areas subject to concentrated runoff.

A detailed hydrologic and hydraulic evaluation may be warranted during final design to confirm flow paths and ensure that structures are adequately protected from potential scour during extreme storm events.

3.8 Corrosion Potential

Corrosive soils can deteriorate buried metallic materials such as iron, steel, cast iron, ductile iron, galvanized steel, and dielectric-coated steel or iron if they are not properly protected. The level of protection required depends on the critical nature of the structure and the anticipated exposure conditions.

Confirmation of the corrosion potential of soils at the Site requires laboratory testing during the design-level geotechnical investigation. Recommended tests include determination of chloride and sulfate concentrations, pH, and redox potential. These parameters will help evaluate the aggressiveness of the soil environment and guide appropriate corrosion protection measures for underground utilities and structural components.

4.0 SEISMIC HAZARD ASSESSMENT

The types of seismic hazards assessed include earthquake induced ground motion, seismic induced landslides, liquefaction, and seismic induced settlement.

4.1 Seismic Sources

Figure 11 and Figure 12 present local and regional fault maps showing major faults that may influence seismic hazard at the Site. Ground motion at the Site can result from earthquakes on any of the surrounding seismic sources. To evaluate the contribution of these sources, a probabilistic seismic hazard disaggregation was performed using the USGS Earthquake Hazard Toolbox and the ASCE 7 Hazard Tool, consistent with the procedures outlined in ASCE/SEI 7-22 and adopted by the 2025 California Building Code (American Society of Civil Engineers [ASCE], 2022; U.S. Geological Survey [USGS], 2025).

Disaggregation was conducted at the Maximum Considered Earthquake (MCE) Risk-Targeted Ground Motion level, as required by ASCE 7-22 for site-specific seismic design. The analysis provides the modal magnitude, source-to-site distance, and epsilon, which represents the deviation of ground motion from the median prediction for a given magnitude and distance (ASCE, 2022). These parameters are used in probabilistic seismic hazard calculations.

Results from the USGS disaggregation indicate that the most significant contributor to hazard at the Site is a large-magnitude event on the Garlock Fault, with an extreme scenario of approximately magnitude 7.7. The modal magnitude for the Site is 5.5 Mw at distance of approximately 8.7 kilometers. These values

are appropriate for use as probabilistic input parameters in site-specific ground motion studies and are consistent with the design earthquake ground motion requirements of ASCE 7-22 (USGS, 2025).

4.2 Earthquake Ground Motion – 2025 California Building Code (ASCE 7-22)

4.2.1 Site Class

Under the 2025 California Building Code, which adopts ASCE/SEI 7-22, seismic site classification is based primarily on the average shear-wave velocity in the upper 30 meters (V_{s30}) of the subsurface. This method replaces previous alternatives such as Standard Penetration Test blow counts or undrained shear strength, which are no longer permitted for site class determination (American Society of Civil Engineers [ASCE], 2022).

Confirmation of the site class for the Site will require subsurface geophysical measurements or reliable correlations to V_{s30} . These measurements are typically obtained through surface-wave testing methods such as MASW (Multichannel Analysis of Surface Waves) or ReMi (Refraction Microtremor), which provide accurate shear-wave velocity profiles without invasive drilling (Louie et al., 2025). The design-level geotechnical investigation will include V_{s30} testing to establish the appropriate site class for seismic design.

Site class determination is critical because it directly influences the design response spectrum, seismic coefficients (S_{DS} and S_{D1}), and the Multi-Period Design Response Spectrum (MPRS) required by ASCE 7-22 for structural design (ASCE, 2022; USGS, 2025).

4.2.2 Seismic Design Criteria – 2025 California Building Code (ASCE 7-22)

The 2025 California Building Code adopts ASCE/SEI 7-22, which defines seismic ground motion based on the Risk-Targeted Maximum Considered Earthquake (MCER). The MCER represents the most severe earthquake effects considered by the code, adjusted for targeted risk, and is determined for the orientation that produces the largest horizontal ground motion response. Based on Chapter 20 of ASCE 7-22, the Site shall be classified as Site Class A, B, BC, C, CD, D, DE, E or F based on the Site soil properties.

Ground motion parameters for design are obtained using the USGS Design Ground Motion Tools or the ASCE 7 Hazard Tool, which provide risk-targeted spectral accelerations for periods of 0.2 seconds (S_s) and 1.0 second (S_1) at 5% damping. These values are then adjusted for site conditions using site coefficients and used to calculate design spectral accelerations (S_{DS} and S_{D1}) and the MPRS required by ASCE 7-22.

For preliminary planning at the Site, Default Site Conditions values are provided because our preliminary soil and geologic evaluation for this project excluded subsurface characterization and site class determination via measurement of shear wave velocities. For Default Site Conditions, the OSHPD Seismic Design Maps Tool and Chapter 16 of the 2025 CBC based on ASCE 7-22 output the most critical spectral acceleration parameters risk targeted maximum considered earthquake values from Site Classes C, CD, and D. These values were provided so that the structural engineer can develop spectral response

accelerations based on the most critical spectral response acceleration at each period for each of these Site Classes.

The actual seismic design parameters will require confirmation of site class through subsurface testing and V_{s30} measurements during the design-level geotechnical investigation. Site class determination is critical because it directly affects seismic coefficients and the design response spectrum.

Table 4 and Table 5 below present the spectral acceleration parameters produced for an assumed Default Site Conditions by OSHPD Seismic Design Maps Application and Chapter 16 of the 2025 CBC based on ASCE 7-22.

TABLE 4 SPECTRAL ACCELERATION PARAMETERS NORTHWEST CORNER RISK TARGETED MAXIMUM CONSIDERED EARTHQUAKE (Lat: 35.650087, Lon: -117.811197)			
Criteria	2025 CBC Value		Reference
Site Class	Default (most critical values across Site Class C, CD, and D)		ASCE 7-22 Section 11.4.2.1
MCE _R Mapped Spectral Acceleration (g)	$S_s = 1.68$	$S_1 = 0.48$	USGS Mapped Value
Site Adjusted MCE Spectral Acceleration (g)	$S_{MS} = 1.89$	$S_{M1} = 1.19$	USGS Mapped Value
Design Spectral Acceleration (g)	$S_{DS} = 1.26$	$S_{D1} = 0.79$	ASCE 7-22 Eq. 11.4.1-2
V_{s30} (m/sec)	260		https://www.seismicmaps.org/ https://ascehazardtool.org/
Site Short Period – T_s (Seconds) (for construction of the two-period design spectrum)	$T_s = 0.626$		$T_s = S_{D1} / S_{DS}$, ASCE 7-22, Section 11.3
Site Long-Period – T_L (Seconds) (for construction of the two-period design spectrum)	$T_L = 8$		USGS Mapped Value
Seismic Design Category (SDC)	D		ASCE 7-22, Section 11.6
Definitions:			
MCE _R = Risk-Targeted Maximum Considered Earthquake			
MCE _G = Maximum Considered Earthquake Geometric Mean			

TABLE 5 SPECTRAL ACCELERATION PARAMETERS SOUTHEAST CORNER RISK TARGETED MAXIMUM CONSIDERED EARTHQUAKE (Lat: 35.650055, Lon: -117.808157)			
Criteria	2025 CBC Value		Reference
Site Class	Default (most critical values across Site Class C, CD, and D)		ASCE 7-22 Section 11.4.2.1
MCE _R Mapped Spectral Acceleration (g)	S _S = 1.69	S ₁ = 0.48	USGS Mapped Value
Site Adjusted MCE Spectral Acceleration (g)	S _{MS} = 1.9	S _{M1} = 1.19	USGS Mapped Value
Design Spectral Acceleration (g)	S _{DS} = 1.27	S _{D1} = 0.79	ASCE 7-22 Eq. 11.4.1-2
V _{S30} (m/sec)	260		https://www.seismicmaps.org/ https://ascehazardtool.org/
Site Short Period – T _S (Seconds) (for construction of the two-period design spectrum)	T _S = 0.626		T _S = S _{D1} / S _{DS} , ASCE 7-22, Section 11.3
Site Long-Period – T _L (Seconds) (for construction of the two-period design spectrum)	T _L = 8		USGS Mapped Value
Seismic Design Category (SDC)	D		ASCE 7-22, Section 11.6
Definitions:			
MCE _R = Risk-Targeted Maximum Considered Earthquake			
MCE _G = Maximum Considered Earthquake Geometric Mean			

The preliminary seismic parameters are based on using the Default Site Conditions and should only be used for preliminary planning purposes. Actual seismic design parameters will require subsurface data and will be determined during a design level geotechnical investigation.

4.2.3 Geometric Mean Peak Ground Acceleration – 2025 California Building Code

Under Section 1803.5.12 of the 2025 California Building Code, peak ground acceleration (PGA) used for dynamic lateral earth pressure and liquefaction analysis must be based on either a site-specific study in accordance with ASCE 7-22 Chapter 25 or in accordance with ASCE 7-22 Section 11.8.3. These values are obtained using the USGS Design Ground Motion Tool or the ASCE 7 Hazard Tool, which incorporates the latest seismic hazard data from the 2023 National Seismic Hazard Model and are based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2 for Risk Category.

For preliminary planning at the Site, Default Site Conditions values can be used. The mapped geometric mean PGA (PGA_M) are provided in Table 6 for the Maximum Considered Earthquake (MCE) level. These parameters are critical for evaluating liquefaction potential and seismic settlement.



TABLE 6 GEOMETRIC MEAN PEAK GROUND ACCELERATION (DEFAULT SITE CONDITIONS) MAXIMUM CONSIDERED EARTHQUAKE			
Location	Coordinates	Geometric Mean PGA (PGA_M)	Reference
Northwest Corner	35.650087, -117.811197	0.74	USGS Mapped Value
Southeast Corner	35.650055, -117.808157	0.75	USGS Mapped Value

For liquefaction and seismic settlement analyses, a PGA_M range of **0.74 g (Northwest Corner) to 0.75 g (Southeast Corner)** should be considered for preliminary evaluation. Final design values will require confirmation of site class through Vs₃₀ testing and site-specific ground motion analysis during the design-level geotechnical investigation.

The levels of earthquake-induced ground motion presented in Section 4.1 can be considered moderately intense to intense and structures should be designed to comply with seismic response requirements at the Site. Structural dynamic characteristics contained in the Kern County Code of Building Regulations and the California Building Code and State of California design standards should be incorporated into the project design.

4.3 Liquefaction

Liquefaction is a phenomenon where saturated, cohesionless soils lose shear strength during earthquake shaking. Strong seismic ground motion can induce cyclic shear strain reversals of significant amplitude, resulting in lateral and vertical soil displacements and a reduction in bearing capacity. Historically, liquefaction has caused severe damage to structures, embankments, levees, and transportation infrastructure. Seed and Idriss (1971) identified key factors influencing liquefaction potential, including soil type, void ratio, depth to groundwater, duration of shaking, and confining pressure. Conditions most conducive to liquefaction include loose, well-sorted fine sands, shallow groundwater, intense seismic shaking, and prolonged ground motion.

At the site, groundwater is currently deeper than 50 feet below ground surface (bgs), indicating a low potential for liquefaction. However, a design-level geotechnical investigation will be required to evaluate the potential for dry seismic settlement under the anticipated seismic loading conditions.

5.0 REGULATORY SETTING

5.1 Federal Regulations

Earthquake Hazards Reduction Act

See the table below for a summary of the federal regulations from the Earthquake Hazards Reduction Act.

TABLE 7 FEDERAL REGULATIONS
The Earthquake Hazards Reduction Act of 1977 established the National Earthquake Hazards Reduction Program (NEHRP), the primary federal initiative for reducing earthquake-related risks to life, property, and critical infrastructure. NEHRP is a coordinated effort among four lead agencies:
<ul style="list-style-type: none"> • Federal Emergency Management Agency (FEMA) – emergency preparedness and mitigation programs
<ul style="list-style-type: none"> • National Institute of Standards and Technology (NIST) – seismic design standards and building code development
<ul style="list-style-type: none"> • National Science Foundation (NSF) – basic and applied earthquake research
<ul style="list-style-type: none"> • U.S. Geological Survey (USGS) – seismic hazard assessment and monitoring
Recent Updates and Strategic Goals
NEHRP was reauthorized in 2024 and 2025 , with amendments emphasizing resilience, equity, and advanced warning systems. Key updates include:
<ul style="list-style-type: none"> • Expanded Scope: Inclusion of Tribal jurisdictions and critical lifeline infrastructure in program objectives.
<ul style="list-style-type: none"> • Risk Assessment: FEMA and USGS estimate annualized earthquake losses to U.S. building stock at \$14.7 billion, with total economic exposure exceeding \$100 trillion.
<ul style="list-style-type: none"> • Early Warning Systems: Continued development of the Advanced National Seismic System and expansion of ShakeAlert for real-time earthquake alerts.
<ul style="list-style-type: none"> • Building Codes and Retrofits: Stronger requirements for seismic evaluation and retrofit of high-risk structures, especially essential facilities and lifelines.
<ul style="list-style-type: none"> • Community Resilience: Programs incentivizing replacement or retrofit of vulnerable buildings and infrastructure.
<ul style="list-style-type: none"> • Funding: Authorized appropriations of \$83 million annually for FY 2026–2030, with at least \$30 million dedicated to seismic monitoring and early warning systems.
Current Strategic Plan (2022–2029)
NEHRP’s strategic plan outlines four primary goals:
<ol style="list-style-type: none"> 1. Advance Earthquake Understanding – Improve scientific knowledge of seismic hazards and impacts.
<ol style="list-style-type: none"> 2. Develop Risk Reduction Tools – Create and update seismic design standards, hazard maps,

TABLE 7 FEDERAL REGULATIONS	
	and mitigation strategies.
3.	Improve Community Resilience – Promote adoption of seismic safety measures at federal, state, and local levels.
4.	Coordinate National Response – Enhance interagency collaboration and public communication during seismic events.

Compliance with NEHRP provisions is reflected in model building codes (e.g., International Building Code and ASCE 7), which incorporate NEHRP-recommended seismic design criteria. Federal agencies must also adhere to Executive Order 13717, requiring seismic safety in new and existing federal buildings.

5.2 State Regulations

5.2.1 California Building Standards Code (Title 24)

The California Building Standards Code (Title 24) establishes comprehensive requirements for building construction, seismic design, and grading throughout the state. The 2025 edition of Title 24, which becomes effective January 1, 2026, incorporates the latest seismic hazard data and design provisions from the 2024 International Building Code and ASCE 7-22, along with California-specific amendments. These standards govern structural safety, excavation, foundations, retaining walls, and grading activities to ensure resilience against seismic hazards.

The updated code integrates revised seismic design parameters based on new USGS hazard maps, which adjust risk-targeted maximum considered earthquake ground motions. Site coefficients for soil amplification have been refined to better represent site-specific conditions, and near-fault provisions have been clarified to require additional design forces for structures located near active faults. Geotechnical investigations are mandatory for most projects and must address liquefaction potential, differential settlement, lateral spreading, and dynamic lateral earth pressures. Reports must include site-specific seismic parameters, groundwater depth, slope stability analysis, and foundation recommendations, particularly for sites classified in Seismic Design Categories D, E, or F.

The code also updates design criteria for earth-retaining structures, requiring compliance with ASCE 7 provisions for seismic loads, and clarifies requirements for excavation support systems. Grading regulations emphasize erosion control, slope stability, and safe excavation practices, with local jurisdictions authorized to impose stricter requirements based on geologic and topographic conditions.

Historically, California relied on the Uniform Building Code as a model standard until the late 1990s. Today, the California Building Standards Code fully replaces the UBC, incorporating national model codes with California-specific amendments. Local jurisdictions may adopt additional requirements, but they cannot be less restrictive than Title 24.



5.2.2 Alquist-Priolo-Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act, enacted in 1972 following the destructive 1971 San Fernando earthquake, was designed to mitigate the hazard of surface fault rupture to structures intended for human occupancy. The Act prohibits the construction of most occupied structures directly across the surface trace of active faults and requires local agencies to regulate development within designated Earthquake Fault Zones (EFZs). These zones are delineated by the State Geologist based on evidence of Holocene fault activity (movement within the last 11,000 years) and are shown on official maps published by the California Geological Survey (CGS).

Under the Act, cities and counties must withhold development permits for projects within an EFZ until a site-specific geologic investigation demonstrates that the proposed building site is not threatened by surface displacement during future faulting. Investigations typically include detailed fault mapping and, where necessary, fault trenching to confirm the absence of active fault traces beneath the proposed building footprint. The Act applies to subdivisions and structures for human occupancy, with certain exemptions for minor alterations and retrofits as outlined in recent amendments.

The most recent guidance for implementing the Act is provided in Special Publication 42 (SP 42), revised in 2018, which outlines procedures for assessing fault rupture hazards and reviewing geologic reports. Additionally, preliminary and updated EFZ maps continue to be released by CGS as new data becomes available.

For the Site, review of current CGS Earthquake Fault Zone maps indicates that the property is not located within an Alquist-Priolo Earthquake Fault Zone, and no active faults have been mapped crossing the Site. Therefore, the risk of surface fault rupture at this location is considered low.

5.2.3 Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, enacted in 1990, addresses earthquake-related hazards other than surface fault rupture, specifically liquefaction and seismically induced landslides. The Act requires the State Geologist, through the California Geological Survey (CGS), to identify and map Seismic Hazard Zones where these risks are significant. These zones, referred to as Zones of Required Investigation under California Code of Regulations (CCR) Title 14, Article 10, Section 3722, are delineated on official Seismic Hazard Zone Maps.

Within these zones, site-specific investigations are mandatory before development permits can be issued. The purpose of these investigations is to determine whether mitigation measures are necessary to reduce the potential for ground failure caused by liquefaction or earthquake-induced landslides. Geotechnical reports for projects in these areas must include evaluations of soil strength, groundwater conditions, slope stability, and recommended mitigation strategies such as ground improvement or structural reinforcement.

As of the latest mapping updates, the California Geological Survey has not issued a Seismic Hazard Zone Map for the Site, and the property is not located within a designated Zone of Required Investigation. Consequently, while the Act does not impose mandatory mitigation requirements for this Site, a design-level geotechnical investigation should still evaluate potential dry seismic settlement and other seismic hazards consistent with current building code provisions.

5.2.4 NPDES General Permit for Construction Storm Water Discharges

The National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity applies to projects that disturb one acre or more of soil, or are part of a larger common plan of development that collectively disturbs one acre or more. In California, this permit is implemented and enforced by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) under Water Quality Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ. These amendments remain current and govern storm water compliance for construction activities.

The permit requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer (QSD). The SWPPP must identify Best Management Practices (BMPs) to prevent pollutants from entering storm water runoff and include monitoring programs for visual inspections, sediment tracking, and water quality sampling. Construction sites must eliminate or minimize non-stormwater discharges to storm drain systems and waters of the United States. Regular inspections of storm water control measures and pollution prevention practices are mandatory throughout the construction period.

Compliance is verified through the Storm Water Multiple Application and Report Tracking System (SMARTS), which requires electronic filing of permit registration documents, SWPPP certification, and monitoring reports. Projects must also comply with numeric action levels (NALs) and risk-based requirements established under the permit.

5.3 Local Regulations

5.3.1 Kern County Code of Building Regulations

The Kern County Code of Building Regulations establishes minimum standards for building construction to promote public safety and welfare throughout the unincorporated areas of Kern County. These regulations are codified in Title 17 of the Kern County Code of Ordinances, with Chapter 17.08 (Building Code) serving as the primary reference for structural and construction requirements.

Kern County has adopted the California Building Standards Code (Title 24), including the California Building Code (CBC), with local amendments based on unique climatic, geological, and topographical conditions. The most recent update to Chapter 17.08 was enacted by Ordinance No. G-9179 on November 8, 2022, which repealed the previous version and incorporated the 2022 California Building Code with Kern County-specific modifications. These amendments address factors such as high wind speeds in eastern

Kern County, seismic considerations, flood resistance, and fire protection measures.

The County is currently preparing to adopt the 2025 California Building Standards Code, which becomes effective statewide on January 1, 2026. This update will include revised seismic design provisions, enhanced energy efficiency requirements, and expanded wildfire-resistant construction standards. Kern County will adopt the new code by reference, along with any necessary local amendments to address regional hazards such as Santa Ana winds, Tule fog, and steep terrain that can affect emergency response times.

Construction within Kern County must comply with these regulations, including requirements for building permits, plan review, and inspections administered by the Kern County Public Works Department – Building Inspection Division.

5.3.2 Chapter 17.28 - Kern County Grading Code

The following is a summary of key provisions from Kern County Code of Ordinances, Title 17, Chapter 17.28. For complete requirements, refer to the official Kern County Code.

The Kern County Grading Code, codified in Title 17, Chapter 17.28, establishes regulations to safeguard life, property, and public welfare by controlling excavation, grading, and earthwork construction on private property. The code outlines administrative procedures for permit issuance, plan approval, and inspection of grading activities, as well as technical standards for cuts, fills, setbacks, drainage, erosion control, and maintenance of grading work.

Under Section 17.28.040, a grading permit is required for most grading activities unless specifically exempted. Section 17.28.070 details permit requirements, including submission of plans, specifications, and supporting data. Grading involving more than 2,000 cubic yards must be performed as engineered grading, requiring a grading plan prepared by a licensed civil engineer or architect, along with a soils engineering report, engineering geology report, and drainage calculations. Smaller projects may be designated as regular grading, unless special conditions or hazards require engineered grading.

The code also addresses erosion control measures, drainage retention facilities, and inspection requirements to ensure compliance with approved plans and applicable laws. All grading permits must be obtained prior to commencement of construction activities, and work must conform to the provisions of Chapter 17.28 and other relevant county and state regulations. For the proposed project, all requirements of the Kern County Grading Code will apply during implementation, and necessary grading permits will be secured before grading begins.

Section 17.28.140 – Erosion Control

Cut and fill slopes must be prepared and maintained to prevent erosion. Protective measures, such as effective planting or other approved stabilization methods, shall be installed as soon as practicable and before final approval. Where slopes consist of erosion-resistant materials, such protection may be omitted. Additional erosion control devices, including check dams, cribbing, riprap, or other approved methods, shall be employed where necessary to ensure safety and prevent soil loss. Temporary drainage and erosion control measures must be implemented at the end of each workday during grading operations to avoid blockage of existing drainage channels. Dust control is required on all graded areas and materials, using water or other approved dust palliatives to prevent nuisance conditions. Deposition of rocks, soil, or debris onto adjacent properties, public roads, or drainage channels is strictly prohibited.

Section 17.28.150 – Drainage Retention Facilities

All drainage retention or detention facilities, along with associated conveyance systems, must be designed in accordance with the Kern County Development Standards, or the latest revision thereof.

Section 17.28.160 – Maintenance

The property owner, or any person in control of the property where grading has been performed under a permit, is responsible for maintaining all drainage structures, sumps, and protective devices shown on the approved grading plans. These features must remain in good condition and repair as a condition of the permit.

Section 17.28.170 – Grading Inspection

All grading operations requiring a permit are subject to inspection by the Building Official. For engineered grading, professional inspection and testing must be provided by the civil engineer, soils engineer, and engineering geologist retained for the project.

- The civil engineer ensures proper line, grade, and surface drainage and prepares revised plans if required.
- The soils engineer observes grading and compaction testing, verifying compliance with approved plans and specifications. Any changes to soil conditions must be reported with revised recommendations.
- The engineering geologist inspects bedrock excavations and confirms conformance with the approved geology report.

The permittee is responsible for coordinating consultants, contractors, and the Building Official, ensuring compliance with approved plans and code provisions. The Building Official may inspect the project at various stages to confirm adequate professional oversight. If any consultant identifies work not in conformance with approved plans or code, they must immediately notify the permittee and Building Official in writing, including corrective recommendations. If a consultant of record is replaced during grading, work must stop until written notice of the change and acceptance of responsibility by the new

consultant is provided to the Building Official.

5.4 Kern County Environmental Checklist

The Kern County CEQA Implementation Document and Environmental Checklist identify a project as having a potentially significant impact if it:

- Exposes people or structures to substantial adverse effects, including risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as shown on the most recent **Alquist-Priolo Earthquake Fault Zone Map** or based on other substantial evidence of an active fault;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction;
 - Landslides;
- Results in substantial soil erosion or loss of topsoil;
- Is located on a geologic unit or soil that is unstable or could become unstable due to the project, potentially resulting in landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Is located on expansive soil, as defined in **California Building Code Section 1805.8**, creating substantial risks to life or property;
- Has soils incapable of supporting septic systems where sewers are unavailable.

Evaluation and Mitigation

TABLE 8 GEOLOGY AND SOILS – IMPACT EVALUATION AND MITIGATION		
Checklist Item	Impact Assessment	Mitigation Measures
a) Seismic Hazards – Fault rupture, ground shaking, liquefaction, landslides	- Fault rupture: Low (site not in Alquist-Priolo zone) - Ground shaking: Moderate to high - Liquefaction: Low (GW > 50 ft) - Landslides: Low (no steep slope/flat topography)	GEO-1: Design structures per CBC and Kern County Code for seismic loads. GEO-2: Evaluate slope stability and erosion control before development on steep terrain or for development near future stormwater detention basins.

TABLE 8 GEOLOGY AND SOILS – IMPACT EVALUATION AND MITIGATION		
b) Soil Erosion or Loss of Topsoil	Potential during grading and construction; wind erosion possible	Implement BMPs, SWPPP, and Erosion Control Plan per State Water Board Construction General Permit and Kern County requirements.
c) Unstable Soils / Hydrocompaction	Hydrocompaction potential requires evaluation	GEO-3: Prepare design-level geotechnical report; recommend mitigation (over-excavation/re-compaction, deep foundations, or alternative solutions).
d) Expansive Soils	Not anticipated, but confirmation required	GEO-4: Evaluate soil expansion potential in geotechnical report; implement foundation design recommendations.
e) Septic Suitability	Septic systems proposed. Requires evaluation.	GEO-5: <u>Evaluate suitability of septic system in Geotechnical Investigation Report.</u> Onsite Wastewater Treatment Systems (OWTS) must also comply with KERN COUNTY ONSITE SYSTEMS MANUAL.

5.5 Cumulative Impacts

Development of the proposed project, combined with other foreseeable projects in the region, will result in localized changes to landforms and temporary exposure of workers and structures to regional geologic hazards. However, these hazards will be addressed through site-specific geotechnical investigations and implementation of recommendations during design and construction. Each project in the area is required to comply with applicable state and county building codes, grading regulations, and CEQA mitigation measures for geology and soils.

Because geologic and soil-related impacts are mitigated at the project level through engineering design, grading standards, and erosion control measures, the cumulative effect of regional development on geologic hazards is considered less than significant.

6.0 LIMITATIONS

The findings presented in this report are based on a preliminary study that included Site reconnaissance of accessible areas and a review of publicly available data and references. These findings do not constitute a detailed engineering analysis of actual subsurface conditions. A comprehensive geotechnical investigation consisting of field exploration, soil sampling, laboratory testing, and engineering analysis will be required to provide definitive evaluations of Site conditions and potential environmental impacts associated with development.

The conclusions in this report are valid as of the date of issuance. However, Site conditions may change over time due to natural processes or human activities on this property or adjacent properties. Additionally, applicable standards and regulations may change as a result of legislative updates, policy revisions, or advances in technical knowledge.

BSK has prepared this report exclusively for the Client and the project design team in accordance with generally accepted geotechnical engineering practices in Kern County at the time of preparation. No other warranties, expressed or implied, are provided regarding the professional advice contained herein or its applicability beyond the scope of the Client's agreement with BSK.

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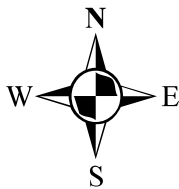
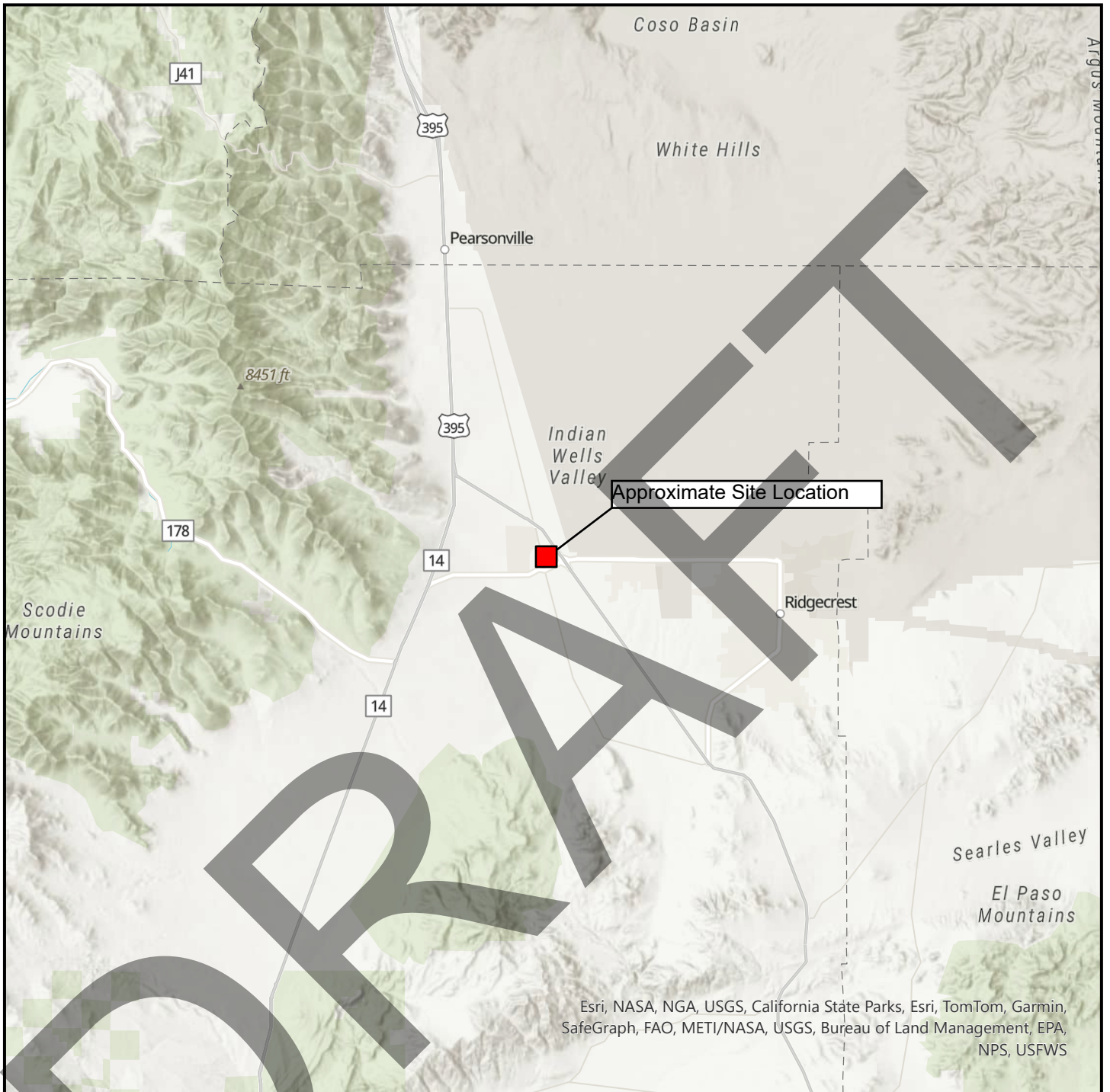
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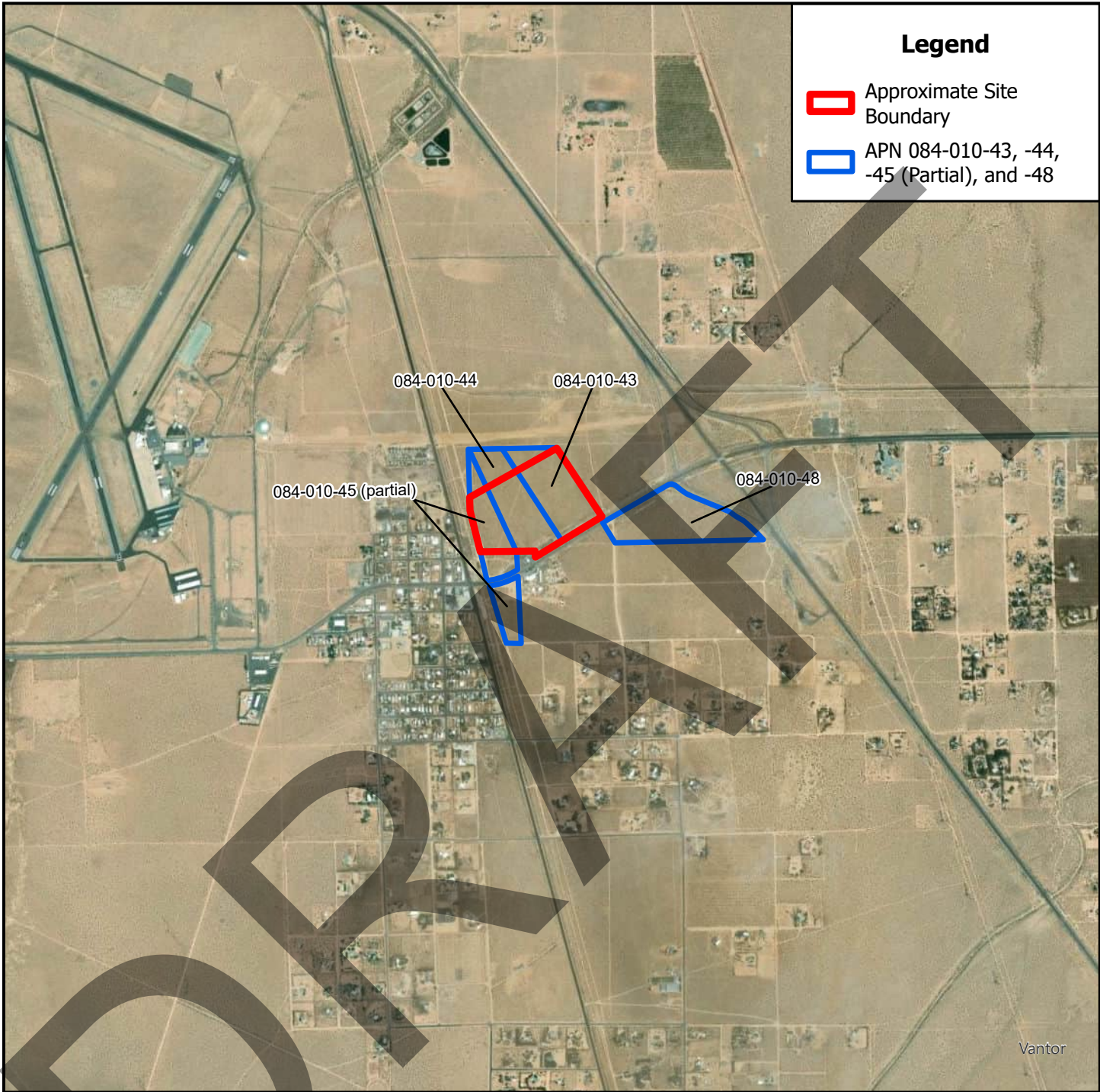
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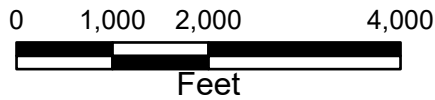
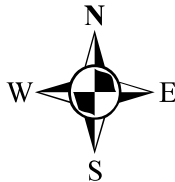
Drawn Date: 12/11/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure 1
 Vicinity Map
 BSK Project G25001225



Reference: Kern County Assessor Recorder, Assessor- Property-Search,
<https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>



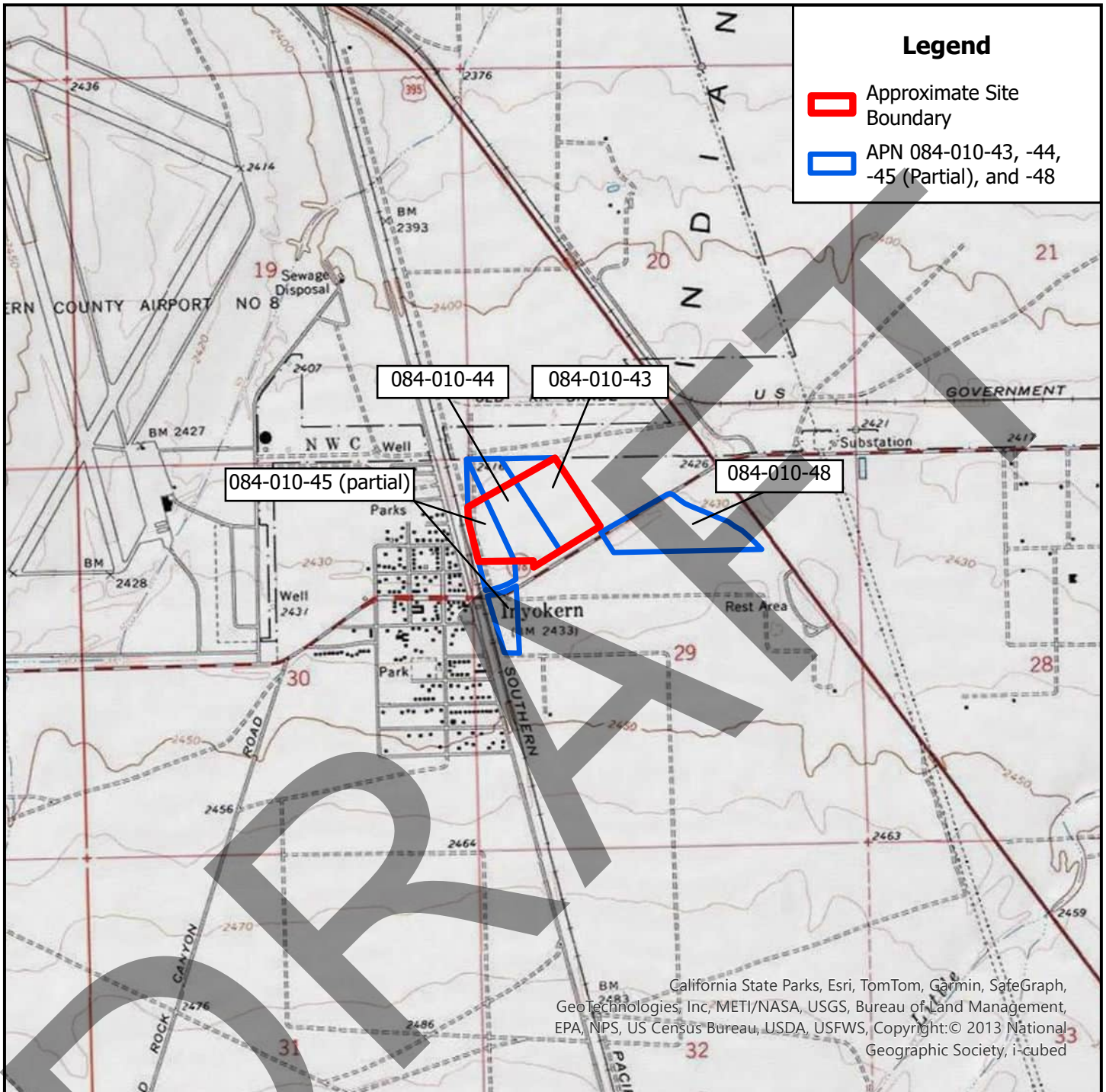
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Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure 2
 Project Area
 BSK Project G25001225



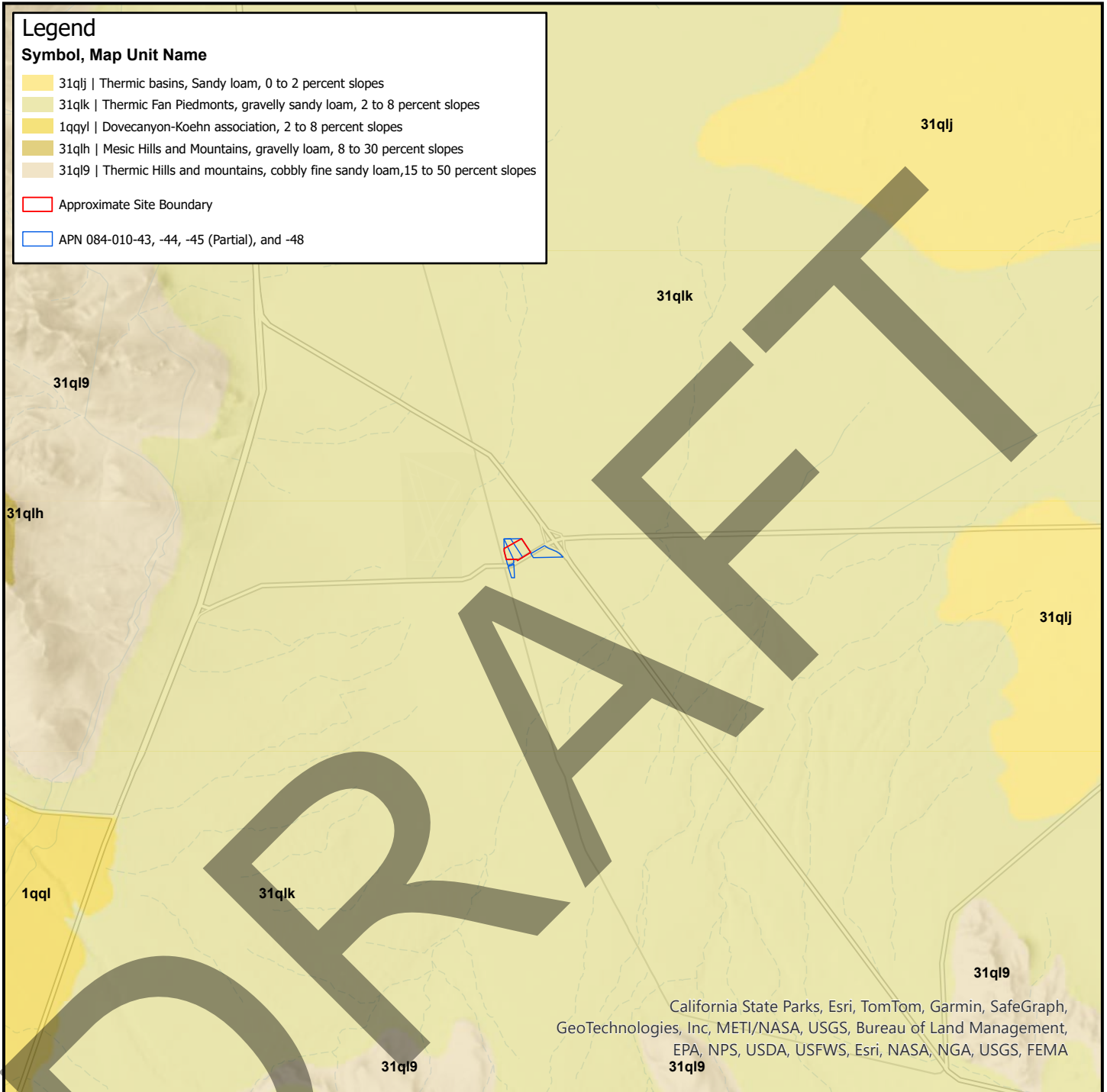
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	Drawn Date: 12/9/2025 Drawn by: AG Reviewed by: MR	Preliminary Soil and Geology Evaluation Proposed Data Center Inyokern, Kern County, California	Figure 3 Topographic Map BSK Project G25001225
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Legend

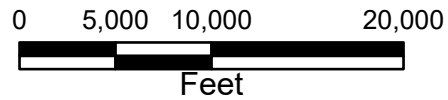
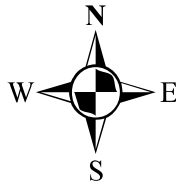
Symbol, Map Unit Name

- 31qlj | Thermic basins, Sandy loam, 0 to 2 percent slopes
- 31qlk | Thermic Fan Piedmonts, gravelly sandy loam, 2 to 8 percent slopes
- 1qqyl | Dovecanyon-Koehn association, 2 to 8 percent slopes
- 31qlh | Mesic Hills and Mountains, gravelly loam, 8 to 30 percent slopes
- 31ql9 | Thermic Hills and mountains, cobbly fine sandy loam, 15 to 50 percent slopes
- Approximate Site Boundary
- APN 084-010-43, -44, -45 (Partial), and -48



Reference: Kern County Assessor Recorder, Assessor- Property-Search, <https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>

United States Department of Agriculture, Natural Resources Conservation Service, USDA, Web Soil Survey, <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>



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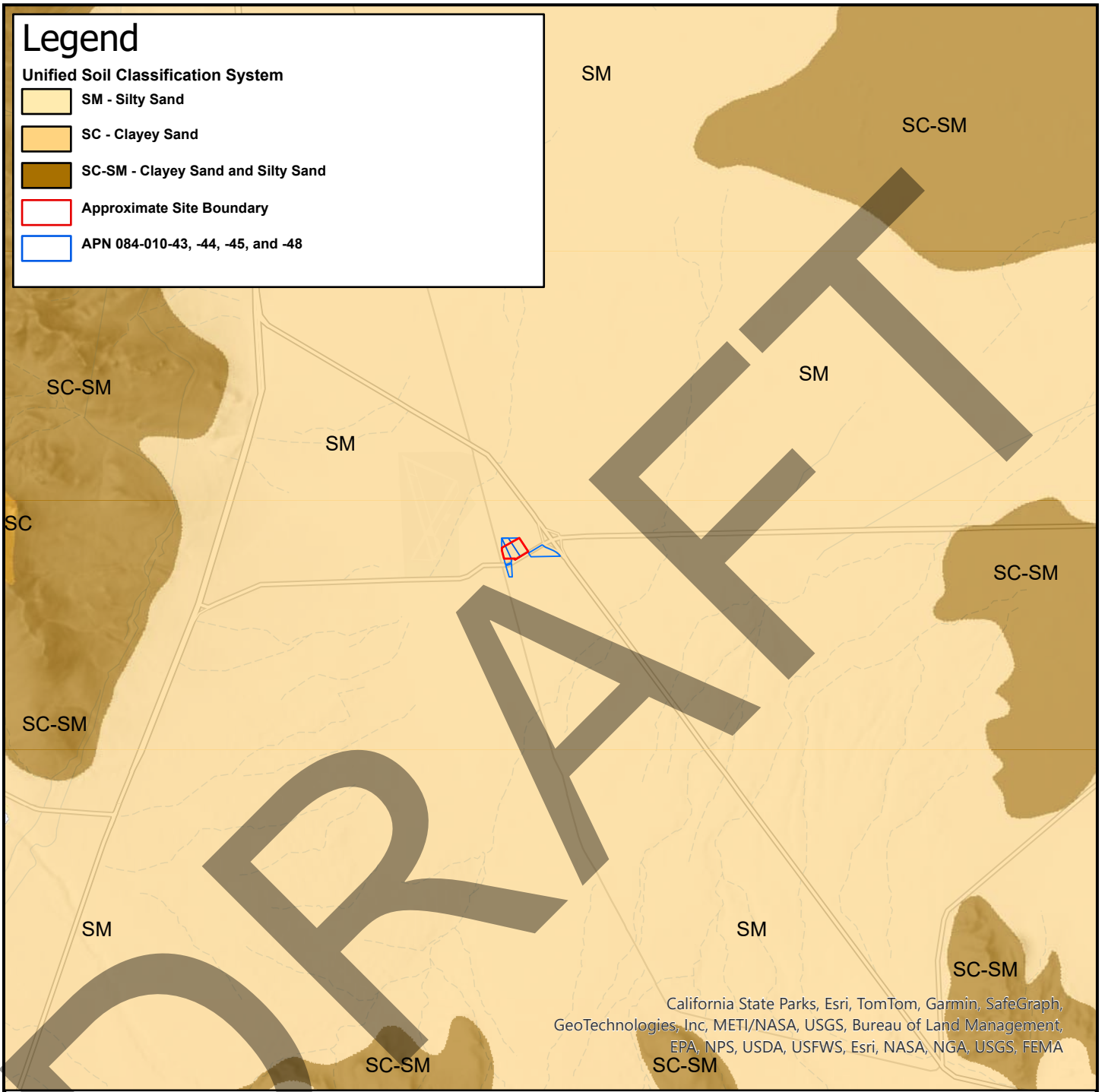
Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure 4
 Soil Map
 BSK Project G25001225

Legend

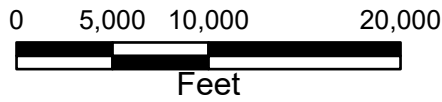
Unified Soil Classification System

- SM - Silty Sand
- SC - Clayey Sand
- SC-SM - Clayey Sand and Silty Sand
- Approximate Site Boundary
- APN 084-010-43, -44, -45, and -48



Reference: Kern County Assessor Recorder, Assessor- Property-Search, <https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>

United States Department of Agriculture, Natural Resources Conservation Service, USDA, Web Soil Survey, <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>



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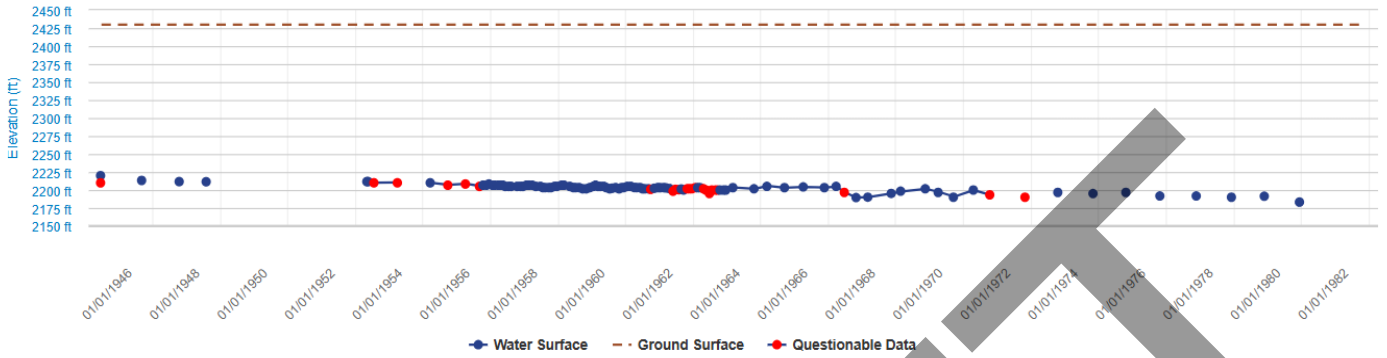


Drawn Date: 12/11/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure 5
 Unified Soil Classification System
 BSK Project G25001225

Groundwater Levels for Well 356486N1178224W001



Measurement Date (PST)	Reference Point Elevation	Ground Surface Elevation	Distance from RP to WS	Groundwater Elevation	Ground Surface to Water Surface	Measurement Issue	Submitting Organization	Collecting Organization	Water Level Measurement Comments
11/18/1981 00:00:00	2429.780	2429.780				QM Measurement Discontinued	Department of Water Resources	United States Geological Survey	
12/01/1979 00:00:00	2429.780	2429.780	346.56	2183.22	246.56		Department of Water Resources	United States Geological Survey	
12/01/1978 00:00:00	2429.780	2429.780	238.41	2191.37	238.41		Department of Water Resources	United States Geological Survey	
12/07/1977 00:00:00	2429.780	2429.780	240.43	2189.35	240.43		Department of Water Resources	United States Geological Survey	
11/23/1976 00:00:00	2429.780	2429.780	238.18	2191.6	238.18		Department of Water Resources	United States Geological Survey	
10/22/1975 00:00:00	2429.780	2429.780	237.98	2191.8	237.98		Department of Water Resources	United States Geological Survey	
10/24/1974 00:00:00	2429.780	2429.780	332.3	2197.48	332.3		Department of Water Resources	United States Geological Survey	
10/31/1973 00:00:00	2429.780	2429.780	334.75	2199.03	334.75		Department of Water Resources	United States Geological Survey	
10/17/1972 00:00:00	2429.780	2429.780	222.46	2197.32	222.46		Department of Water Resources	United States Geological Survey	
10/27/1971 00:00:00	2429.780	2429.780	229.79	2189.99	229.79	QM Nearby pump operating	Department of Water Resources	United States Geological Survey	
10/14/1970 00:00:00	2429.780	2429.780	336.69	2193.09	336.69	QM Nearby pump operating	Department of Water Resources	United States Geological Survey	
04/14/1970 00:00:00	2429.780	2429.780	338.06	2196.72	338.06		Department of Water Resources	United States Geological Survey	
06/17/1969 00:00:00	2429.780	2429.780	239.05	2190.73	239.05		Department of Water Resources	United States Geological Survey	
04/02/1969 00:00:00	2429.780	2429.780	232.34	2197.44	232.34		Department of Water Resources	United States Geological Survey	
11/19/1968 00:00:00	2429.780	2429.780	228.28	2201.5	228.28		Department of Water Resources	United States Geological Survey	
02/26/1968 00:00:00	2429.780	2429.780	231.93	2197.85	231.93		Department of Water Resources	United States Geological Survey	
11/14/1967 00:00:00	2429.780	2429.780	234.51	2195.27	234.51		Department of Water Resources	United States Geological Survey	
03/09/1967 00:00:00	2429.780	2429.780	239.77	2190.01	239.77		Department of Water Resources	United States Geological Survey	
10/21/1966 00:00:00	2429.780	2429.780	240.22	2189.56	240.22		Department of Water Resources	United States Geological Survey	
06/24/1966 00:00:00	2429.780	2429.780	233.13	2186.65	233.13	QM Nearby pump operating	Department of Water Resources	United States Geological Survey	
03/24/1966 00:00:00	2429.780	2429.780	225.2	2204.58	225.2		Department of Water Resources	United States Geological Survey	
11/19/1965 00:00:00	2429.780	2429.780	236.28	2203.5	236.28		Department of Water Resources	United States Geological Survey	
03/24/1965 00:00:00	2429.780	2429.780	225.39	2204.4	225.39		Department of Water Resources	United States Geological Survey	
09/09/1964 00:00:00	2429.780	2429.780	226.58	2203.2	226.58		Department of Water Resources	United States Geological Survey	
03/12/1964 00:00:00	2429.780	2429.780	223.93	2205.85	223.93		Department of Water Resources	United States Geological Survey	

State Well Number: 26S39E30C001M
 Latitude (NAD83): 35.6486
 Longitude (NAD83): -117.8224
 Groundwater Basin (code): Indian Wells Valley (6-054)
 Reference Point Elevation (NAVD88 ft): 2429.780
 Ground Surface Elevation (NAVD88 ft): 2429.780

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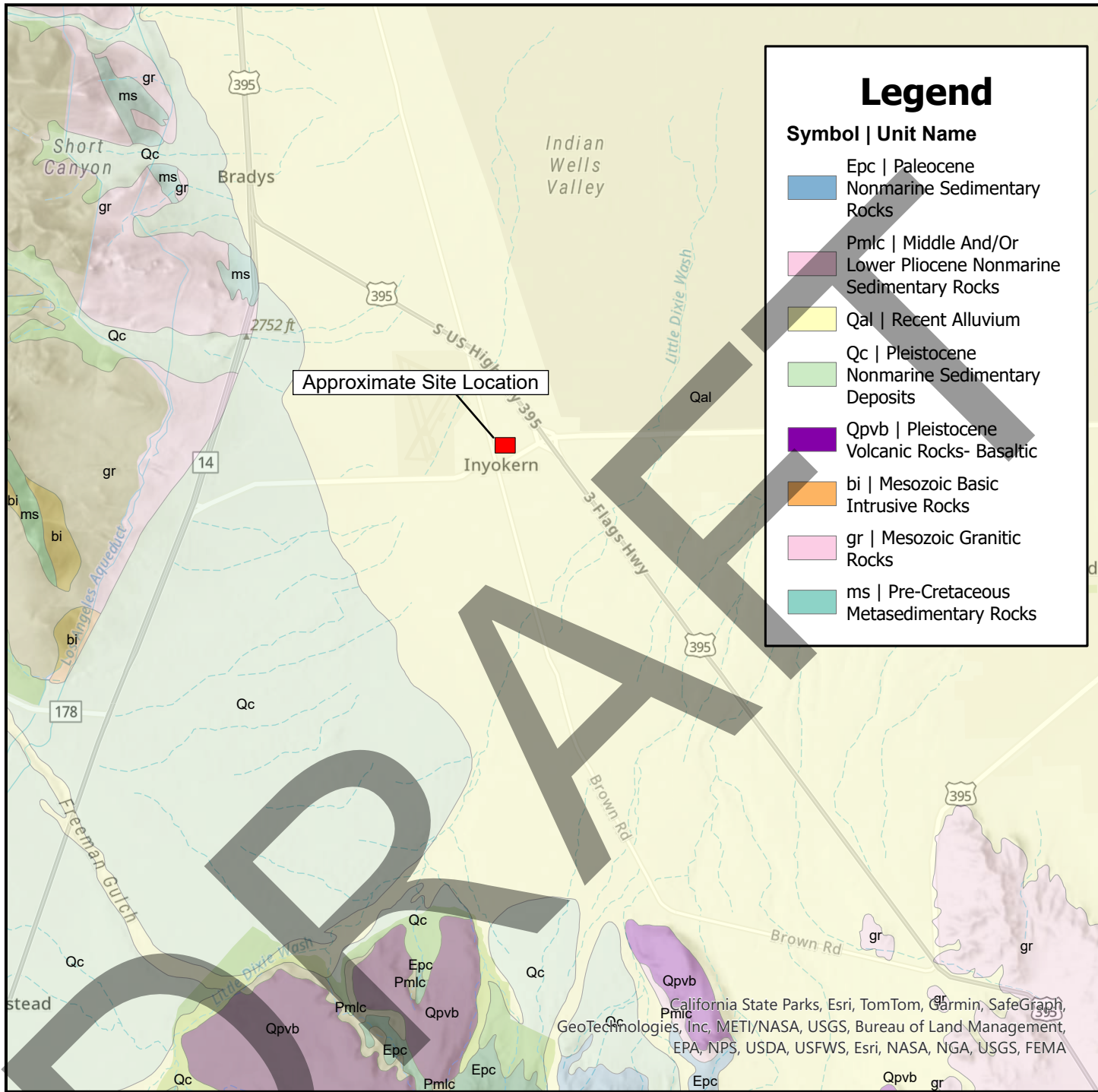
Reference: California Department of Water Resources, Water Data Library (WDL)
 Station Map, <https://wdl.water.ca.gov>



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Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

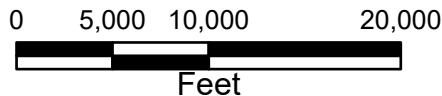
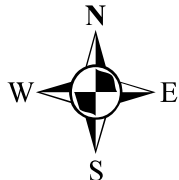
Figure 6
 Area Hydrograph
 BSK Project G25001225




Legend

Symbol	Unit Name
	Epc Paleocene Nonmarine Sedimentary Rocks
	Pmlc Middle And/OR Lower Pliocene Nonmarine Sedimentary Rocks
	Qal Recent Alluvium
	Qc Pleistocene Nonmarine Sedimentary Deposits
	Qpvh Pleistocene Volcanic Rocks- Basaltic
	bi Mesozoic Basic Intrusive Rocks
	gr Mesozoic Granitic Rocks
	ms Pre-Cretaceous Metasedimentary Rocks

Reference: Department of Conservation, California Regional Geologic Maps, Trona, 1962 (GAM 23), <https://www.conservation.ca.gov/cgs/rgm/maps>



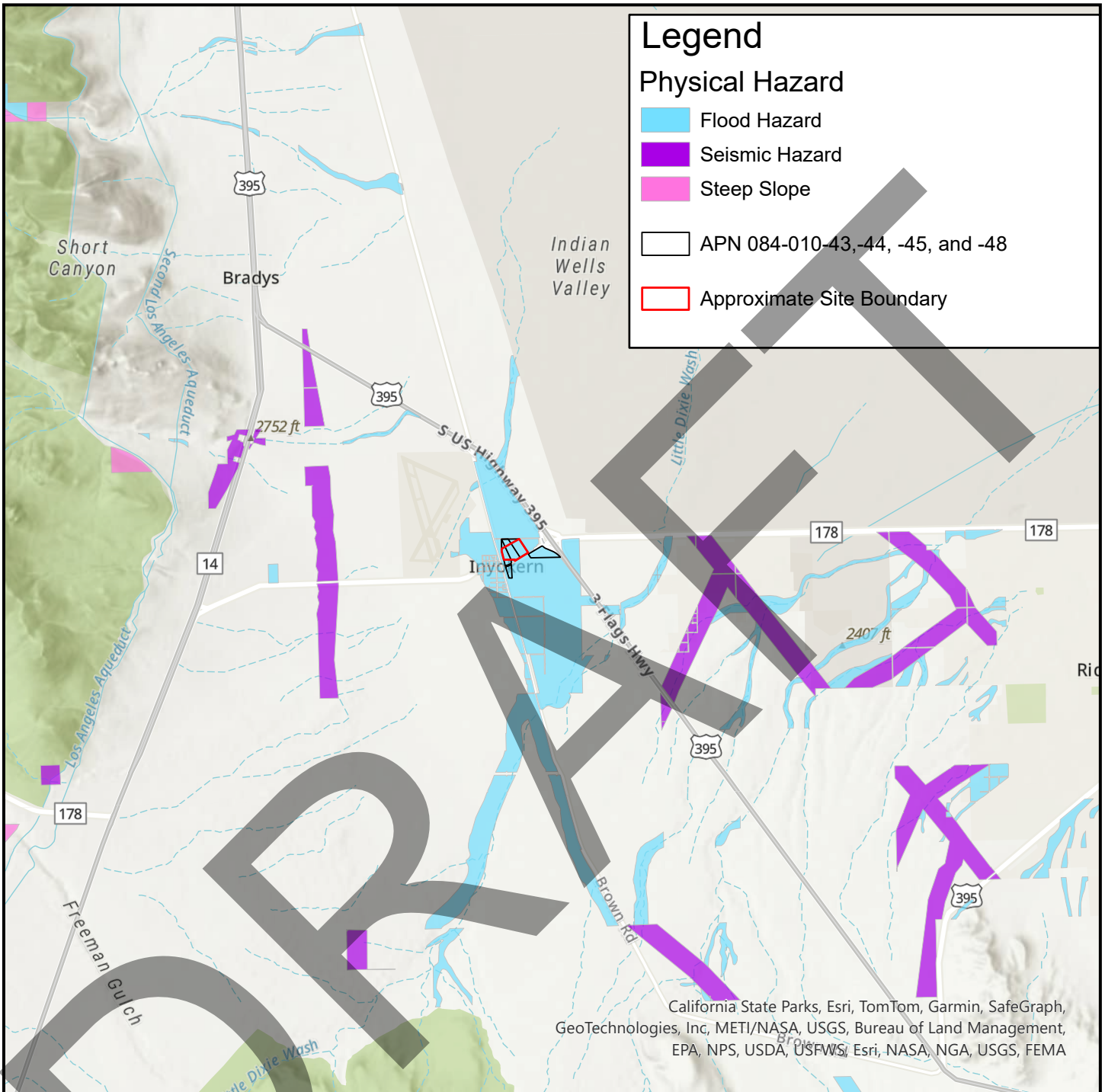
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	<p>Drawn Date: 12/11/2025 Drawn by: AG Reviewed by: MR</p>	<p>Preliminary Soil and Geology Evaluation Proposed Data Center Inyokern, Kern County, California</p>	<p>Figure 7 Geologic Map BSK Project G25001225</p>
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Legend

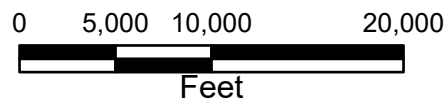
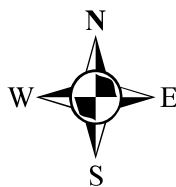
Physical Hazard

- Flood Hazard
- Seismic Hazard
- Steep Slope
- APN 084-010-43, -44, -45, and -48
- Approximate Site Boundary



California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, Esri, NASA, NGA, USGS, FEMA

Reference: Kern County General Plan, 2025. <https://geodat-kernco.opendata.arcgis.com/search>



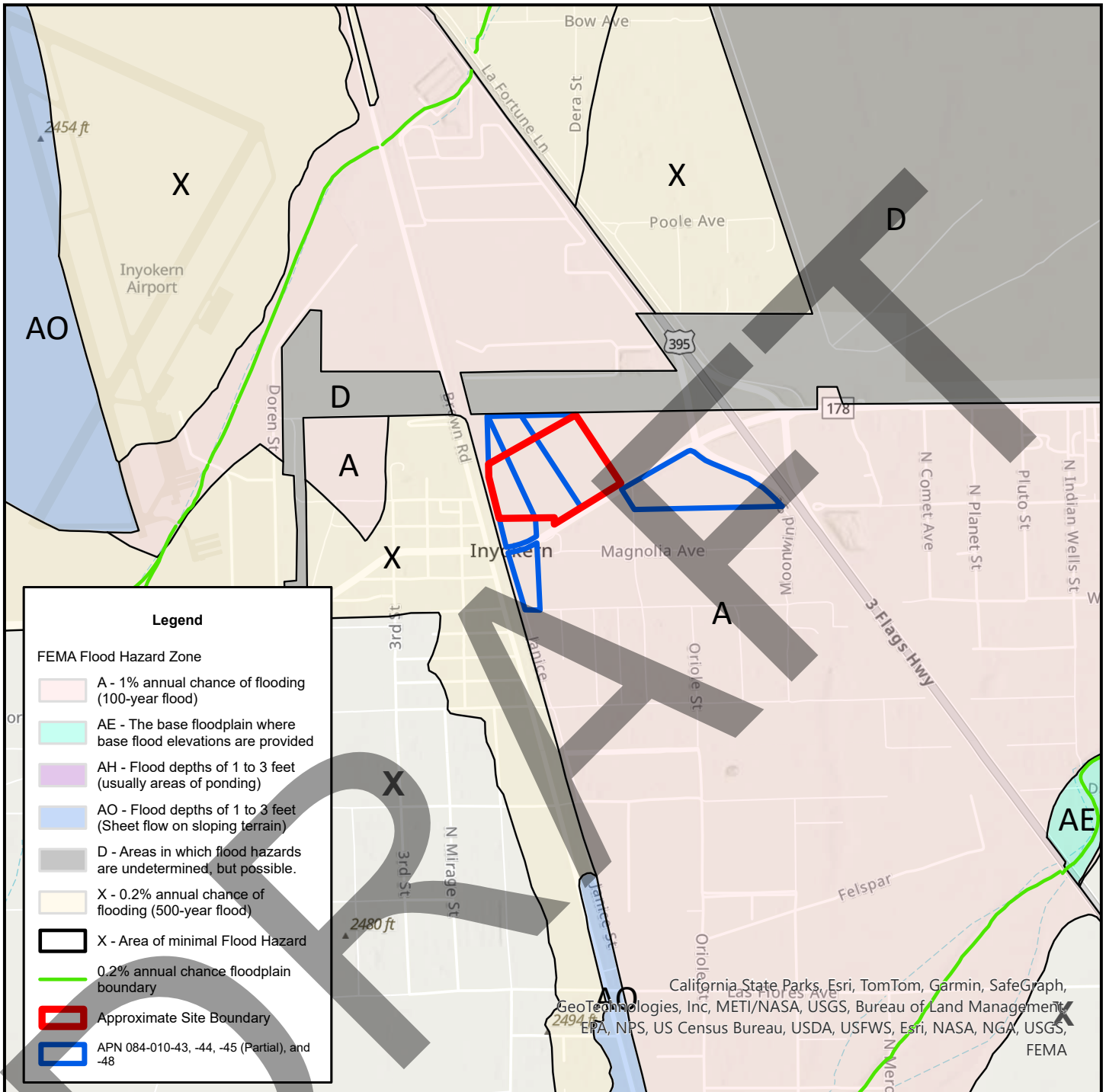
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Reviewed by: MR

Preliminary Soil and Geology Evaluation
Proposed Data Center
Inyokern, Kern County, California


Figure 8
Kern County Physical
Constraints Map
BSK Project G25001225



Reference: Kern County Assessor Recorder, Assessor- Property-Search, <https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>

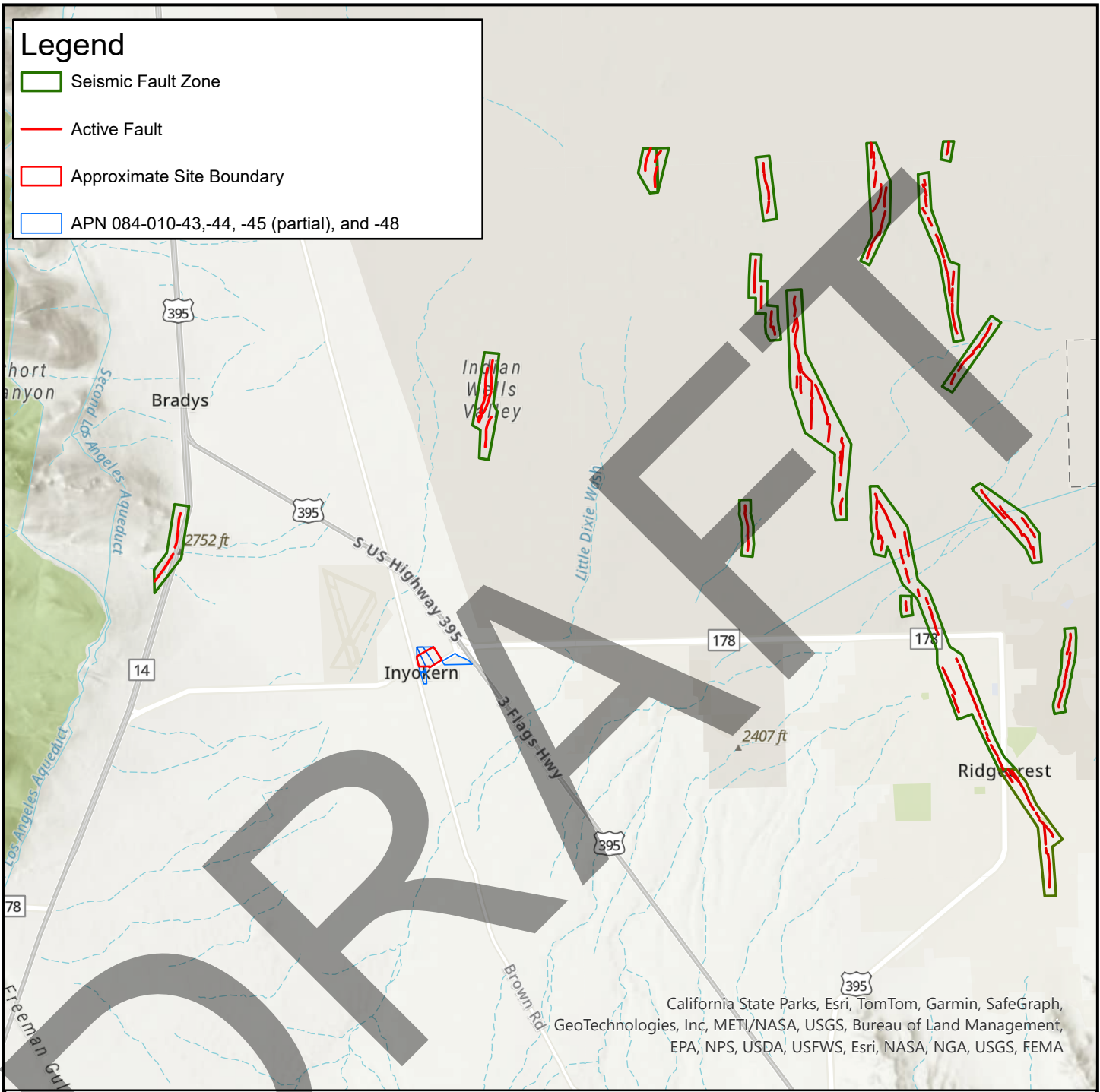
FEMA NFHL 06107C eff. 10/21/2021

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	<p>Drawn Date: 12/11/2025 Drawn by: AG Reviewed by: MR</p>	<p>Preliminary Soil and Geology Evaluation Proposed Data Center Inyokern, Kern County, California</p>	<p>Figure 9 FEMA Flood Zones BSK Project G25001225</p>
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Legend

- Seismic Fault Zone
- Active Fault
- Approximate Site Boundary
- APN 084-010-43,-44, -45 (partial), and -48



California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, Esri, NASA, NGA, USGS, FEMA

Reference: Seismic Hazards Program, California Geological Survey, California Department of Conservation. <https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/>



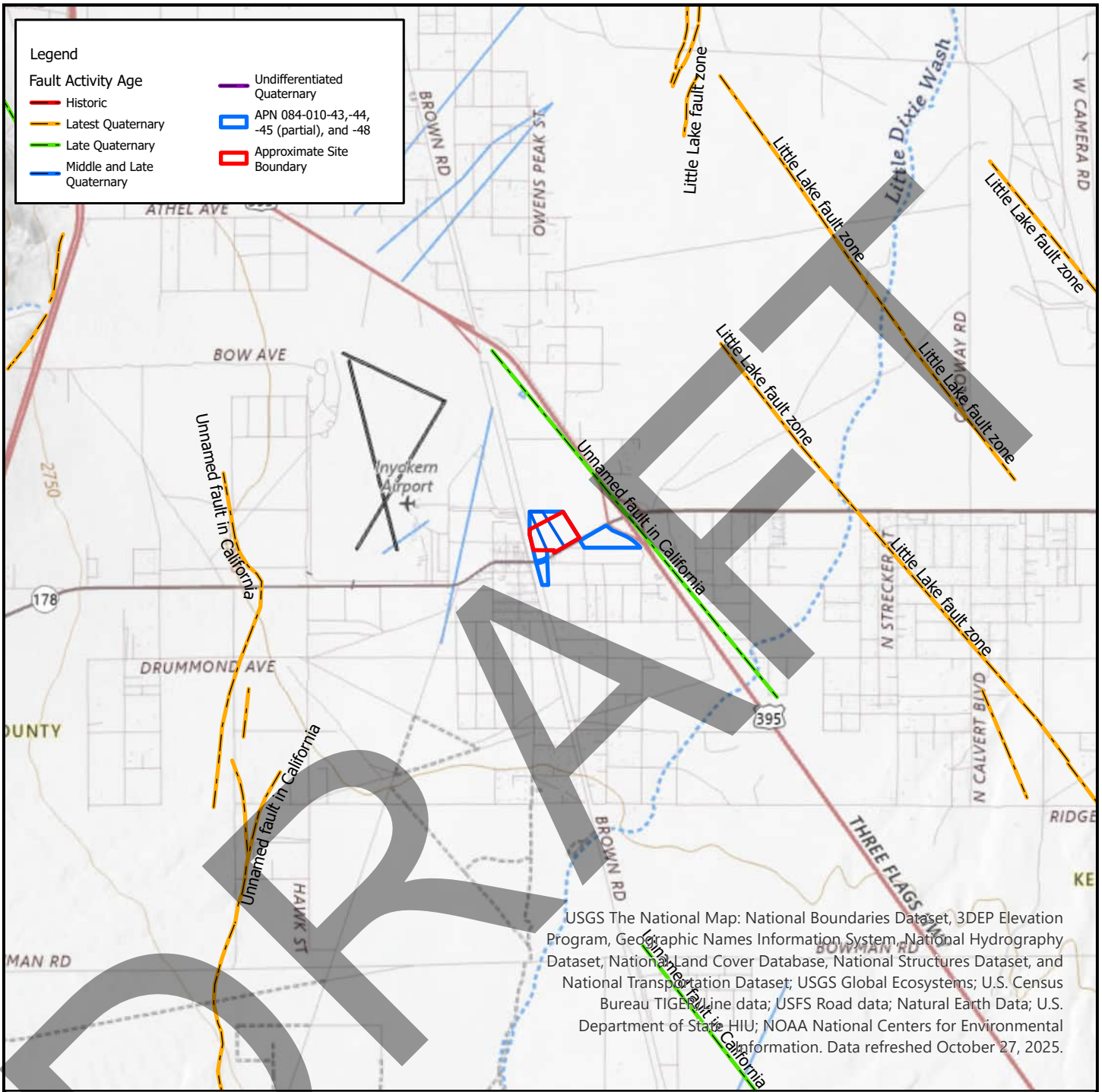
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Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure 10
 State Seismic Hazard
 Zones
 BSK Project G25001225



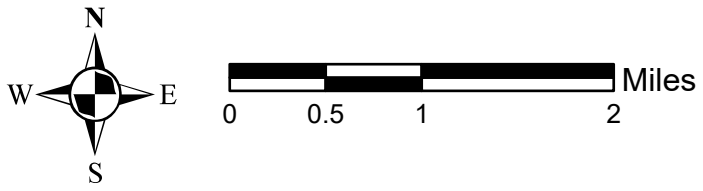
Legend

Fault Activity Age	
— Historic	— Undifferentiated Quaternary
— Latest Quaternary	 APN 084-010-43, -44, -45 (partial), and -48
— Late Quaternary	 Approximate Site Boundary
— Middle and Late Quaternary	

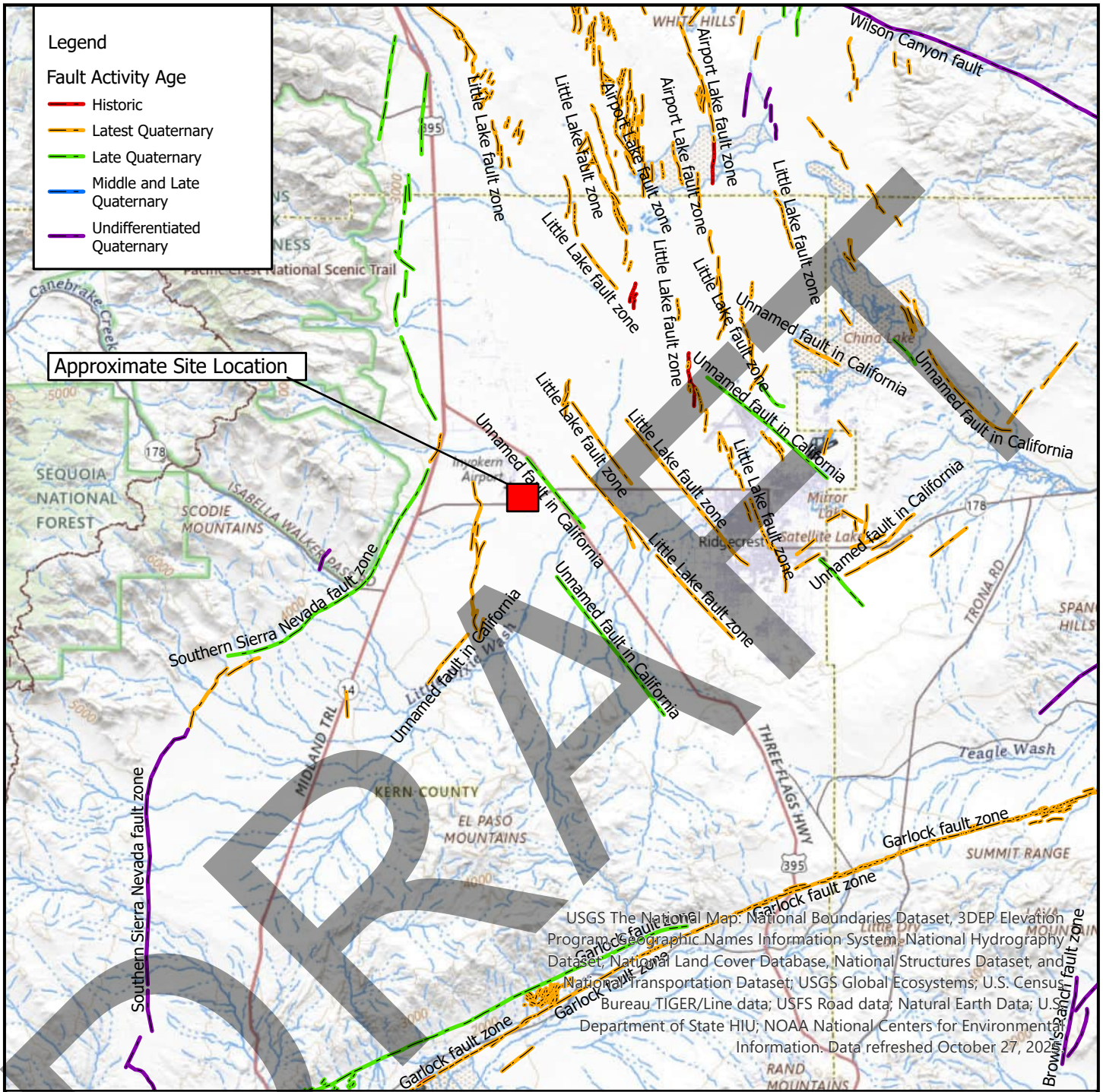
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information. Data refreshed October 27, 2025.

Reference: USGS Quaternary Fault Database
<https://www.usgs.gov/programs/earthquake-hazards/faults>
 Kern County Assessor Recorder, Assessor- Property-Search
<https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>

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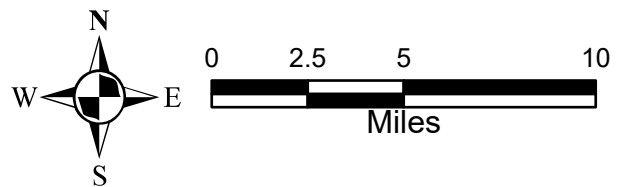


	<p>Drawn Date: 12/11/2025 Drawn by: AG Reviewed by: MR</p>	<p>Preliminary Soil and Geology Proposed Data Center Inyokern, Kern County, California</p>	<p>Figure 11 Local Fault Map BSK Project G25001225</p>
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Reference: USGS Quaternary Fault Database
<https://www.usgs.gov/programs/earthquake-hazards/faults>

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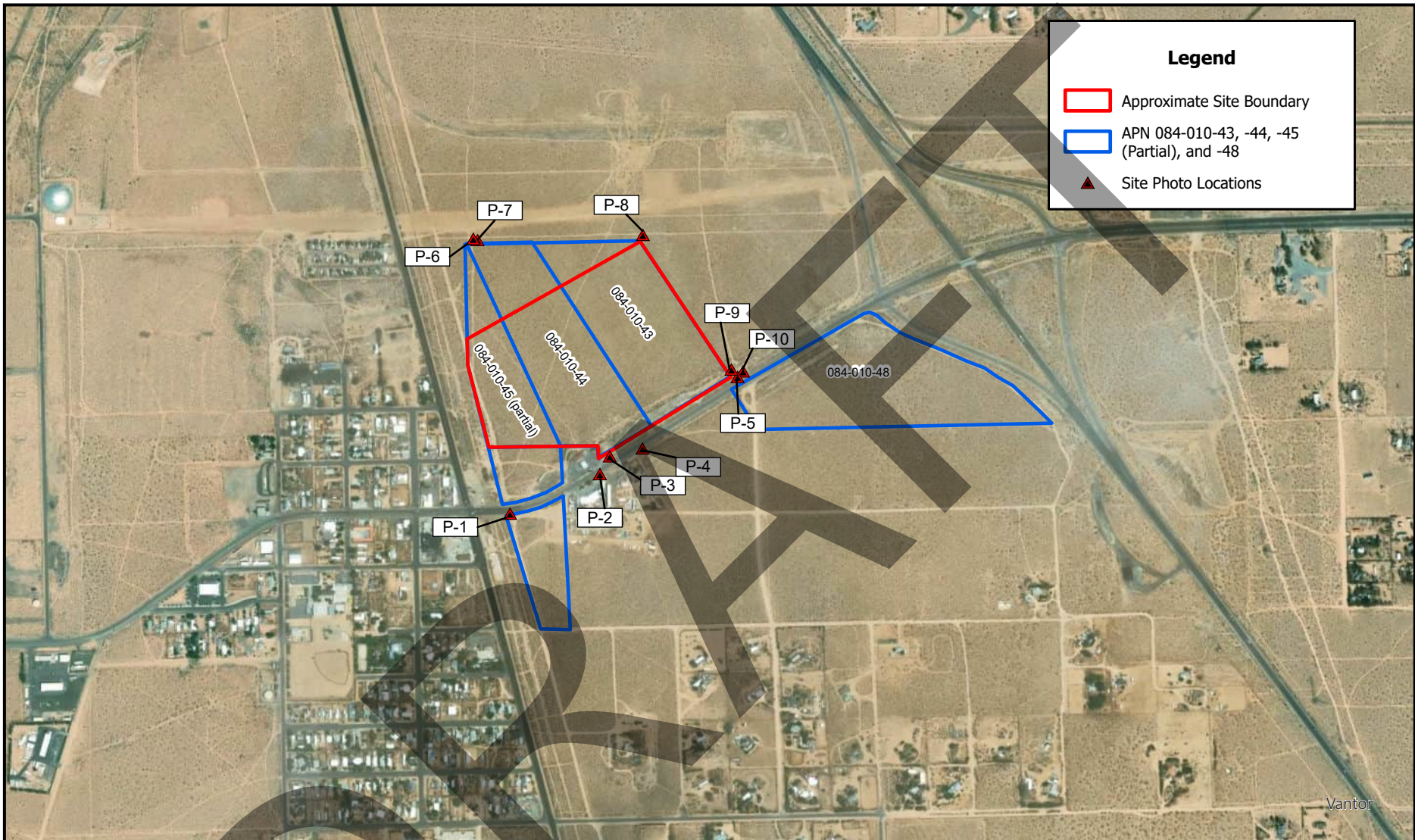
Drawn Date: 12/11/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology
 Proposed Data Center
 Inyokern, Kern County, California

Figure 12
 Regional Fault Map
 BSK Project G25001225

**APPENDIX A
PHOTO LOG**

DRAFT

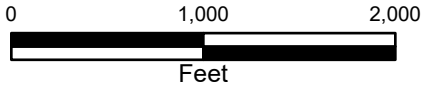


Legend

- Approximate Site Boundary
- APN 084-010-43, -44, -45 (Partial), and -48
- ▲ Site Photo Locations

Reference: Kern County Assessor Recorder, Assessor-Property-Search, <https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search>

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 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Figure A-1
 Site Photos
 BSK Project G25001225



Photo Location: P-1 (View from SW Corner)



Photo Location: P-2 (Chevron Gas Station SW Corner)



Drawn Date: 12/12/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Date Taken: November 2025

Photo Plate 1

PROJECT: G25001225



Photo Location: P-3 (Asphalt Pile Next to Existing Gas Station SW Corner)



Photo Location: P-4 (Concrete Stockpile West of Chevron)



Drawn Date: 12/12/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Date Taken: November 2025

Photo Plate 2

PROJECT: G25001225



Photo Location: P-5 (SE Corner Stockpile in Background)



Photo Location: P-6 (NW Corner)



Drawn Date: 12/12/2025
Drawn by: AG
Reviewed by: MR

Preliminary Soil and Geology Evaluation
Proposed Data Center
Inyokern, Kern County, California

Date Taken: November 2025

Photo Plate 3

PROJECT: G25001225



Photo Location: P-7 (NW Corner Looking East)



Photo Location: P-8 (NW Corner)



Drawn Date: 12/12/2025
Drawn by: AG
Reviewed by: MR

Preliminary Soil and Geology Evaluation
Proposed Data Center
Inyokern, Kern County, California

Date Taken: November 2025

Photo Plate 4

PROJECT: G25001225



Photo Location: P-9 (SE Corner)



Photo Location: P-10 (View From Existing Frontage Road Looking West)



Drawn Date: 12/12/2025
 Drawn by: AG
 Reviewed by: MR

Preliminary Soil and Geology Evaluation
 Proposed Data Center
 Inyokern, Kern County, California

Date Taken: November 2025

Photo Plate 5

PROJECT: G25001225

APPENDIX B
USDA SOIL PROPERTIES

DRAFT

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Mojave Desert Area, Northwest Part, California

Map Unit: 29—Lithic Torriorthents and Ustic Haplargids, shallow; mesic hills and mountains

Component: Lithic Torriorthents, granitic (40%)

The Lithic Torriorthents, granitic component makes up 40 percent of the map unit. Slopes are 8 to 30 percent. This component is on rock pediments, fan piedmonts. The parent material consists of colluvium derived from granitoid over residuum weathered from granitoid. Depth to a root restrictive layer, bedrock, lithic, is 3 to 14 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 8. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent. There are no saline horizons within 30 inches of the soil surface.

Component: Lithic Torriorthents, limestone (30%)

The Lithic Torriorthents, limestone component makes up 30 percent of the map unit. Slopes are 8 to 30 percent. This component is on hills, hills. The parent material consists of residuum and/or colluvium derived from limestone and dolomite. Depth to a root restrictive layer, bedrock, lithic, is 14 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7s. The calcium carbonate equivalent within 40 inches, typically, does not exceed 18 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ustic Haplargids, shallow (20%)

The Ustic Haplargids, shallow component makes up 20 percent of the map unit. Slopes are 4 to 15 percent. This component is on low hills, hills. The parent material consists of colluvium and/or residuum weathered from granitoid. Depth to a root restrictive layer, bedrock, paralithic, is 10 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low.

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This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s.

Component: Ustic Haplargids (10%)

Generated brief soil descriptions are created for major soil components. The Ustic Haplargids soil is a minor component.

Map Unit: 32—Xeric Torriorthents, Typic Torrfluents, and Aeric Halaquepts; thermic basins

Component: Xeric Torriorthents (40%)

The Xeric Torriorthents component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on alluvial fans, valleys. The parent material consists of alluvium derived from granitoid rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7c. Irrigated land capability classification is 2e. The calcium carbonate equivalent within 40 inches, typically, does not exceed 6 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Typic Torrfluents (30%)

The Typic Torrfluents component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on alluvial fans, basins. The parent material consists of alluvium derived from granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7c. Irrigated land capability classification is 2e. The calcium carbonate equivalent within 40 inches, typically, does not exceed 6 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Aeric Halaquepts (15%)

The Aeric Halaquepts component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on lake plains, fan piedmonts. The parent material consists of alluvium derived from igneous and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A

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seasonal zone of water saturation is at 39 inches during February, March. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7c. Irrigated land capability classification is 3s. The calcium carbonate equivalent within 40 inches, typically, does not exceed 12 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 15 within 30 inches of the soil surface.

Component: Petronodic Haplocalcids (5%)

Generated brief soil descriptions are created for major soil components. The Petronodic Haplocalcids soil is a minor component.

Component: Typic Torriorthents (5%)

Generated brief soil descriptions are created for major soil components. The Typic Torriorthents soil is a minor component.

Component: Typic Torripsamments (5%)

Generated brief soil descriptions are created for major soil components. The Typic Torripsamments soil is a minor component.

Map Unit: 45—Typic Torriorthents and Typic Haplargids; thermic fan piedmonts

Component: Typic Torriorthents (40%)

The Typic Torriorthents component makes up 40 percent of the map unit. Slopes are 2 to 8 percent. This component is on fan aprons, fan piedmonts. The parent material consists of alluvium derived from igneous rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7c. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Component: Typic Haplargids (35%)

The Typic Haplargids component makes up 35 percent of the map unit. Slopes are 1 to 4 percent. This component is on fan remnants, fan piedmonts. The parent material consists of alluvium derived from igneous and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7c. Irrigated land capability classification is 2e. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Component: Typic Torripsamments (15%)

Generated brief soil descriptions are created for major soil components. The Typic Torripsamments soil is a minor component.

Component: Calcic Petrocalcids (5%)

Generated brief soil descriptions are created for major soil components. The Calcic Petrocalcids soil is a minor component.

Component: Typic Haplocalcids (5%)

Generated brief soil descriptions are created for major soil components. The Typic Haplocalcids soil is a minor component.

Map Unit: 61—Typic Haplargids and Lithic Haplargids; thermic hills and mountains

Component: Typic Haplargids (40%)

The Typic Haplargids component makes up 40 percent of the map unit. Slopes are 15 to 50 percent. This component is on hillslopes, tablelands. The parent material consists of colluvium and/or residuum weathered from basalt. Depth to a root restrictive layer, bedrock, lithic, is 28 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6e. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lithic Haplargids (35%)

The Lithic Haplargids component makes up 35 percent of the map unit. Slopes are 4 to 15 percent. This component is on rock pediments, fan piedmonts. The parent material consists of residuum and/or colluvium derived from granitoid. Depth to a root restrictive layer, bedrock, lithic, is 4 to 14 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7s.

Component: Lithic Torriorthents (15%)

Generated brief soil descriptions are created for major soil components. The Lithic Torriorthents soil is a minor component.

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Component: Cambidic Haplodurids (5%)

Generated brief soil descriptions are created for major soil components. The Cambidic Haplodurids soil is a minor component.

Component: Typic Haplocalcids (5%)

Generated brief soil descriptions are created for major soil components. The Typic Haplocalcids soil is a minor component.

Map Unit: 3251—Jawbone association, 8 to 50 percent slopes

Component: Jawbone, warm (60%)

The Jawbone, warm component makes up 60 percent of the map unit. Slopes are 8 to 30 percent. This component is on hills, hills. The parent material consists of residuum weathered from granite. Depth to a root restrictive layer, bedrock, paralithic, is 4 to 12 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the R030XA048CA Shallow Fans 5-7 ecological site. Nonirrigated land capability classification is 8.

Component: Jawbone (20%)

The Jawbone component makes up 20 percent of the map unit. Slopes are 30 to 50 percent. This component is on hills, hills. The parent material consists of residuum weathered from granite. Depth to a root restrictive layer, bedrock, paralithic, is 4 to 12 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the R030XA048CA Shallow Fans 5-7 ecological site. Nonirrigated land capability classification is 8.

Component: Jawbone, high elev (10%)

Generated brief soil descriptions are created for major soil components. The Jawbone, high elev soil is a minor component.

Component: Dovecanyon, cool (3%)

Generated brief soil descriptions are created for major soil components. The Dovecanyon, cool soil is a minor component.

Component: Jawbone, dry (3%)

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Generated brief soil descriptions are created for major soil components. The Jawbone, dry soil is a minor component.

Component: Typic Torriorthents, rarely flooded (2%)

Generated brief soil descriptions are created for major soil components. The Typic Torriorthents, rarely flooded soil is a minor component.

Component: Rock outcrop (2%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop soil is a minor component.

Map Unit: 4171—Dovecanyon-Koehn association, 2 to 8 percent slopes

Component: Dovecanyon, warm (70%)

The Dovecanyon, warm component makes up 70 percent of the map unit. Slopes are 2 to 8 percent. This component is on fan remnants, fan piedmonts. The parent material consists of alluvium derived from granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the R030XA020CA Arid Fans 5-7 ecological site. Nonirrigated land capability classification is 7e.

Component: Koehn, dry (20%)

The Koehn, dry component makes up 20 percent of the map unit. Slopes are 2 to 8 percent. This component is on fan aprons, fan piedmonts. The parent material consists of alluvium derived from granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the R030XA020CA Arid Fans 5-7 ecological site. Nonirrigated land capability classification is 7e.

Component: Dovecanyon, sloping (3%)

Generated brief soil descriptions are created for major soil components. The Dovecanyon, sloping soil is a minor component.

Component: Garlock (2%)

Generated brief soil descriptions are created for major soil components. The Garlock soil is a minor component.

Component: Dovecanyon, cool (2%)

Generated brief soil descriptions are created for major soil components. The Dovecanyon, cool soil is a minor component.

Component: Typic Haplocalcids (1%)

Generated brief soil descriptions are created for major soil components. The Typic Haplocalcids soil is a minor component.

Component: Koehn, rarely flooded (1%)

Generated brief soil descriptions are created for major soil components. The Koehn, rarely flooded soil is a minor component.

Component: Koehn, occasionally flooded (1%)

Generated brief soil descriptions are created for major soil components. The Koehn, occasionally flooded soil is a minor component.

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission

rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

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Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

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Engineering Properties—Mojave Desert Area, Northwest Part, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
29—Lithic Torriorthents and Ustic Haplargids, shallow; mesic hills and mountains														
Lithic torriorthents, granitic	40	D	0-2	Gravelly loam	SC, SC-SM	A-6, A-1-b, A-4	0-0-0	0-1-9	74-85-88	48-69-77	39-60-69	25-40-49	19-26-29	4-10-12
			2-6	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam	GW-GC, SC, GP	A-1-a, A-2-6	0-0-7	0-1-15	38-38-60	9-16-47	5-10-32	3-5-20	19-27-28	4-11-12
			6-16	Bedrock	—	—	—	—	—	—	—	—	—	—
Lithic torriorthents, limestone	30	D	0-3	Very stony loam	GC-GM, SC	A-4, A-2-4	24-27-31	12-20-21	55-63-74	53-61-73	46-54-65	32-38-47	20-23-25	5-7-9
			3-14	Very stony loam	CL	A-4, A-6	53-67-75	0-0-0	100-100-100	100-100-100	88-89-90	65-66-68	24-26-29	8-10-12
			14-24	Bedrock	—	—	—	—	—	—	—	—	—	—
Ustic haplargids, shallow	20	D	0-1	Gravelly coarse sandy loam	SC-SM, SM	A-1-b, A-2-4	0-0-0	0-0-0	79-86-87	53-61-65	31-39-46	17-24-31	17-19-25	1-2-7
			1-5	Very gravelly coarse sandy loam	SP-SC, SC-SM, SC	A-2-4, A-1-a, A-1-b	0-0-0	0-0-0	67-70-70	36-42-42	21-27-29	11-16-19	20-22-27	4-5-9
			5-10	Extremely gravelly coarse sandy loam	GP, GW-GC, GP-GC	A-2-6, A-2-4	0-0-0	0-0-0	41-50-50	13-27-29	7-16-18	3-8-10	22-24-29	7-8-12
			10-19	Bedrock	—	—	—	—	—	—	—	—	—	—
			19-29	Bedrock	—	—	—	—	—	—	—	—	—	—

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Engineering Properties—Mojave Desert Area, Northwest Part, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
32—Xeric Torriorthents, Typic Torrifluvents, and Aeric Halaquepts; thermic basins														
Xeric torriorthents	40	A	0-6	Sandy loam	SC-SM, SC	A-4, A-2-4	0-0-0	0-0-0	79-100-100	78-100-100	59-76-78	29-38-40	21-23-26	6-7-9
			6-13	Sandy loam	SC-SM, SM	A-4, A-2-4	0-0-0	0-0-0	79-100-100	78-100-100	57-76-80	27-38-41	17-19-22	3-4-6
			13-24	Sandy loam	SC-SM, SC	A-4, A-2-4	0-0-0	0-0-0	79-100-100	78-100-100	57-76-81	28-38-42	21-23-26	6-7-9
			24-33	Sandy loam	SC	A-4, A-6, A-2-4	0-0-0	0-0-0	79-100-100	78-100-100	56-76-81	27-37-41	24-26-28	8-10-11
			33-60	Fine sandy loam	SC-SM, SC	A-2-4, A-4	0-0-0	0-0-0	79-100-100	78-100-100	67-93-98	27-39-41	21-23-26	6-7-9
Typic torrifluvents	30	C	0-4	Fine sandy loam	SC-SM, CL-ML, SM	A-4	0-0-0	0-0-0	78-100-100	77-100-100	65-86-88	36-48-50	17-20-22	2-4-6
			4-8	Very fine sandy loam	CL-ML, SC-SM	A-4	0-0-0	0-0-0	78-100-100	77-100-100	74-98-99	42-57-59	19-21-24	4-5-7
			8-28	Silty clay loam	CL	A-6, A-7-6	0-0-0	0-0-0	75-100-100	74-100-100	71-97-99	64-88-90	37-40-43	19-21-23
			28-34	Sandy clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	77-100-100	76-100-100	62-84-86	41-57-58	36-39-42	18-20-22
			34-60	Loam	CL	A-6	0-0-0	0-0-0	77-100-100	76-100-100	71-98-100	50-71-73	30-32-35	13-14-16
Aeric halaquepts	15	D	0-2	Loam	CL	A-6	0-0-0	0-0-0	87-100-100	87-100-100	77-89-90	56-67-68	28-31-33	11-13-15
			2-15	Loam	CL	A-6, A-7-6	0-0-0	0-0-0	87-100-100	87-100-100	78-90-94	59-69-74	33-35-48	15-16-26

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Engineering Properties—Mojave Desert Area, Northwest Part, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			15-60	Clay loam	CL	A-6, A-7-6	0-0-0	0-0-0	87-100-100	87-100-100	78-91-92	60-71-72	38-40-43	19-21-23

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Engineering Properties—Mojave Desert Area, Northwest Part, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
45—Typic Torriorthents and Typic Haplargids; thermic fan piedmonts														
Typic torriorthents	40	A	0-3	Gravelly sandy loam	SM, SC-SM	A-2-4, A-4, A-1-b	0- 3- 4	0- 4- 6	79-93-93	52-83-83	38-65-68	19-34-39	16-18-23	2-3 -7
			3-22	Very gravelly coarse sand, very gravelly sand, very gravelly loamy coarse sand, very gravelly loamy sand	SM, GP, GP-GM	A-1-a, A-1-b	0- 2- 6	0- 6- 8	46-52-62	28-38-53	14-22-37	4- 8- 15	0-15 -17	NP-3 -3
			22-43	Very gravelly loamy sand, very gravelly loamy coarse sand, very gravelly coarse sand, extremely gravelly loamy sand	SW-SM, SP, SW	A-1-b, A-1-a	0- 6- 7	6-12- 16	53-70-76	18-47-60	7-20- 30	1- 3- 10	0-0 -17	NP-0 -3
			43-57	Very gravelly loamy coarse sand, extremely gravelly coarse sand, extremely gravelly loamy coarse sand, very gravelly coarse sand	SW, SP, SW-SM	A-1-b, A-1-a	0- 0- 7	0- 2- 5	53-79-80	18-52-54	7-22- 26	1- 3- 8	0-0 -17	NP-0 -3

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					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			57-61	Very gravelly coarse sand, gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy coarse sand	SM, SP, SW-SM	A-1-a, A-1-b	0-0-5	0-2-5	70-80-89	28-46-77	14-25-46	4-9-20	0-16-17	NP-3-3
Typic haplargids	35	A	0-2	Fine sandy loam	SC-SM, SM	A-4, A-2-4	0-0-0	0-0-0	88-98-100	76-94-100	64-82-92	27-38-46	17-18-22	2-3-6
			2-14	Fine sandy loam, sandy loam	SC-SM, SC	A-6, A-2-4	0-0-0	0-0-0	88-97-97	77-92-92	63-85-92	21-33-40	19-23-29	4-7-12
			14-23	Fine sandy loam, sandy loam	SC, SC-SM	A-2-4, A-6	0-0-0	0-0-0	88-95-97	77-88-92	63-81-92	21-31-40	19-24-29	4-8-12
			23-38	Sandy loam, fine sandy loam	SC-SM, SC	A-2-6, A-6, A-2-4	0-0-0	0-1-4	88-97-97	77-92-93	64-86-93	22-33-39	21-28-29	6-11-12
			38-47	Gravelly sand, sand, gravelly loamy sand, loamy sand	SM, SP-SM	A-1-b, A-2-4	0-0-0	0-1-4	74-92-96	49-75-92	35-59-79	6-13-24	0-0-18	NP-0-3
			47-63	Gravelly sand, very gravelly coarse sand, very gravelly sand, gravelly coarse sand	SW-SM, SP-SM, SW	A-1-b, A-1-a	0-0-0	0-1-3	78-89-94	33-47-77	14-22-44	3-5-12	0-0-17	NP-0-3

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					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
61—Typic Haplargids and Lithic Haplargids; thermic hills and mountains														
Typic haplargids	40	D	0-1	Cobbly fine sandy loam	CL-ML, SM	A-2-4, A-4	0- 3- 6	11-15-20	82-91-93	65-85-89	55-74-80	32-45-51	16-17-21	2-3 -6
			1-6	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	SC, GC-GM	A-4, A-2-4, A-1-b	0- 0- 0	7-13- 24	56-69-71	34-53-58	27-46-52	17-31-36	20-24-26	6-8 -9
			6-17	Very gravelly loam	GC	A-2-6, A-6	0- 0- 0	6-12- 17	43-50-62	30-42-57	26-38-54	20-29-43	27-30-37	12-14-19
			17-21	Gravelly clay loam, gravelly loam, clay loam, loam	CL, GC	A-2-6, A-6	0- 0- 0	0- 1- 6	66-95-96	52-88-92	45-82-89	34-66-74	28-40-40	12-21-21
			21-28	Very gravelly sandy loam, extremely gravelly loam, very gravelly loam	GW-GC, GC, GP-GC	A-2-4, A-2-6, A-6	0- 0- 0	0- 5- 10	29-29-59	13-17-52	11-15-49	7-12- 37	25-32-35	9-15-17
			28-38	Bedrock	—	—	—	—	—	—	—	—	—	—
Lithic haplargids	35	D	0-2	Gravelly loam	CL, SC-SM	A-4, A-2-4	0- 0- 0	0- 0- 4	81-89-92	48-57-76	40-50-69	27-36-51	19-22-26	4-6 -9
			2-12	Very gravelly loam, very gravelly sandy clay loam, very gravelly sandy loam	SC	A-2-6, A-6	0- 0- 0	0- 0- 5	66-81-82	27-52-53	23-47-51	16-35-38	28-35-37	12-17-19
			12-22	Bedrock	—	—	—	—	—	—	—	—	—	—

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					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
3251—Jawbone association, 8 to 50 percent slopes														
Jawbone, warm	60	D	0-2	Loamy sand	SM	A-2-4	0-0-0	0-0-0	94-98-100	73-86-100	55-67-78	16-21-24	0-18-19	NP-3-3
			2-6	Loamy sand	SC-SM, SM	A-2-4	0-0-0	0-0-0	98-98-100	84-84-100	65-68-80	17-21-25	0-19-21	NP-4-4
			6-59	Bedrock	—	—	—	—	—	—	—	—	—	—
Jawbone	20	D	0-2	Loamy sand	SM	A-2-4	0-0-0	0-0-0	94-98-100	73-86-100	55-67-78	16-21-24	0-18-19	NP-3-3
			2-6	Loamy sand	SC-SM, SM	A-2-4	0-0-0	0-0-0	98-98-100	84-84-100	65-68-80	17-21-25	0-19-21	NP-4-4
			6-59	Bedrock	—	—	—	—	—	—	—	—	—	—

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					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
4171—Dovecanyon-Koehn association, 2 to 8 percent slopes														
Dovecanyon, warm	70	A	0-2	Loamy sand	SM, SC-SM	A-2-4	0-0-0	0-0-0	92-92-100	77-82-92	59-65-76	14-18-23	0-19-23	NP-3-6
			2-5	Coarse sandy loam, gravelly sandy loam, loamy sand	SC-SM, SM	A-2-4, A-1-b	0-0-0	0-0-0	93-97-98	71-84-92	36-48-54	15-23-26	0-21-23	NP-5-6
			5-36	Gravelly coarse sandy loam, sandy loam, gravelly sandy loam, coarse sandy loam	SC, SC-SM	A-2-4, A-2-6	0-0-0	0-0-0	86-90-97	64-70-89	32-40-52	13-19-25	20-27-30	6-11-12
			36-63	Gravelly loamy coarse sand, gravelly coarse sand, loamy coarse sand, coarse sand	SM, SC-SM	A-1-b	0-0-0	0-0-0	86-89-100	66-75-92	32-41-52	9-13-19	0-19-22	NP-3-6
			63-79	Gravelly coarse sandy loam, gravelly sandy loam, coarse sandy loam, sandy loam	SC, SC-SM	A-2-4, A-2-6	0-0-0	0-0-0	86-89-100	64-76-92	37-46-63	19-23-35	20-22-32	6-7-13
Koehn, dry	20	A	0-1	Sand	SP-SM	A-2-4	0-0-0	0-0-0	97-97-100	85-90-96	70-70-77	9-9-12	0-16-19	NP-1-2
			1-63	Coarse sand, loamy sand, loamy coarse sand, sand	SM, SC-SM	A-2-4	0-0-0	0-1-5	94-98-100	82-92-98	63-72-83	10-13-19	0-16-22	NP-1-6