SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

ITEM: 3.54
(ID # 27675)
MEETING DATE:
Tuesday, June 24, 2025

FROM : TLMA - AVIATION

SUBJECT: TRANSPORTATION AND LAND MANAGEMENT AGENCY/AVIATION: Adopt the Final Initial Study/Mitigated Negative Declaration and Approve the Air Traffic Control Tower Construction at Jacqueline Cochran Regional Airport, District 4. [$0] (Clerk to File the Notice of Determination)

RECOMMENDED MOTION: That the Board of Supervisors:

1. Adopt the Final Initial Study with Mitigated Negative Declaration for the Air Traffic Control Tower Construction at Jacqueline Cochran Regional Airport and adopt the Mitigation Monitoring and Reporting Program for the project based on the findings in the Initial Study and the conclusion that the project will not have a significant effect on the environment;

2. Approve the Jacqueline Cochran Regional Airport – Air Traffic Control Tower Construction project; and

3. Direct the Clerk of the Board to file the Notice of Determination with the County Clerk and the State Clearinghouse for posting within five (5) working days of project approval.

ACTION:Policy

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Spiegel, seconded by Supervisor Medina and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes:	Medina, Spiegel, Washington, Perez and Gutierrez
Nays:	None
Absent:	None
Date:	June 24, 2025
xc:	TLMA-Aviation, Recorder, State Clearinghouse

Kimberly A. Rector
Clerk of the Board
By: _____ Deputy

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost
COST	$ 0	$ 0	$ 0	$ 0
NET COUNTY COST	$ 0	$ 0	$ 0	$ 0
SOURCE OF FUNDS: N/A			**Budget Adjustment:** No	
			For Fiscal Year: 24/25	

C.E.O. RECOMMENDATION: Approve

BACKGROUND:

Summary

The Jacqueline Cochran Regional Airport (TRM) is a busy, public-use general aviation airport that is owned and operated by Riverside County and included in the Federal Aviation Administration's (FAA's) National Plan of Integrated Airport Systems (NPIAS). The FAA determined that the airport is eligible for the Federal Control Tower Program in 2022. The County proposed to construct a 448 – square-foot Air Traffic Control Tower (ATCT) to enhance safety by improving communication among aircraft to reduce the risk of accidents, incursions, and other potential hazards. The project will not increase airport capacity or alter the fleet mix using the airport.

The Federal Aviation Administration's (FAA's) National Plan of Integrated Airport Systems (NPIAS) categorizes TRM as a National Airport (NPIAS, 2024a). Aircraft that operate at TRM include corporate jets, single- and multi-engine aircraft, and helicopters. FAA's Airport Master Record indicates that TRM supported approximately 42,200 operations throughout 2024. The Airport supports 94 based aircraft including single-engine aircraft (50), multi-engine aircraft (16), jets (18), and helicopters (10) (FAA 2024b). Three Fixed-Based Operators (FBO) operate at the Airport to provide fuel, aircraft parking and storage, maintenance services to tenants and to provide air-charter services (Riverside County, 2024a).

The 1,850-acre Airport includes two non-intersecting paved runways in an open "V" formation. Runway 17/35 is 8,500 feet long and 150 feet wide, equipped with Medium Intensity Runway Edge Lights, a two-box Visual Approach Slope Indicator on Runway 17 end, and a four-box Precision Approach Path Indicator (PAPI) on the Runway 35 end. Runway 12/39 is 4,955 feet long and 100 feet wide, equipped with MIRLs, and two-light PAPIs on both runway ends. Both runways are equipped with a full-length parallel taxiway equipped with Runway End Identifier Lights.

Jacqueline Cochran Regional Airport (TRM) is not equipped with an Air Traffic Control Tower (ATCT). Approach and departure control services are provided by the Los Angeles Air Route Traffic Control Center (ARTCC). Pilots in the vicinity of TRM use the general air traffic frequency to communicate. During major events, such as the Coachella Valley Music Festival and Stagecoach Festival, TRM experiences substantial surges in visitor traffic, which highlight the need for enhanced operational capabilities.

Riverside County and the FAA conducted a tower siting to identify an appropriate ATCT location. The County will construct the ATCT on a previously graded and disturbed area located east of the runway. The facility will include a secure interior access road, a parking area for tower staff (average of 3 staff members daily), a back-up generator, fence, and lighting. The ATCT will be served by existing utilities including sewer, electricity, communications, and water. The proposed ATCT would include the following components:

- **Cab.** A 448-square-foot octagonal cab will be constructed.
- **Security Fence.** A chain-link security fence will surround the tower site.
- **Emergency generator.** An emergency diesel generator with a sub-base tank will be provided. A designated parking area will be provided for a fuel truck.
- **Clear area.** A 40-foot clear area will be provided between the tower and the fence.
- **Lighting.** Overhead parking lights will be installed at each tower corner.
- **Parking.** Ten parking spaces, including two spaces that comply with the Americans with Disabilities Act.
- **Dedicated Access Road.** A dedicated paved access road with a motorized security gate will be constructed to provide access from an interior service road to the tower site. The access road will be designed as a one-way path.
- **Runway 12 Hold Lights.** Hold lights will be installed at Runway 12 as requested by FAA as a condition of site selection

The overall project area, which includes the tower site and all limits of disturbance will total 8.5 acres including a 200-foot by 200-foot construction staging area; however, the tower site, which includes the tower, generator / pad, and fence will total 0.24 acre (10,404 square feet), and the interior roadway area leading from the public road to the tower and new trenching will total 1.15 acres (50,006 square feet). The remaining area includes temporary effects associated with utility connections and trenching.

Construction of the ATCT is planned to commence in 2026, contingent upon receipt of external funding, and requires approximately six months. The maximum staffing needs is anticipated to be 35 employees at peak utilization, with an average utilization being 15 staff members. Anticipated construction includes: a front loader, scraper, grader, asphalt paver, haul trucks, striping cart, crane, compaction roller, pile driver (if required), concrete trucks, water trucks, pickup trucks, compaction jacks, forklifts, and human lifts.

The preparation of the environmental documentation for this project is consistent with the California Environmental Quality Act (CEQA). The County prepared an Initial Study (IS) with proposed Mitigated Negative Declaration (MND) in order to analyze the proposed Project's impact to the environment.

The draft Initial Study/Mitigated Negative Declaration (IS/MND) was circulated for a 30-day public review period from April 18, 2025, to May 19, 2025. Physical copies of the documents

were made available for public review at the following locations:

- Clerk of the Board of Supervisors for the County of Riverside, 4080 Lemon Street, First Floor, Riverside California 92501
- County of Riverside Division of Airports website at: www.rcjcra.com
- Coachella Branch Library, 1500 6th Street, Coachella, CA 92236 (Wednesday and Thursday from 11AM to 7PM), (Tuesday, Friday, and Saturday 10AM to 6PM) (Telephone 760-398-5148)

Based upon the whole record before it, including technical studies, the initial study, and any comments received, the County has determined, reflecting the lead agency's independent judgment and analysis, that there is no substantial evidence that the project will have a significant impact on the environment. All documents supporting this determination are located at the Riverside County TLMA – Aviation Division, 4080 Lemon Street, 14th Floor, Riverside, CA 92501.

Impact on Residents and Businesses

The Jacqueline Cochran Regional Airport Air Traffic Control Tower will enhance aviation safety by improving air traffic communication, providing improved aircraft separation, and reducing the risk of mid-air collisions and other accidents, runway incursions, and other hazards.

ATTACHMENTS:

Notice of Intent to Adopt a Mitigated Negative Declaration
Notice of Completion
Initial Study/Mitigated Negative Declaration
CEQA Findings of Fact
Notice of Determination

Jason Farin, Principal Policy Analyst 6/19/2025

Aaron Gettis, Chief of Deputy County Counsel 6/10/2025

Peter Aldana
Riverside County
Assessor-County Clerk-Recorder
2724 Gateway Drive
Riverside, CA 92507
(951) 486-7000
www.rivcoacr.org

Receipt: 25-190660-C1

Receipt corrected 6/25/25, 3:19 PM by nolivas
25-190660-C1 - Changed filing type - Nadia O.

Product	Name	Extended
FISH	CLERK FISH AND GAME FILINGS	$3,018.75
	# Pages	1
	Document #	E-202500568
	Filing Type	2
	State Fee Prev Charged	false
	No Charge Clerk Fee	false
F&G Negative Declaration		$2,968.75
F&G Clerk Handling Fee		$50.00
Total		$3,018.75
Tender (On Account)		$3,018.75

Account#	TRANS
Account Name	TRANS - TRANSPORTATION DEPT
Balance	$11,217.25
Comment	SST3535S1999

6/25/25, 1:49 PM PST
Gateway Clerk

State of California - Department of Fish and Wildlife

2025 ENVIRONMENTAL DOCUMENT FILING FEE

CASH RECEIPT

DFW 753.5a (REV. 01/01/25) Previously DFG 753.5a

RECEIPT NUMBER: 25-190660

STATE CLEARINGHOUSE NUMBER *(If applicable)*: 2025040919

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
RIVERSIDE COUNTY AIRPORTS DIVISION	AJAMISON@RIVCO.ORG	06/25/2025

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
RIVERSIDE	E-202500568

PROJECT TITLE

AIRPORT TRAFFIC CONTROL TOWER CONSTRUCTION AT THE JACQUELINE COCHRAN REGIONAL AIRPORT

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
RIVERSIDE COUNTY AIRPORTS DIVISION	AJAMISON@RIVCO.ORG	(951) 955-5746

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
4080 LEMON STREET, 14TH FLOOR	RIVERSIDE	CALI	92501

PROJECT APPLICANT *(Check appropriate box)*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$4,123.50	$
☐ Mitigated/Negative Declaration (MND)(ND)	$2,968.75	$
☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,401.75	$

☒ Exempt from fee

- ☐ Notice of Exemption (attach)
- ☒ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$
☒ County documentary handling fee		$ $50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☐ Check ☒ Other **TOTAL RECEIVED** $ $50.00

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X I Tejeda	Deputy Isabel Tejeda

ORIGINAL - PROJECT APPLICANT | COPY - CDFW/ASB | COPY - LEAD AGENCY | COPY - COUNTY CLERK | DFW 753.5a (Rev. 01012025)

Print Form

Notice of Determination

Appendix D

To:

☒ Office of Planning and Research

U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Rm 113, Sacramento, CA 95814

☒ County Clerk
County of: Riverside
Address: 4080 Lemon Street, 1st Floor
Riverside, CA 92501

From:
Public Agency: Riverside County
Address: 4080 Lemon Street, 14th Floor
Riverside, CA 92501
Contact: Angela Jamison
Phone: (951) 955-9418

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): SCH No. 2025040919

Project Title: Airport Trafffic Control Tower Construction at the Jacqueline Cochran Regional Airport

Project Applicant: Riverside County Airports Division

Project Location (include county): 56-850 Higgins Rd, Thermal, CA, Riverside County, CA 92274

Project Description:

The Jacquleine Cochran Regional Airport (TRM) is a busy, public-use general aviation airport that is owned and operated by Riverside County. The Airport is included in the FAA's Federal Control Tower Program. The County proposed to construct an Airport Traffic Control Tower (ATCT) at an FAA-approved location at TRM to enhance safety by improving communication among aircraft and to reduce the risk of accidents, incursions, and other hazards. The project will not increase airport capacity.

This is to advise that the Riverside County Board of Supervisors (☒ Lead Agency or ☐ Responsible Agency) has approved the above described project on June 24, 2025 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
Riverside County - Aviation, 4080 Lemon Street, 14th Floor, Riverside, CA 92501

Signature (Public Agency): Angela Jamison Title: Director of Airports

Date: 06/05/2025 Date Received for filing at OPR:

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

F I L E D / P O S T E D
County of Riverside
Peter Aldana
Assessor-County Clerk-Recorder
E-202500568
06/25/2025 01:49 PM Fee: $ 50.00
Page 1 of 1
Removed: By: Deputy

06/24/2025 Item 3.54

Document Root (Read-Only)

Selected Document

2025040919 - NOD - Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport

Riverside County
Created - **6/26/2025** | Submitted - **6/26/2025** | Posted - **6/26/2025** | Received - **6/26/2025** | Published - **6/26/2025**
Whitney N Mayo

Document Details

Lead Agency

Riverside County

Document Type

Notice of Determination

Document Status

Published

Title

Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport

Document Description

The Jacqueline Cochran Regional Airport (TRM) is a busy, public-use general aviation airport that is owned and operated by Riverside County. The Airport is included in the FAA's Federal Control Tower Program. The County proposed to construct an Airport Traffic Control Tower (ATCT) at an FAA approved location at TRM to enhance safety by improving communication among aircraft and to reduce the risk of accidents, incursions, and other hazards. The project will not increase airport capacity.

Attachments (Upload Project Documents)

3.54 - NOD - Mit Neg Dec w JV.pdf

Contacts

Riverside County Airports Division - *Angela Jamison*

4080 Lemon Street 14th Floor
Riverside, CA 92501
Phone : (951) 955-5746
ajamison@rivco.org

Regions

Southern California

Counties

Riverside

Cities

Thermal

Location Details

Zip Code - 92274

Other Location Info

56-850 Higgins Rd, Thermal , CA, Riverside County , CA 92274

Notice of Determination

Agency Approved by
Riverside County Board of Supervisors

Agency Role
Lead Agency

Approved On
6/24/2025

Significant Environmental Impact
Will Not

Environmental Impact Report Prepared
No

Mitigated or Negative Declaration Prepared
Yes

Mitigation Measures
Were made a condition of the approval of the project

Mitigation Reporting Or Monitoring Plan
Was adopted for this project

Statement Of Overriding Considerations
Was not adopted for this project

Findings
Were made pursuant to the provisions of CEQA

Final Environmental Document Available at
Riverside County - Aviation , 4080 Lemon Street, 14th Floor, Riverside, CA 92501 and https://rcfva.com/

County Clerk(s)

Riverside

Signature

Title

Date

Proposed Airport Traffic Control Tower Construction at the French Valley Airport (F70)
Initial Study/Mitigated Negative Declaration (IS/MND) – SCH No. 2025040919
Riverside County - Aviation

CEQA Findings of Fact

Pursuant to the California Environmental Quality Act (CEQA), these Findings of Fact (Findings) support the adoption of a Mitigated Negative Declaration (MND) for a proposed Airport Traffic Control Tower (ATCT) at the Jacqueline Cochran Regional Airport (TRM) near Thermal, California. To prepare the Findings, the County of Riverside has used the IS/MND prepared by the Division of Aviation and submitted to the State Clearinghouse on April 17, 2025, and the comments received on the IS/MND during a 30-day public circulation period.

The County of Riverside is the Lead Agency under CEQA for the purposes of adopting the MND and approving the proposed project. To that end, the Findings provide the specific reasons supporting the County's decisions under CEQA as they relate to the Board's decision to adopt the IS/MND. The findings are supported by substantial evidence in the Airport Division's administrative record.

A. ENVIRONMENTAL REVIEW

PROJECT OVERVIEW

The Jacqueline Cochran Regional Airport (TRM or "Airport") is a public-use Airport that is owned and operated by the County of Riverside, Transportation and Land Management Agency ("County"). TRM is located in the lower Coachella Valley in an unincorporated area of the County southwest of the community of Thermal and approximately 33 miles southeast of Palm Springs. The Airport serves General Aviation (GA), pilot training, and charter operations. TRM plays a crucial role as a gateway to the growing Riverside region.

TRM is not equipped with an Air Traffic Control Tower (ATCT). The County prepared a Benefit/Cost (B/C) analysis and submitted it to the FAA to determine whether the Airport could be included in the FAA's Federal Contract Tower (FCT) program. The B/C study identified that ATCT construction would enhance safety, operational efficiency, and overall effectiveness of Airport operations, and the FAA accepted TRM into the FCT Program in 2022. The addition of an ATCT will support the Airport's role in the regional airport system and in the NPIAS. The proposed project will neither affect air traffic patterns nor increase Airport capacity; it will enhance airfield safety by providing more effective air traffic communication and facilitating ground movement.

Following virtual reality modeling and simulations of each tower site, the FAA identified Site No. 2 as the recommended ATCT site. A 448-square-foot octagonal tower cab will be constructed and face westward. The ATCT will be constructed using a column design with a cab floor elevation of 90 feet above ground level (AGL) and a top-of-tower height of 125 AGL/-5 feet MSL.

The proposed ATCT would include the following components:

- **Cab.** A 448-square-foot octagonal cab will be constructed.
- **Security Fence.** A chain-link security fence will surround the tower site.

- **Emergency generator.** An emergency diesel generator with a sub-base tank will be provided. A designated parking area will be provided for a fuel truck.
- **Clear Area.** A 40-foot clear area will be provided between the tower and the fence.
- **Lighting.** Overhead parking lights will be installed at each tower corner.
- **Parking.** Ten parking spaces, including two spaces that comply with the Americans with Disabilities Act.
- **Dedicated Access Road**. A dedicated paved access road with a motorized security gate will be constructed to provide access from an interior service road to the tower site. The access road will be designed as a one-way path.
- **Runway 12 Hold Lights.** Hold lights will be installed at Runway 12 as requested by FAA as a condition of site selection.

TRM is equipped with all utilities needed to construct and operate the ATCT. Utility connections would be provided to the ATCT, including stormwater, electricity, water, sewer, and communications.

The overall project area, which includes the tower site and all limits of disturbance, will total 8.5 acres including a 200-foot by 200-foot construction staging area; however, the tower site, which includes the tower, generator/pad, and fence, will total 0.24 acre (10,404 square feet). The total and the interior roadway area leading from the public road to the tower and new trenching will total 1.15 acres (50,006 square feet). The project limits of disturbance are shown on **Figure 1**. The remaining area includes disturbance associated with utility connections and trenching but will not result in an increased amount of impervious surface.

CEQA CIRCULATION

Riverside County submitted an Initial Study/Mitigated Negative Declaration (IS/MND) to the State Clearinghouse (SCH No 2025040919), which was circulated or a 30-day period from April 18 to May 19, 2025. The document was also available at the following locations:

- County of Riverside Division of Airports website at: www.rcfva.com
- Coachella Branch Library, 1500 6th Street, Coachella, California. A hard copy was available from the librarian upon request.

Comments on the IS/MND were received as written comments or email comments submitted to Angela Jamison, Director of Airports through May 29, 2025, at 5:00 PM.

COMMENTS RECEIVED

One comment was received during the 30-day review period. A comment letter was received from the Department of Toxic Substances Control regarding the presence of an open ENVIROSTOR Site located near the proposed project site (see **Attachment 1**). The comment and the County's response are discussed in Section E of this document.

Figure 1 - ATCT Limits of Disturbance

B. FINDING OF FACTS

Pursuant to the California Environmental Quality Act (CEQA), the Riverside County Airports Division prepared an Initial Study for the proposed Airport Control Tower Construction at the Jacqueline Cochran Regional Airport (Project), which studied the environmental impacts related to the Project. As demonstrated by the IS/MND, the Project will not have a significant impact on the environment and an MND is proposed. As such, in accordance with CEQA, a Notice of Determination (NOD) has been prepared by the District, and the Clerk of the Board should be directed to file the NOD within five days of the Board of Supervisors' adoption of the MND and Project approval.

Prior to reaching a decision on the issuance of IS/MND adoption, the Board considered the environmental effects of the proposed project as shown in the IS/MND. The IS/MND specifies mitigation measures for identified impacts and provides a Mitigation, Monitoring, and Reporting Plan (MMRP), which documents the mitigation measures and how they will be implemented (see **Attachment 2**). The Findings specified below address the mitigation measures that will be implemented to reduce potential impacts to less-than-significant.

C. GENERAL FINDINGS ON SIGNIFICANT AND UNAVOIDABLE IMPACTS ASSOCIATED WITH THE PROJECT THAT CANNOT BE AVOIDED OR SUBSTANTIALLY LESSENED TO A LESS-THAN-SIGNIFICANT LEVEL.

No significant and unavoidable impacts were identified that cannot be avoided or substantially lessened to a less-than significant level.

D. CUMULATIVE IMPACTS

No cumulative impacts were identified.

E. SIGNIFICANT IMPACTS THAT ARE AVOIDED OR SUBSTANTIALLY REDUCED TO A LESS-THAN-SIGNIFICANT LEVEL BY MITIGATION MEASURES INCORPORATED OR REQUIRED AS A CONDITION OF PROJECT APPROVAL.

The IS/MND describes the potential impacts to environmental resources considered under CEQA, some of which could result in significant impacts without the implementation of mitigation measures. These potential impacts and their mitigation measures, which would reduce potential impacts to less than significant, are presented below, along and Board's findings and rationale for these findings.

BIOLOGICAL RESOURCES

The County conducted a Biological Resources Assessment (BRA) and Jurisdictional Determination (JD). The BRA identified that the project vicinity included non-native grasslands and scrub habitats that could be used by nesting birds protected by the California Fish and Game Code (CFGC), including the vermillion flycatcher.

Impact BIO-1: Indirect Taking of a Species Protected by the California Fish and Game Code.

The inadvertent taking of a vermillion flycatcher or other nesting bird protected by the CFGS during construction activities would be considered a significant impact.

The County identified **Mitigation Measure BIO-1** to prevent the inadvertent taking of a vermillion flycatcher during construction activities.

- **Mitigation Measure BIO-1: Conduct a preconstruction survey for nesting birds.** Should begin during the nesting season for migratory birds, which extends from February 15 to August 31, the county will undertake a preconstruction survey within 3 to 7 days of construction to identify the potential presence of the vermillion fly catcher. In the event that a nest for the vermillion flycatcher is observed within the project's limits of disturbance, a 250-foot buffer will be established, and work shall not commence within the buffered area until the young have fledged.

Based on the results of the BRA and JD, the proposed project would not have a substantial adverse effect on any candidate, sensitive, or special-status species. The impact would be less than significant with mitigation incorporated.

CULTURAL RESOURCES

Impact CUL-1: Disturbance and Destruction of Previously Unknown Cultural Resources

The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

The County established an Area of Potential Effect (APE) for cultural and archaeological resources and undertook a cultural resources assessment that included the area within 1 mile of the cultural resources APE. The Cultural Resources assessment included outreach to the Native American Heritage Commission (NAHC) to conduct a Sacred Lands File Search and obtain a list of tribal contacts. The County subsequently reached out to tribal contacts to alert tribes of the proposed project and solicit input regarding known resources.

Representatives from one tribe, the Agua Caliente Band of Cahuilla Indians, requested formal consultation with the County and participated in a teleconference to discuss the need for potential mitigation during site grading and construction. A record of outreach to Native American Tribes is appended to the IS/MND. The County developed the mitigation measures to address the potential disturbance and destruction of previously unknown cultural resources and forwarded the measures to the tribe for comment. No comments were received, and the following mitigation measures were presented in the IS/MND.

- **Mitigation Measure CUL-1: Conduct cultural resources monitoring during initial ground disturbing activities.** The Project Archaeologist and Tribal Representatives shall monitor initial ground disturbing activities. (Ongoing disturbance of the same area will not require ongoing monitoring.) Approximately 60 days prior to construction, the Project Archaeologist, in consultation with the Monitoring Tribe(s), shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing, and responsibility of archaeological and cultural activities that will occur on the project site such as: project grading and development scheduling.

  The CRMP will include measures for the coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the County. The CRMP shall identify the protocols and stipulations that the County, Monitoring Tribe(s), and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resources. They shall have the authority to stop and redirect excavation in order to evaluate the significance of any archaeological resources discovered within 60 feet of the find (see **Mitigation Measure CUL-2**). A decision regarding the find and its effect on construction activities must be determined within 48 hours.

- **Mitigation Measure CUL-2: Inadvertent discovery of Native American cultural resources.** If during ground disturbance activities unanticipated Native American cultural resources are discovered during the course of grading or ground disturbance for this project, all ground disturbance activities within 60 feet of the resource shall be halted, and a meeting shall be convened among the Project Archaeologist and Native American Tribal Monitor to discuss the significance of the find. At that meeting, a decision will need to be made, with the concurrence of the Airports Division, as to the appropriate treatment of the resource (documentation, recovery, avoidance). Resource evaluations shall be limited to non-destructive analysis. Further ground disturbance shall not resume within the area of discovery until the appropriate treatment has been accomplished. The following procedures shall be carried out for the treatment and disposition, which shall be further described in the project-related CRMP:

  - **Temporary On-Site Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site with Native American Tribal Monitor oversight of the process.

  - **Curation:** The County shall relinquish ownership of all cultural resources. The Project Archaeologist, following consultation with the Monitoring Tribe(s), shall deliver the materials to a qualified repository in Riverside County that meets or exceeds federal standards per Code of Federal Regulations (CFR) Title 36, Part 79, and that shall be made available to all qualified researchers and tribal representatives.

  - **Treatment and Final Disposition**: The County shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all cultural materials and nonhuman remains, as part of the required mitigation for impacts to cultural resources.

  - **Reporting.** The Project Archaeologist shall prepare a final archaeological report within 60 days of project completion. The report shall follow Cultural Resources Management Plan (CRMP).

The disturbance and destruction of previously unknown cultural resources would result in a significant impact. The implementation of **Mitigation Measures CUL-1 and CUL-2** will reduce the potential impact to less than significant with mitigation incorporated.

Findings

The Airports Division has conducted outreach to interested tribes and worked with the Agua Caliente Band of Cahuilla Indians to develop mitigation and to provide monitoring during initial ground disturbance associated with construction. The County Airports Division will continue to work with the Agua Caliente Band to develop a Cultural Resource Management Plan (CRMP) that will be implemented during construction.

Rationale

Mitigation Measures CUL-1, CUL-2, and ongoing coordination with the Agua Caliente Band are proposed by the Airports Division; these actions will avoid and minimize potential impacts associated with the inadvertent discovery of unknown cultural resources.

Impact CUL-2: Discovery of Human Remains and Grave Goods

The proposed project has the potential to disturb any human remains, including those interred outside of dedicated cemeteries.

No cultural remains were observed within the project area during field activities associated with the Cultural Resources Assessment, as the area was disturbed by grading and clearing, during Airport development. The Cultural Resources Assessment concluded that it is unlikely that any human remains would be disturbed as part of the project (Applied Earthworks, 2024). While the potential to encounter human remains is low, the disturbance of unknown human remains would be a significant impact. The implementation of **Mitigation Measure CUL-3** would reduce this potential impact to less than significant with mitigation incorporated. The County developed **Mitigation Measure CUL-3** during consultation with the Agua Caliente Band of Cahuilla Indians.

- **Mitigation Measure CUL-3: Discovery of human remains.** In the event that human remains (or remains that may be human) are discovered within the construction areas, all activity within 60 feet of the find shall be immediately halted. Any discovery of human remains shall be immediately reported by the Project Archaeologist and Native American monitor(s) to the County Coroner. If the human remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall appoint a Most Likely Descendant (MLD). The MLD shall make recommendation and engage in consultation with the County Airports Division and Project Archaeologist concerning the treatment of the remains as provided in California Public Resources Code 5097.98.
    - The discovery of any Native American human remains and / or funerary objects shall be kept confidential and secure to prevent any further disturbance. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains and associated funerary objects, sacred objects and / or objects of cultural patrimony shall be covered with an opaque material or placed in opaque cloth bags. A physical barrier (e.g., metal plate, concrete slab that can be moved by heavy equipment) shall be placed over the excavation opening to protect the remains until examination by the MLD. If this type of protective barrier is not available, a 24-hour guard shall be posted outside of working hours.

- The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD shall identify and direct the most appropriate means of treating the human remains and any associated funerary object(s). As determined through consultation with the County, the MLD shall make recommendations that allow the burial to remain in situ and protected.
- Once complete, a final report of all activities associated with or resulting from the discovery of human remains shall be submitted to the NAHC.

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code § 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the State of California regardless if the remains are modern or archaeological.

The disturbance of unknown human remains would be a significant impact. The implementation of **Mitigation Measure CUL-3** would reduce this potential impact to less than significant with mitigation incorporated.

Findings

The County Airports Division has consulted with the Agua Caliente Band of Cahuilla Indians to develop **Mitigation Measure CUL-3,** and it would continue to work with the Agua Caliente Band to develop a CRMP and associated Cultural Resources Treatment Agreement as identified in the IS/MND.

Rationale

Mitigation Measure CUL-3 as proposed by the Airports Division would avoid and minimize potential impacts associated with the discovery of human remains and grave goods.

ENERGY

Impact ENERGY-1: Permitted Use of a Diesel-Fueled Generator

The proposed project could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

As required by the FAA, the proposed ATCT will be equipped with an emergency generator to enable ATCT operations to continue during power interruptions, and it is anticipated that the generator would require the use of diesel fuel. A permit to construct is required from the South Coast AQMD prior to the installation of internal combustion engines, including emergency generators (South Coast AQMD, 2025).

The installation and operation of a backup generator in the absence of a permit from the South Coast AQMD could be considered a significant impact. The implementation of Mitigation Measure ENERGY-1 would reduce this potential impact to less than significant:

- **Mitigation Measure ENERGY-1: Obtain permit to construct from the South Coast AQMD.** Prior to selection and installation of an emergency backup generator, the County shall consult with the South Coast AQMD regarding the proposed emergency generator and obtain a permit to Construct the emergency generator.

Findings

The County Airports Division will procure a permit from the South Coast AQMD, which will avoid a significant impact as identified in the IS/MND.

Rationale

The FAA requires the installation and use of generators during emergencies. The proposed mitigation measure complies with South Coast AQMD policies and regulations, and it will avoid and minimize potential impacts associated with the use of a diesel-fueled generator during emergencies.

GEOLOGY AND SOILS

Impact PALEO-1: Disturbance of Previously Unknown Paleontological Resources

The proposed project has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The County's Aviation Division considered the presence of paleontological resources in the study area. A consulting paleontologist reviewed available geologic maps and paleontological literature and conducted a museum records search to identify the potential for encountering paleontological resources during project construction.

Riverside County has assigned various paleontological sensitivity rankings to the various geologic units exposed within its boundaries. According to the Riverside County Planning Department paleontological sensitivity map (2015), the entire project area is mapped as High A (Ha) sensitivity based on the occurrence of fossils that may be present at the ground surface of the Project area. The data review conducted by the County's consultant supports that assessment.

Paleontological resources are protected under CEQA, and the Riverside County's General Plan, Multipurpose Open Space (OS) Element, The proposed project has the potential to directly or indirectly destroy a unique paleontological resource, which would be considered a significant impact. However, this impact can be reduced to less than significant with the application of **Mitigation Measure PALEO-1.**

- **Mitigation Measure PALEO-1: Discovery of Previously Unknown Paleontological Resources.** The County shall establish monitoring procedures and discovery protocols, based on industry-wide best practices for paleontological resources that may be encountered during earth-disturbing activities in a Paleontological Resources Impact Mitigation Program (PRIMP). The Project Paleontologist shall prepare a PRIMP to identify where construction monitoring will be required during project activities and the frequency of monitoring required (i.e., full-time, spot checks, etc.); address the collection and processing of sediment samples to analyze for the presence or absence of micro vertebrates and other small fossils; provide details about fossil collection, analysis, and curation at an approved repository; and describes the different reporting standards for monitoring, and worker environmental awareness training.

Findings

The development and implementation of a PRIMP will avoid or substantially lessen the potential significant impact identified in the IS/MND mitigation.

Rationale

The direct or indirect destruction of a unique paleontological resource or site or unique geologic feature would be a significant impact. **Mitigation Measure PALEO-1** is proposed by the Airports Division to avoid potential impacts to previously unknown paleontological resources.

HAZARDOUS MATERIALS

Impact HAZARD-1: Discovery of Previously Unknown Unexploded Ordnance (UXO), Munitions of Explosive Concern (MEC), or Munitions Debris (MD).

The Phase I ESA and comment letter received from the DTSC identified the presence of an open ENVIROSTOR database record associated with the Former Thermal Ground Air Base, which is a 2,555-acre site that encompasses TRM. The DTSC stated that the proposed project would be located in close proximity to several Formerly Used Defense Sites (FUDS) in which munitions testing during the World War II era occurred. The Phase I ESA identified this as a potential recognized Environmental Condition because the record remains open.

The County reviewed the ENVIROSTOR record and reviewed previously submitted documentation presented to DTSC. Documentation associated with the ENVIROSTOR record for the Thermal Ground Station Air Base. The included a September 2011 Draft Final Site Investigation (SI) Report for the Thermal Ground Air Station Base, Riverside County, California. The County's response to the DTSC letter is presented in **Attachment 1**, including the SI Report. The County reviewed the SI Report, which identified the locations of both the MRS site and burial pits. As shown on Attachment B of the County's response to the DTSC comment letter (see **Attachment 1**), both of the Munitions Response Sites (MRSs) associated with the ENVIROSTOR record and SI are located outside of the Airport and, therefore, outside of the proposed project's limits of disturbance. As shown on Attachment B of the County's response letter, the Burial Pits MRS is located on property owned by others, and the Skeet Range MRS is located on an area that was subsequently paved and developed as a campsite for recreational vehicles.

The Site Investigation Report evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS including munitions of explosive concern (MEC) and/or munitions debris (MD).

- **Skeet Range MRS:** The report identified that the former Skeet Range MRS, the site nearer to the airport, is within a graded and developed area, and the original Department of Defense (DoD) era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, a "No Department of Defense Action Indicated" (NDAI) determination is warranted (USACE 2011; Table 8-1).

- **Burn Pits MRS:** The report identified that MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

The ENVIROSTOR record included a letter stated that DTSC concurred with the "Draft Final SI Report recommendation of 'No Defense Action Indicated' for the Munitions Response Site (MRS) designated Skeet Range and Burial Pits because no MEC/MC was found at these sites." At that time, the DTSC was looking forward to the final SI Report Submittal (see **Appendix G**).

The discovery of previously unknown unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) would pose risks to human health and would be considered a significant impact. **Mitigation Measures HAZARD-1** and **HAZARD-2** were developed in response to the DTSC's letter and the review of reports associated with the ENVIROSTOR record:

- **Mitigation Measure HAZARD-1: Brief construction crews about the potential presence of munitions and debris, cease work if potential unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) are discovered during site grading or construction, and identify construction worker education and cease work measures in construction documents.** Prior to project construction, construction crews will be briefed on the identification of UXO, MEC, and MD, and safe actions to be taken in the event they are encountered, including leaving the area immediately and noting the location in which the material was encountered. Upon departing the site, the crew leader will call 911 and the County's Airports Director. The Airports Director will procure the services of qualified hazardous materials personnel to review and determine potential hazards. Work will continue after an appropriate assessment has been made and the materials have been removed by appropriate personnel.

Findings

Alerting crews to the types of munitions and debris that were formerly used or stored on site during the World War II era will prevent interaction with these materials. The implementation of **Mitigation Measure HAZARD-1** would reduce **Impact HAZARD-1** to less than significant with mitigation incorporated.

Rationale

Identifying the need for crew education and outreach in construction documents and providing a process for avoiding and removing munitions and munitions debris will avoid interaction with World War II-era emissions and emissions debris.

Impact HAZARD-2: Discovery of Previously Unknown Hazardous Materials.

The Phase I ESA did not identify the presence of hazardous materials in the area associated with the proposed tower site or limits of disturbance, but the DTSC Comment letter of May 12, 2025, recommended that construction crews be aware of signs of contaminated soil, residual staining, or odors during the construction process and that sample collection occur should these conditions be encountered. The discovery of previously unknown hazardous materials would be a significant impact. The implementation of **Mitigation Measure HAZARD-2** will be implemented to address this potential hazard.

- **Mitigation Measure HAZARD-2: Alert construction crews to signs of contaminated soil, residual staining, or odors, and cease work if they are encountered during site grading or construction.** Construction documents will specify that construction crews shall be alerted to signs of contaminated soil, residual staining, or odors and instruct crews to cease work if these conditions are encountered. The Airports Director will be alerted to the potential presence of hazardous materials and procure a qualified hazardous materials or environmental services personnel to evaluate the potentially hazardous material. Work will continue after an appropriate evaluation of the condition has been made, appropriate treatment or remediation is undertaken, and hazardous materials/environmental personnel determine that it safe to continue construction activities.

Findings

The implementation of **Mitigation Measure HAZARD-2** will reduce the potential impact to less than significant with mitigation incorporated.

Rationale

Alerting construction crews to signs of hazardous materials, cease work requirements, and material removal requirements will prevent interaction with potentially contaminated soils.

NOISE

Impact NOISE-1: Compliance with County Noise Policy and Ordinances

The proposed project will not result in temporary or permanent increases that will exceeds the standards established in the local general plan; however, construction of the proposed project will result in temporary construction-related noise associated with the use of construction vehicles and equipment. The Riverside County Noise Ordinance exempts capital improvement projects of a governmental agency. The Riverside County General Plan's Noise Element provides policies pertaining to temporary construction noise. Failure to comply with these policies would constitute a significant impact.

The implementation of **Mitigation Measures NOISE-1 and NOISE-2** will ensure compliance with County codes.

- **Mitigation Measure NOISE-1: Specify work hours in construction documents.** Construction documents will specify that all project-related construction activities will occur between the hours of 7AM and 7PM.
- **Mitigation Measure NOISE-2: Require construction equipment to be equipped with noise mufflers.** Construction documents will require that all construction equipment be equipped with noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Findings

Although noise impacts are unlikely, the implementation of **Mitigation Measures NOISE-1** and **NOISE-2** will prevent conflicts with the County's noise ordinance.

Rationale

Construction documents will specify that construction activities will occur during established hours of operation and require the use of noise-reduction features on construction equipment.

Impact NOISE-2: Temporary Exposure of Construction Workers to Aircraft Noise.

Construction workers will be exposed to aircraft noise throughout the construction period at levels exceeding 65 decibels as measured by the Community Noise Exposure Level (CNEL), which would result in a significant impact. As described by **Mitigation Measure NOISE-3**, construction documents would identify the need for hearing protection as appropriate for construction workers.

- **Mitigation Measure NOISE-3: Identify the need for personal protective equipment for hearing protection by construction personnel in contract documents.** Construction documents will identify that the proposed project is located on an airport and within an area that will include aircraft noise exposure at levels exceeding 65 CNEL and require the use of hearing protection by Construction workers to the extent practicable.

Findings

The proposed project is located near an active runway, and construction workers will be exposed to elevated levels of aircraft noise. The use of hearing protection will reduce the effects of aircraft noise to less-than-significant levels.

Rationale

Identifying the need for hearing protection in construction documents will ensure that construction workers are aware of aircraft noise exposure and the need to use hearing protection as appropriate during construction activities.

MANDATORY FINDING OF SIGNIFICANCE

The proposed project has the potential to disturb previously unknown cultural and paleontological resources as identified in **Impacts CUL-1, CUL-2**, and **PALEO-1**, the disturbance of which could affect important examples of history or prehistory; however, the implementation of **Mitigation Measures CUL-1, CUL-2,** and **PALEO-1** as described above would reduce this potential impact to less than significant.

Findings

The development of a CRMP and PRIMP, ongoing consultation with the Agua Caliente Band of Cahuilla Indians, and on-site monitoring during initial ground disturbance during construction will reduce the potential for impacts to cultural and paleontological resources to less than significant.

Rationale

The proposed mitigation measures, construction monitoring, and ongoing consultation will avoid a potentially significant impact associated with of California history or prehistory.

ADDITIONAL MITIGATION MEASURES FOR LESS-THAN-SIGNIFICANT IMPACTS

The Airports Division identified some temporary, less-than-significant impacts associated with construction, and it will implement them to further reduce temporary construction impacts that are already less than significant.

The proposed project would result in less-than-significant impacts associated with daily travel to and from the project site by workers and visitors. The County will implement **Mitigation Measure AQ-1** to further reduce temporary, less-than-significant impacts associated with fugitive dust generated during construction activities.

- **Mitigation Measure AQ-1: Incorporate County Provisions for Fugitive Dust Control in County Ordinance 742.1 in Construction Documents.** The provisions set forth in Ordinance 742.1 of the County of Riverside to control the fugitive dust and PM10 in Coachella Valley will be incorporated into construction documents to minimize the volume of particulates generated during construction activities.

F. STATEMENT OF OVERRIDING CONSIDERATIONS

No statement of overriding considerations is necessary for the project.

G. MITIGATION MEASURES

All proposed mitigation measures that will be implemented in subsequent project phases and during construction are presented in the Environmental Commitments Record (MMRP) presented as **Attachment 2** to this document. The County's Division of Airports will guide the implementation of mitigation measures by assigning implementation and reporting responsibilities and specifying timelines for their completion.

ATTACHMENTS

ATTACHMENT 1
Comments Received on the Initial Study

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
dtsc.ca.gov

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

May 12, 2025

Angela Jamison
Airports Manager
Riverside County Aviation Division
4080 Lemon Street, 14th Floor
Riverside, CA 92501
ajamison@rivco.org

RE: MITIGATED NEGATIVE DECLARATION FOR AIRPORT TRAFFIC CONTROL TOWER CONSTRUCTION AT THE JACQUELINE COCHRAN REGIONAL AIRPORT DATED APRIL 17, 2025, STATE CLEARINGHOUSE NUMBER 2025040919

Dear Angela Jamison,

The Department of Toxic Substances Control (DTSC) reviewed the Mitigated Negative Declaration (MND) for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (Project). The Jacqueline Cochran Regional Airport (Airport) is a public-use Airport that is owned and operated by the County of Riverside. The County proposes to construct a 448-square-foot octagonal Air Traffic Control Tower (ATCT) to enhance safety by improving communication among aircraft to reduce the risk of accidents, incursions, and other hazards. The proposed Project will not increase airport capacity or alter the aircraft fleet mix. Riverside County and the FAA conducted research to identify an appropriate ATCT location wherein, Riverside County will construct the ATCT on a previously graded and disturbed area of airport property located east of the runway. The 8.5-acre project area includes the tower site and all limits of disturbance along with a 200-foot by 200-foot construction staging area. Construction is anticipated in late 2026.

DTSC recommends and requests consideration of the following comments:

1. The Airport Traffic Control Tower Construction project is located near formerly used defense sites (FUDS), Thermal Ground Air Sta Base and Army Airport. Information, if available, can be requested from the U.S. Army Corps of Engineers through a Freedom of Information Act (FOIA) request at: FOIA-SPL@usace.army.mil.
2. The proposed Project is located in close proximity to several FUDS in which munitions testing during the World War II era occurred. While it appears that the FUDS are outside of the proposed Project area, due to the nature of FUDS use, and the potential that unexploded ordnance (UXO), munitions of explosive concern (MEC) and/or munitions debris (MD) may be discovered, proper health and safety measures are recommended prior to intrusive activities. If UXO, MEC or MD is/are encountered, follow the 3 Rs of Explosives Safety: Recognize, Retreat and Report: Recognize, when you have encountered munitions; Retreat, note your location as you are backing away. Do not approach, touch, or disturb a suspect munitions, safely leave the area and Report, immediately what was found to state and or local law enforcement – call 911.
3. DTSC recommends being aware of signs of contaminated soil, residual staining, or odors during the construction process and advises collecting appropriate samples for waste characterization and contacting DTSC if further assessment is necessary. DTSC recommends compliance with all applicable or relevant and appropriate environmental laws.
4. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil and fill material there should be documentation of the origins of the soil or fill material and, if applicable,

sampling be conducted to ensure that the imported soil and fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the fill and knowledge of prior land use. Additional information can be found by visiting DTSC's Human and Ecological Risk Office (HERO) webpage.

DTSC would like to thank you for the opportunity to comment on the MND for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via our CEQA Review email for additional guidance.

Sincerely,

Dave Kereazis

Dave Kereazis
Associate Environmental Planner
HWMP-Permitting Division – CEQA Unit
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

cc: (via email)

Governor's Office of Land Use and Climate Innovation
State Clearinghouse
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Riverside County Aviation

June 3, 2025

Mr. David Kereazis
Associate Environmental Planner
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826-3200

Sent via email

Subject: Mitigated Negative Declaration for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport, SCH No. 2025040919

Dear Mr. Kereazis,

Thank you for your letter of May 12, 2025, and your review of the Mitigated Negative Declaration (MND) for Airport Traffic Control Tower (ATCT) Construction at the Jacqueline Cochran Regional Airport (TRM). The following letter addresses the comments you provided.

Comment No. 1. The Airport Traffic Control Tower Construction project is located near formerly used defense sites (FUDS), Thermal Ground Air Sta Base and Army Airport. Information, if available, can be requested from the U.S. Army Corps of Engineers through a Freedom of Information Act (FOIA) request at: FOIASPL@usace.army.mil.

Comment Response. TRM is located on land that was formerly used by the U.S. Army as the Thermal Ground Air Station Base (ASB) as part of the federal Desert Training Center. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, and supported Navy carrier aircraft service units. The property was deeded to the county of Riverside, the Coachella Valley County Water District, and the United Date Growers of California between June 1947 and December 1948 (USACE, 2011). Much of the land associated with the former Thermal Ground ASB is currently owned by Riverside County and associated with TRM, but the footprint of the ASB extends beyond the current airport property. Adjacent area outside of the airport boundary is owned by the County or private entities (USACE, 2011).

In response to your letter and the results of a Phase I Site Investigation prepared in support of the proposed project, the County identified one record associated with the Thermal Ground Air Station Base (ASB), FUDs Property No. J09CA0645, and Estor/EPA ID 80000402, Site code 410505. The County reviewed the associated Site Investigation Report prepared by the USACE dated November 17, 2011, entitled *Site Inspection Report, Former Thermal Ground Air Station Base, Riverside County California* (Site Investigation Report; see **Attachment A** to this letter).

Based on the available documentation, the County concluded the following:

- The Site Investigation Report addressed two Munitions Response Sites (MRSs), both of which are located outside of the airport boundary (see **Attachment B**). As shown on Attachment B, the Burial Pits MRS is not located on County-owned property and is not associated with TRM.
- The Skeet Range MRS, though located on County Property, is located outside of the fence-enclosed airfield; the area has been almost entirely paved and developed as the Camper Land RV Park. A small portion of the area remains undeveloped and covered in trees and brush.
- The proposed project does not have the potential to affect the area identified by the Site Investigation Report

Comment No. 2. The proposed Project is located in close proximity to several FUDS in which munitions testing during the World War II era occurred. While it appears that the FUDS are outside of the proposed Project area, due to the nature of FUDS use, and the potential that unexploded ordnance (UXO), munitions of explosive concern (MEC) and/or munitions debris (MD) may be discovered, proper health and safety measures are recommended prior to intrusive activities. If UXO, MEC or MD is/are encountered, follow the 3 Rs of Explosives Safety: Recognize, Retreat and Report: Recognize, when you have encountered munitions; Retreat, note your location as you are backing away. Do not approach, touch, or disturb a suspect munitions, safely leave the area and Report, immediately what was found to state and or local law enforcement – call 911.

Comment Response. The Site Investigation Report evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS including munitions of explosive concern (MEC) and/or munitions debris (MD).

- **Skeet Range MRS.** The report identified that the former Skeet Range MRS, the site nearer to the airport, is within a graded and developed area, and the original Department of Defense (DoD) era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, a “No Department of Defense Action Indicated (NDAI) determination is warranted (USACE 2011; Table 8-1).
- **Burn Pits MRS.** The report identified that MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

In a letter dated September1, 2011, Department of Toxic Substances Control (DTSC) concurred with the NDAI recommendation presented in the Draft-Final Site Investigation Report (see **Attachment C**).

The County appreciates DTSC's comment regarding the risk posed by World War II-era munitions and activities. While the risk associated with encountering such materials is low, the County remains aware that the discovery of such materials would pose risk. The County has incorporated the following mitigation measures into its MND to reduce the potential impact associated with exposure to MEC/MD exposure during field activities.

- **Mitigation Measure HAZARD-1. Brief construction crews about the potential presence of munitions and debris, cease work if potential unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) are discovered during site grading or construction, and identify construction worker education and cease work measures in construction documents.** Prior to project construction, construction crews will be briefed on the identification of UXO, MEC, and MD, and safe actions to be taken in the event they are encountered, including leaving the area and noting the location in which the material was encountered. Upon departing the site, the crew leader will call 911, and the County's Airports Director. The Airports Director will procure the services of qualified hazardous materials personnel to review and determine potential hazards. Work will continue after an appropriate assessment has been made and the materials have been removed by appropriate personnel.

Comment No. 3. DTSC recommends being aware of signs of contaminated soil, residual staining, or odors during the construction process and advises collecting appropriate samples for waste characterization and contacting DTSC if further assessment is necessary. DTSC recommends compliance with all applicable or relevant and appropriate environmental laws.

Comment Response. As previously mentioned, the County undertook a Phase I ESA in support of the proposed project. The Phase I ESA did not identify the presence of hazardous materials in the area associated with the proposed tower site or limits of disturbance. While the potential to encounter contaminated soils, residual staining or odors is low, the County developed the following mitigation measure to alert crews and further reduce risks associated with the presence of unknown hazardous material releases.

- **Mitigation Measure HAZARD-2. Alert construction crews to signs of contaminated soil, residual staining, or odors, and cease work if they are encountered during site grading or construction.** Construction documents will specify that construction crews shall be alerted to signs of contaminated soil, residual staining, or odors and instruct crews to cease work if these conditions are encountered. The Airports Director will be alerted to the potential presence of

hazardous materials and procure a qualified hazardous materials or environmental services personnel to evaluate the potentially hazardous materials. The County will comply with relevant environmental laws, and work will continue after an appropriate evaluation of the condition has been made, and necessary treatment or remediation is undertaken.

Comment No. 5. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary.

Comment Response. The County does not anticipate that soil or fill material will be imported to the airport in association with the proposed project. No additional mitigation measure is warranted.

The County appreciates the DTSC's interest in its proposed project and the safety of site users and construction crews. The documents used to reach our conclusions to your comments are provided as attachments to this letter. Should you have any questions, please feel free to reach out to me by phone (916-955-9418) or email (ajamison@rivco.org).

Sincerely,

Angela Jamison

Angela Jamison
Riverside County Airports Director

FINAL

Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

U.S. Army Corps of Engineers
Southwest IMA Region

FUDS Project No. J09CA064502
Contract No. W912DY-04-D-0005
Task Order 0009

Prepared for

U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Blvd.
Los Angeles, California 90017-3401
and
U.S. Army Corps of Engineers
South Pacific Division Range Support Center

September 2011

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

PARSONS
1700 Broadway, Suite 900 • Denver, Colorado 80290 • (303) 831-8100 • Fax: (303) 831-8208 • www.parsons.com

September 21, 2011

U.S. Army Corps of Engineers, Los Angeles District
ATTN: CESPL-PM-M (Ms. Claudia Garcia)
3636 N. Central Ave., Suite 900
Phoenix, AZ 85012-1939
(602) 640-2021 x 256

Subject: Contract W912DY-04-D-0005, Delivery Order 0009
MMRP SI for SW IMA Region – Final Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

Dear Ms. Garcia:

Parsons has prepared this Final Site Inspection (SI) Report for the former Thermal Ground Air Station Base. Stakeholder comments for the Draft Final SI Report have been incorporated into the Final SI Report as discussed at the 2nd TPP Meeting that was held on September 8, 2011. One electronic copy has been provided for your internal files. Six hard copies have been sent to Anna Ayala at the USACE Los Angeles District Office for distribution to the regulators and key stakeholders (DTSC, BLM, and County of Riverside). We have submitted a single hard copy of this document to the EMM. Electronic copies have also been provided to Brian Jordan, the EMS, and Rochelle Hance.

If you have any questions or comments, please contact me at (303) 764-1927 or the Program Manager (Mr. Don Silkebakken) at (678) 969-2384.

Sincerely,
PARSONS

Greg P. Van
SI Task Manager

cc: Brian Jordan (SPD) – 1 DVD
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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Parsons has completed the Final Site Inspection Report for the former Thermal Ground Air Station Base, California. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. The independent technical review verified compliance with established policy principles and procedures, using justified and valid assumptions. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

Scott Anderson — September 21, 2011
Study/Design Team Leader — Date

Brian Mouth, ELECTRONIC SIGNATURE — September 21, 2011
Study/Design Team Members — Date

Kimberley A. Beliel — September 21, 2011
Study/Design Team Members — Date

Scott Lowry, Kim A. Irwin — September 21, 2011
Review Team — Date

Greg P. Van — September 21, 2011
Independent Technical Review Team Leader — Date

Significant concerns and the explanation of the resolution are as follows:

None

As noted above, all concerns resulting from independent technical review of the project have been considered.

Laura Kelley — September 21, 2011
Parsons Program Manager(s) — Date

U.S. Army Corps of Engineers
Southwest IMA Region

FINAL
Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

FUDS Project No. J09CA064502

September 2011

In Support of

FUDS MMRP Site Inspections Project

Prepared by

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Project No. 747217

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

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ACRONYMS AND ABBREVIATIONS

°F	degree Fahrenheit
ASB	Air Station Base
bgs	below ground surface
BLM	Bureau of Land Management
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHE	chemical warfare materiel hazard evaluation
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DGM	digital geophysical mapping
DQO	data quality objective
DTSC	California Department of Toxic Substances Control
EHE	explosive hazard evaluation
ER	Engineering Regulation
FUDS	Formerly Used Defense Site
GPS	global positioning satellite
HHE	health hazard evaluation
HRS	Hazard Ranking System
INPR	inventory project report
MC	munitions constituents
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
MQO	measurement quality objective
MRS	munitions response site
MRSPP	Munitions Response Site Prioritization Protocol
NARA	National Archives and Records Administration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAI	no Department of Defense action indicated
NGVD	national geodetic vertical datum
No.	Number
PA	preliminary assessment
Parsons	Parsons Infrastructure and Technology Group
PSAP	programmatic sampling and analysis plan
PWP	programmatic work plan
QC	quality control
QR	qualitative reconnaissance

RAC	risk assessment code
RI/FS	remedial investigation and feasibility study
SI	site inspection
SLERA	screening-level ecological risk assessment
SLRA	screening-level risk assessment
SS-WP	site-specific work plan
T&E	threatened and endangered
TPP	technical project planning
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
WAA	War Assets Administration

GLOSSARY OF TERMS

inhabited structure	Permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.
military munitions	All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.
munitions and explosives of concern (MEC)	Military munitions that may pose unique explosives safety risks, including unexploded ordnance, discarded military munitions, or munitions constituents present in high enough concentrations to pose an explosive or other health hazard.
munitions constituents (MC)	Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.
munitions debris	Remnants of munitions (e.g., penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.
munitions response	Response actions, including investigation, removal actions, and remedial actions, to address the explosive safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents, or to support a determination that no removal or remedial action is required.
munitions response area	Any area on a defense site that is known or suspected to contain unexploded ordnance, discarded military munitions, or munitions constituents. Examples include former ranges and munitions burial areas. A munitions response area includes one or more munitions response sites.

munitions response site (MRS)	A discrete location within a munitions response area that is known to require a munitions response.
projectile	Object projected by an applied force and continuing in motion by its own inertia. This includes bullets, bombs, shells, grenades, guided missiles, and rockets.
unexploded ordnance (UXO)	Military munitions that have been primed, fuzed, armed, or otherwise prepared for action; that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and that remain unexploded whether by malfunction, design, or any other cause.

EXECUTIVE SUMMARY

ES.1 The objective of this site inspection (SI) is to determine whether the former Thermal Ground Air Support Base (ASB) in Riverside County, California, warrants further investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The former Thermal Ground ASB was used from 1942 to 1945 as an air support command base. The SI at the former Thermal Ground ASB was performed to confirm the munitions response site (MRS) location and to evaluate evidence for the presence of munitions and explosives of concern (MEC) and munitions debris at the Formerly Used Defense Site (FUDS). To accomplish this objective, qualitative reconnaissance (QR) and a digital geophysical mapping (DGM) investigation were performed by Parsons on May 21 and 22, 2011, within the Burial Pits MRS at the FUDS (Thermal Ground ASB).

ES.2 Outcomes for the MRS could include MEC response actions or no Department of Defense (DoD) action indicated (NDAI), among others. If NDAI status is recommended and approved after evaluation of the SI data, the process to close out the former Thermal Ground ASB will be initiated. If an imminent threat is identified to the public or the environment, a time-critical removal action (TCRA) may be performed as an interim action, or a remedial investigation and feasibility study (RI/FS) may be initiated to evaluate feasible MEC response actions.

ES.3 The technical project planning (TPP) process determined that no soil sampling would be proposed to meet the SI project objectives because the Skeet Range MRS has been graded and developed at the former Thermal Ground ASB. However, approximately 4.8 miles of QR and a DGM investigation were conducted at the Burial Pits MRS. Due to the surface grading that has occurred, the original DoD-era ground surface is no longer present at either MRS.

ES.4 No MEC or munitions debris was observed at the former Thermal Ground ASB during the Inventory Project Report (INPR) field visit; however, an interview during the INPR with the then-current maintenance supervisor indicated that in the past, airport staff found “both dummy and real bombs” at the site. The location of the bombs was not discussed in the 1994 INPR and these findings were not substantiated. During the SI, the site visit team observed no MEC or munitions debris at the site. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk to exist at the Skeet Range MRS or the Burial Pits MRS.

ES.5 An MC exposure pathway is not considered complete unless all four of the following elements are present (United States Environmental Protection Agency, 1989):

- A source and mechanism for chemical release
- An environmental transport and/or exposure medium

- A receptor exposure point
- A receptor and a likely route of exposure at the exposure point

ES.6 Surface soil could have been directly affected by activities at the Skeet Range MRS. The TPP team determined that because the Skeet Range MRS has been graded and developed and the original DoD-era ground surface is no longer present, there is no need to sample surface soil at the former Thermal Ground ASB. Therefore, soil sampling was not conducted during the SI to evaluate MC contamination in the surface soil at the MRS. Subsurface soil could have been directly affected by activities at the Burial Pits MRS. no evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. Due to the grading that has occurred at the MRSs since DoD use of the property, it is highly unlikely that MC contamination remains in the surface soil. No change in land use is expected for the MRSs. For these reasons, the soil exposure pathways for human receptors are incomplete for the Skeet Range MRS and the Burial Pits MRS, and unacceptable risks to human receptors resulting from MC are not expected.

ES.7 The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk at the Skeet Range MRS. Furthermore, although an evaluation of the potential for MC contamination in surface soil at the Skeet Range MRS could not be conducted, it is unlikely that MC contamination remains in the surface soil because the original ground surface is no longer present. Based on the current land use at the Skeet Range MRS, all MC exposure pathways are considered incomplete for all receptors, and unacceptable risks to human receptors resulting from MC are not expected. Therefore, the Skeet Range MRS should proceed to NDAI status.

ES.8 Although an evaluation of the potential for MC contamination in surface soil at the Burial Pits MRS could not be conducted, it is unlikely that MC contamination remains in the surface soil because the original ground surface is no longer present. Based on the current land use at the Burial Pits MRS, all MC exposure pathways are considered incomplete for all receptors, and unacceptable risks to human receptors resulting from MC are not expected. The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk at the Burial Pits MRS. Based on this information, it is recommended that the Burial Pits MRS proceed to NDAI. Table ES.1 and Figure ES.1 summarize the results of the SI and historical documentation of munitions use.

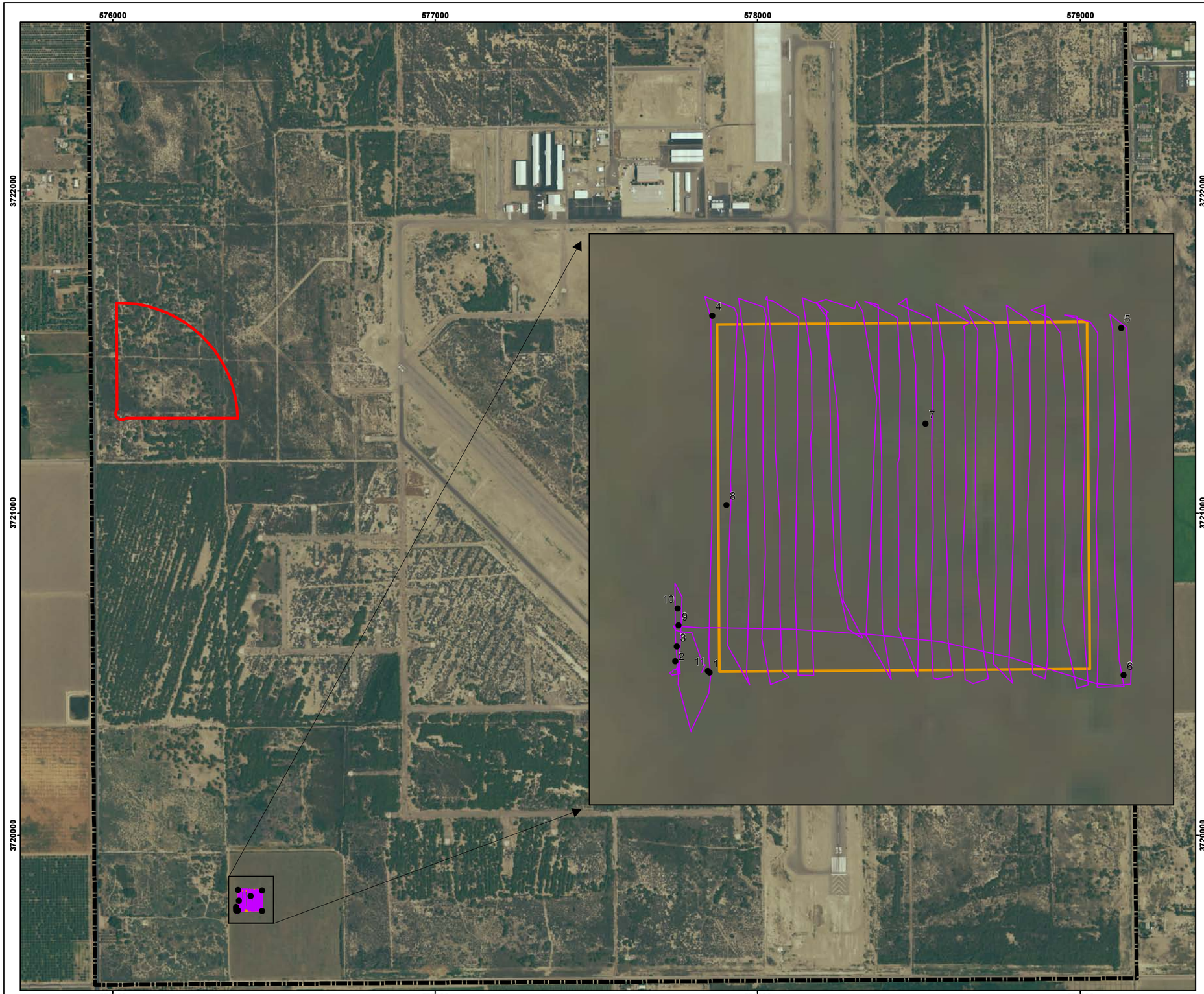
TABLE ES.1
SUMMARY OF RESULTS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	Recommendation	Rationale
Skeet Range	NDAI	The MRS is within a graded and developed area, and the original DoD-era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.
Burial Pits	NDAI	The MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

Figure ES.1

General Site Overview
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California



Legend

- Field Observation Location
- Skeet Range MRS
- Burial Pits MRS
- FUDS Boundary
- Qualitative Reconnaissance

Site Location in California

N

Image: 2005 Orthophotos
Projection: UTM Zone 11 NAD83, Units in Meters

400 200 0 400 Meters

PARSONS

U.S. ARMY SOUTH
PACIFIC DIVISION
RANGE SUPPORT CENTER

DESIGNED BY: BT	General Site Overview	
DRAWN BY: BT		
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b
SUBMITTED BY: TM	DATE: September 2011	PAGE NUMBER: ES-4
	FILE: thermal_ca\FigES_1.mxd	

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 Parsons Infrastructure and Technology Group (Parsons) received Contract Number (No.) W912DY-04-D-0005, Task Order No. 0009 (Parsons, 2004), from the United States (U.S.) Army Corps of Engineers (USACE) Engineering and Support Center, Huntsville to perform a site inspection (SI) of the Thermal Ground Air Station Base (ASB) Formerly Used Defense Site (FUDS), Project No. J09CA064502, Federal Facilities Identification No. CA99799F563700. The former Thermal Ground ASB is in Riverside County in southeastern California, just west of Thermal and approximately 5 miles southeast of Indio, California. The coordinates for the subject FUDS are approximately 33° 37' 40" N and 116° 09' 54" W (USACE, 2004b). Figure 1.1 shows the site location.

1.1.2 The Department of Defense (DoD) established the Military Munitions Response Program (MMRP) to address DoD sites suspected of containing munitions and explosives of concern (MEC) or munitions constituents (MC). Under the MMRP, the USACE is conducting environmental response activities at FUDS for the Army, the DoD's executive agent for the FUDS program.

1.1.3 Pursuant to USACE Engineering Regulation (ER) 200-3-1 (USACE, 2004a) and the *Management Guidance for the Defense Environmental Restoration Program* (DERP; Office of the Deputy Under Secretary of Defense [Installations and Environment], 2001), the USACE is conducting FUDS response activities. All work is performed in accordance with the following:

- The DERP statute (10 *U.S. Code* [USC] 2701 et seq.);
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; 42 USC 9601 *et seq.*);
- Executive Orders 12580 and 13016; and
- The National Oil and Hazardous Substances Pollution Contingency Plan (NCP; 40 *Code of Federal Regulations* [CFR] Part 300).

1.1.4 The USACE is conducting SIs, as set forth in the NCP, to evaluate hazardous substance releases or threatened releases from eligible FUDS.

1.1.5 While not all MEC or MC constitute CERCLA hazardous substances, pollutants, or contaminants, the DERP statute authorizes the DoD to respond to releases of MEC or MC. DoD policy states that such responses shall be conducted in accordance with CERCLA and the NCP.

1.1.6 This report summarizes the work performed during the SI and describes any MEC and MC contamination identified at the FUDS. The SI is limited exclusively to MEC and MC contamination issues and does not consider unrelated hazardous and toxic waste concerns that the FUDS may pose. Per ER 200-3-1 guidance for conducting an SI, "The SI is not intended as a full-scale study of the nature and extent of contamination or explosive hazards"; it only requires collection of sufficient and appropriate information as defined in the Technical Project Planning (TPP) Memorandum for this site.

1.2 PROJECT OBJECTIVES

1.2.1 The primary objective of the MMRP SI is to determine whether a FUDS project warrants further response action under CERCLA. The SI collects sufficient and appropriate information necessary to make this determination, as well as it

1) Determines the potential need for a removal action;

2) Collects or develops additional data, as appropriate, for Hazard Ranking System (HRS) scoring by the U.S. Environmental Protection Agency (USEPA); and

3) Collects data, as appropriate, to characterize the release for effective and rapid initiation of the remedial investigation and feasibility study (RI/FS).

1.2.2 An additional objective of the MMRP SI is to collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).

1.3 PROJECT SCOPE

1.3.1 The primary project planning documents used to perform the SI include the Site-Specific Work Plan (SS-WP) Addendum for the Former Thermal Ground ASB (Parsons, 2011b), the South Pacific Division Range Support Center Programmatic Work Plan (PWP; Parsons, 2010), the Programmatic Sampling and Analysis Plan (PSAP; USACE, 2005), and the PSAP Addendum (Parsons, 2006). The performance work statement for this project is in Appendix A.

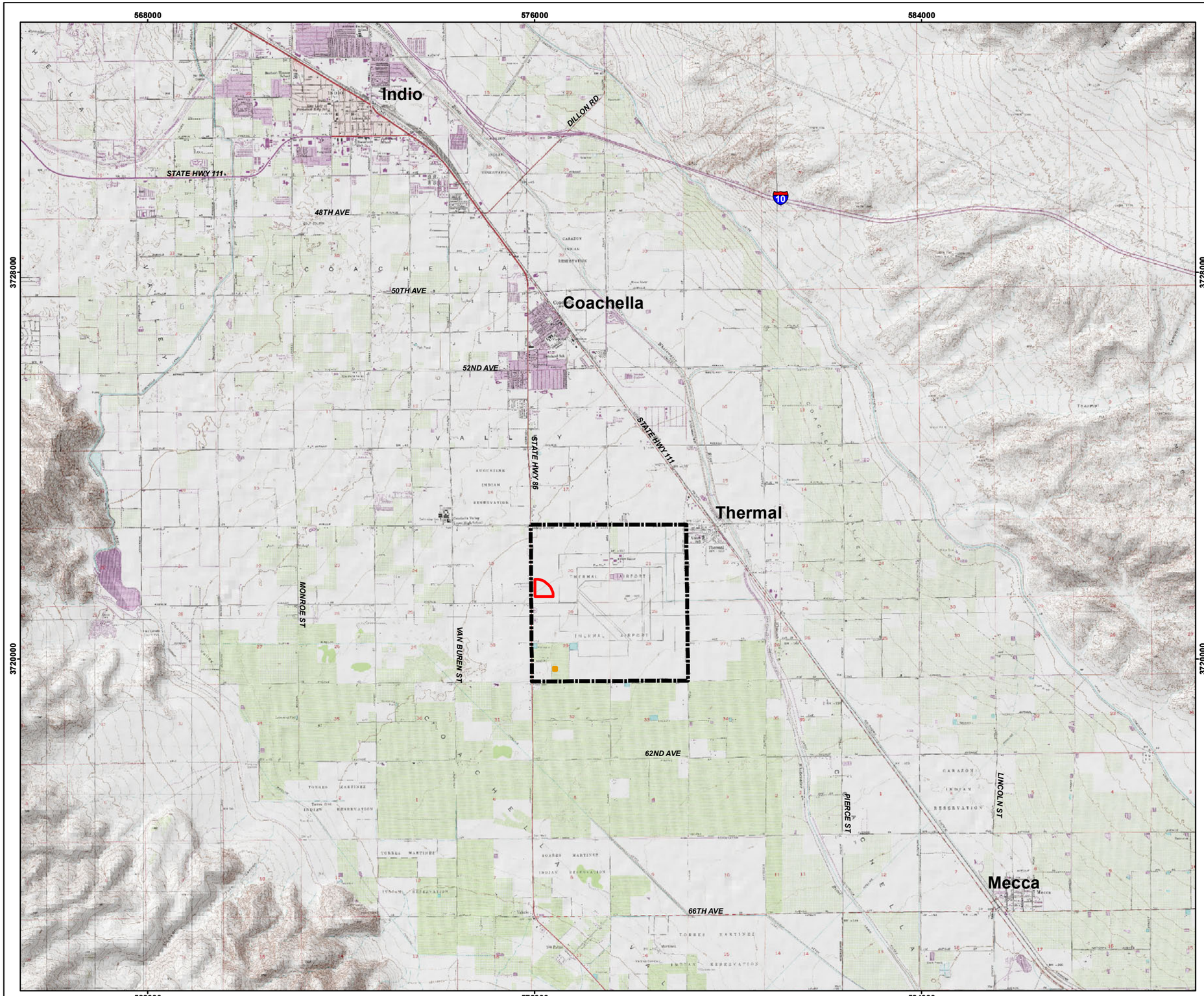
1.3.2 The USACE Los Angeles District facilitated a TPP meeting on November 17, 2010, that included representatives of the USACE, the Bureau of Land Management (BLM), the California Department of Toxic Substances Control (DTSC), the County of Riverside, and Parsons. The TPP Team unanimously concurred with the technical approach presented in the final TPP Memorandum (Parsons, 2011c). The TPP Team

determined that because the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. In addition, because no munitions are anticipated to be on the surface of the Burial Pits MRS, it was agreed that no soil samples would be collected within this MRS; however, a geophysical survey would be conducted to verify the presence or absence of a burial pit. The TPP team agreed that groundwater sampling was not warranted during the SI, based on the absence of groundwater wells within the MRSs.

Figure 1.1

Site Location Map
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California



Legend

- Skeet Range MRS
- Burial Pits MRS
- FUDS Boundary

Site Location in California

N

Image: USGS 7.5' Topo Quadrangles, Date Unknown
Projection: UTM Zone 11 NAD83, Units in Meters

2 1 0 2 Kilometers

PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER	
DESIGNED BY: BT	**Site Location Map**	
DRAWN BY: BT	SCALE: As Shown	PROJECT NUMBER: 747217.94239b
CHECKED BY: AS	DATE: August 2011	PAGE NUMBER: 1-4
SUBMITTED BY: TM	FILE: thermal_ca\Fig1_1.mxd	

CHAPTER 2

PROPERTY DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

The former Thermal Ground ASB is in southeastern California, just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of Coachella in Riverside County, California (Figure 1.1). Figure 2.1 shows the FUDS and munitions response site (MRS) boundaries. The site contains the 26-acre Skeet Range MRS and the 1-acre Burial Pits MRS. Thermal Ground ASB was acquired by the Army in August 1942 and was used as an air support command base as part of the Desert Training Center. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units. The site was declared surplus effective November 16, 1945, and transferred to the War Assets Administration (WAA) January 23, 1947. The land was deeded to the county of Riverside, the Coachella Valley County Water District, and the United Date Growers of California between June 1947 and December 1948. The former Thermal Ground ASB is currently owned by Riverside County and several private entities and is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport).

2.2 SITE LOCATION AND SETTING

2.2.1 Topography and Vegetation

2.2.1.1 The former Thermal Ground ASB is in the Indio and the Valerie Quadrangles, Riverside County, 7.5-minute series (U.S. Geological Survey [USGS], 1972a and 1972b). The FUDS ranges from a high elevation of approximately 140 feet national geodetic vertical datum (NGVD) in the southeastern portion of the FUDS to a low of approximately 100 feet NGVD in the northwestern portion of the FUDS (Figure 2.1). The topographic quadrangles indicate that the site terrain slopes down to the northwest through the FUDS and MRSs toward the city of Indio, California. The surface water most likely follows local topography and flows in a northwest direction, but at least one of the ditches reroutes the flow to the south and then east in the northeastern portion of the site.

2.2.1.2 The former Thermal Ground ASB is within the Sonoran Basin and Range Ecoregion, which is characterized by vast expanses of hot, barren desert between Palm Springs, California, and Phoenix, Arizona. The Sonoran Basin and Range ecoregion

contain scattered, low mountains and large areas of palo verde-cactus shrub and giant saguaro cactus, with scattered creosote bush and grasses (USEPA, 2011b). Scattered brush and grasses interspersed with plowed fields were the predominant vegetation types observed during the SI, as shown in site photographs taken May 21, 2011 (Appendix E).

2.2.2 Soil

2.2.2.1 The Thermal Ground ASB FUDS is composed of four main soil types: Indio very fine sandy loam, wet (approximately 62.1 percent of the site); Salton silty clay loam (12.1 percent); Gilman fine sandy loam, wet, 0 to 2 percent slopes (11.1 percent); Gilman silt loam, wet, 0 to 2 percent slopes (9.1 percent). Indio fine sandy loam, wet (3 percent); and Coachella fine sand, wet, 0 to 2 percent slopes (1.4 percent) are also on site (Natural Resources Conservation Service, 2010).

2.2.2.2 Indio very fine sandy loam, wet includes the Indio and similar soils. Indio and similar soils are moderately well drained with high available water capacity. These soils are found on alluvial fans and typically consist of very fine sandy loam from 0 to at least 60 inches below ground surface (bgs).

2.2.2.3 Salton silty clay loam includes Salton and similar soils. Salton and similar soils are poorly drained with high available water capacity. These soils are found on basin floors and typically consist of silty clay loam from 0 to 42 inches and clay from 42 to at least 60 inches bgs.

2.2.2.4 Both Gilman fine sandy loam, wet, 0 to 2 percent slope and Gilman silt loam, wet, 0 to 2 percent slope include the Gilman and similar soils. Gilman and similar soils are moderately well drained with a high available water capacity. These soils are found on alluvial fans and typically consist of fine sandy loam from 0 to 8 inches and stratified loamy sand to silty clay loam from 8 to at least 60 inches bgs.

2.2.3 Climate

2.2.3.1 The nearest weather station to the former Thermal Ground ASB is at the Indio Fire Station in Indio, California, approximately 6 miles northwest of the FUDS. Climate data for the area are based on monthly or yearly averages derived from readings collected at this station. Rainfall is highest in December (0.54 inches), January (0.66 inches), and February (0.51 inches). The climate is driest from March to November, with an average of approximately 0.18 inches of precipitation. The hottest months are June through September, with average maximum temperatures of 104 degrees Fahrenheit (°F). The coldest month is January, with an average maximum temperature of 70.6°F and an average minimum of 39.1°F (Western Regional Climate Center, 2010).

2.2.3.2 Based on information for Coachella, California (roughly 3 miles north of Thermal), winds are highest in the spring, averaging approximately 7.5 miles per hour. Sunshine in the area is above the U.S. average, ranging from approximately 59 percent to 75 percent sunshine year round (City-Data.com, 2011).

2.2.4 Significant and Inhabited Structures

Numerous (more than 26) inhabited structures are within the FUDS (Google Earth, 2011). The structures consist mainly of airport facilities (hangars, terminal, and maintenance buildings), and other commercial/industrial buildings. The census-designated city of Thermal borders the FUDS on the eastern boundary and is approximately 2 miles from the MRS boundaries. Structures just outside the FUDS boundary include temporary and permanent residences, schools, churches, restaurants, and businesses. No inhabited structures are within the MRS boundaries. Inhabited structures are permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

2.2.5 Demographics

The former Thermal Ground ASB is in Riverside County, 3 miles south of the city of Coachella, California. According to U.S. Census 2010, the population density of Riverside County is 303.8 persons per square mile. The census data indicate that 44,154 people potentially live within 4 miles of the Skeet Range MRS, 30,001 people potentially live within 4 miles of the Burial Pits MRS, and 53,064 people potentially live within 4 miles of the FUDS boundary, as shown in Table 2.1 and Figure 2.2. The data indicate that no one lives within the FUDS or MRS boundaries (U.S. Census Bureau, 2011).

TABLE 2.1
POPULATION WITHIN 4-MILE BUFFER OF THE SITE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Range	On Site	0 to ¼ Mile	¼ to ½ Mile	½ to 1 Mile	1 to 2 Miles	2 to 3 Miles	3 to 4 Miles	Total
FUDS	0	1,256	424	3,433	12,865	19,365	15,721	53,064
Skeet Range MRS	0	176	0	94	6,320	19,038	18,526	44,154
Burial Pits MRS	0	0	97	292	953	7,076	21,583	30,001

Source: U.S. Census 2010 data. The population within the FUDS, MRS, or any buffer area is determined using a conservative approach to calculate the population of an area by including the total number of people for any census block that falls within or overlaps the site boundary, MRS boundary, or buffer line.

2.2.6 Current and Future Land Use

The County of Riverside and private entities currently own the lands on which the former Thermal Ground ASB existed. The former Thermal Ground ASB is currently operated as the Jacqueline Cochran Regional Airport (formerly known as the Desert Resorts Regional Airport), which serves the greater Palm Springs and desert resort area. There is also agricultural land around much of the periphery of the site.

2.3 SITE OWNERSHIP AND HISTORY

2.3.1 The former Thermal Ground ASB was originally used as an air support command base as part of the Desert Training Center. The primary function of the tactical units at this station was to provide air support for the ground units of the Desert Training

Center, which were preparing for Operation Torch, the invasion of North Africa. In December 1943, the Thermal Ground ASB was reassigned to the California-Arizona Maneuver Area under control of the Third Air Force. In December 1944, the Army made provisions for Navy use of the site on a temporary basis without transfer of the command jurisdiction or transfer of the real estate. Elements of Combat Application Group 98 arrived in late December 1944, and flight operations began. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units. The Navy officially commissioned Thermal on February 1, 1945, and closed the base on November 1, 1945 (California State Military Museum, no date).

2.3.2 On November 16, 1945, the site was declared surplus; it was transferred to the WAA on April 7, 1947. Portions of the site were deeded to the United Date Growers of California on June 20, 1947; the Coachella Valley County Water District on September 2, 1947; and the County of Riverside, California, on December 21, 1948. During its use by the Army and the Navy, the site was known by several aliases. During Army occupancy, the former Thermal Ground ASB was also known as the Thermal Army Airfield, the Thermal Air Support Command Base, and the Indio Airdrome. While under Naval control, the site was known as the Naval Air Facility at Thermal as well as the Naval Air Bases Detachment, Thermal. The airfield at the Thermal Ground ASB included a runway, hangar facilities, a motor park and utility yard, a hospital area, and living quarters (USACE, 1994; Parsons, 2011a).

2.3.3 The former Skeet Range was near the western boundary of the FUDS, with a firing arc of 90 degrees instead of the typical 180 degrees. The firing direction was to the northeast. The exact location of the Burial Pits MRS is unknown. The burial pit was assumed in the Inventory project Report (INPR) to be in the general location of the former ordnance storage area, which was in the southwest corner of the FUDS. The exact acreage of the burial pit is also unknown and was estimated to be 1 acre (USACE, 2004b).

2.4 SITE OPERATIONS AND WASTE CHARACTERISTICS

2.4.1 Munitions Response Site-Specific Descriptions and Operations

The former Thermal Ground ASB consists of the 2,553-acre FUDS with a 26-acre Skeet Range MRS and 1-acre Burial Pits MRS (USACE, 2004b). The land is owned by the County of Riverside and several private entities and is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport).

2.4.2 Regulatory Compliance

The USACE is conducting the SI at the former Thermal Ground ASB as part of FUDS response activities pursuant to and in accordance with the guidance, regulations, and legislation listed in Subchapter 1.1.

2.5 PREVIOUS INVESTIGATIONS

2.5.1 Parsons performed a document review for the former Thermal Ground ASB, including the INPR (USACE, 1994) and the INPR Supplement (USACE, 2004b). Under the direction of the USACE, Parsons in March 2011 also completed the Archival Research Site Summary, which compiles known information and is considered the preliminary assessment (PA) for this site (Parsons, 2011a).

2.5.2 Previous investigations determined that the former Thermal Ground ASB was under military control from 1942 to 1947 and used for use as an air support command base and a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units between 1942 and 1945. The INPR identifies the site as a FUDS and includes interviews and two field visit reports. The INPR Supplement identifies the types of ordnance potentially used at the FUDS.

2.5.1 1994 Inventory Project Report

The USACE Los Angeles District completed a site survey and risk assessment in 1993 to determine whether the former Thermal Ground ASB was eligible for the DERP FUDS program. During June 1993 and August 1994 field visits, the field team observed no target features or munitions debris; however, an interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at the site. The resulting INPR concludes that the site was used by the DoD and is eligible for the FUDS program. A risk assessment code (RAC) worksheet in the report assigns a score of 4 to the site, indicating further required action. No additional hazards associated with past DoD use are identified for the former Thermal Ground ASB.

2.5.2 2004 Inventory Project Report Supplement

The USACE St. Louis District completed the INPR Supplement in November 2004. The INPR Supplement lists munitions potentially used at the site as general small arms ammunition associated with the Skeet Range MRS as well as several practice bombs that were assumed to be associated with the Burial Pits MRS. The INPR Supplement reports a RAC score of 5 for the Skeet Range MRS based on a hazard severity of *none* and a hazard probability of *frequent* and a RAC score of 4 for the Burial Pits MRS based on a hazard severity of *marginal* and a hazard probability of *occasional*.

2.5.3 2011 Archival Research Site Summary

2.5.3.1 Parsons completed the Archival Research Site Summary for the former Thermal Ground ASB in March 2011 under the direction of the USACE to document record reviews and examination of historical aerial photographs, site maps, and letters. No site visit was conducted as part of this assessment. Two maps pertinent to identification of munitions areas at the former Thermal Ground ASB were obtained from the National Archives and Records Administration (NARA): an aerial image titled "Thermal Air Base, Calif." dated April 20, 1943 (NARA, 2010c), and a map titled

"Ground Air Support Base Building Construction Layout Plan" dated August 17, 1942, with the last revision on December 19, 1944 (NARA, 2010a).

2.5.3.2 The map "Ground Air Support Base Building Construction Layout Plan" shows the location of the skeet range but not the location of any of the other potential ranges listed in the document "Status of Range Acquisitions and Construction" (NARA 2010b). However, the map labels the southwestern corner of the site as "Ordnance," and in the same general vicinity are buildings labeled "Small Arms Ammunition Warehouse" (one unit), "Pyrotechnic Storage" (one unit), "Ammunition Assembly and Maintenance Shop" (one unit), and "Fuse Storage Units" (10 units).

TABLE 2.2
SUSPECTED OR KNOWN MUNITIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

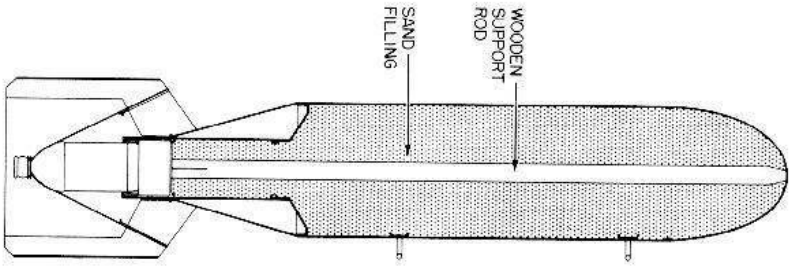
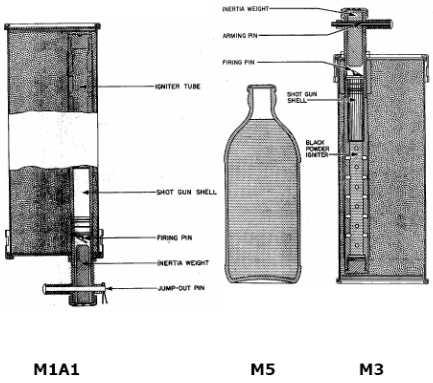
Munitions	Photograph/Diagram
Small arms ammunition, general: Shotgun, 12 gauge	
Bomb, 100 pound, practice, M38A2	
Charges, spotting, bomb, M1A1, M5, and M3	

TABLE 2.2 (Continued)
SUSPECTED OR KNOWN MUNITIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

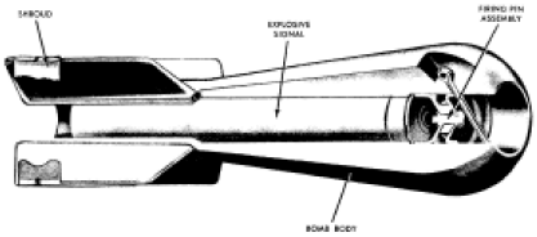
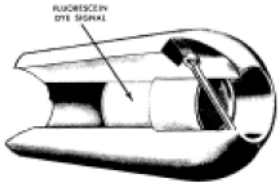
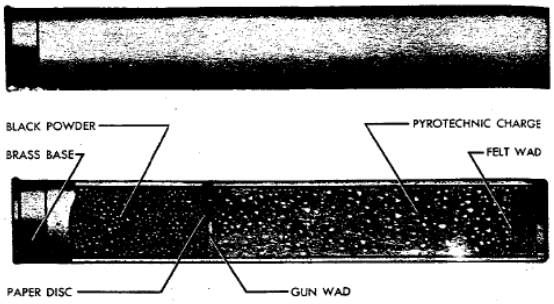
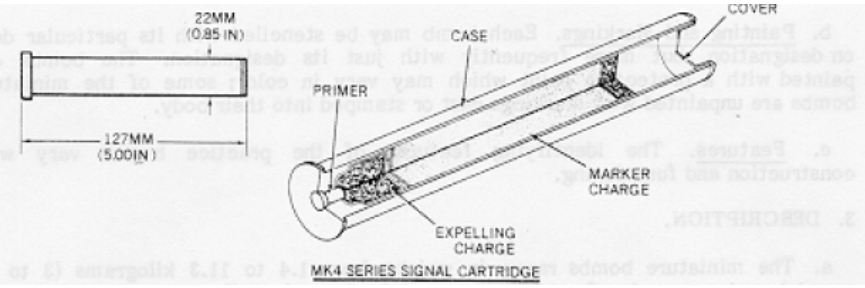
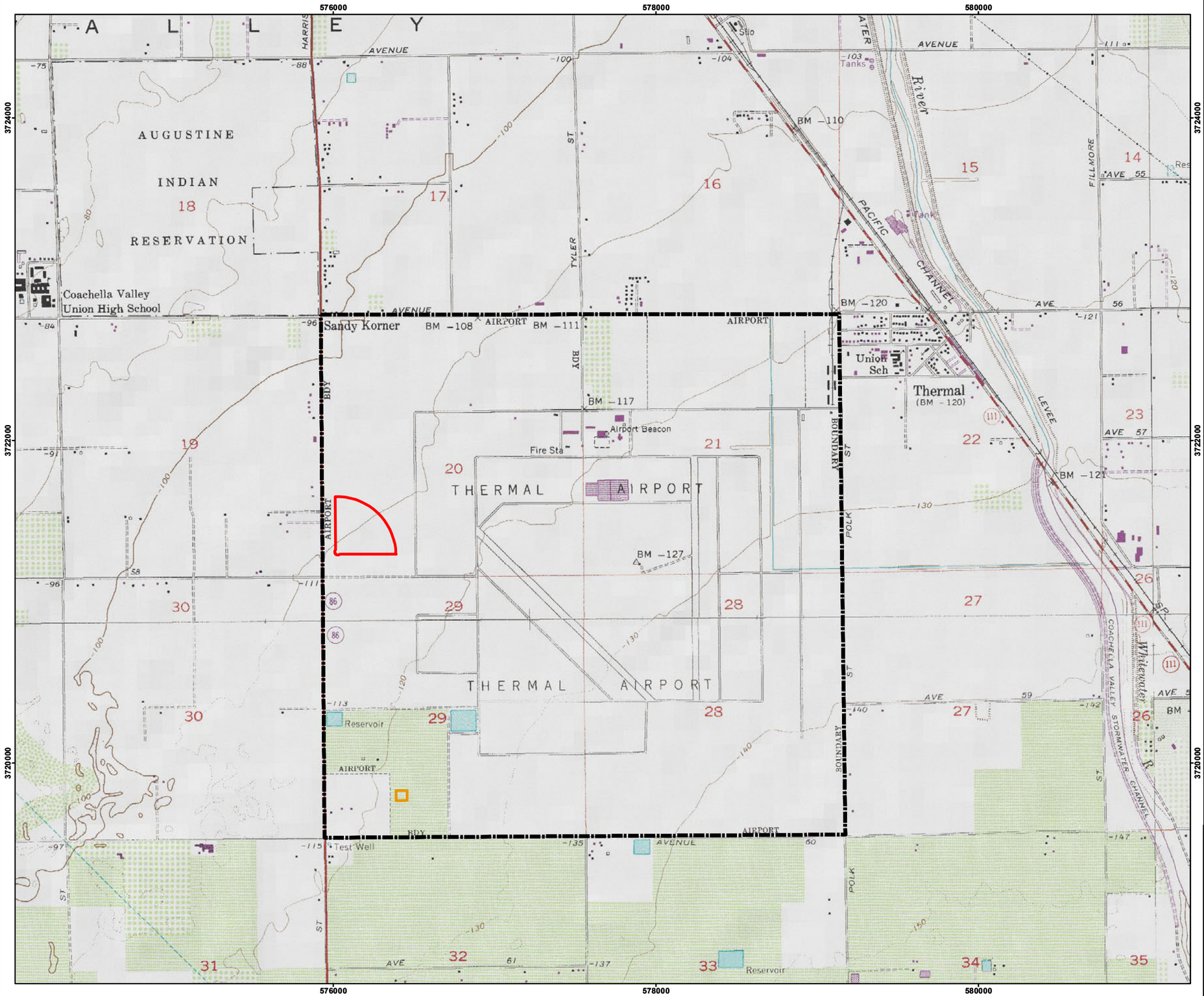
Munitions	Photograph/Diagram
Bomb, 3 pound, miniature practice, Mk5 and Mk23 **and** **Bomb, 4.5-pound, miniature practice, Mk43**	 
Cartridge, signal, bomb, Mk4, Mods 0, 1, and 2	
Cartridge, signal, bomb, Mk4, Mods 3 and 4	

Figure 2.1

Site Setting
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California



Site Location in California

N

Image: USGS 7.5' Topo Quadrangles, Date Unknown
Projection: UTM Zone 11 NAD83, Units in Meters

500 250 0 500 Meters

Legend

- Skeet Range MRS
- Burial Pits MRS
- FUDS Boundary

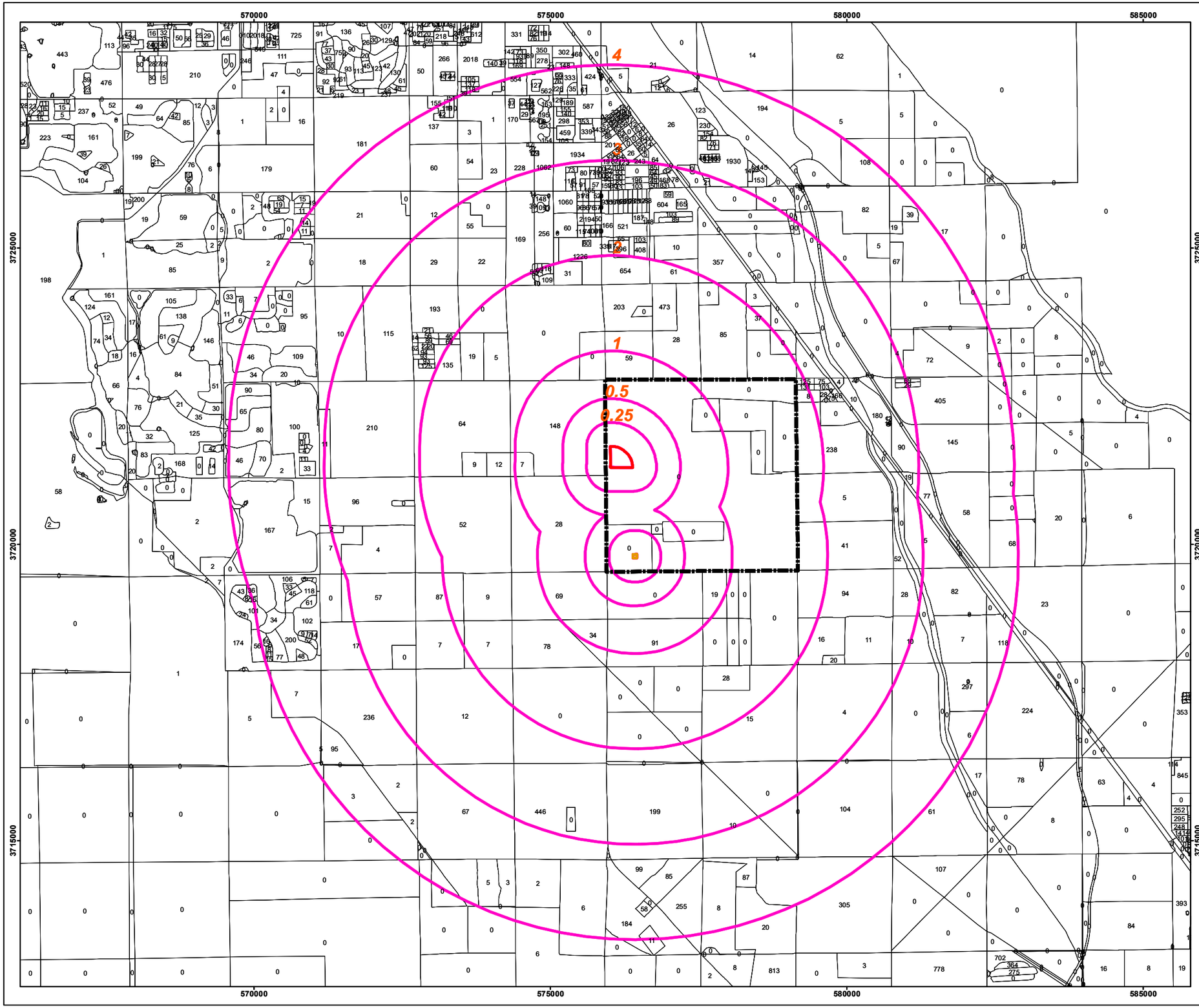
PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER

DESIGNED BY: BT	Site Setting		
DRAWN BY: BT			
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b	
SUBMITTED BY: TM	DATE: August 2011	PAGE NUMBER: 2-9	
	FILE: thermal_ca\Fig2_1.mxd		

Figure 2.2

2010 Census Data
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California



Legend

- 4 — 2010 Census Block Boundary with Total Population
- Skeet Range MRS
- Burial Pits MRS
- FUDS Boundary
- Buffer (Mile)

Site Location in California

N

2,000 1,000 0 2,000 Meters

PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER

DESIGNED BY: BT	2010 Census Data		
DRAWN BY: BT			
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b	
SUBMITTED BY: TM	DATE: August 2011	PAGE NUMBER: 2-10	
	FILE: thermal_ca\Fig2_2.mxd		

CHAPTER 3

SITE INSPECTION TASKS

3.1 HISTORICAL RECORD REVIEW

Parsons performed a document review for the former Thermal Ground ASB, including the INPR, the INPR Supplement, and the Archival Research Site Summary.

3.2 TECHNICAL PROJECT PLANNING

The former Thermal Ground ASB falls under the purview of the USACE Los Angeles District, which facilitated a TPP meeting on November 17, 2010, that included representatives of the USACE Los Angeles District, the DTSC, the BLM, the County of Riverside, and Parsons. The TPP Team unanimously concurred with the technical approach presented in the Final TPP Memorandum issued in January, 2011 (Parsons, 2011c; Appendix B). Key TPP findings and decisions are summarized below:

- The TPP Team concurred with the technical approach (developed to aid the presumptive no DoD action indicated [NDAI] outcome) as presented and revised at the TPP meeting.

- The TPP Team determined that because the Skeet Range MRS has been developed and graded, there is no need to sample surface soil at the former Thermal Ground ASB.

- The TPP Team agreed that groundwater sampling was not warranted during the SI, based on the absence of groundwater wells within the MRSs.

- The Riverside County Economic Development Agency was to provide Parsons with a cultural study that was performed by Riverside County at the location of the Skeet Range at the former Thermal Ground ASB. Parsons has not received this information from the agency.

- The TPP Team agreed that Parsons would try to collect more historical information to help verify the location of the Burial Pits MRS. No additional information has been found.

3.3 NONMEASUREMENT DATA COLLECTION

3.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, Inc., which contacted the appropriate authorities and collated the well information received. According to the resulting report, no groundwater wells are within either the Skeet Range MRS or the Burial Pits MRS (Banks Environmental Data, 2010). The California Department of Public Health (CDPH) indicated that there are no wellhead protection areas within 4 miles or surface water intakes within 15 miles of the site (CDPH, 2010). The USEPA indicated that two drinking water wells are within tribal surface water protection areas within 4 miles of the site (USEPA, 2011a).

3.3.2 According to the National Heritage Area Program, the National Historic Landmarks Program, the National Register of Historic Places, and the California Office of Historic Preservation, no cultural or archeological resources are listed within the former Thermal Ground ASB (National Park Service, 2011b, 2011c, 2011d; National Register of Historic Places, 2011a, 2011b). The California Historical Resources Information System – Eastern Information Center has been contacted to provide information regarding any cultural resources that may be present within the MRS boundaries; however, no information has been received.

3.3.3 The following printed and electronic information sources were consulted for the former Thermal Ground ASB:

- USGS – topographic map
- U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory – Wetlands Mapper
- USFWS, Endangered Species Program – Threatened and Endangered Species System, http://ecos.fws.gov/tess_public/StateListing.do?state=all
- USFWS, National Wildlife Refuge System, http://www.fws.gov/refuges/profiles/bystate.cfm
- USFWS, Southwest Region Ecological Services
- U.S. Forest Service, http://www.fs.fed.us
- National Oceanic and Atmospheric Administration, Coastal Zone Management Program, http://coastalmanagement.noaa.gov
- National Park Service, http://www.nps.gov/applications/parksearch/geosearch.cfm
- National Park Service – National Heritage Areas, http://www.nps.gov/history/heritageareas/
- National Park Service – Lists of National Historic Landmarks, http://www.nps.gov/nhl/designations/listsofNHLs.htm

- National Park Service – National Historic Landmarks Program, http://www.nps.gov/history/nhl/
- National Park Service – National Register of Historic Places, NPS focus, http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome
- National Register of Historic Places, Riverside, http://www.historicdistricts.com/ca/riverside/districts.html and http://www.historicdistricts.com/ca/riverside/state.html
- California Department of Fish and Game – BioGeographic Data Branch, California Natural Diversity Database, http://www.dfg.ca.gov/biogeodata/cnddb/quick_ viewer_launch.asp
- INPR Supplement for the former Thermal Ground ASB, Riverside County, California

3.4 SITE-SPECIFIC WORK PLAN

3.4.1 The SS-WP augments the PWP and PSAP, as warranted, to present pertinent site-specific information and procedural adjustments that could not be readily captured in the programmatic documents or that resulted from TPP Team agreements that required modifying the preliminary SI technical approach. The PWP and PSAP are umbrella documents that set overall programmatic objectives and approaches, whereas the SS-WP provides site-specific details and action plans. The PWP, PSAP, and SS-WP accompanied the site visit team during the SI field work.

3.4.2 The SS-WP includes the project description, the field investigation plan, the sampling and analysis plan, the environmental protection plan, and the accident prevention plan specific to the former Thermal Ground ASB. The field investigation plan developed a technical approach to guide the geophysical investigation. Key elements of the technical approach include the conceptual site model (CSM), data quality objectives (DQOs), and geophysical transect locations. The sampling and analysis plan concluded that no soil sampling would be conducted, as agreed by the TPP Team. The environmental protection plan presents procedures for avoiding, minimizing, and mitigating potential impacts on environmental and cultural resources during site field activities. The health and safety plan supplements the programmatic accident prevention plan with site-specific emergency contact information and directions to the nearest hospital.

3.5 DEPARTURES FROM PLANNING DOCUMENTS

There were no departures from planning documents at the former Thermal Ground ASB.

CHAPTER 4

MUNITIONS AND EXPLOSIVES OF CONCERN FINDINGS

4.1 GENERAL INFORMATION

4.1.1 Digital Geophysical Mapping Investigation and Qualitative Reconnaissance

4.1.2.1 The former Thermal Ground ASB includes two MRSs: the Skeet Range MRS and the Burial Pits MRS. The TPP team agreed that the SI data collection would focus on a geophysical survey in the vicinity of the Burial Pits MRS. In addition, the TPP Team determined that since the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. On May 21 and 22, 2011, the site visit team conducted a digital geophysical mapping (DGM) investigation over the Burial Pits MRS to determine the presence or absence of a burial pit.

4.1.2.2 Prior to the investigation, the EM61-MK2 was checked according to the procedures specified in the instruction manual, as well as those outlined in the SS-WP to determine that the equipment was functioning properly. As a part of this process, an instrument battery check was performed on all components (EM61-MK2, and Allegro/data logger). Several quality control (QC) checks to monitor the instrument for signal noise, stability, and repeatability were conducted prior to use in accordance with the SS-WP. The quality control checks were all adequate (met MQOs) and the complete results of these tests are provided in Appendix I.

4.1.2.3 The site visit team performed 4.8 miles of qualitative reconnaissance (QR) simultaneously with the DGM survey (Figure 4.1). An unexploded ordnance (UXO) technician performed a sweep of the areas for surface debris using a Schonstedt GA-92XTi magnetic locator. The site was plowed and free of visible surface debris, and no MEC or munitions debris was observed during the SI. The site visit team's daily field reports are included in Appendix D, and the photograph documentation log is included in Appendix E. No photographs are available for the observations taken May 22, 2011; however, the May 21, 2011 photographs show similar observations.

4.1.2.4 The Burial Pits MRS geophysical investigation used survey lines spaced 3 meters apart across the entire site (Figure 4.2). Fiducial markers were inserted in the geophysical data file by the instrument operator at 15 meter intervals along each survey line to interpolate the geophysical data. Two seed items (1-inch diameter metal pipe, 6 inches long) were placed within the Burial Pits MRS to verify that the instrument was

working properly. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation (Figure 4.2).

4.1.2 Instrument Standardization

4.1.2.1 To ensure the quality of the mapped geophysical data, several tests were performed on the EM61-MK2. These tests, their objectives, and the acceptance criteria are described below. The results of these tests are in Appendix I.

4.1.2.2 As stated in the SS-WP a static test was conducted at the beginning and end of each day in an area known to be free of subsurface anomalies and other potential magnetic interference. This static test recorded the instrument background readings, monitored for electronic drift, identified potential interference, and determined the impulse response and repeatability produced by a "static bar," which consists of a polyvinyl chloride (PVC) pipe with a metal nut in the center set on the EM61-MK2 coils. The test was conducted by holding the instrument static and measuring the local background (without the static bar present) for about 3 minutes. Next, the static bar was placed across the center of the coil, where a maximum reading was obtained and an additional minute of data was collected. Improper instrument function, ambient electromagnetic noise, and instability in the earth's magnetic field during a magnetic storm are all potential sources of inconsistent or unrepeatable readings. The pre- and post-survey responses were not to exceed 20 percent of one another.

4.1.2.3 The EM61-MK2 was tested at the site over a test strip before the geophysical survey was conducted at the Burial Pits MRS. The test strip was in an area with minimal background anomalies and consisted of an area of 5 feet by 50 feet. The test strip contained four detection items (1-inch diameter metal pipe, 6-inches long). The items were placed on the ground in line separated by 10 feet and placed in the same direction and orientation throughout the project for repeatability. The test strip was surveyed twice per day in opposite directions and the responses of each of the test items did not exceed 75 percent of one another. Following the completion of activities at the site, all detection items were removed and accounted for.

4.1.2.4 Two noise checks (the operator and the cable shake tests) were performed once per day. The operator test collects data as the operator moves his/her body in relation to the sensor to ensure that there are no metallic items on the operator that will interfere with the measurements. The cable shake test collects data while the instrument cables are shaken to ensure that poor connectors and cables will not introduce noise into the data. The readings were observed by the operator during these tests to ensure that spikes in the data during either test did not occur.

4.1.2.5 The geophysical processor evaluated results of the test strip to determine the instrument latency correction necessary for the data set. Once determined, the latency value was applied to the whole data set.

4.1.3 Data Quality Objectives

4.1.3.1 Introduction

4.1.3.1.1 DQOs are qualitative and quantitative statements that clarify study objectives and specify the type and quality of the data necessary to support decisions. The development of DQOs for a specific site takes into account factors that determine whether the quality and quantity of data are adequate for project needs, such as data collection, uses, types, and needs. While developing these DQOs in accordance with the process presented in Chapter 3, paragraph 3.1.2, of the PWP, Parsons followed the *Guidance on Systematic Planning Using the Data Quality Objectives Process* (USEPA, 2006).

4.1.3.1.2 The goal of the TPP process is to achieve stakeholder, USACE, and applicable state and federal regulatory concurrence with the DQOs for a given site. The TPP Team approved the former Thermal Ground ASB DQOs at the TPP meeting on November 17, 2010. Appendix B of this SI Report presents the TPP documentation, including the DQO worksheets agreed to at the meeting. The updated DQO and measurement quality objectives (MQO) worksheets for the Skeet Range and Burial Pits MRSs are included in this report as Tables 4.1 through 4.5.

4.1.3.1.3 As stated in Subchapter 1.2 of this SI Report, data must be sufficient to do the following: 1) determine whether a removal action is necessary; 2) enable HRS scoring by the USEPA; 3) characterize the release for RI/FS initiation; and 4) complete the MRSPP.

4.1.3.1.4 DQOs cover four project objectives that SI data must satisfy: 1) evaluate potential presence of MEC; 2) evaluate potential presence of MC; 3) collect data needed to complete MRSPP scoring sheets; and 4) collect information for HRS scoring.

4.1.3.2 Munitions and Explosives of Concern Data Quality Objective

The MEC DQO was achieved by evaluating potential presence of MEC within the Burial Pits MRS boundary. The QR team searched for visual evidence of MEC and munitions debris along the QR transects. No MEC or munitions debris was found within the MRS boundary during the QR or DGM survey. Table 4.1 presents the MEC DQOs.

4.1.3.3 Digital Geophysical Data and Measurement Quality Objective

4.1.3.3.1 The quality control (QC) tests listed in Subchapter 4.1.2 were evaluated for compliance with the MQOs listed in Table 4.2. In addition to the instrument standardization tests, an analysis of the acquisition speed was applied to the whole dataset. The acquisition speed MQO required that no more than 10 percent of the data collected exceeded 3 mph, the maximum speed demonstrated at the test strip.

4.1.3.3.2 Positional accuracy of the fiducial method was verified with two seed items placed within the Burial Pits MRS (the same type of pipes used in the test strip described

in Subchapter 4.1.2). The geodetic accuracy MQO required that the location of a target over a seed item not exceed 1.5 meters from the actual location.

4.1.3.3.3 The DGM MQO was achieved by evaluating each dataset for pass/fail of the metrics shown in Table 4.2. All datasets passed the QC tests within the values required by the MQOs. A complete list of the results of these tests is in Appendix I.

TABLE 4.1
MEC DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

DQO Element Number(1)	DQO Element Description(1)	Site-Specific DQO Statement	Objective Met?
Intended Data Use(s):			
1	Project Objective(s) Satisfied	Evaluate potential presence of MEC	Yes
Intended Need Requirements:			
2	Data User Perspective(s)	Risk, remedy	Yes
3	Contaminant or Characteristic of Interest	MEC, munitions debris	Yes
4	Media of Interest	N/A	N/A
5	Required Locations or Areas	Burial Pits MRS	Yes
6	Number of Samples Required	N/A	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Identification of MEC or munitions debris during QR or DGM survey	Yes
Appropriate Sampling and Analysis Methods:			
8	Sampling Method	QR using Schonstedt GA-92XTi magnetic locator for avoidance in accordance with AHA; DGM (using Geonics EM61-MK2)	Yes
9	Analytical Method	N/A	N/A

(1) Refer to EM 200-1-2, Paragraph 4.2.

TABLE 4.2
GEOPHYSICAL MAPPING MEASUREMENT QUALITY OBJECTIVES
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MQO	Method	Criteria	Corrective action for QC failure	Objective Met?
Static Repeatability	Collect data over a test item twice daily and compare response with standard response.	Response (mean static spike – mean static background) is within ±20% of with standard response.	Day's data fails unless both the test strip test item and a fiducial positioning test item are mapped with repeatable characteristics.	Yes
Velocity	Evaluate each dataset using Geosoft Velocity Calculation QC tool.	90% of data are within maximum velocity demonstrated at the test strip.	Recollect areas of MQO-failing data until MQO is met.	Yes
Test-Strip Repeatability	Collect data over the test strip twice daily and compare response with standard response.	Measured responses are at least 75% of expected responses for items in the test strip	Day's data fails unless both the test strip test item and a fiducial positioning test item are mapped with repeatable characteristics.	Yes
Geodetic Accuracy of Fiducial Methods	Collect data over two fiducial positioning test items placed within the grid.	Fiducially positioned response is within 1.5m (i.e., 0.5m + ½ line spacing) of actual position of each fiducial positioning test item.	Recollect areas of MQO-failing data until MQO is met	Yes
Geodetic Accuracy of Fiducial Grid Boundaries	The geophysical team will use a GeoXT GPS capable of sub-meter accuracy to place grid corners and extents of fiducial data collection lanes. The GeoXT GPS antenna will be placed directly over a known location to measure accuracy.	The GeoXT will operate using recommended receiver quality metrics (SNR 3.5 and PDOP 7), though these metric may vary due to available satellites. Compare measured coordinates with known coordinates to confirm that the offset is <1.0m for the GeoXT.	N/A. GeoXT receiver quality metrics will be adjusted until required accuracy is met.	Yes

4.1.3.4 Munitions Constituents Data Quality Objective

The MC DQO was achieved by evaluating the potential presence of MC at the MRS at the former Thermal Ground ASB. The TPP team agreed that there is no need to sample surface soil at the former Thermal Ground ASB because the Skeet Range MRS has been graded and developed. Table 4.3 presents the MC DQOs.

TABLE 4.3
MC DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

DQO Element Number(1)	DQO Element Description(1)	Site-Specific DQO Statement	Objective Met?
Intended Data Use(s):			
1	Project Objective(s) Satisfied	Evaluate potential presence of MC	Yes
Intended Need Requirements:			
2	Data User Perspective(s)	Risk, remedy	Yes
3	Contaminant or Characteristic of Interest	See CSM and sampling rationale tables	Yes
4	Media of Interest	N/A	N/A
5	Required Sampling Locations or Areas and Depths	N/A. MC sampling is not proposed for this site.	N/A
6	Number of Samples Required	N/A. MC sampling is not proposed for this site.	N/A
7	Reference Concentration of Interest or Other Performance Criteria	N/A. MC sampling is not proposed for this site.	N/A
Appropriate Sampling and Analysis Methods:			
8	Sampling Method	N/A. DGM will be conducted.	N/A
9	Analytical Method	N/A. MC sampling is not proposed for this site.	N/A

(1) Refer to EM 200-1-2, Paragraph 4.2.

4.1.3.5 Munitions Response Site Prioritization Protocol Data Quality Objective

The MRSPP DQO was achieved by obtaining sufficient information to complete the MRSPP scoring sheets. Specific input data were collected, and the three modules for the MRSPP were populated as part of the SI. Appendix K includes the MRSPP scoring sheets. Table 4.4 presents the MRSPP DQOs.

TABLE 4.4
MRSPP DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Module	MRSPP Table No.	Table Description	Known Data	Current Data Gap	Data Source
Explosive Hazard Evaluation (EHE)	1	Munitions Type	X		Historical records or field findings
	2	Source of Hazard	X		Historical maps
	3	Location of Munitions	X		Historical records or field findings
	4	Ease of Access	X		Field findings
	5	Status of Property	X		Historical records
	6	Population Density	X		U.S. Census Bureau
	7	Population Near Hazard	X		Field findings
	8	Types of Activities/Structures	X		Regional zoning
	9	Ecological and/or Cultural Resources	X		USFWS, State Historic Preservation Office
	10	Determining the EHE	X		Scores from Tables 1 through 9
Chemical Warfare Materiel (CWM) Hazard Evaluation (CHE)	11	CWM Configuration	X		Historical records or field findings
	12	Sources of CWM	X		Historical records or field findings
	13	Location of CWM	X		Historical records or field findings
	14	Ease of Access	X		Field findings
	15	Status of Property	X		Historical records
	16	Population Density	X		U.S. Census Bureau
	17	Population Near Hazard	X		Field findings
	18	Types of Activities/Structures	X		Regional zoning
	19	Ecological and/or Cultural Resources	X		USFWS, State Historic Preservation Office
	20	Determining the CHE	X		Scores from Tables 11 through 19
Health Hazard Evaluation (HHE)	21	Groundwater Data	X		N/A
	22	Surface Water – Human Endpoint	X		N/A
	23	Sediment – Human Endpoint	X		N/A
	24	Surface Water – Ecological Endpoint	X		N/A
	25	Sediment – Ecological Endpoint	X		N/A
	26	Surface Soil	X		N/A
	27	Supplemental Contaminant Hazard Factor	X		N/A. DGM was conducted.
	28	Determining the HHE	X		Scores from Tables 21 through 27
	29	MRS Priority	X		Scores from Tables 10, 20, and 28
	A	MRS Background Information	X		DoD databases

4.1.3.6 Hazard Ranking System Data Quality Objective

The HRS DQO was achieved by including information in the SI report necessary for the USEPA to populate the HRS score sheets. Source documents for the HRS information include the INPR, the INPR Supplement, the Archival Research Site Summary (the PA), and information from local and state agencies regarding population, groundwater well users, and drinking water use. Table 4.5 presents the HRS DQOs.

TABLE 4.5
HRS DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Data Description	Known Data	Current Data Gap	Data Source
Source Type	X		Historical records or field findings
Estimated Volume or Area	X		N/A
Hazardous Substance	X		Constituents of suspected munitions
Groundwater Sample Concentration	X		N/A
Groundwater Use	X		Well records and municipal data
Surface Water Sample Concentration	X		N/A
Surface Water Pathways	X		Field findings
Soil Sample Concentration	X		N/A
Soil Pathways	X		Field findings
Sensitive Environments	X		State Historic Preservation Office, U.S. Fish and Wildlife Service, various government agencies
Attractiveness/Accessibility	X		Field findings and land use records

4.2 SKEET RANGE MUNITIONS RESPONSE SITE

4.2.1 Historical Munitions and Explosives of Concern

4.2.1.1 The Skeet Range MRS consists of a 26-acre skeet range northwest of the original northwest-southeast runway at the Thermal Ground ASB FUDS. Historical records summarized in the INPR, INPR Summary, and Archival Research Site Summary indicate that the Skeet Range MRS was used from 1942 to 1945 for shotgun practice. The INPR states that general small arms ammunition (12-gauge shotgun) was the ordnance most likely used for training (USACE, 1994).

4.2.1.2 The field visits in June 1993 and August 1994 in support of the INPR observed no MEC or munitions debris; however, an interview with the maintenance supervisor in support of the INPR revealed that ordnance, both practice and live bombs, have been found by airport staff in the past. The location of these items was not discussed in the 1994 INPR, and it is unlikely that they were within the Skeet Range MRS.

4.2.2 Inspection Activities

The TPP Team agreed that no QR or soil sampling would be conducted within the Skeet Range MRS since the area has been graded and developed. The Skeet Range MRS is agricultural land and has been plowed and tilled.

4.3 BURIAL PITS MUNITIONS RESPONSE SITE

4.3.1 Historical Munitions and Explosives of Concern

4.3.1.1 The Burial Pits MRS consists of a 1-acre area southwest of the original northwest-southeast runway at the Thermal Ground ASB FUDS. Historical records summarized in the INPR, INPR Summary, and Archival Research Site Summary indicate that the Burial Pits MRS was used from 1942 to 1945. The INPR indicates that the location of the Burial Pits MRS is not known, and as a result, the Burial Pits MRS was inferred from an interview conducted during the 1994 INPR with the then-current maintenance supervisor. The maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at the site; however, he did not provide specific locations, and he is no longer the maintenance supervisor at the airport. The INPR Supplement indicates that according to standard practice, the bombs would either have been dropped on the airfield during practice bombing or they would have been discarded and buried in the airfield. Because there is no evidence of bombing targets or of cratering, burying the bombs was assumed (USACE, 1994 and 2004b).

4.3.1.2 In addition, a 1942 facility map, updated in 1944, shows the location of ordnance storage facilities in the southwestern portion of the site. The buildings in the ordnance area are referenced as a small arms and ammunition warehouse, pyrotechnic storage, an ammunition assembly and maintenance shop, and 10 fuse storage units. Although the location of the ordnance storage facility is known, the location(s) at which ordnance was found is not known. Accordingly, the location of the Burial Pits MRS was assumed to be in the general location of the former ordnance storage area. The exact area of the Burial Pits MRS is unknown but was estimated at 1 acre.

4.3.1.3 The field visits in June 1993 and August 1994 in support of the INPR observed no MEC or munitions debris; however, an interview with the maintenance supervisor in support of the INPR revealed that ordnance (both practice and live bombs) has been found by airport staff in the past. The location of these items was not disclosed in the 1994 INPR and these findings were not substantiated. It was assumed that the most likely location is the Burial Pits MRS (USACE, 1994 and 2004b). The INPR Supplement lists M38A2 practice bombs, M1A1 spotting charges, AN-Mk5, AN-Mk23, and AN-Mk43 miniature practice bombs, and Mk4 signal cartridges as the ordnance most likely used. M3 and M5 spotting charges were also typically used with M38A2 bombs (USACE, 2004b).

4.3.2 Inspection Activities

To assess the potential presence of a burial pit within the Burial Pit MRS, the site visit team conducted geophysical mapping. In addition, the site visit team conducted 4.8 miles of QR along the geophysical transects while conducting the DGM investigation within the Burial Pits MRS. Before conducting the geophysical mapping, the grid area was surveyed by the UXO escort. No evidence of MEC or munitions debris was observed on the surface. No evidence of a burial pit was found at the Burial Pits MRS during the

geophysical investigation (Figure 4.2). The site visit team observed that the area was plowed; however, no visual evidence of a burial pit was found.

Figure 4.1

Qualitative Reconnaissance and Field Observation Locations Photo
Burial Pits MRS
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California

Legend

- Field Observation Location
- Burial Pits MRS
- Qualitative Reconnaissance

Site Location in California

N

Image: 2005 Orthophotos
Projection: UTM Zone 11 NAD83, Units in Meters

20 10 0 20 Meters

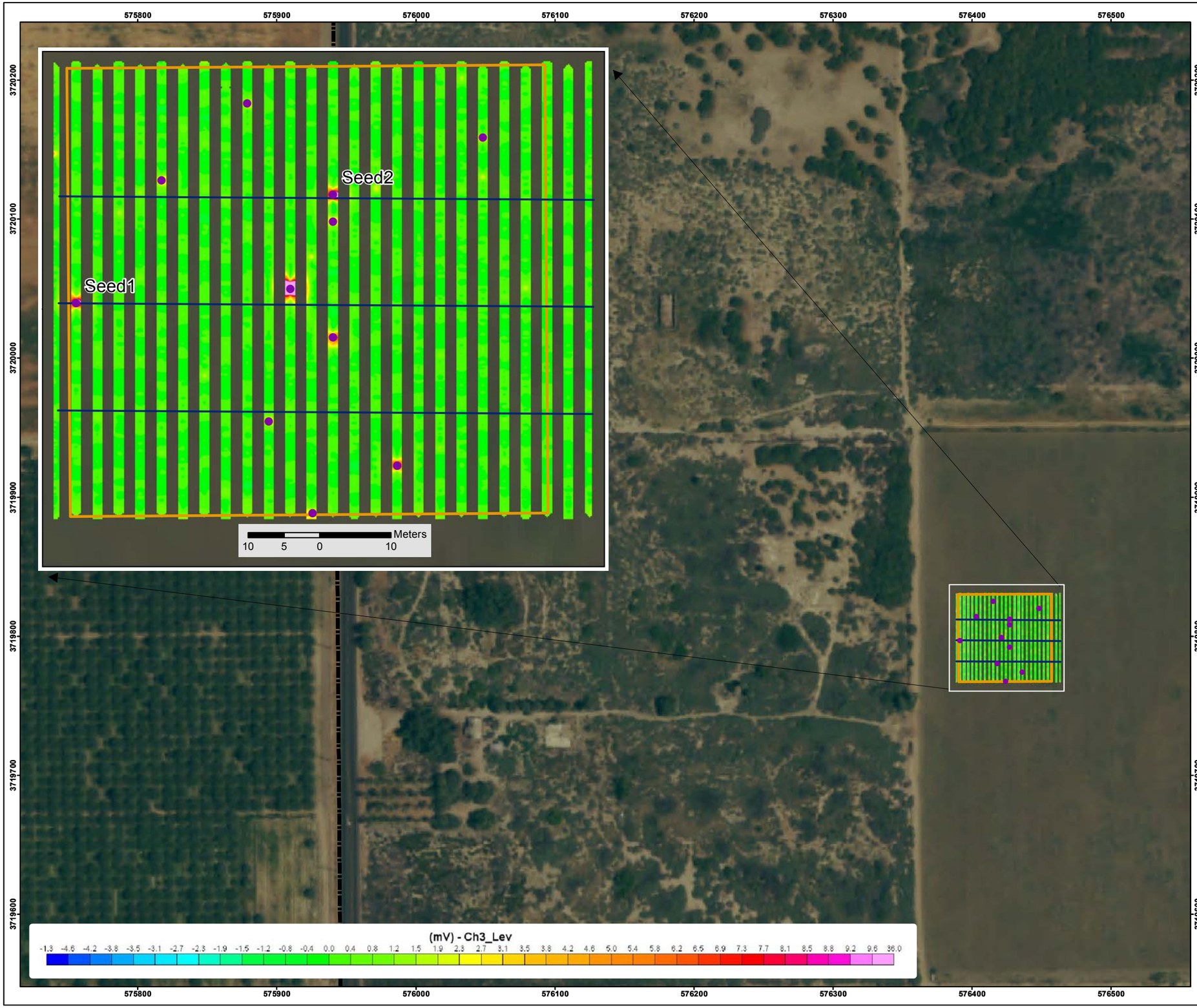
PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER

DESIGNED BY: BT	**Qualitative Reconnaissance and Field Observation Locations Photo Burial Pits MRS**	
DRAWN BY: BT		
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b
SUBMITTED BY: TM	DATE: September 2011	PAGE NUMBER: 4-11
	FILE: thermal_ca\Fig4_1.mxd	

Figure 4.2

Digital Geophysical Mapping (DGM) Survey Map Burial Pits MRS Former Thermal Ground Air Station Base FUDS Project No. J09CA064502

Riverside County, California



Legend

- Anomaly Locations
- Geophysical Mapping Locations
- Burial Pits MRS
- FUDS Boundary
- Fiducial Lines

Site Location in California

N

Image: 2005 Orthophotos
Projection: UTM Zone 11 NAD83, Units in Meters

100 50 0 100 Meters

PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER

DESIGNED BY: BT	Digital Geophysical Mapping (DGM) Survey Map Burial Pits MRS	
DRAWN BY: BT		
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b
SUBMITTED BY: TM	DATE: September 2011	PAGE NUMBER: 4-12
	FILE: thermal_ca\Fig4_2.mxd	

CHAPTER 5

EXPOSURE PATHWAYS AND RECEPTORS

5.1 INTRODUCTION

5.1.1 This chapter evaluates the potential presence of exposure pathways and receptors, based on site-specific conditions. It is necessary to evaluate site-specific conditions and land use to assess risks posed to potential receptors under current and future land use scenarios. Exposure pathways for groundwater, surface water and sediment, soil, and air are evaluated. The conceptual site exposure models for the former Skeet Range and Burial Pits MRSs (Appendix J) summarize which potential receptor exposure pathways are (or may be) complete and which are (and are likely to remain) incomplete. An exposure pathway is considered incomplete unless all four of the following factors (in italics) are present (USEPA, 1989). An example regarding a hypothetical groundwater exposure pathway accompanies the factors.

- *A source of contamination*. For example, a site has known MEC from which MC have leached and contaminated surface soil.

- *An environmental transport and/or exposure medium*. In the example, the MC in soil at the site are mobile and can contaminate groundwater.

- *A point of exposure at which the contaminant can interact with a receptor*. A well drawing from the contaminated aquifer is at the site.

- *A receptor and a likely route of exposure at the exposure point*. A resident uses groundwater from the onsite well as a source of drinking water.

5.1.2 In this hypothetical example, all four factors are present and, therefore, the groundwater exposure pathway is complete. If any single factor was not present (e.g., the MC were not present in soil, or the resident used drinking water from another source), the pathway would be incomplete.

5.1.3 This chapter presents the information required to evaluate whether exposure pathways at this site are complete. It also addresses those constituents that require further consideration in a screening-level risk assessment (SLRA) and a screening-level ecological risk assessment (SLERA). Chapter 6 assesses the potential significance of complete pathways (i.e., whether there is an unacceptable risk).

5.2 GENERAL INFORMATION

General information regarding the geology, hydrogeology, and hydrology of the former Thermal Ground ASB is presented below, followed by a discussion of MRS-specific characteristics and sampling results from the Skeet Range and Burial Pits MRSs.

5.2.1 Regional Geologic and Hydrogeologic Setting

5.2.1.1 The former Thermal Ground ASB is within the Salton Trough section of the Los Angeles Ranges Physiographic Province (USGS, 2002). The Salton Trough is a concave desert basin that descends to 235 feet below sea level at the Salton Sea (*Encyclopedia Britannica*, 2011). The former Thermal Ground ASB is within the Salton Sea Watershed in east-central Riverside County. Portions of the Salton Sea Watershed are in Imperial, Riverside, San Bernardino, and San Diego Counties and in Baja California, Mexico (USGS, 2010a). The Whitewater River flows from north to south, while the New River, originating in Mexico, flows to the north. These two rivers are the main tributaries in the Salton Sea Watershed, and both drain into the Salton Sea. The upper portions of the Salton Sea watershed are in the Santa Rosa Mountains, the San Jacinto Mountains, and the Little San Bernardino Mountains (USGS, 1995). These mountain ranges are mostly unforested, scrub-shrub, arid ecosystems that have burrobrush, cacti, and other succulent plants. The Salton Sea Watershed has no outlets, and thus all water entering the watershed flows directly into the Salton Sea (USGS, 1995; USGS, 2010a). Many ephemeral washes are found throughout the Salton Sea Watershed, none of which flow through the FUDS and MRSs. The Salton Sea Watershed includes the cities of Thermal, Mecca, Indio, Palm Springs, and La Quinta as well as numerous agricultural fields (USGS, 2010a).

5.2.1.2 The surface geology at the former Thermal Ground ASB is composed of Quaternary alluvium deposits. These deposits are characterized by alluvium, lake, playa, and terrace deposits, which tend to be unconsolidated to semiconsolidated and are mostly of nonmarine origin (USGS, 2010b).

5.2.1.3 The FUDS and MRSs are within the Indio Subbasin of the Coachella Valley Groundwater Basin. The Indio Subbasin is bounded by impermeable rocks of the San Jacinto and Santa Rosa Mountains to the south, the Banning fault to the north, and the semipermeable rocks of the Indio Hills in the eastern portion of the Coachella Valley (California Department of Water Resources, 2004). The Basin and Range basin fill aquifer system, which underlies the former Thermal Ground ASB, consists of alluvium-filled basins interspersed between mountain ranges (USGS, 2003). The alluvium fill of the basin aquifers generally consists of unconsolidated sand and gravel. Recharge to the aquifers is primarily from precipitation in the mountains surrounding the valley. Because of increased water demand in the Coachella Valley, water from the Colorado River is delivered to the valley for aquifer recharge efforts (Coachella Valley Water District, 2002). The water levels and direction of groundwater movement in a basin are determined by the geometry of the bedrock surrounding the basin and by the location and quantity of recharge and discharge within the basin. Although groundwater flows

through the basin-fill aquifers from areas of recharge to areas of discharge, the complex and partly interconnected network of aquifers in the basins causes groundwater to flow in many different directions, and the hydrology of each basin is unique (USGS, 1995).

5.2.2 Regional Groundwater Use

5.2.2.1 Although there are no state-regulated public groundwater supplies in the area (CDPH, 2010), there are two tribal drinking water supplies in the area (USEPA, 2011a).

5.2.2.2 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, there are 526 groundwater wells within 4 miles of the former Thermal Ground ASB, including two public/domestic wells and three other wells on site. Depth to groundwater is typically 28 feet bgs (Banks Environmental Data, 2010; Table 5.1 and Figure 5.1).

TABLE 5.1
GROUNDWATER WELLS WITHIN 4-MILE BUFFER OF THE FUDS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from FUDS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	2	0	0	3	5
0 to ¼ mile	13	1	0	0	14
¼ to ½ mile	8	2	0	2	12
½ to 1 mile	37	6	0	4	47
1 to 2 miles	86	14	0	13	113
2 to 3 miles	106	58	0	22	186
3 to 4 miles	92	44	0	13	149
Site to 4 miles	344	125	0	57	526

5.2.2.3 The former Thermal Ground ASB is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport). Population information based on U.S. Census 2010 data indicates that 53,064 people potentially live within 4 miles of the FUDS boundary (Table 2.1 and Figure 2.2). More than 26 inhabited structures are within the FUDS or within 2 miles of the FUDS boundaries (Google Earth, 2011). However, there are no inhabited structures within the MRS boundaries. The site visit observations and the census data indicate that no one lives within the FUDS or MRSs.

5.2.3 Regional Hydrologic Setting

The former Thermal Ground ASB is within the Salton Sea watershed (USGS, 2010a). The USGS Indio and Valerie topographic quadrangles indicate that the site terrain slopes northwest through the FUDS and MRSs toward the City of Indio, California. Surface water at the former Thermal Ground ASB FUDS, the Skeet Range MRS, and the Burial Pits MRS likely follows local topography and also flows in the ditches and culverts

surrounding the site (USGS, 1972a and 1972b). No surface water intakes for drinking water systems are within 15 miles of the FUDS boundary (CDPH, 2010).

5.2.4 Regional Sensitive Environmental Resources

5.2.4.1 California supports 308 federally listed threatened and endangered (T&E) species consisting of 129 animals and 179 plants (USFWS, 2011b). Seven of these species are extirpated from the state of California but remain listed as endangered species. The USFWS identifies 111 plant and animal species that occur within Riverside County (USFWS, 2011c). According to the California Natural Diversity Database, two federally listed T&E species occur within the Indio and Valerie quadrangles: the Coachella fringe-toed lizard (*Uma inornata*) and the Coachella valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (California Department of Fish and Game, 2011a). Of the 237 state-listed T&E species in California, 39 are listed in Riverside County (California Department of Fish and Game, 2011b).

5.2.4.2 No federally designated critical habitat for any T&E species or suitable habitat for the Coachella Valley fringe-toed lizard or the Coachella Valley milk-vetch is within the MRSs or the FUDS. The USFWS Wetlands Mapper, through the National Wetlands Inventory, was used to identify wetlands within the former Thermal Ground ASB FUDS and MRSs (USFWS, 2011a). Wetlands are land areas that are transitional between terrestrial and deep-water habitats in which the water table usually is at or near the surface or in which the land is covered by shallow water. One wetland type was found within the FUDS (PUBHx: palustrine, unconsolidated bottom, permanently flooded, excavated), but none in the MRSs (USFWS, 2011a). The site visit team observed no T&E species or wetlands in the MRSs during the site visit. Based on this information and a review of the Army Checklist for Important Ecological Places (Department of the Army, 2005b), this site is not considered an important ecological place. Therefore, ecological receptors are not likely to be present at the site.

5.2.5 Sampling Locations and Analysis Methods

Direct release of MC from munitions activities at the former Thermal Ground ASB would have been to soil, with potential migration to surface water, sediment, groundwater, or air (through resuspended soil particulates). The TPP Team agreed that since the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. A DGM investigation of the subsurface soil was conducted at the Burial Pits MRS and is described in detail in Subchapter 4.1.

5.2.6 Data Quality Assessment

Not applicable because no samples were collected.

5.2.7 Background Concentrations

Not applicable because no samples were collected.

5.2.8 Munitions Constituents Source Evaluation

Not applicable because no samples were collected.

5.3 SKEET RANGE MUNITIONS RESPONSE SITE

5.3.1 Historical Munitions Constituents Information

The Skeet Range MRS consists of a 26-acre small arms range northwest of the original northwest-southeast runway. No historical MC-related groundwater, surface water, soil, or air sampling has been documented at this MRS.

5.3.2 Groundwater Exposure Pathway

Groundwater can serve as a contaminant transport mechanism that may affect surface water bodies, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil at the ground surface that can be transported to the groundwater, site-specific geology, climate, and the expected future land use.

5.3.2.1 Geologic and Hydrogeologic Setting

There are no known differences between the geologic and hydrogeologic setting at the Skeet Range MRS and the setting described for the site in Subchapter 5.2.

5.3.2.2 Releases and Potential Releases to Groundwater

No releases of MC to groundwater have been identified at the Skeet Range MRS. Groundwater would not have been directly affected by range activities. The TPP Team agreed that groundwater sampling was not warranted during the SI based on the absence of groundwater wells within the Skeet Range MRS. If there were releases of MC to soil as a result of the munitions-related activities, it is possible that the constituents would leach to groundwater at the site, which is typically at an average depth of 28 feet bgs (Banks Environmental Data, 2010).

5.3.2.3 Groundwater Exposure Pathway and Receptors

5.3.2.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, 340 groundwater wells are within 4 miles of the Skeet Range MRS, including 236 public/domestic wells (Banks Environmental Data, 2010), as shown on Figure 5.1 and listed in Table 5.2. No groundwater wells are reported within the Skeet Range MRS.

5.3.2.3.2 Using available population information based on U.S. Census 2010 data, 44,154 people potentially live within 4 miles of the Skeet Range MRS boundary (Table 2.1 and Figure 2.2). However, no people are reported as residing within the MRS

boundary. The site visit team observed no inhabited structures within the MRS and numerous (more than 26) within 2 miles of the Skeet Range MRS; therefore, residents are not considered potential receptors at this MRS. Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

TABLE 5.2
GROUNDWATER WELLS IN THE VICINITY OF
THE SKEET RANGE MRS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from MRS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	0	0	0	0	0
0 to ¼ mile	1	0	0	1	2
¼ to ½ mile	2	0	0	1	3
½ to 1 mile	6	2	0	2	10
1 to 2 miles	53	10	0	6	69
2 to 3 miles	86	17	0	20	123
3 to 4 miles	88	31	0	14	133
Site to 4 miles	236	60	0	44	340

5.3.2.4 Groundwater Sampling Locations and Methods

As discussed in Subchapters 5.2.5 and 5.3.2, the TPP Team agreed that groundwater sampling was not warranted during the SI at the Skeet Range MRS, based on the absence of groundwater wells within the MRS. Therefore, groundwater samples were not collected during the SI.

5.3.2.5 Groundwater Sampling Analytical Results

Groundwater samples were not collected during the SI at the Skeet Range MRS.

5.3.2.6 Groundwater Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Due to the absence of groundwater wells within the MRS, the groundwater exposure pathway is incomplete for all potential receptors.

5.3.3 Surface Water and Sediment Exposure Pathway

Surface water and sediment can serve as contaminant transport mechanisms that may affect surface water bodies, sediment, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in the soil at the ground surface that can be transported to surface water and sediment through runoff and erosion.

5.3.3.1 Hydrologic Setting

No perennial surface water bodies are within the Skeet Range MRS (USFWS, 2011a; USGS, 1972a and 1972b). As described in Subchapters 5.2.2 and 5.2.3, no wellhead protection areas are within a 4-mile buffer of the MRS, and no surface water intakes are within a 15-mile buffer of the MRS (CDPH, 2010). Two tribal source water protection areas are within 4 miles of the MRS (USEPA, 2011a).

5.3.3.2 Releases and Potential Releases to Surface Water and Sediment

There is no evidence of MC releases to soil at the Skeet Range MRS. The lack of perennial surface water would prevent MC migration to surface water and sediment.

5.3.3.3 Surface Water and Sediment Exposure Pathway and Receptors

There is no perennial surface water at or near the Skeet Range MRS. Based on the absence of surface water, it is unlikely that commercial/industrial workers (e.g., airport and agricultural employees) and site visitors would be exposed to surface water or sediment via incidental ingestion or dermal contact.

5.3.3.4 Surface Water and Sediment Sampling Locations and Methods

Neither surface water nor sediment sampling was performed during the SI at the Skeet Range MRS because no perennial surface water bodies are within the MRS.

5.3.3.5 Surface Water and Sediment Sampling Analytical Results

Neither surface water nor sediment sampling was performed during the SI at the Skeet Range MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.3.3.6 Surface Water and Sediment Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Because no perennial surface water bodies are within the Skeet Range MRS, the surface water and sediment erosion/runoff exposure pathways are incomplete for all potential receptors at the Skeet Range MRS.

5.3.4 Soil Exposure Pathway

Potential soil exposure pathways include incidental ingestion, dermal contact, and inhalation of resuspended soil particulates by human receptors; leaching to groundwater; and runoff and erosion to surface water and sediment (when present). The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil exposed at the ground surface, site-specific geology, hydrogeology, climate, and the expected future land use.

5.3.4.1 Physical Source Access Conditions

There are no barriers to access at the Skeet Range MRS. Therefore, access to this site is unrestricted.

5.3.4.2 Actual or Potential Contamination Areas

Based on the munitions used at the Skeet Range MRS, the most likely location for contamination is throughout the small arms range. However, the TPP Team agreed that there is no need to sample surface soil since the Skeet Range MRS has been graded and developed.

5.3.4.3 Soil Exposure Pathway and Receptors

Human receptors may come into contact with MC in soil via dermal contact, incidental ingestion, and inhalation of resuspended soil particulates. Based on the known current and future land use at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.3.4.4 Soil Sampling Locations and Methods

As described in Subchapter 5.2.5, no surface soil samples were collected within the Skeet Range MRS.

5.3.4.5 Soil Sampling Analytical Results

Not applicable; no surface soil samples were collected within the Skeet Range MRS.

5.3.4.6 Soil Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors for soil include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors may be exposed to surface soil through dermal contact, incidental ingestion, and inhalation of resuspended particulate matter. Surface soils were not sampled at the Skeet Range MRS as contamination is unlikely because the Skeet Range MRS has been graded and developed, and DoD-era soil is unlikely to remain. The soil exposure pathways are incomplete for all potential receptors at the Skeet Range MRS.

5.3.5 Air Exposure Pathway

The air exposure pathway accounts for hazardous substance migration in gaseous or particulate form through the air. Inhalation of a contaminant can be a potential exposure for human receptors. No air sampling has been performed at the Skeet Range MRS, and the TPP Team agreed that air sampling would not be performed as part of this SI.

5.3.5.1 Climate

Subchapter 2.2.3 discusses climate.

5.3.5.2 Releases and Potential Releases to Air

There is no evidence of MC releases to air at the Skeet Range MRS. During dry and windy conditions, soil particulates can become airborne. If there were releases of MC to soil as a result of DoD munitions activities, it is possible that the constituents would migrate to air via resuspension of soil particles.

5.3.5.3 Air Exposure Pathways and Receptors

Because no known volatile MC are associated with the munitions used at the site, the only remaining air exposure pathway would be via the inhalation of resuspended soil particulates. Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.3.5.4 Air Sampling and Monitoring Locations and Methods

There is no historical record of air sampling at the former Thermal Ground ASB. Air sampling was not conducted as part of the SI within the Skeet Range MRS.

5.3.5.5 Air Sampling Analytical Results

Air sampling was not conducted as part of the SI at the Skeet Range MRS.

5.3.5.6 Air Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors could be exposed to surface soil through inhalation of suspended particulate matter through the air exposure pathway. As discussed in Subchapter 5.3.4.6, the Skeet Range MRS has been graded and developed, and therefore MC contamination in soil is not expected. Consequently, no potential for a receptor to be exposed to windblown contaminated soil particulates is expected, and the air exposure pathway is incomplete for all receptors at the Skeet Range MRS.

5.4 BURIAL PITS MUNITIONS RESPONSE SITE

5.4.1 Historical Munitions Constituents Information

The Burial Pits MRS consists of a 1-acre burial pit southwest of the original northwest-southeast runway. No historical MC-related groundwater, surface water, soil, or air sampling has been documented at this MRS.

5.4.2 Groundwater Exposure Pathway

Groundwater can serve as a contaminant transport mechanism that may affect surface water bodies, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil at the ground surface that can be transported to the groundwater, site-specific geology, climate, and the expected future land use.

5.4.2.1 Geologic and Hydrogeologic Setting

There are no known differences between the geologic and hydrogeologic setting at the Burial Pits MRS and the setting described for the site in Subchapter 5.2.

5.4.2.2 Releases and Potential Releases to Groundwater

No releases of MC to groundwater have been identified at the Burial Pits MRS. Groundwater would not have been directly affected by bombing activities. The TPP Team agreed that groundwater sampling was not warranted during the SI based on the absence of groundwater wells within the Burial Pits MRS. If there were releases of MC to soil as a result of the munitions-related activities, it is possible that the constituents would leach to groundwater at the site, which is typically at an average depth of 28 feet bgs (Banks Environmental Data, 2010).

5.4.2.3 Groundwater Exposure Pathway and Receptors

5.3.2.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, 344 groundwater wells are within 4 miles of the Burial Pits MRS, including 248 public/domestic wells (Banks Environmental Data, 2010), as shown on Figure 5.1 and listed in Table 5.3. No groundwater wells are reported within the Burial Pits MRS, and no wells were observed in the MRS during the site visit.

5.3.2.3.2 Using available population information based on U.S. Census 2010 data, 30,001 people potentially live within 4 miles of the Burial Pits MRS boundary (Table 2.1 and Figure 2.2). However, no people are reported as residing within the MRS boundary. The site visit team observed no inhabited structures within the MRS and numerous (more than 26) within 2 miles of the Burial Pits MRS; therefore, residents are not considered potential receptors at this MRS. Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

TABLE 5.3
GROUNDWATER WELLS IN THE VICINITY OF
THE BURIAL PITS MRS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from MRS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	0	0	0	0	0
0 to ¼ mile	0	0	0	0	0
¼ to ½ mile	1	0	0	0	1
½ to 1 mile	8	0	0	1	9
1 to 2 miles	34	5	0	7	46
2 to 3 miles	73	28	0	8	109
3 to 4 miles	132	27	0	20	179
Site to 4 miles	248	60	0	36	344

5.4.2.4 Groundwater Sampling Locations and Methods

As discussed in Subchapters 5.2.5 and 5.3.2, the TPP Team agreed that groundwater sampling was not warranted during the SI at the Burial Pits MRS, based on the absence of groundwater wells within the MRS. Therefore, groundwater samples were not collected during the SI.

5.4.2.5 Groundwater Sampling Analytical Results

Groundwater samples were not collected during the SI at the Burial Pits MRS.

5.4.2.6 Groundwater Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Due to the absence of groundwater wells within the MRS, the groundwater exposure pathway is incomplete for all potential receptors.

5.4.3 Surface Water and Sediment Exposure Pathway

Surface water and sediment can serve as contaminant transport mechanisms that may affect surface water bodies, sediment, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in the soil at the ground surface that can be transported to surface water and sediment through runoff and erosion.

5.4.3.1 Hydrologic Setting

No perennial surface water bodies are within the Burial Pits MRS (USFWS, 2011a; USGS, 1972a and 1972b). As described in Subchapters 5.2.2 and 5.2.3, no wellhead protection areas are within a 4-mile buffer of the MRS, and no surface water intakes are

within a 15-mile buffer of the MRS (CDPH, 2010). Two tribal source water protection areas are within 4 miles of the MRS (USEPA, 2011a).

5.4.3.2 Releases and Potential Releases to Surface Water and Sediment

There is no evidence of MC releases to soil at the Burial Pits MRS. The lack of perennial surface water would prevent MC migration to surface water and sediment.

5.4.3.3 Surface Water and Sediment Exposure Pathway and Receptors

There is no perennial surface water at or near the Burial Pits MRS. Based on the absence of surface water, it is unlikely that commercial/industrial workers (e.g., airport and agricultural employees) and site visitors would be exposed to surface water or sediment via ingestion as drinking water, incidental ingestion, or dermal contact.

5.4.3.4 Surface Water and Sediment Sampling Locations and Methods

Neither surface water nor sediment sampling was performed during the SI at the Burial Pits MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.4.3.5 Surface Water and Sediment Sampling Analytical Results

Neither surface water nor sediment sampling was performed during the SI at the Burial Pits MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.4.3.6 Surface Water and Sediment Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Because no perennial surface water bodies are within the Burial Pits MRS, the surface water and sediment erosion/runoff exposure pathways are incomplete for all potential receptors at the Burial Pits MRS.

5.4.4 Soil Exposure Pathway

Potential soil exposure pathways include incidental ingestion, dermal contact, and inhalation of resuspended soil particulates by human receptors; leaching to groundwater; and runoff and erosion to surface water and sediment (when present). The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil exposed at the ground surface, site-specific geology, hydrogeology, climate, and expected future land use.

5.4.4.1 Physical Source Access Conditions

There are no barriers to access at the Burial Pits MRS. Therefore, access to this site is unrestricted.

5.4.4.2 Actual or Potential Contamination Areas

Based on the potential munitions at the Burial Pits MRS, the most likely location for contamination is throughout the burial pit. However, the TPP Team agreed that there is no need to sample surface soil at the former Thermal Ground ASB.

5.4.4.3 Soil Exposure Pathway and Receptors

Human receptors may come into contact with MC in soil via dermal contact, incidental ingestion, and inhalation of resuspended soil particulates. Based on the known current and future land use at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.4.4.4 Soil Sampling Locations and Methods

As described in Subchapter 5.2.5, no surface soil samples were collected within the Burial Pits MRS.

5.4.4.5 Soil Sampling Analytical Results

Not applicable; no surface soil samples were collected within the Burial Pits MRS.

5.4.4.6 Soil Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors for soil include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. If munitions were buried, the receptors would not be expected to be exposed to surface soil through dermal contact, incidental ingestion, and inhalation of resuspended particulate matter. Surface soils were not sampled at the Burial Pits MRS because contamination resulting from buried munitions is more likely to be found in the subsurface soil than the surface soil. In addition, it is likely that the burial pit associated with the Burial Pits MRS was capped with non-DoD-era soil due to grading and plowing at the site. No evidence of a burial pit was found during the geophysical investigation. Because there is no evidence that munitions were buried within the MRS, the surface and subsurface soil exposure pathways are incomplete for all potential receptors at the Burial Pits MRS.

5.4.5 Air Exposure Pathway

The air exposure pathway accounts for hazardous substance migration in gaseous or particulate form through the air. Inhalation of a contaminant can be a potential exposure for human receptors. No air sampling has been performed at the Burial Pits MRS, and the TPP Team agreed that air sampling would not be performed as part of this SI.

5.4.5.1 Climate

Subchapter 2.2.3 discusses climate.

5.4.5.2 Releases and Potential Releases to Air

There is no evidence of MC releases to air at the Burial Pits MRS. During dry and windy conditions, soil particulates can become airborne. If there were releases of MC to soil as a result of DoD munitions activities, it is possible that the constituents would migrate to air via resuspension of soil particles.

5.4.5.3 Air Exposure Pathways and Receptors

Because no known volatile MC are associated with the munitions used at the site, the only remaining air exposure pathway would be via the inhalation of resuspended soil particulates. Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.4.5.4 Air Sampling and Monitoring Locations and Methods

There is no historical record of air sampling at the former Thermal Ground ASB. Air sampling was not conducted as part of the SI within the Burial Pits MRS.

5.4.5.5 Air Sampling Analytical Results

Air sampling was not conducted as part of the SI at the Burial Pits MRS.

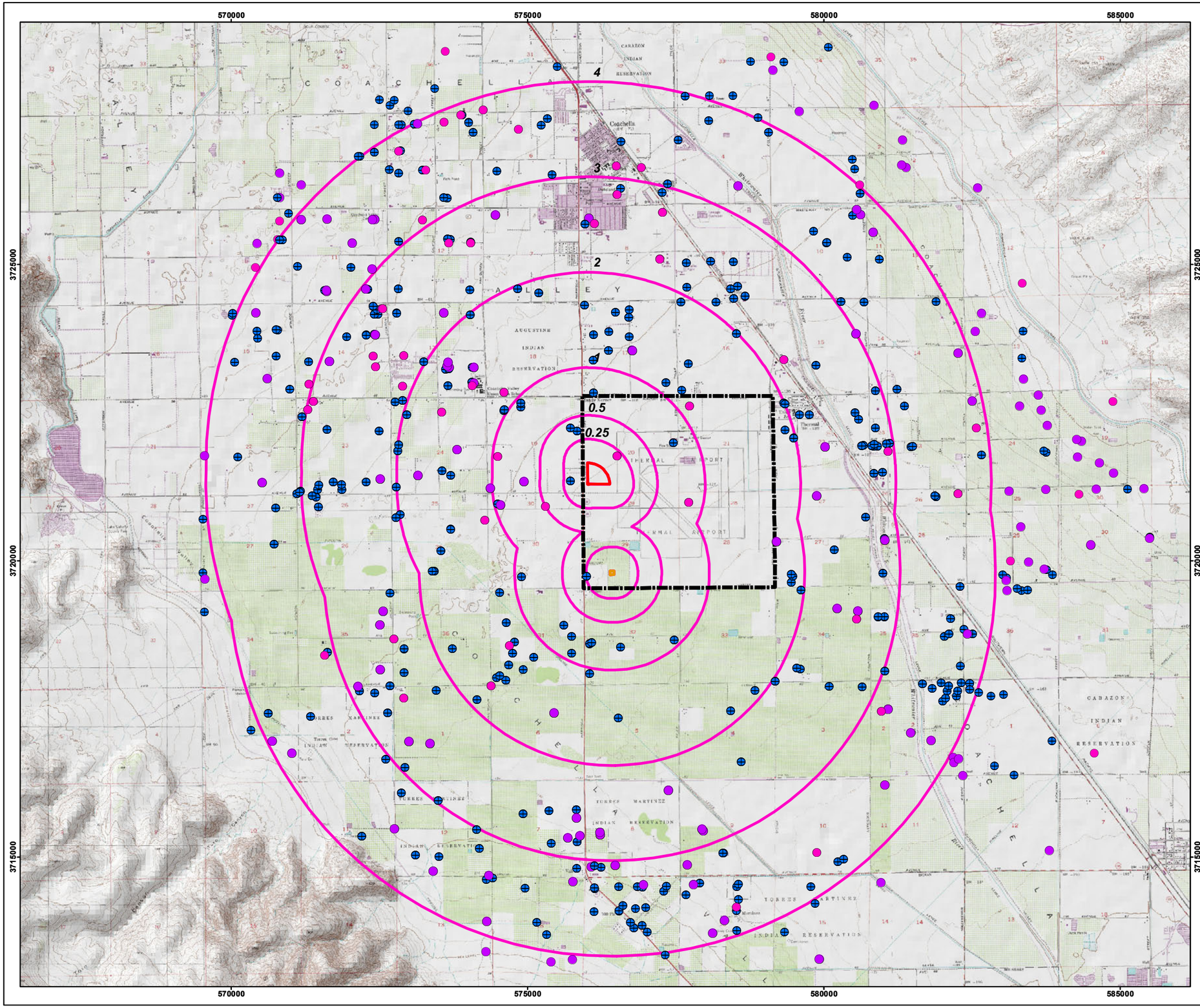
5.4.5.6 Air Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors could be exposed to surface soil through inhalation of suspended particulate matter through the air exposure pathway. As discussed in Subchapter 5.3.4.6, there is no evidence that munitions were buried within the MRS, and therefore MC contamination in soil is not expected. Consequently, no potential for a receptor to be exposed to windblown contaminated soil particulates is expected, and the air exposure pathway is incomplete for all receptors at the Burial Pits MRS.

Figure 5.1

Water Wells within 4-Mile Buffer
Former Thermal
Ground Air Station Base
FUDS Project No. J09CA064502

Riverside County, California



Legend

- Public/Domestic Water Well
- Irrigation/Stock Water Well
- Other Water Well
- Skeet Range MRS
- Burial Pits MRS
- FUDS Boundary
- Buffer (Mile)

Site Location in California

N

Image: USGS 7.5' Topo Quadrangles, Date Unknown
Projection: UTM Zone 11 NAD83, Units in Meters

2 1 0 2 Kilometers

PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER

DESIGNED BY: BT	Water Wells within 4-Mile Buffer		
DRAWN BY: BT			
CHECKED BY: AS	SCALE: As Shown	PROJECT NUMBER: 747217.94239b	
SUBMITTED BY: TM	DATE: August 2011	PAGE NUMBER: 5-15	
	FILE: thermal_ca\Fig5_1.mxd		

CHAPTER 6

SCREENING-LEVEL RISK ASSESSMENT

6.1 MUNITIONS AND EXPLOSIVES OF CONCERN SCREENING-LEVEL RISK ASSESSMENT

6.1.1 Introduction

6.1.1.1 A qualitative risk assessment evaluates the potential explosive safety risk to the public at the former Thermal Ground ASB and communicates whether a potential risk exists at the FUDS and the primary causes of that potential risk. The risk assessment is based on historical information in prior studies (e.g., the ASR and the ASR Supplement) and on observations made during the QR.

6.1.1.2 An explosive safety risk exists if a person can come near or into contact with MEC and interact with the MEC in a manner that results in a detonation. The potential for an explosive safety risk depends on the presence of three critical elements:

- A source (i.e., presence of MEC),
- A human receptor (i.e., a person), and
- The potential for interaction between the source and receptor (i.e., the possibility that the person might pick up or disturbed the MEC).

6.1.1.3 All three of these elements must be present for an explosive safety risk to exist; there is no risk if any one element is missing. Each of these three elements provides a basis for implementing effective risk management response actions.

6.1.2 Conceptual Site Model

The CSM for the former Thermal Ground ASB, included in Appendix J, summarizes conditions at the FUDS that could result in human exposure to MEC. It describes the types of MEC potentially present in the Skeet Range and Burial Pits MRSs, past MEC and munitions debris findings, and current and projected future land use and receptors.

6.1.3 Qualitative Risk Evaluation

6.1.3.1 For the Skeet Range and Burial Pits MRSs, the potential risk posed by MEC was characterized qualitatively by evaluating three primary risk factors, which are related to the three critical elements listed above:

1) MEC presence: whether there is potential for MEC at the MRS

2) MEC type: the types of MEC that might be at the MRS and the related potential explosive hazards

3) Site accessibility: how potential receptors at the MRS might interact with the MEC

6.1.3.2 The known or suspected presence of an explosive hazard at a given MRS and any potential human receptors at that MRS will typically be considered sufficient justification for RI/FS implementation at that MRS. The following paragraphs describe each of the primary risk factors.

6.1.3.3 **MEC presence** describes whether MEC have been confirmed or are suspected at the MRS, either at the surface or in the subsurface, based on historical information in prior studies (e.g., the INPR, the INPR Supplement, and the Archival Research Site Summary) and observations made during the QR. If there is historical evidence of potential MEC presence at a site, lack of confirmation of MEC presence during the QR will not be considered as evidence of MEC absence for this qualitative risk evaluation. Table 6.1 describes the three possible categories of MEC presence for this evaluation.

TABLE 6.1
CATEGORIES OF MEC PRESENCE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MEC Presence	Description
Confirmed or suspected	There is physical or confirmed historical evidence of MEC presence at the MRS, or there is physical or historical evidence indicating that MEC may be present at the MRS.
Small arms only(1)	The presence of small arms ammunition is confirmed or suspected, and there is evidence that no other types of munitions were used or are present at the MRS.
Evidence of no munitions	Following investigation of the MRS, there is physical or historical evidence that there are no UXO or discarded military munitions present.

(1) Small arms ammunition is "ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller or for shotguns" (Department of the Army, 2005a).

6.1.3.4 **MEC type** determines whether the MEC potentially present at the MRS might be detonated, resulting in a minor injury or worse to one or more human receptors. If multiple MEC types are potentially present at the MRS, the type that poses the greatest risk to public health is selected for this qualitative risk evaluation. This determination is

based on historical information in prior studies and observations made during the QR. Table 6.2 describes the three possible categories of MEC type for this evaluation.

TABLE 6.2
CATEGORIES OF MEC TYPE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MEC Type	Description
Potentially hazardous	Fuzed or unfuzed MEC that may result in physical injury to an individual if detonated by an individual's activities.
Small arms only(1)	Small arms ammunition is confirmed or suspected, and there is evidence that no other types of munitions were used or are present at the MRS.
Inert	Munitions debris or other items that will cause no injury (e.g., training ordnance containing no explosives, fuzes, spotting charges, etc.).

(1) Small arms ammunition is defined as "ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller or for shotguns" (Department of the Army, 2005a).

6.1.3.5 **Site accessibility** describes whether human receptors have access to the MRS and, therefore, may interact with any MEC at the surface or in the subsurface. For this qualitative risk evaluation, if MEC are confirmed or suspected at the MRS, it is assumed that human receptors might come into contact with those MEC unless there is complete restriction to access. This assessment will also describe the potential receptors. Table 6.3 describes the two possible categories of site accessibility for this evaluation.

TABLE 6.3
CATEGORIES OF SITE ACCESSIBILITY
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Site Accessibility	Description
Accessible	Access control is not complete: residents, site workers, or visitors can gain access to all or part of the MRS.
Complete restriction to access	Human receptors are completely prevented from gaining access to the MRS.

6.1.3.6 For this qualitative risk assessment, further evaluation (i.e., RI/FS) for the MRS will typically be justified if the following conditions are all met:

- MEC are confirmed or suspected to be present;
- The MEC confirmed or suspected to be present are potentially hazardous; and
- The MRS is accessible.

6.1.3.7 These primary risk factors were evaluated for Skeet Range and Burial Pits MRSs at the former Thermal Ground ASB using the data collected during the site visit and the historical data available from other studies. The following subchapters discuss

the qualitative risk evaluation by each primary risk factor to determine whether further evaluation is justified in the MRS.

6.1.4 Munitions and Explosives of Concern Risk Assessment: Skeet Range MRS

6.1.4.1 Based on the INPR and the INPR Supplement, no munitions debris was observed during previous field visits to the former Thermal Ground ASB. However, an interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found practice and live bombs at this site. The location of these items was not discussed in the 1994 INPR, and it is unlikely that they were found within the Skeet Range MRS. The ASR Supplement reports no other MEC incidents. Based on these findings and the known historic use of the site, MEC presence at the Skeet Range MRS is considered "Small Arms Only."

6.1.4.2 The INPR and the ASR Supplement list the known or suspected munitions at the Skeet Range MRS as general small arms ammunition (12-gauge shotgun). No other evidence has been discovered to contradict this. Expended small arms ammunition is munitions debris and poses no explosive hazards, and unexpended small arms ammunition does not present a significant explosive hazard (Department of the Army, 2005a). Based on this information, the MEC type at the Skeet Range MRS is assessed as "Small Arms Only."

6.1.4.3 The former Thermal Ground ASB is just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of the city of Coachella, California, and is used for agriculture and as a municipal airport. The site visit team encountered no barriers to access during the QR, and it is assumed that the site is accessible to anyone wishing to enter. Therefore, the Skeet Range MRS is considered "Accessible."

6.1.5 Munitions and Explosives of Concern Risk Assessment: Burial Pits MRS

6.1.5.1 Based on the INPR and the INPR Supplement, no munitions debris was observed during previous field visits to the former Thermal Ground ASB. An interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at this site. However, the location of these items was not discussed in the 1994 INPR and these findings are not substantiated. The 2011 site visit team observed no MEC or munitions debris. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. Based on these findings, MEC presence at the Burial Pits MRS is considered "Evidence of No Munitions."

6.1.5.2 The INPR and the INPR Supplement list the known or suspected munitions at the Burial Pits MRS as M38A2 practice bombs; M1A1 spotting charges; AN-Mk5, AN-Mk23, and AN-Mk43 miniature practice bombs; and Mk4 signal cartridges. M3 and M5 spotting charges were also typically used with M38A2 bombs (USACE, 2004b). These items contain charges and cartridges that might present a residual explosive hazard if they

remain at the site intact. However, because the MEC presence is considered "Evidence of No Munitions," the MEC type at the Burial Pits MRS is assessed as "Not Applicable."

6.1.5.3 The former Thermal Ground ASB is just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of the city of Coachella, California, and is used for agriculture and as a municipal airport. The site visit team encountered no barriers to access during the QR, and it is assumed that the site is accessible to anyone wishing to enter. Therefore, the Burial Pits MRS is considered "Accessible."

6.1.6 Risk Summary

Table 6.4 summarizes the qualitative MEC risk evaluation for the former Thermal Ground ASB. Based on the qualitative evaluation of the Skeet Range MRS, no explosive hazards remain at the Skeet Range MRS; therefore, there is no explosive safety risk at this MRS. The qualitative evaluation of the Burial Pits MRS suggests that there is no potential for an explosive safety risk at this MRS.

TABLE 6.4
MEC RISK EVALUATION
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	MEC Presence	MEC Type		Site Accessibility	Further Evaluation?
Skeet Range MRS	Small Arms Only	Small arms ammunition, general: Shotgun, 12 gauge	Small Arms Only	Accessible	No
Burial Pits MRS	Evidence of No Munitions	Not Applicable	Not Applicable	Accessible	No

6.2 MUNITIONS CONSTITUENTS SCREENING-LEVEL HUMAN HEALTH RISK ASSESSMENT

Potential human receptors at the Skeet Range MRS or Burial Pits MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. The MRSs have been graded, and the original DoD-era ground surface is no longer present. Additionally, there are no perennial surface water bodies or groundwater wells within the MRSs. Therefore, no soil, air, surface water, sediment, or groundwater sampling was conducted at the Skeet Range MRS or Burial Pits MRS. As described in Subchapters 5.3.2, 5.3.3, 5.3.4, and 5.3.5 for the Skeet Range MRS and Subchapters 5.4.2, 5.4.3, 5.4.4, and 5.4.5 for the Burial Pits MRS, all MC exposure pathways at these MRSs are considered incomplete for all receptors. Because a complete exposure pathway is required for a risk to be present, unacceptable risks to human receptors resulting from MC are not expected as a result of exposure to groundwater, surface water or sediment, surface soil, subsurface soil, or air at the Skeet Range MRS or the Burial Pits MRS.

6.3 MUNITIONS CONSTITUENTS SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT

As discussed in Subchapter 5.2.4, the former Thermal Ground ASB is not an important ecological place, therefore ecological receptors are not considered to be present at the MRSs. Because a complete exposure pathway is required for a risk to be present, unacceptable ecological risk resulting from exposure to MC is not expected at the Skeet Range MRS or Burial Pits MRS.

CHAPTER 7

SUMMARY AND CONCLUSIONS

7.1 SUMMARY

7.1.1 The SI performed at the former Thermal Ground ASB in Riverside County, California, evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS. The project was planned and performed to satisfy the DQOs set for the project: 1) evaluate potential presence of MEC; 2) evaluate potential presence of MC; 3) collect data needed to complete MRSPP scoring sheets; and 4) collect information for HRS scoring. Successful completion of the DQOs allowed determination of whether this FUDS project warrants further response action under CERCLA.

7.1.2 The SI included approximately 4.8 miles of QR and a DGM investigation of the subsurface soil at the Burial Pits MRS. The TPP team determined that since the Skeet Range MRS has been graded and developed, there was no need to sample surface soil at the former Thermal Ground ASB.

7.1.3 The site visit team found no MEC or munitions debris during the QR. No evidence of a burial pit was found during the geophysical investigation.

7.2 CONCLUSIONS REGARDING POTENTIAL MUNITIONS AND EXPLOSIVES OF CONCERN EXPOSURE PATHWAYS

7.2.1 The evaluation of potential MEC exposure (Subchapter 6.1) concluded that the MEC exposure pathway is incomplete for the Skeet Range MRS, based on no MEC or munitions debris observed during the SI and the INPR field visits. Based on the current use of the site, there is no potential for human receptors to come into contact with surface or subsurface MEC at the Skeet Range MRS. Consequently, there is no potential explosive safety risk at the MRS.

7.2.2 The evaluation of potential MEC exposure (Subchapter 6.1) concluded that the MEC exposure pathway is incomplete for the Burial Pits MRS, based on no MEC or munitions debris observed during the SI and the INPR field visits. Based on the current use of the site, there is no potential for human receptors to come into contact with surface or subsurface MEC at the Burial Pits MRS. Consequently, there is no potential explosive safety risk at the MRS.

7.3 CONCLUSIONS REGARDING POTENTIAL MUNITIONS CONSTITUENTS EXPOSURE PATHWAYS

7.3.1 An exposure pathway is considered incomplete unless all four of the following elements are present (USEPA, 1989):

- A source and mechanism for chemical release;
- An environmental transport and/or exposure medium;
- A receptor exposure point; and
- A receptor and a likely route of exposure at the exposure point.

7.3.2 As agreed by the TPP Team, no MC sampling was conducted at the site because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. A DGM investigation was conducted at the Burial Pits MRS to determine the potential presence of munitions debris; none was found. Therefore, soil sampling was not conducted during the SI to evaluate MC contamination in the surface soil at the MRSs. Due to the grading/development that has occurred at the MRSs since DoD use of the property, it is highly unlikely that MC contamination remains in the surface soil or the subsurface soil. No change in land use is expected for either MRS. Therefore, the soil exposure pathways for human receptors are incomplete for the Skeet Range MRS and the Burial Pits MRS, and unacceptable risks to human receptors from MC are not expected.

CHAPTER 8

RECOMMENDATIONS

8.1 The Skeet Range MRS at the former Thermal Ground ASB is recommended to proceed to NDAI status (Table 8.1) based on the following:

- During the INPR field visit, no munitions debris or MEC were observed. An interview during the INPR with the then-current maintenance supervisor indicated that in the past, airport staff found practice and live bombs at this site. The location of these items was not discussed in the INPR, and it is unlikely that they were within the Skeet Range MRS. Explosive hazards are not expected to be present.

- As agreed by the TPP Team, no MC sampling was conducted at the site because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. Therefore, human exposure pathways are incomplete.

8.2 The Burial Pits MRS at the former Thermal Ground ASB is recommended to proceed to NDAI status (Table 8.1) based on the following:

- During the INPR field visits, no munitions debris or MEC were observed.

- During the SI, the site visit team observed no MEC or munitions debris during the QR. No evidence of a burial pit was found during the geophysical investigation. Explosive hazards are not expected to be present.

- As agreed by the TPP Team, no MC sampling was conducted at the former Thermal Ground ASB because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. Therefore, human exposure pathways are incomplete.

TABLE 8.1
RECOMMENDATIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	Recommendation	Rationale
Skeet Range	NDAI	The MRS is within a graded and developed area, and the original DoD-era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.
Burial Pits	NDAI	The MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

CHAPTER 9

REFERENCES

Banks Environmental Data. 2010. Water Well Report: Thermal Air Station, Riverside County, California. December 6.

California Department of Fish and Game. 2011a. California Natural Diversity Database. Online Map Viewers. http://imaps.dfg.ca.gov/viewers/cnddb_quickviewer/app.asp.

California Department of Fish and Game. 2011b. Threatened and Endangered Species of California. http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/index.html.

California Department of Public Health (CDPH). 2010. Email from Paul Richter to Cynthia Frazier, Parsons. February 23.

California Department of Water Resources. 2004. Coachella Valley Groundwater Basin, Indio Subbasin . *Hydrologic Regions of California: Colorado River*. Basins and Subbasins of the Colorado River Hydrologic Region. California's Groundwater Bulletin 118. http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-21.01.pdf.

California State Military Museum. No date. Historic California Posts: Naval Air Facility, Thermal (Thermal Ground Support Base, Thermal Army Air Field). Prepared by M.L. Shettle. http://www.militarymuseum.org/ThermalAAF.html.

City-Data.com. 2011. Thermal, California. http://www.city-data.com/city/Thermal-California.html.

Coachella Valley Water District. 2002. Coachella Valley Aquifer Recharge Gets Underway. http://www.cvwd.org/news/press/whitewaterrecharge.pdf.

Department of the Army. 2005a. Memorandum for the Assistant Chief of Staff for Installation Management. Subject: Munitions Response Terminology. Prepared by the Office of the Assistant Secretary, Installations and Environment. April 21.

Department of the Army. 2005b. Technical Document for Ecological Risk Assessment: Process for Developing Management Goals. Prepared by the U.S. Army Biological Technical Assistance Group. August.

Encyclopedia Britannica. 2011. Salton Trough. http://www.britannica.com/EBchecked/topic/519929/Salton-Trough.

Google Earth. 2011. Visual observation made from review of project site using Google Earth® software. Aerial photographs dated May, 2009.

National Archives and Records Administration (NARA). 2010a. Ground Air Support Base, Thermal, California, Building Construction Layout Plan. NARA Pacific Region (Riverside). Tracking number: NARARVKM047. Accessed April 2010.

National Archives and Records Administration. 2010b. Status of Range Acquisitions and Construction, prepared in Engr. Office, Hq, Third Air Force, 16 March 1944. Tracking number: NARACPEA081. Accessed March 2010.

National Archives and Records Administration. 2010c. Thermal Air Base, Calif. NARA Pacific Region (Riverside). Block 6 Schedule "I" (V-3-126N-11). Tracking number: NARARVKM037. Accessed April 2010.

National Oceanic and Atmospheric Administration. 2011. Ocean and Coastal Resource Management. http://coastalmanagement.noaa.gov.

National Park Service. 2011a. Geographic Search. http://www.nps.gov/applications /parksearch/geosearch.cfm.

National Park Service. 2011b. National Heritage Areas. http://www.nps.gov/history /heritageareas/.

National Park Service. 2011c. National Historic Landmarks Program: Lists of National Historic Landmarks. http://www.nps.gov/history/nhl/designations/listsof NHLs.htm.

National Park Service. 2011d. National Register of Historic Places: NPS Focus. http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome.

National Register of Historic Places. 2011a. Historic Districts: California – Riverside County. http://www.historicdistricts.com/ca/riverside/districts.html.

National Register of Historic Places. 2011b. State Listings: California – Riverside County. http://www.historicdistricts.com/ca/riverside/state.html.

Natural Resources Conservation Service. 2010. Web Soil Survey. http://websoilsurvey .nrcs.usda.gov.

Office of the Deputy Under Secretary of Defense. 2001. *Management Guidance for the Defense Environmental Restoration Program*. September.

Parsons. 2004. Basis Munitions Response Contract W912DY-04-D-0005. February 27.

Parsons. 2006. *Final Sampling and Analysis Plan Addendum: Military Munitions Response Program Site Inspections, Southwest Region*. August.

Parsons. 2010. *Final Programmatic Work Plan for Southwest IMA Region, South Pacific Division Range Support Center FUDS Military Munitions Response Program for Site Inspections at Multiple Sites*. February.

Parsons. 2011a. Archival Research Site Summary: Thermal Ground Air Station Base. March.

Parsons. 2011b. *Final Site-Specific Work Plan Addendum to the Programmatic Work Plan: The Former Thermal Ground Air Station Base, Riverside County, California.* May.

Parsons. 2011c. Final Technical Project Planning Memorandum and Associated Documentation for Former Thermal Ground Air Station Base, Riverside County, California. January.

State Parks.com. 2007. State Parks.com→USA→California. http://www.stateparks.com/ca.html.

U.S. Army Corps of Engineers (USACE). 1994. Inventory Project Report: Thermal Ground Air Station Base. Riverside County, California. DERP-FUDS Site No. J09CA064500. Prepared by USACE Los Angeles District. October 1993 and August 1994.

U.S. Army Corps of Engineers. 2004a. *Environmental Quality: Formerly Used Defense Sites (FUDS) Program Policy*. ER 200-3-1. May 10. http://www.usace.army.mil/publications/eng-regs/er200-3-1/entire.pdf.

U.S. Army Corps of Engineers. 2004b. INPR Supplement: Thermal Grd Air Sta Base. Prepared by USACE St. Louis District. November.

U.S. Army Corps of Engineers. 2005. *Final Programmatic Sampling and Analysis Plan: Military Munitions Response Program Site Inspections*. Prepared by USACE Engineering Support Center, Huntsville. Final. September.

U.S. Army Corps of Engineers. 2006. *Screening-Level Ecological Risk Assessments for FUDS MMRP Site Inspections*. Prepared by the USACE HTRW CX.

U.S. Census Bureau. 2011. United States Census 2010. http://factfinder2.census.gov /faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_GCTPH1.CY 07&prodType=table.

U.S. Environmental Protection Agency (USEPA). 1989. *Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part A), Interim Draft.* Office of Emergency and Remedial Response. EPA/540/1-89/002. December.

U.S. Environmental Protection Agency. 2006. *Guidance on Systematic Planning Using the Data Quality Objectives Process*. EPA QA/G-4, EPA/240/B-06/001. February.

U.S. Environmental Protection Agency. 2011a. Email from Karl Banks, USEPA, to Cindy Conway, Parsons. May 31.

U.S. Environmental Protection Agency. 2011b. Western Ecology Division, Ecoregions of North America. http://www.epa.gov/wed/pages/ecoregions/na_eco.htm#Downloads.

U.S. Fish and Wildlife Service (USFWS). 2011a. National Wetlands Inventory: Wetlands Mapper. http://www.fws.gov/wetlands/Data/mapper.html.

U.S. Fish and Wildlife Service. 2011b. Species Reports: Listings and Occurrences for California—Summary of Animals Listings. http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=CA&s8fid=112761032792&s8fid=112762573902&s8fid=24012871586874.

U.S. Fish and Wildlife Service. 2011c. Species Reports: Species by County Report—County: Riverside, CA. http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=06065.

U.S. Forest Service. 2010. Recreational Activities: Find a Forest by State. http://www.fs.fed.us/recreation/map/state_list.shtml#California.

U.S. Geological Survey (USGS). 1972a. Indio Quadrangle, California – Riverside, Co. 7.5-Minute Series (topographic, photorevised 1972).

U.S. Geological Survey. 1972b. Valerie Quadrangle, California – Riverside, Co. 7.5-Minute Series (topographic, photorevised 1972).

U.S. Geological Survey. 1995. *Ground Water Atlas of the United States: California, Nevada*. Prepared by M. Planert and J.S. Williams. http://pubs.usgs.gov/ha/ha730/ch_b/B-text4.html.

U.S. Geological Survey. 2002. A Tapestry of Time and Terrain: The Union of Two Maps – Geology and Topography. http://tapestry.usgs.gov/physiogr/physio.html.

U.S. Geological Survey. 2003. Principal Aquifers of the 48 Conterminous United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands, Vector Digital Data: aquifrp025.tar.gz. http://nationalatlas.gov/atlasftp.html?openChapters=chpwater#chpwater.

U.S. Geological Survey. 2010a. Science in Your Watershed. Salton Sea Watershed. http://water.usgs.gov/lookup/getwatershed?18100200/www/cgi-bin/lookup/getwatershed.

U.S. Geological Survey. 2010b. Mineral Resources On-Line Spatial Data. http://tin.er.usgs.gov/geology/state/sgmc-unit.php?unit=CAQ;0.

Western Regional Climate Center. 2010. Indio Fire Station, California (044259). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4259.

PROPOSED ATCT SITE

PROPOSED RUNWAY 12
HOLD LIGHTS

BURIAL PITS
MRS

SKEET RANGE
MRS

Avenue 58

Polk Street

Fire Department Access Route

Avenue 60
(to be vacated at airport boundary)

Airport Blvd

Higgins Dr.

Aviator Blvd

Waterhawk Way

Tyler Street

Harrison Street

MUNITION RESPONSE SITES
(MRS) NEAR TRM

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Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Deborah O. Raphael, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

September 21, 2011

Ms. Claudia Garcia
Project Manager
United States Army Corps of Engineers
Los Angeles District
915 Wilshire Boulevard, Suite 15018
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DRAFT DRAFT FINAL SITE INVESTIGATION REPORT FOR THE THERMAL GROUND AIR STATION BASE, RIVERSIDE COUNTY, CALIFORNIA

Dear Ms. Garcia:

The Department of Toxic Substances Control (DTSC) has completed its review of the draft final Site Inspection (SI) Report detailing the site investigation results for munitions and explosives of concern (MEC) and munitions constituents (MC) in soil, surface water and groundwater.

DTSC concur with the draft final SI Report recommendation of 'No Defense Action Indicated' for the Munitions Response Site (MRS) designated Skeet Range and Burial Pits because no MEC/MC was found at these sites.

DTSC looks forward to the final Site Investigation Report submittal. If you should have any questions regarding this matter, please call me at (714) 484-5452.

Sincerely,

Shelia Lowe

for Omoruyi Patrick, P. E.,
Brownfields and Environmental Restoration Program

ATTACHMENT 2
Environmental Commitments (MMRP)

Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (TRM)

Mitigation Monitoring and Reporting Program

Public Resources Code, Section 21081.6 (Assembly Bill 3180) requires a public agency to adopt a reporting or monitoring program that can be used to track and implement the mitigation measures identified in an environmental review document prepared in accordance with the California Environmental Quality Act (CEQA). This Mitigation Monitoring Program (MMRP) has been prepared to ensure that the mitigation measures included in the Mitigated Negative Declaration (MND) for the Air Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (TRM) (State Clearinghouse # 2025040919) are implemented.

Riverside County - Aviation is the agency responsible for implementation of the mitigation measures identified in the Mitigated Negative Declaration (MND) for the proposed Airport Traffic Control Tower Construction at the French Valley Airport (F70). This MMRP provides a summary table to identify all mitigation measures and includes the following information for each mitigation measure:

- Phase of the project during which the required mitigation measure must be implemented;
- Phase of the project during which the required mitigation measure must be monitored;
- Responsible party or agency sponsible for conducting the mitigation; and
- Verification of compliance (monitoring party, date of monitoring, and comments).

Mitigation Monitoring and Reporting Program - Air Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (TRM)

Mitigation Measure	Implementation Phase	Monitoring Phase/Timing	Responsible Party (Monitoring)	Verification of Compliance		
				Initial	Date	Remarks
AIR QUALITY						
Mitigation Measure AQ-1: Incorporate County provisions for fugitive dust control set forth in County Ordinance 742.1 in construction documents. The provisions set forth in Ordinance 742.1 of the County of Riverside to control the fugitive dust and PM10 in Coachella Valley will be incorporated into construction documents to minimize the volume of particulates generated during construction activities.	Preparation of final plans and construction documents	Pre-Construction Documentation / Construction Activities	Riverside County Aviation-Contractor			
BIOLOGICAL RESOURCES						
Mitigation Measure BIO-1: Conduct a preconstruction survey for nesting birds. Should construction begin during the nesting season for migratory birds, which extends from February 15 to August 31, the County will undertake a preconstruction survey within 3 to 7 days of construction to identify the potential presence of the vermillion fly catcher. In the event that a nest for the vermillion flycatcher is observed within the project's limits of disturbance, a 250-foot buffer will be established, and work shall not commence within the buffered area until the young have fledged.						
CULTURAL RESOURCES						
Mitigation Measure CUL-1: Conduct cultural resources monitoring during initial ground disturbing activities. The Project Archaeologist and Tribal Representatives shall monitor initial ground disturbing activities. (Ongoing disturbance of the same area will not require ongoing monitoring.) Approximately 60 days prior to construction, the Project Archaeologist, in consultation with the Monitoring Tribe(s), shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing, and responsibility of archaeological and cultural activities that will occur on the project site such as: project grading and development scheduling. The CRMP will include measures for the coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the County. The CRMP shall identify the protocols and stipulations that the County, Monitoring Tribe(s), and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resources. They shall have the authority to stop and redirect excavation in order to evaluate the significance of any archaeological resources discovered within 60 feet of the find (see **Mitigation Measure CUL-2**). A decision regarding the find and its effect on construction activities must be determined within 48 hours.	Preparation of final plans and construction documents	Pre-Construction Documentation / Construction Activities	Riverside County Aviation, Project Archaeologist and Native American Tribal Monitor(s)			
Mitigation Measure CUL-2: Inadvertent discovery of Native American cultural resources. If during ground disturbance activities unanticipated Native American cultural resources are discovered during the course of grading or ground disturbance for this project, all ground disturbance activities within 60 feet of the resource shall be halted, and a meeting shall be convened among the Project Archaeologist and Native American Tribal Monitor to discuss the significance of the find. At that meeting, a decision will need to be made, with the concurrence of the Airports Division, as to the appropriate treatment of the resource (documentation, recovery, avoidance). Resource evaluations shall be limited to non-destructive analysis. Further ground disturbance shall not resume within the area of discovery until the appropriate treatment has been accomplished. The following procedures shall be carried out for the treatment and disposition, which shall be further described in the project-related CRMP: • **Temporary On-Site Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site with Native American Tribal Monitor oversight of the process. • **Curation:** The County shall relinquish ownership of all cultural resources. The Project Archaeologist, following consultation with the Monitoring Tribe(s), shall deliver the materials to a qualified repository in Riverside County that meets or exceeds federal standards per Code of Federal Regulations (CFR) Title 36, Part 79, and that shall be made available to all qualified researchers and tribal representatives. • **Treatment and Final Disposition:** The County shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all cultural materials and nonhuman remains, as part of the required mitigation for impacts to cultural resources. • **Reporting.** The Project Archaeologist shall prepare a final archaeological report within 60 days of project completion. The report shall follow Cultural Resources Management Plan (CRMP).	Preparation of final plans and construction documents	Construction Activities	Riverside County Aviation, Project Archaeologist and Native American monitor(s)			

Mitigation Measure	Implementation Phase	Monitoring Phase/Timing	Responsible Party (Monitoring)	Verification of Compliance		
				Initial	Date	Remarks
Mitigation Measure CUL-3: Discovery of human remains. In the event that human remains (or remains that may be human) are discovered within the construction areas, all activity within 60 feet of the find shall be immediately halted. Any discovery of human remains shall be immediately reported by the Project Archaeologist and Native American monitor(s) to the County Coroner. If the human remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall appoint a Most Likely Descendant (MLD). The MLD shall make recommendation and engage in consultation with the County Airports Division and Project Archaeologist concerning the treatment of the remains as provided in California Public Resources Code 5097.98. • The discovery of any Native American human remains and / or funerary objects shall be kept confidential and secure to prevent any further disturbance. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains and associated funerary objects, sacred objects and / or objects of cultural patrimony shall be covered with an opaque material or placed in opaque cloth bags. A physical barrier (e.g., metal plate, concrete slab that can be moved by heavy equipment) shall be placed over the excavation opening to protect the remains until examination by the MLD. If this type of protective barrier is not available, a 24-hour guard shall be posted outside of working hours. • The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD shall identify and direct the most appropriate means of treating the human remains and any associated funerary object(s). As determined through consultation with the County, the MLD shall make recommendations that allow the burial to remain in situ and protected. • Once complete, a final report of all activities associated with or resulting from the discovery of human remains shall be submitted to the NAHC. All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code § 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the State of California regardless if the remains are modern or archaeological.	Preparation of final plans and construction documents	Construction Activities	Riverside County Aviation, Project Archaeologist and Native American monitor(s)			
ENERGY						
Mitigation Measure ENERGY-1: Obtain a permit to construct from the South Coast AQMD. Prior to selection and installation of an emergency backup generator, the County shall consult with the South Coast AQMD regarding the proposed emergency generator and obtain a permit to Construct the emergency generator.	Preparation of final plans and construction documents	Pre-construction Documentation / Construction Activities	Riverside County Aviation			
GEOLOGY AND SOILS: PALEONTOLOGICAL RESOURCES						
Mitigation Measure PALEO-1: Discovery of previously unknown paleontological resources. The County shall establish monitoring procedures and discovery protocols, based on industry-wide best practices for paleontological resources that may be encountered during earth-disturbing activities in a PRIMP. The Project Paleontologist shall prepare a PRIMP to identify where construction monitoring will be required during project activities and the frequency of monitoring required (i.e., full-time, spot checks, etc.); address the collection and processing of sediment samples to analyze for the presence or absence of micro vertebrates and other small fossils; provide details about fossil collection, analysis, and curation at an approved repository; and describes the different reporting standards for monitoring, and worker environmental awareness training.	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Riverside County Aviation, Project Paleontologist			
HAZARDS AND HAZARDS MATERIALS						
Mitigation Measure HAZARD-1: Brief construction crews about the potential presence of munitions and debris, cease work if potential unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) are discovered during site grading or construction, and identify construction worker education and cease work measures in construction documents. Prior to project construction, construction crews will be briefed on the identification of UXO, MEC, and MD, and safe actions to be taken in the event they are encountered, including leaving the area immediately and noting the location in which the material was encountered. Upon departing the site, the crew leader shall call 911 and the County's Airports Director. The Airports Director will procure the services of qualified hazardous materials personnel to review and determine potential hazards. Work will continue after an appropriate assessment has been made and the materials have been removed by appropriate personnel.	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Construction Manager and Riverside County Airports Director,			

Mitigation Measure	Implementation Phase	Monitoring Phase/Timing	Responsible Party (Monitoring)	Verification of Compliance		
				Initial	Date	Remarks
Mitigation Measure HAZARD-2: Alert construction crews to signs of contaminated soil, residual staining, or odors, and cease work if they are encountered during site grading or construction. Construction documents will specify that construction crews shall be alerted to signs of contaminated soil, residual staining, or odors and instruct crews to cease work if these conditions are encountered. The Airports Director will be alerted to the potential presence of hazardous materials and procure a qualified hazardous materials or environmental services personnel to evaluate the potentially hazardous material. Work will continue after an appropriate evaluation of the condition has been made, appropriate treatment or remediation is undertaken, and hazardous materials/environmental personnel determine that it safe to continue construction activities.	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Construction Manager and Riverside County Airports Director,			
NOISE						
Mitigation Measure NOISE-1: Specify work hours in Construction documents. Construction documents will specify that all project-related construction activities will occur between the hours of 7AM and 7 PM.	Preparation of final plans and construction documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			
Mitigation Measure NOISE-2: Require construction equipment to be equipped with noise mufflers. Construction documents will require that all construction equipment be equipped with noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.	Final plans and Construction Documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			
Mitigation Measure NOISE 3: Identify the need for personal protective equipment for hearing protection by construction personnel in contract documents. Construction documents will identify that the proposed project is located on an Airport and within an area that will include aircraft noise exposure at levels exceeding 65 CNEL and require the use of hearing protection by Construction workers to the extent practicable.	Preparation of final plans and construction documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			

Initial Study / Mitigated Negative Declaration Airport Traffic Control Tower Construction Jacqueline Cochran Regional Airport (TRM)

~~April~~ June 2025

PREPARED BY:
Mead & Hunt, Inc.
3110 E Guasti Rd, Suite 330
Ontario, CA 91761

ON BEHALF OF:
Riverside County
TLMA-Aviation
4080 Lemon Street, 14th Floor
Riverside, CA 92501

APPENDIX G:
ENVIRONMENTAL CHECKLIST FORM

PROJECT INFORMATION

1.	**Project title:**	Airport Traffic Control Tower Construction at the Jacquleine Cochran Regional Airport
2.	**Lead agency name and address:**	Riverside County 4080 Lemon Street, 14th Floor Riverside, California, 92501
3.	**Contact person and phone number:**	Angela Jamison, Director of Airports 951-955-9418
4.	**Project location:**	Jacqueline Cochran Regional Airport 58-850 Higgins Drive Thermal, CA 92274
5.	**Project sponsor's name and address:**	Riverside County TLMA - Aviation Division 4080 Lemon Street, 14th Floor Riverside, California, 92501
6.	**General plan designation:**	Public Facilities (PF)
7.	**Zoning:**	Manufacturing-Heavy (M-H)

8. Description of project:
(Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The Jacqueline Cochran Regional Airport (TRM or "Airport") is a public-use Airport that is owned and operated by the County of Riverside, Transportation and Land Management Agency ("County"). TRM is located in the lower Coachella Valley, in an unincorporated area of the County southwest of the community of Thermal and approximately 33 miles southeast of Palm Springs (Figure 1). The Airport serves General Aviation (GA), pilot training, and charter operations. TRM plays a crucial role as a gateway to the growing Riverside region, which is a prominent destination for business, tourism, and community investment (Figure 1).

The Federal Aviation Administration's (FAAs) National Plan of Integrated Airport Systems (NPIAS) categorizes TRM as a National Airport (NPIAS, 2024a). Aircraft that operate at TRM include corporate jets, single- and multi-engine aircraft, and helicopters. FAA's Airport Master Record indicates that TRM supported approximately 42,200 operations throughout 2024. The Airport supports 94 based aircraft including single-engine aircraft (50), multi-engine aircraft (16), jets (18), and helicopters (10) (FAA 2024b). Three Fixed-Based Operators (FBO) operate at the Airport to provide fuel, aircraft parking and storage, maintenance services to tenants and to provide air-charter services (Riverside County, 2024a).

The 1,850-acre Airport includes two non-intersecting paved runways in an open "V" formation (**Figure 2**). Runway 17/35 is 8,500 feet long and 150 feet wide, equipped with Medium Intensity Runway Edge Lights, a two-box Visual Approach Slope Indicator on Runway 17 end, and a four-box Precision Approach Path Indicator (PAPI) on the Runway 35 end. Runway 12/39 is 4,955 feet long and 100 feet wide, equipped with MIRLs, and two-light PAPIs on both runway ends. Both runways are equipped with a full-length parallel taxiway equipped with Runway End Identifier Lights.

Project Purpose and Need

TRM is not equipped with an Air Traffic Control Tower (ATCT). Approach and departure control services are provided by the Los Angeles Air Route Traffic Control Center (ARTCC). Pilots in the vicinity of TRM use the general air traffic frequency to communicate. During major events, such as the Coachella Valley Music Festival and Stagecoach Festival, TRM experiences substantial surges in visitor traffic, which highlight the need for enhanced operational capabilities.

The County prepared a Benefit/Cost (B/C) analysis and submitted it to the FAA to determine whether the Airport could be included in the FAA's Federal Contract Tower (FCT) program. The B/C study identified that ATCT construction would enhance safety, operational efficiency, and overall effectiveness of Airport operations, and the FAA accepted TRM into the FCT Program in 2022. The addition of an ATCT will support the Airport's role in the regional airport system and in the NPIAS. The proposed project will neither affect air traffic patterns nor increase Airport capacity; it will enhance airfield safety by providing more effective air traffic communication and facilitating ground movement.

Project Siting and Components

Riverside County undertook ATCT site selection using the FAA's "alternative" process as described in FAA Order 6480.4B, Air Traffic Control Tower Siting Process (FAA, 2018). To identify a proposed tower site, the County undertook a comprehensive airfield analysis that evaluated six candidate sites. Following a preliminary analysis, three of the sites (Site Nos. 1 through 3) were retained for further analysis by the FAA (see **Figure 2**). All three sites are located east of Runway 17-35 in a vacant, previously graded, and disturbed area. All three sites were located approximately 1,092 feet east of the Runway 17/35 centerline.

The FAA evaluated the three proposed sites using the "Airport Facilities Terminal Integration Laboratory (ATFIL)-on-the-Road" site selection process (County of Riverside, 2024).

Following virtual reality modeling and simulations of each tower site, the FAA identified Site No. 2 as the recommended ATCT site (see **Appendix A**). As shown on **Figure 3,** a 448-square-foot octagonal tower cab will be constructed at Site No. 2 and face westward. The ATCT will be constructed using a column design with a cab floor elevation of 90 feet above ground level (AGL) and a top-of-tower height of 125 AGL/-5 feet MSL (**Figure 3**).

The proposed ATCT would include the following components (**Figures 4 and 5**):

- **Cab.** A 448-square-foot octagonal cab will be constructed.
- **Security Fence.** A chain-link security fence will surround the tower site.
- **Emergency generator.** An emergency diesel generator with a sub-base tank will be provided. A designated parking area will be provided for a fuel truck.
- **Clear area.** A 40-foot clear area will be provided between the tower and the fence.
- **Lighting.** Overhead parking lights will be installed at each tower corner.

- **Parking.** Ten parking spaces, including two spaces that comply with the Americans with Disabilities Act.
- **Dedicated Access Road.** A dedicated paved access road with a motorized security gate will be constructed to provide access from an interior service road to the tower site. The access road will be designed as a one-way path.
- **Runway 12 Hold Lights.** Hold lights will be installed at Runway 12 as requested by FAA as a condition of site selection (**Figure 6**).

TRM is equipped with all utilities needed to construct and operate the ATCT. Utility connections would be provided to the ATCT including:

- **Stormwater connection.** Approximately 1,028 linear feet of trenching will be required to install a stormwater pipe. A 5-foot-wide, 6-foot-deep trench will be excavated to provide connection between the existing stormwater line and the ATCT site.
- **Electrical connection.** Approximately 1,159 linear feet of electrical duct bank will be installed to provide electricity to the site between the existing electrical line and the tower site. A 3-foot-wide, 3-foot-deep trench will be excavated to install the duct bank.
- **Sewer connection.** Approximately 2,331 linear feet of trenching will be required to connect the existing sewer line to the ATCT site. A 5-foot wide, 6-foot-deep trench will be excavated to accommodate the sewer line.
- **Communication line.** Approximately 7,371 linear feet of FAA communication line will be installed. A 5-foot-wide, 6-foot-deep trench will be excavated to install the conduit and communication line in areas outside of the runway and taxiway areas. The portion of the line that passes beneath runways and taxiways will be installed using directional boring.
- **Water line.** A 2,281 linear-foot water line will be installed to connect to the ATCT site. A 5-foot-wide, 6-foot-deep trench will be excavated to install the water line.
- **Earthwork.** Approximately 600 cubic yards of crushed aggregate base will be installed along the interior roads leading to the ATCT site to a 6-inch depth. Approximately 620 tons of hot mix asphalt will be applied.

Limits of Disturbance

The overall project area, which includes the tower site and all limits of disturbance will total 8.5 acres including a 200-foot by 200-foot construction staging area; however, the tower site, which includes the tower, generator / pad, fence will total 0.24 acre (10,404 square feet). The total and the interior roadway area leading from the public road to the tower and new trenching will total 1.15 acres (50,006 square feet). The project limits of disturbance are shown on **Figure 6**. The remaining area includes disturbance associated with utility connections and trenching but will not result in an increased amount of impervious surface.

Construction Sequence

Construction of the ATCT is planned to commence in 2026 and requires approximately six months. Maximum staffing needs is anticipated to be 35 employees at peak utilization, with average utilization being

15 staff members. Anticipated construction includes: a front loader, scraper, grader, asphalt paver, haul trucks, striping cart, crane, compaction roller, pile driver (if required), concrete trucks, water trucks, pickup trucks, compaction jacks, forklifts, and human lifts. Construction workers will access the site from Polk Road.

Additional environmental clearances, consultations or permits

- NEPA compliance for FAA approval and inclusion on the Airport Layout Plan
- Underground utilities verification (811)
- Permit to construct the Emergency Backup Generator from the South Coast Air Quality Management District

Agencies to use environmental document for CEQA compliance

- Riverside County Board of Supervisors

Figure 1 - Jacqueline Cochran Regional Airport (TRM) Site Location

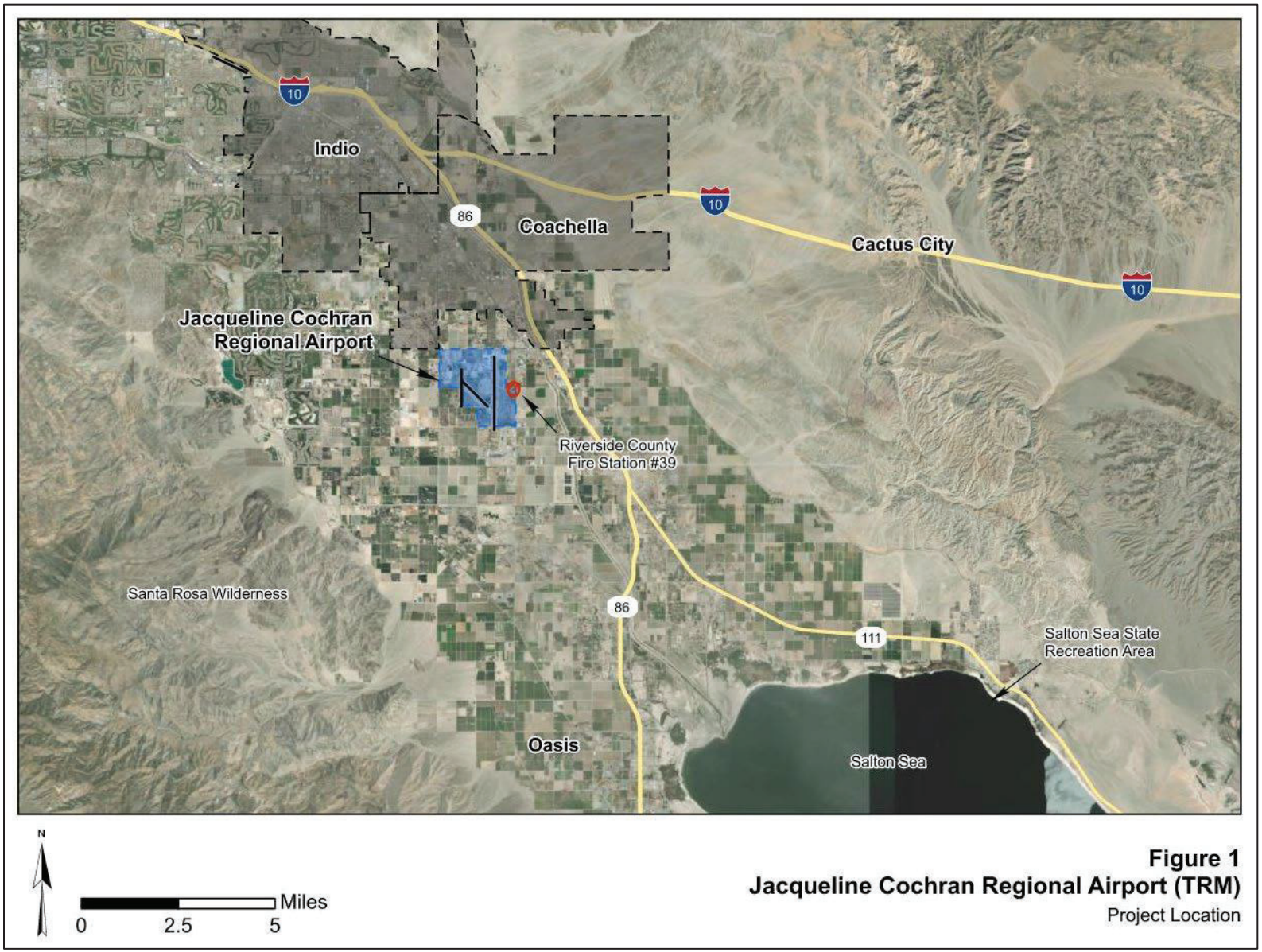


Figure 2 - Proposed ATCT Site Location Details

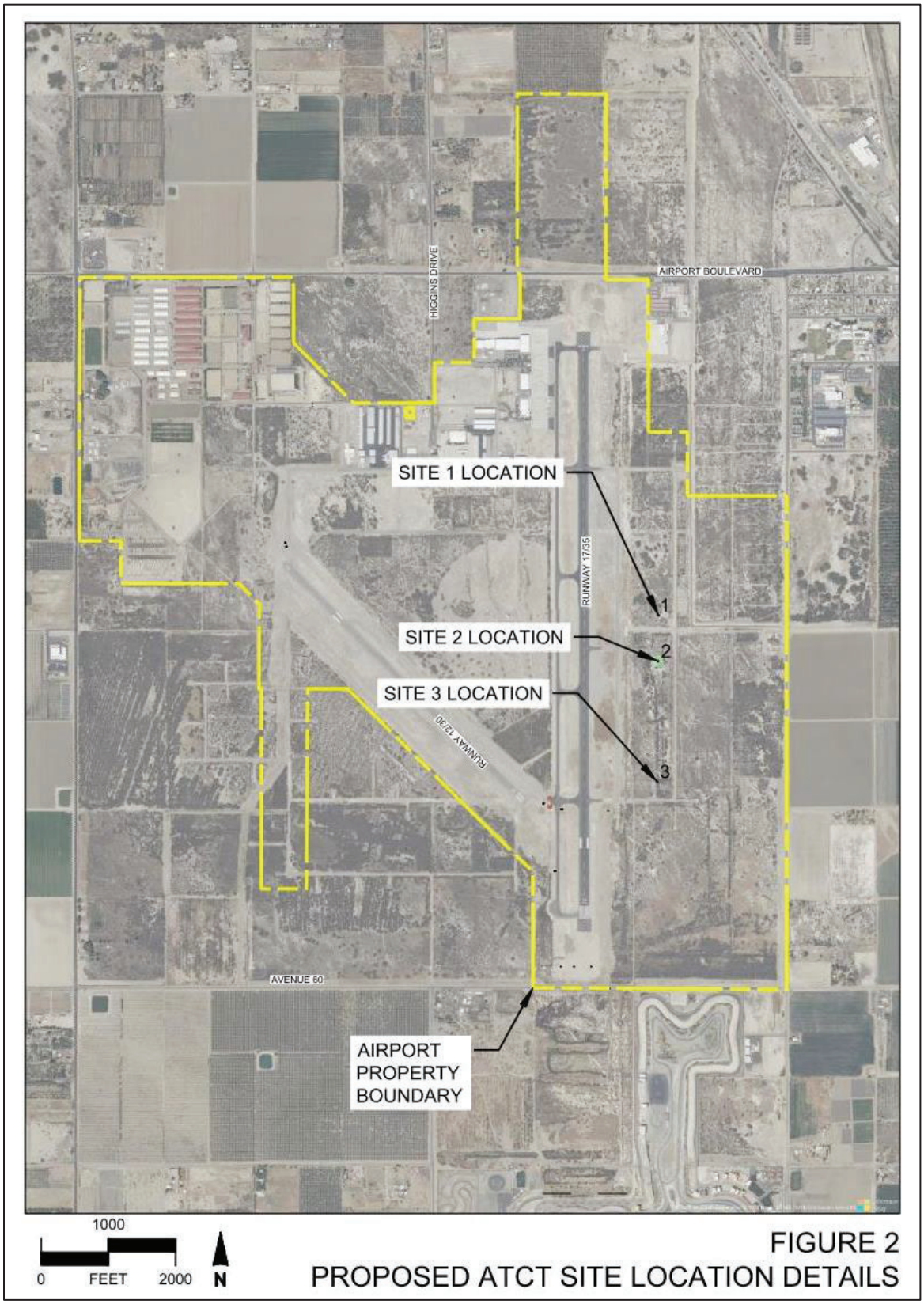


Figure 3 – ATCT Location

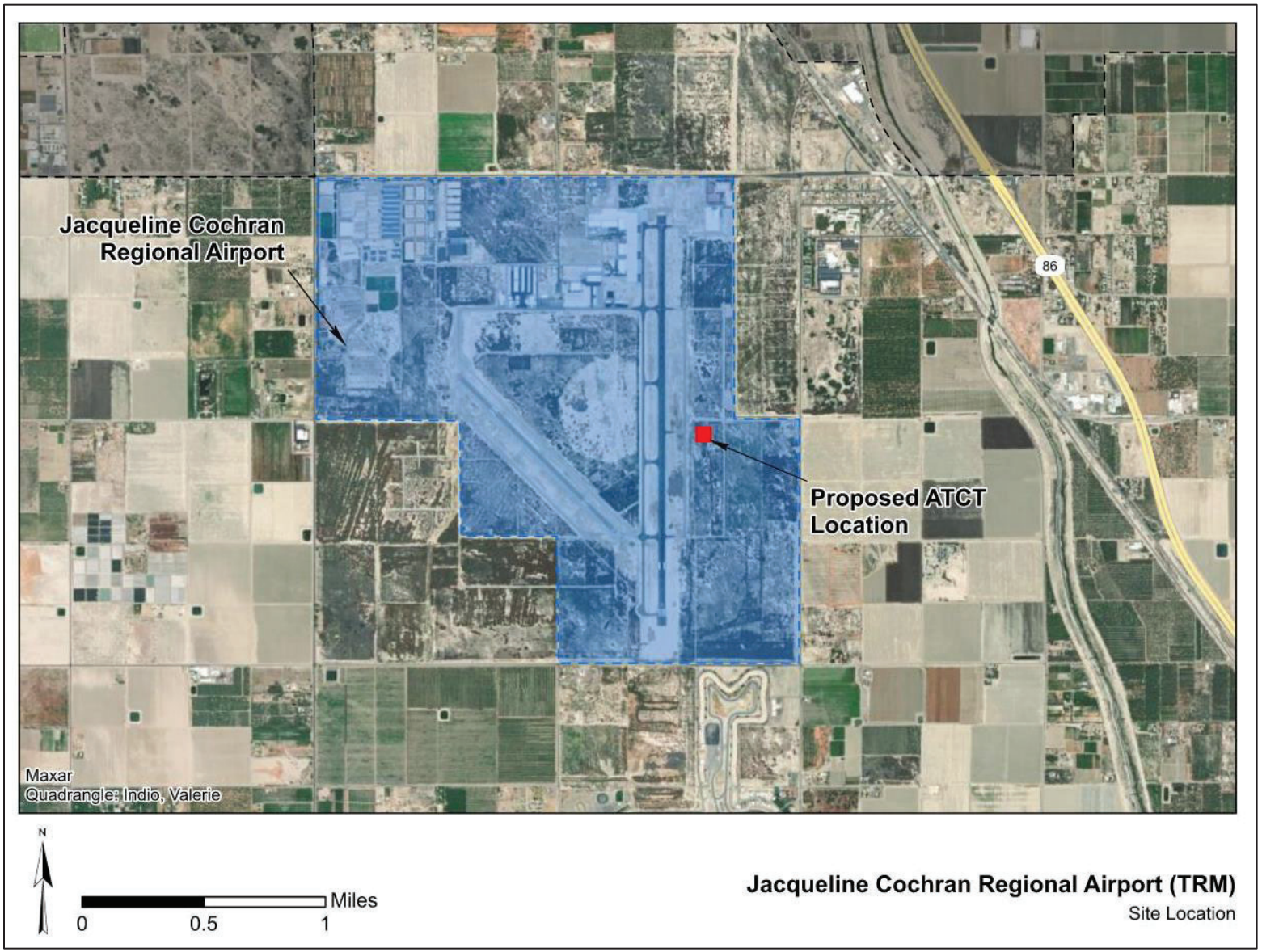


Figure 4 - ATCT Site Layout Details

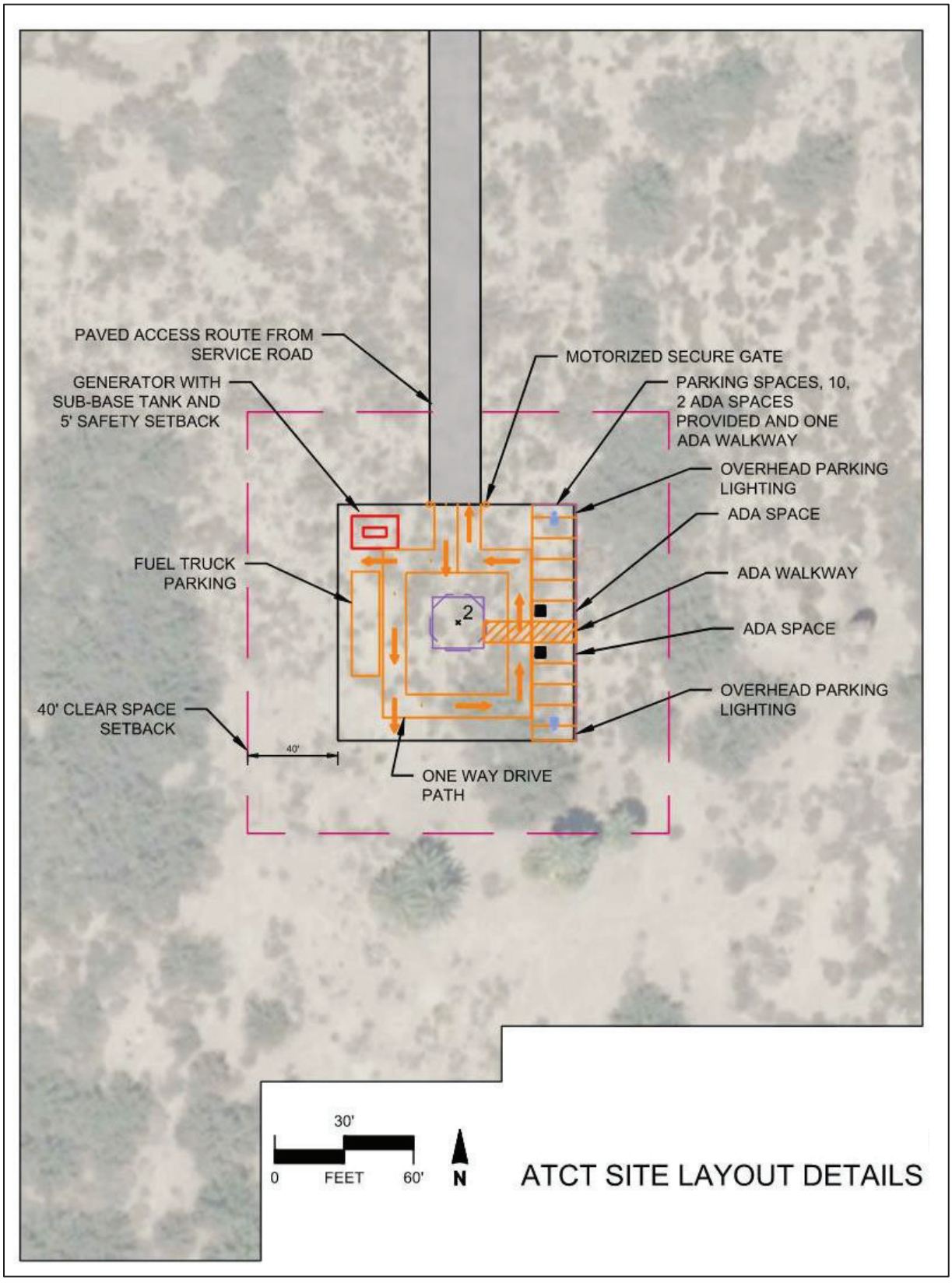


Figure 5 - Project Components

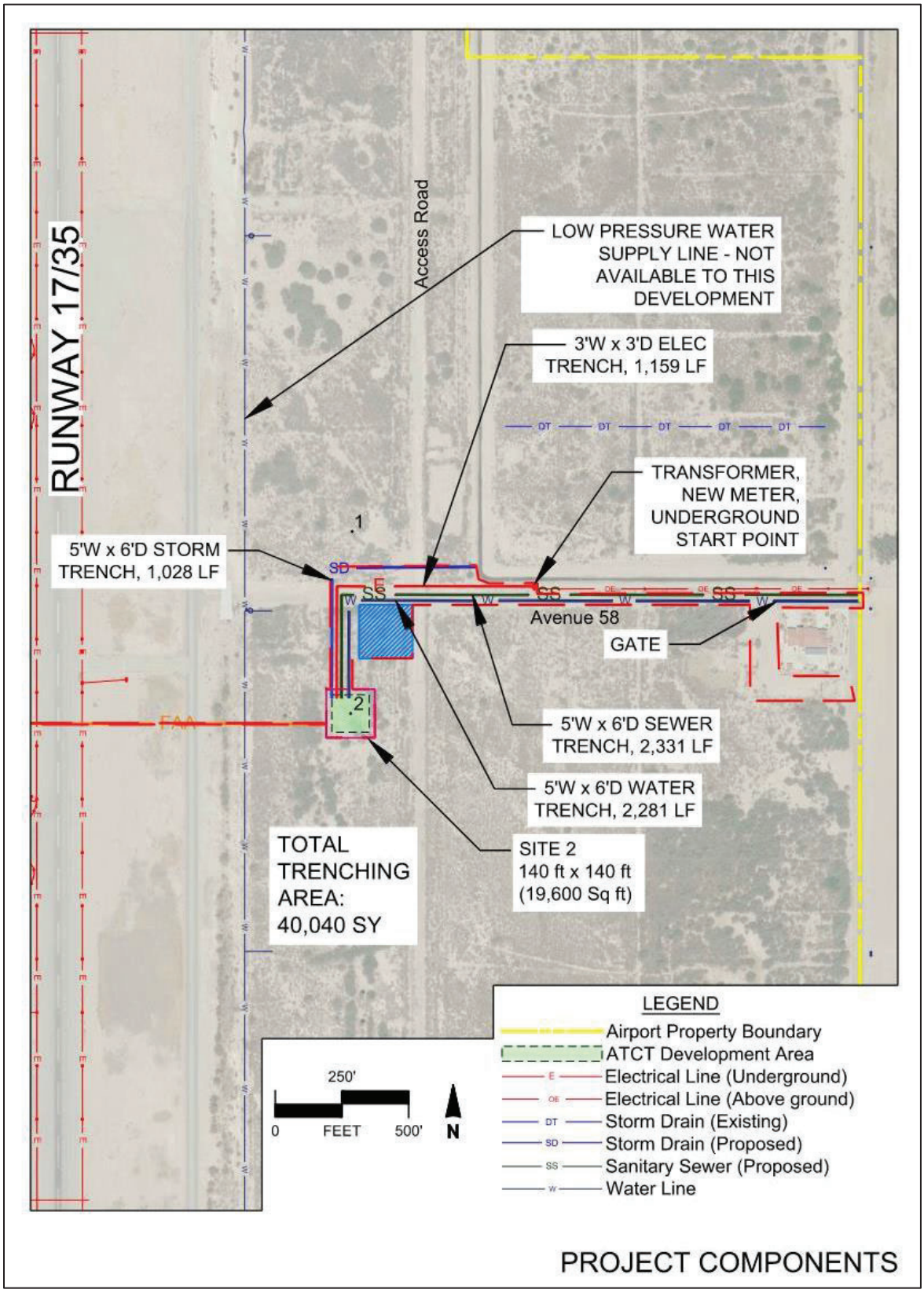
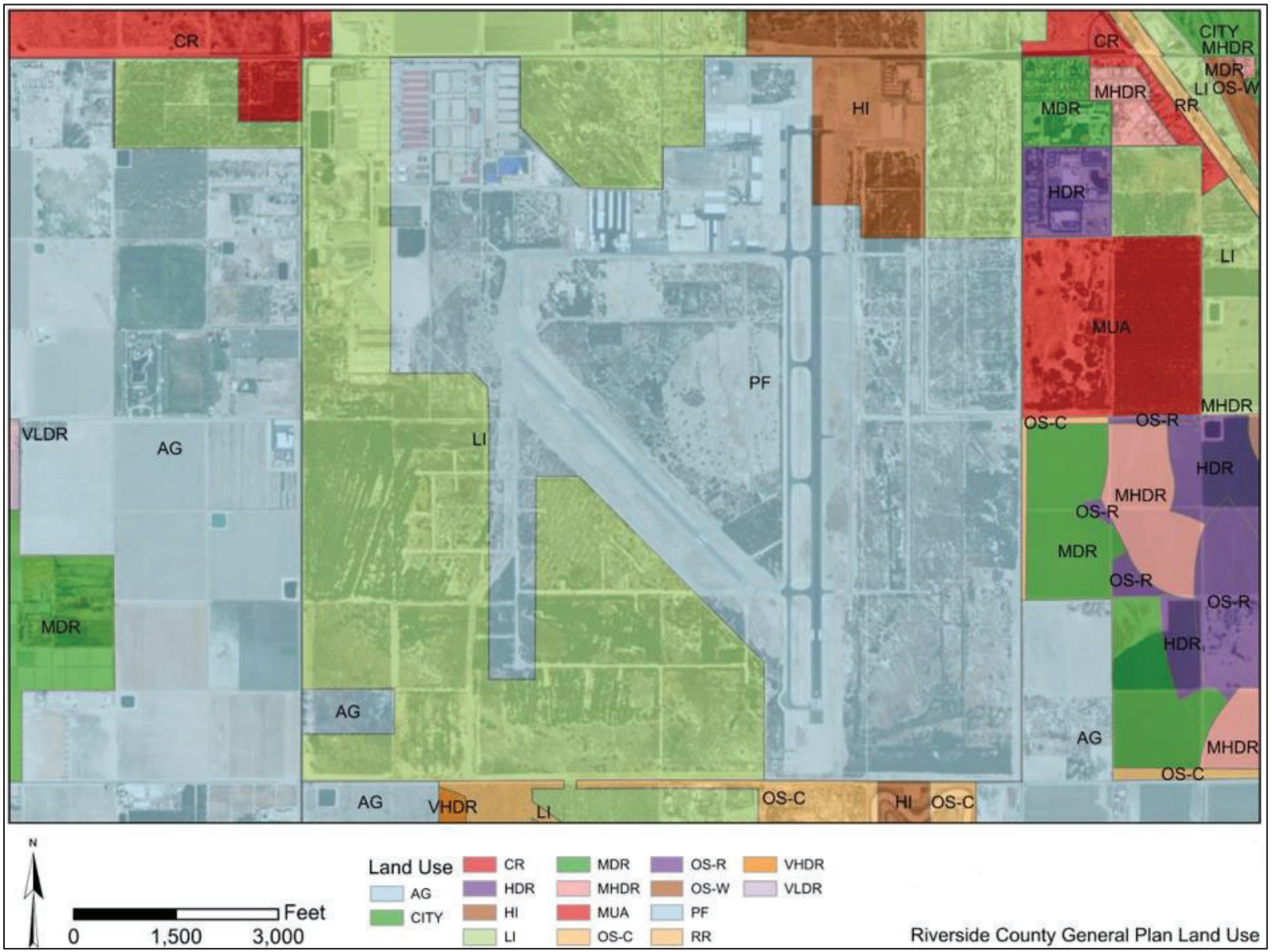


Figure 6 - ATCT Limits of Disturbance

Figure 7 - Jacqueline Cochran Airport Regional (TRM)



9. Surrounding land uses and setting: Briefly describe the project's surroundings

TRM is located on the southeastern portion of the Coachella Valley in an unincorporated area outside of the City of Thermal. The topography is generally flat, and vegetation is sparse due to the arid desert climate (except where irrigated). Adjacent land use includes a mix of undeveloped scrub lands, agricultural use (date palm plantations) and industrial use. The regional climate is typically warm and dry all year-round, being surrounded by mountain ranges on three sides. It has average winter temperatures ranging from 60 to 70 degrees Fahrenheit and average summer temperatures of 80-110 degrees Fahrenheit. The average annual precipitation is below 3 inches. The proposed project area will occur entirely within paved or previously disturbed areas.

Surrounding land uses include (see **Figure 7**):

- North: Heavy Industrial (HI), Light Industrial (LI)
- East: Mixed Use Area (MUA), Open Space-Conservation (OS-C), High Density Residential (HDR), Medium Density Residential (MDR), Agriculture (AG)
- South: OS-C, HI, LI, Very High Density Residential (VHDR), Medium High Density Residential (MHDR), Commercial Retail (CR)
- West: AG, MDR, LI

10. Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreement):

- South Coast Air Quality Management District Permit to Construct a Generator
- Federal Aviation Administration (NEPA approval)
- County of Riverside (building permits)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

☐NO ☒YES

NOTE: *Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.*

Consultation Plan (if YES).

The County reached out to the Native American Heritage Commission (NAHC) to conduct a Sacred Lands Search and to obtain a list of Native American Tribes who might have interest in the project. The County reached out to the tribes on the list provided by NAHC. One tribe requested formal

consultation during the 30-day response period, the Agua Caliente Band of the Cahuilla Indians. (see Appendix D).

The County worked with a tribal representative from the Agua Caliente Band of Cahuilla Indians to develop project-specific mitigation measures (see **Measure CUL-1: Conduct cultural resource monitoring during initial ground disturbing activities**). Approximately 60 days prior to construction, the Project Archaeologist, in consultation with the Monitoring Tribe, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing, and responsibility of archaeological and cultural activities that will occur on the project site such as: project grading and development scheduling.

The CRMP will include the coordination of a monitoring schedule as agreed upon by the Monitoring Tribe, the Project Archaeologist, and the County. The CRMP shall identify the protocols and stipulations that the County, Monitoring Tribe, and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resources. They shall have the authority to stop and redirect excavation in order to evaluate the significance of any archaeological resources discovered within 60 feet of the find.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages. *No potential impact was identified that could not be reduced to less-than-significant with the incorporation of project-specific mitigation measures.*

☐ Aesthetics	☐ Agriculture/Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Angela Jamison — *Signature*

06/10/2025 — *Date*

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on- site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analyses Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS

Issues Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				**X**
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

a) The Caltrans Vistas GIS database was reviewed to determine whether the proposed project would have a substantial adverse effect on a scenic vista. The nearest scenic vista is the Coachella Valley Vista Point, which is located more than 13 miles west of the Airport (Caltrans, 2025a). The data indicate that the proposed project would not affect a scenic vista. No impact would occur (Caltrans, 2025a).

b) The California State Scenic Highways System Map was reviewed to determine if the proposed project would have an effect on scenic resources. The nearest state scenic highway is a portion of Route 111, located more than 6 miles southeast of the Airport (Caltrans, 2025b). In addition, the Riverside County Circulation Element identifies State-, County-designated, and eligible scenic highways. The portions of Highway 86 and Route 111 located east of the Airport are not designated as scenic highways (Riverside County, 2015). The proposed project is located within the boundaries of a previously developed airport, which is surrounded by industrial, open space-conservation, residential, agriculture, and commercial development. No scenic resources were identified in the project area. The proposed project would not have an adverse effect on scenic resources. No impact would occur.

c) The proposed project site is located on an airport located 1 mile southwest of the unincorporated community of Thermal. The ATCT is designed to have a cab-level at 95 feet above ground level (AGL) which may be visible from public roads, Route 111, and other adjacent roads, none of which are considered a scenic highway or within a scenic vista (Caltrans 2025a, 2025b). The proposed ATCT would not conflict with applicable General Plan policies regarding scenic resources or other regulations governing scenic quality set forth by Riverside County (Riverside County, 2012). No impact would occur.

d) The ATCT and parking area will include outdoor, downward facing lights for safety and security and to reduce visibility by off-site receptors. The ATCT will include lights to identify the tower location in accordance with FAA regulations at 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, and to assist pilots with navigation. The nearest residents are located approximately 0.75-mile northeast of the ATCT site. The proposed project will be visible to passersby on adjacent roads. These intermittent views are within the context of an existing airport and would be temporary. A less-than-significant impact would occur, and no mitigation will be required. (Google Earth, 2025).

II. AGRICULTURE AND FORESTRY RESOURCES

Issues In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

a) The Riverside County Map My County (MMC) tool was used to determine whether the proposed project would conflict with existing zoning for agricultural use. The MCC tool designates the Airport as a Public Facility (PF) (Riverside County, 2024d). The proposed project does not include or conflict with existing agricultural use or zoning. Airport property is not in cultivation. The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur.

b) The California Williamson Act Enrolment Finder was reviewed to confirm that the Airport does not include property enrolled in a Williamson Act contract (CA Department of Conservation, 2024b). No impact would occur.

c) The County's MMC tool was reviewed to determine whether the proposed project would conflict with existing zoning or cause the rezoning of forest land or timberland zoned for timberland production. The MMC tool did not identify the Airport property as including forest land, timberland, or timberland production, and none was identified in the project area during field studies (Riverside County, 2024d).

The proposed project will not conflict with existing zoning or cause the rezoning of forest land timberland zoned for timberland production (Riverside County, 2024d). No impact would occur.

d) The County's MMC tool was used to identify the presence of forest land that could be converted as a result of the project. No forest land was identified on Airport property by the MMC tool or identified in the project area during field investigations (Riverside County, 2024d). No impact would occur.

e) The MMC tool was used to determine whether the proposed project would involve other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or the conversion of forest land to non-forest use. No cultivation occurs at the Airport, and the MMC confirms that the Airport does not include forest or agricultural land (Riverside County 2024d). No conversion of farmland would occur; therefore, no impact would occur.

III. AIR QUALITY

Issues Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			**X**	

a-c) The proposed project must comply with the Federal Clean Air Act (CAA). To comply with the CAA, the proposed impacts to air quality must conform to the conditions of the applicable State implementation Plan (SIP), also known as General Conformity. The CEQA thresholds and requirements act as an equivalent to the EPA's *de minimis* thresholds for California projects. If a project's net emissions are less than the thresholds, then the project is considered to be too small to adversely affect the air quality status of the area and is automatically considered to conform with the applicable SIP.

The Airport is located within the Coachella Valley Air Basin and included in the South Coast Air Quality Management District (District). The area is in non-attainment for 8-hour ozone and PM2.5 (annual and 24-hour). The County is in maintenance for Particulate Matter (PM) 10, carbon monoxide, and nitrogen dioxide. The District has adopted Air Quality Plans for 8-hour ozone, PM2.5, PM10, and carbon monoxide (South Coast Air Quality Management District, 2025).

An air quality analysis was performed in November 2024 to identify the potential air quality effects associated with ATCT construction and operation (see **Appendix B**). The analysis was conducted using the California Emissions Estimator Model (CalEEMod), which calculates construction and operations emissions from land use development projects and construction emissions from linear projects. The model was used to calculate the short-term construction emissions from the vertical (aerial) and linear project components associated with site preparation, grading, building construction, paving, and architectural coating as well as emissions associated with ATCT operations.

Project-related Construction

Short-term construction emissions were calculated based on emissions from the following sources:

- Exhaust emissions from off-road construction equipment.
- Exhaust emissions from on-road mobile vehicles (workers, vendors, hauling, and on-site trucks).
- Fugitive dust emissions from grading, bulldozing, truck loading, demolition, and on-road vehicles traveling along paved and unpaved roads.
- Evaporative volatile organic compound (VOC) emissions from architectural coating and paving activities.
- Indirect greenhouse gas emissions from electricity consumption.

Project Operation

Emissions associated with project operations were calculated based on the following:

- Daily travel to and from the project site by workers and visitors.

The projected emissions associated with project-related construction and operation were evaluated using the CEQA thresholds for criteria pollutants established by SCAQMD, which provide a minimum threshold for air pollutants by type to assess localized air quality impacts. The analysis concluded that project-level emissions associated with ATCT construction and operation are below *de minimis* thresholds established by SCAQMD (see **Appendix B**, **Tables 5 and 6**). The proposed project would not cause a significant effect on air quality, because no criteria pollutant would exceed its respective threshold, and the proposed project would not cause a cumulatively considerable net increase in emissions.

The project will not conflict or obstruct implementation of any of these air quality plans or any others adopted by the District in the future. The proposed project will not cause a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment (8-hour ozone or PM2.5). The proposed project will not conflict or obstruct the implementation of the applicable air quality management plan (Mead & Hunt, 2024a).

Project-level emissions for all criteria pollutants are below regulatory thresholds, therefore, sensitive receptors will not be exposed to substantial pollutant concentrations. The impact is less than significant.

To further reduce potential impacts, **Mitigation Measure AQ-1** will be implemented during construction.

- **Mitigation Measure AQ-1: Incorporate County provisions for fugitive dust control set forth in in County Ordinance 742.1 in construction documents.** The provisions set forth in Ordinance 742.1 of the County of Riverside to control the fugitive dust and PM10 in Coachella Valley will be incorporated into construction documents to minimize the volume of particulates generated during construction activities (Riverside County, 2024f).

d) Construction activities may result in temporary odors associated with the use of fossil fuels, paints, or finishes; however, the nearest sensitive receptors are associated with residents located approximately 0.75 mile from the Airport. These temporary short-term emissions will not affect sensitive receptors. This temporary impact is less than significant.

IV. BIOLOGICAL RESOURCES

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		**X**	~~**X**~~	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				**X**
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				**X**
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				**X**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

a) The County undertook a Biological Resource Assessment (BRA) and Jurisdictional Delineation (JD) Report in association with the proposed project (Caskey, 2024; see **Appendix C**). The report was prepared to document the existing conditions and evaluate the potential for project-related impacts to sensitive biological resources. Based on the BRA and JD the proposed project would not cause a substantial adverse effect on any species identified as a candidate, sensitive, or special-status species.

The biological resource investigation included a database search that included the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation system (IPaC; USFWS 2024), the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB, CDFW 2024), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2024).

According to the CNDDB, CNPS, and IPAC records, two special-status plant species were identified as having the potential to occur within 3 miles of the Study Area:

- Chaparral sand-verbena (*Abronia villosa* var. *aurita*)
- Coachella Valley milk-vetch butterfly (*Astragalus lentiginosus* var. *coachellae*)

A site visit was conducted to identify the presence of the plant species identified. Based on the results of the site visit, the study area does not provide suitable habitat for either of the special-status plant species, and no special-status plant species was observed during the site visit (**Appendix C**; Caskey 2024).

U.S. Fish and Wildlife Services (USFWS) and California Natural Diversity Database (CNDDB) records were viewed to identify the potential presence of special-status species. Ten special-status wildlife species were identified as having the potential to occur within 3 miles of the Study Area:

- Burrowing owl (*Athene cunicularia*)
- Monarch butterfly (*Danaus plexippus*)
- Crissal thrasher (*Toxostoma crissale*)
- Least Bell's vireo (*Vireo belli pusillus*)
- Vermilion flycatcher (*Pyrocephalus rubinus*)
- Western yellow bat (*Lasiurus xanthinus*)
- Peninsular big horn (*Ovis canadenis nelsoni*)
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis*)
- Coachella Valley fringe-toed lizard (*Uma inornata*)
- Desert tortoise (*Gopherus agassizii*)

Of the species reviewed, four of the special-wildlife species – the monarch butterfly, crissal thrasher, least bell's vireo and the vermillion flycatcher - have the potential to occur within the study area, but no habitat was observed for the monarch butterfly, crissal thrasher or least bell's vireo, and no special-status wildlife species were observed during the field investigation associated with the BRA and JD. The BRA concluded that these species had a low probability of being found on site and were unlikely to occur. The vermillion flycatcher has been observed previously in the project vicinity outside of the Airport. The BRA concluded that due to previous observations and available habitat preferences near the project site, the species is likely to occur.

The project vicinity included non-native grasslands and scrub habitats that could be used by nesting birds protected by the California Fish and Game Code (CFGC), including the vermillion flycatcher.

Impact BIO-1: Indirect taking of a species protected by the California Fish and Game Code. The inadvertent taking of a vermillion flycatcher or other nesting bird protected by the CFGS during construction activities would be considered a significant impact. The implementation of **Mitigation Measure BIO-1** would prevent the inadvertent taking of a vermillion flycatcher during construction activities and reduce this potential impact to less-than-significant with mitigation incorporated.

- **Mitigation Measure BIO-1: Conduct a preconstruction survey for nesting birds.** Should construction begin during the nesting season for migratory birds, which extends from February 15 to August 31, the County will undertake a preconstruction survey within 3 to 7 days of construction to identify the potential presence of the vermillion fly catcher. In the event that a nest for the vermillion flycatcher is observed within the project's limits of disturbance, a 250-foot buffer will be established, and work shall not commence within the buffered area until the young have fledged.

Based on the results of the BRA and JD, the proposed project would not have a substantial adverse effect on any candidate, sensitive, or special-status species. The impact would be less than significant with mitigation incorporated.

b) As documented in the BRA, no riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service occurs in project area (**Appendix C**). No impact will occur.

c) Neither the National Wetland Inventory nor the National Hydrography Database identified the presence of potential wetlands or waterways within the project area, and none were identified during the field investigation (Caskey, 2024; **Appendix C**). The proposed project will not affect wetlands through direct removal, filling, hydrological interruption, or other means. No impact will occur.

d) As documented in the BRA, neither wetland or waters are present in the project area, and the Airport is enclosed by a chain-link security fence (**Appendix C**). The proposed project would be constructed within Airport boundaries, and it would not introduce new barriers to interfere with the movement of any native resident or migratory fish or wildlife species, interfere with established native resident or migratory wildlife corridors, or otherwise impede the use of native wildlife nursery sites. No impact would occur.

e) No biological resources were identified within the project site or its proposed limits of disturbance (see **Appendix C**). The project site consists of low-lying vegetation, existing internal roads, and airfield pavements. No tree removal will occur in association with the proposed project. The project will not conflict with any local policies or ordinances that protect biological resources. No impact would occur.

f) The Airport is located within the established boundaries of the Coachella Valley Multiple Species Habitat Conservation Plan (CV-MSHCP), which focuses on the conservation of species and their associated habitats. The CV-MSHCP identifies environmental protection and economic development objectives in the Plan Area. The proposed project is not located in a designated Resource Management Unit (RMU) or established habitat conservation area. The proposed project will not affect an area designated for conservation or conflict with any provisions included in the adopted CV-MSHCP. No impact would occur.

V. CULTURAL RESOURCES

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		**X**		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?		**X**		

a) The County undertook a cultural resources investigation and evaluation of historical resources in 2024 (Applied Earthworks, 2024; Mead & Hunt 2024b; **Appendices D and E**). A Built-Environment Area of Potential Effects (Built Environment APE) was identified. Previously recorded historical resources listed on either the National Register of Historic Places (NRHP) or the California Register of Historic Resources that occurred within 0.25 mile of the Built Environment APE were reviewed to consider the potential visual effects of the proposed ATCT on the historic properties.

A review of previously identified resources, available reports, and historic aerial photographs indicates that no extant built-environment resources are present within the APE that exceed 45 years of age; therefore, no built-environment resources are within the Built-Environment APE that would qualify as Historic Properties. No impacts to historic properties would occur as result of the proposed project (Mead & Hunt 2024).

b) The County established an APE for cultural and archaeological resources and undertook a cultural resources investigation that included the area within 1 mile of the cultural resources APE. The Cultural Resources Assessment included:

- A literature review and records. A total of 30 cultural resource investigations had been conducted within 1 mile of the APE previously.
- A review of historical maps, and aerial photographs.
- Outreach to the Native American Heritage Commission (NAHC) to conduct a Sacred Lands File Search and obtain a list of tribal contacts. The County subsequently reached out to tribal contacts to alert them to the proposed project and solicit input regarding known resources.
- A pedestrian field survey of the APE, which included the 47-acre project area that included the proposed tower site.

No designated tribal lands are located within Airport Boundaries (Applied Earthworks, 2024).

The results of the NAHC Sacred Lands provided with negative results; no Native American cultural properties were identified. The results of the records search and field survey indicated that there is a low likelihood that archaeological deposits or features would be identified during construction, and no future cultural resource management was recommended (Applied Earthworks, 2024; see **Appendix D**).

The NAHC provided a list of Tribal Historic Preservation Officers (THPOs) that might have interest in the proposed project. The County reached out to the Tribal Historic Preservation Officers (THPOs) identified by the NAHC. The County sent letters to representatives on December 20, 2024, and

representatives were asked to respond within 30 days to identify whether formal consultation was requested. (Responses are provided in **Appendix D**.)

One tribe, the Agua Caliente Band of Cahuilla Indians, engaged in consultation. In response to tribal concerns, the County proposed the following mitigation measures for implementation prior to and during project initial construction.

Impact CUL-1: Disturbance and destruction of previously unknown cultural resources. The disturbance and destruction of previously unknown cultural resources would result in significant impact. The implementation of **Mitigation Measures CUL-1** and **CUL-2** would reduce this potential impact to less-than-significant with mitigation incorporated.

- **Mitigation Measure CUL-1: Conduct cultural resources monitoring during initial ground disturbing activities.** The Project Archaeologist and Tribal Representatives shall monitor initial ground disturbing activities. (Ongoing disturbance of the same area will not require ongoing monitoring.) Approximately 60 days prior to construction, the Project Archaeologist, in consultation with the Monitoring Tribe(s), shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing, and responsibility of archaeological and cultural activities that will occur on the project site such as: project grading and development scheduling.

  The CRMP will include measures for the coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the County. The CRMP shall identify the protocols and stipulations that the County, Monitoring Tribe(s), and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resources. They shall have the authority to stop and redirect excavation in order to evaluate the significance of any archaeological resources discovered within 60 feet of the find (see **Mitigation Measure CUL-2**). A decision regarding the find and its effect on construction activities must be determined within 48 hours.

- **Mitigation Measure CUL-2: Inadvertent discovery of Native American cultural resources.** If during ground disturbance activities unanticipated Native American cultural resources are discovered during the course of grading or ground disturbance for this project, all ground disturbance activities within 60 feet of the resource shall be halted, and a meeting shall be convened among the Project Archaeologist and Native American Tribal Monitor to discuss the significance of the find. At that meeting, a decision will need to be made, with the concurrence of the Airports Division, as to the appropriate treatment of the resource (documentation, recovery, avoidance). Resource evaluations shall be limited to non-destructive analysis. Further ground disturbance shall not resume within the area of discovery until the appropriate treatment has been accomplished. The following procedures shall be carried out for the treatment and disposition, which shall be further described in the project-related CRMP:

  - **Temporary On-Site Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site with Native American Tribal Monitor oversight of the process.

  - **Curation:** The County shall relinquish ownership of all cultural resources. The Project Archaeologist, following consultation with the Monitoring Tribe(s), shall deliver the materials to a qualified repository in Riverside County that meets or exceeds federal standards per Code

of Federal Regulations (CFR) Title 36, Part 79, and that shall be made available to all qualified researchers and tribal representatives.

- **Treatment and Final Disposition**: The County shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all cultural materials and nonhuman remains, as part of the required mitigation for impacts to cultural resources.
- **Reporting.** The Project Archaeologist shall prepare a final archaeological report within 60 days of project completion. The report shall follow Cultural Resources Management Plan (CRMP).

The disturbance and destruction of previously unknown cultural resources would result in a significant impact. The implementation of **Mitigation Measures CUL-1** and **CUL-2** will reduce the potential impact to less than significant with mitigation incorporated.

c) No cultural remains were observed within the project area during field activities associated with the Cultural Resources Assessment, as the area was disturbed by grading and clearing during Airport development. The Cultural Resources Assessment concluded that it is unlikely that any human remains will be disturbed as part of the project (Applied Earthworks, 2024).

Impact CUL-2: Discovery of human remains and grave goods. Although the potential to encounter human remains is low, the disturbance of human remains and grave goods would be a significant impact. The implementation of **Mitigation Measure CUL-3** would reduce the potential impact to less-than-significant with mitigation incorporated. The County developed **Mitigation Measure CUL-3** during tribal consultation:

- **Mitigation Measure CUL-3: Discovery of human remains.** In the event that human remains (or remains that may be human) are discovered within the construction areas, all activity within 60 feet of the find shall be immediately halted. Any discovery of human remains shall be immediately reported by the Project Archaeologist and Native American monitor(s) to the County Coroner. If the human remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall appoint a Most Likely Descendant (MLD). The MLD shall make recommendation and engage in consultation with the County Airports Division and Project Archaeologist concerning the treatment of the remains as provided in California Public Resources Code 5097.98.
  - The discovery of any Native American human remains and / or funerary objects shall be kept confidential and secure to prevent any further disturbance. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains and associated funerary objects, sacred objects and / or objects of cultural patrimony shall be covered with an opaque material or placed in opaque cloth bags. A physical barrier (e.g., metal plate, concrete slab that can be moved by heavy equipment) shall be placed over the excavation opening to protect the remains until examination by the MLD. If this type of protective barrier is not available, a 24-hour guard shall be posted outside of working hours.
  - The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD shall identify and direct the most appropriate means of treating the human remains and any associated funerary object(s). As determined through consultation with the County, the MLD shall make recommendations that allow the burial to remain in situ and protected.
  - Once complete, a final report of all activities associated with or resulting from the discovery of human remains shall be submitted to the NAHC.

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code § 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the State of California regardless if the remains are modern or archaeological.

The disturbance of unknown human remains would be a significant impact. The implementation of **Mitigation Measure CUL-3** would reduce this potential impact to less than significant with mitigation incorporated.

VI. ENERGY

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		**X**		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				**X**

a) Construction vehicles and equipment will consume petroleum-based products such as gasoline and diesel; however, the use of these energy resources will not result in significant environmental impact. Operations of the proposed project area will include the use of electricity, which is available to the Airport.

The proposed ATCT will be equipped with an FAA-approved emergency generator to enable ATCT operations to continue during power interruptions, and it is anticipated that the generator will use diesel fuel. The South Coast AQMD defines an emergency backup generator as a standby internal combustion engine that does not operate more than 200 hours per year and only operates in the event of an emergency or for routine testing. A permit to construct is required from the South Coast AQMD prior to the installation of internal combustion engines, including emergency generators (South Coast AQMD, 2025).

Impact ENERGY-1: Non-permitted use of a diesel-fueled generator. The installation and operation of a backup generator in the absence of a permit from the South Coast AQMD would be considered a significant impact. The implementation of **Mitigation Measure ENERGY-1** would reduce this potential impact to less than significant.

- **Mitigation Measure ENERGY-1: Obtain a permit to construct from the South Coast AQMD.** Prior to selection and installation of an emergency backup generator, the County shall consult with the South Coast AQMD regarding the proposed emergency generator and obtain a permit to construct the emergency generator.

b) As described previously, an Air Quality Analysis was conducted for the project. The proposed project will not obstruct any state or local plans for renewable energy. The project will follow energy measures established by the County's Climate Action Plan, the General Plan, and California Building Code Title 24 (County of Riverside, 2019). No impact would occur.

VII. GEOLOGY AND SOILS

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

a) The project will cause either no impact or a less-than-significant impact associated with potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) **Earthquake Fault Zones.** TRM is located within the Indio Quadrangle and San Andreas Earthquake Fault Zone (CA Department of Conservation, 2024c). There are no active fault traces that pass through the Airport that have the potential for rupture.

The nearest portion of the San Andreas Earthquake Fault Zone is the San Andreas Fault, which is located approximately 5 miles northeast of the Airport (CA Department of Conservation, 2024c). ATCT construction will comply with state laws and local ordinances including but not limited to, the Alquist-Priolo Earthquake Zoning Act, the Seismic Hazards Mapping Act, California Building Standards Code, and the County of Riverside Building Code. The potential for rupture is less than significant.

ii) **Strong seismic ground shaking.** The seismic ground shaking in the area is Very Strong based on a Magnitude 7.0 Scenario Earthquake projected by the USGS Earthquake Hazards Program (USGS, 2024). ATCT design and construction will conform to appropriate state laws and codes including: the Alquist-Priolo Earthquake Fault Zoning Act, the Seismic Hazards Mapping Act, California Building Standards Code, and the County of Riverside Building Code. The potential effect of the proposed project would be less than significant.

iii) **Seismic-related ground failure, including liquefaction.** The Airport is not located within a liquefaction zone (CA Department of Conservation, 2024c). No impact would occur.

iv) **Landslides.** The Airport is not located in a landslide or liquefaction / landslide overlap zone (CA Department of Conservation, 2024c). No impact would occur.

b) The proposed project will not result in substantial soil erosion or the loss of topsoil. The project site is located in a previously graded area of the Airport that includes low-growing vegetation. To prevent substantial erosion or the loss of topsoil as a result of vegetation removal or other project-related activities, the construction contractor will be required to develop and implement a Sediment and Erosion Control Plan during construction activities. The impact is less than significant.

c) The proposed project is not located on an unstable geologic unit or soil. The proposed project will not cause the area to become unstable or result in landslide, lateral spreading, subsidence, liquefaction, or collapse (CA Department of Conservation, 2024c). No impact would occur.

d) The Airport is not located on or near expansive soil and will not create substantial direct or indirect risks to life or property (Caskey, 2024):

- The Airport consists of moderately well-drained alluvium soil not rated as hydric.
- Underlying soils include Gilman fine sandy loam, 0 to 2 percent slopes; Gilman silt loam wet, 0 to 2 percent slopes; Indio fine sandy loam wet; and Indio very fine sandy loam wet.
- The frost-free period for the soils ranges from 250 to 350 days, with a mean annual air temperature of 72 degrees Fahrenheit, which limits the amount of expansion and shrinking of the soil.

The proposed project would not be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994). The proposed project would not create a substantial direct or indirect risk to life or property or cause an area to become unstable. No impact would occur.

e) The proposed ATCT will include a connection to the existing sewer facilities at the Airport. No septic tanks or alternative wastewater disposal systems will be required. No impact would occur.

f) The County considered the presence of paleontological resources in the study area. A consulting paleontologist reviewed available geologic maps, paleontological literature, and museum records search to identify the potential for encountering paleontological resource during project construction.

Riverside County has assigned various paleontological sensitivity rankings to the various geologic units exposed within its boundaries—Low, Undetermined, High A (Ha), and High B (Hb) Potential (County of Riverside, 2015). According to the Riverside County Planning Department's (2015) paleontological sensitivity map, the entire project area is mapped as High A (Ha) sensitivity based on the occurrence of fossils that may be present at the ground surface of the Project area. The data review conducted by the County's consultant supports that assessment.

Paleontological resources are protected under CEQA, and the Riverside County's General Plan, Multipurpose Open Space (OS) element, includes several policies governing the potential presence of paleontological resources. Policy OS 19.6 states, "Whenever existing information indicates that a site for development has a high paleontological sensitivity… a Paleontological Resource Impact Mitigation Program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate paleontological resources." As a result of the demonstrated high sensitivity of sedimentary beds within the Project area, the County's archaeological consultant recommended that a qualified paleontologist prepare a PRIMP prior to the start of project-related, ground-disturbing activities.

Impact PALEO-1: Disturbance of previously unknown paleontological resources. The proposed project has the potential to directly or indirectly destroy a unique paleontological resource, which would be considered a significant impact. However, this impact can be reduced to less than significant with the application of **Mitigation Measure PALEO-1**:

- **Mitigation Measure PALEO-1: Discovery of previously unknown paleontological resources.** The County shall establish mitigation monitoring procedures and discovery protocols, based on industry-wide best practices for paleontological resources that may be encountered during earth-disturbing activities in a PRIMP. The Project Paleontologist shall prepare a PRIMP to identify where construction monitoring will be required during project activities and the frequency of monitoring required (i.e., full-time, spot checks, etc.); address the collection and processing of sediment samples to analyze for the presence or absence of micro vertebrates and other small fossils; provide details about fossil collection, analysis, and curation at an approved repository; and describes the different reporting standards for monitoring, and worker environmental awareness training.

The direct or indirect destruction of a unique paleontological resource or site or unique geologic feature would be a significant impact. The implementation of **Mitigation Measure PALEO-1** will reduce the potential effect to less than significant with mitigation incorporated.

VIII. GREENHOUSE GAS EMISSIONS

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				**X**

a) The County undertook an air quality analysis in association with the proposed project (see **Appendix A**). The results of the air quality analysis indicated that the emissions for all criteria pollutant are below regulatory thresholds (Mead & Hunt, 2024a). The project will have a less than significant effect associated with the emissions of greenhouse gas emissions during construction and operations.

b) The proposed project will comply with energy measures established by the November 2019 County of Riverside Climate Action Plan Update (CAP). The energy measures outlined in the CAP correspond to the Implementation Measures included in the General Plan and measures identified by the State of California (i.e., California Building Code Title 24) (County of Riverside, 2019).

The proposed project will not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

IX. HAZARDS AND HAZARDOUS MATERIALS

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				**X**
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		**X**	~~**X**~~	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				**X**
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				**X**

a-b) Construction of the proposed project will include the use of petroleum-based fuels and lubricants. Following construction, the proposed project will include the operation of a diesel-fueled generator to maintain operations during emergencies that result in power outages.

Contractor vehicles and construction equipment contain petroleum-based fuels and lubricants that are classified as hazardous materials. Standard construction management techniques and Best Management Practices (BMPs), such as the implementation of the Airport's Spill Prevention Control and Countermeasures (SPCC) Plan during construction activities will prevent an accidental release of these materials. The proposed project will not create a significant hazard to the public or the environment. As identified in the project description, the emergency generator will rest on a concrete pad adjacent to the ATCT and equipped with secondary containment to contain diesel fuels in the event of an accidental release. The proposed project would cause a less-than-significant risk to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

c) The nearest school is the La Familia High School, approximately 0.75 mile northeast of the project site. The project will not emit hazardous emissions or handle hazardous or acutely hazardous materials within 0.25 mile of a school. No impact would occur.

d) The County reviewed available databases to identify the presence of hazardous materials sites compiled pursuant to Government Code § 65962.5. A closed and capped hazardous waste site is located on Airport property, northeast of the project site and outside of the proposed project's limits of disturbance. The proposed project is not located on a hazardous material site (CA Department of Toxic Substances Control, 2024).

The County engaged Engineering Solutions (EEI) to conduct Phase 1 Environmental Site Assessment (ESA) for four proposed tower sites in 2024 (EEI, 2024). The Phase I ESA identified the presence of one potential Recognized Environmental Condition (REC) associated with an outstanding state ENVIROSTOR record for the Thermal Ground Station Air Base. The ENVIROSTOR record identified in Phase I was associated with the 2,555 acres obtained by the War Department in 1943-48 for an airport. The site was noted with POTENTIAL impacts of lead, explosives, munition debris, and perchlorate and past uses for "fire range, small arms, etc." (EEI, 2024). A May 12, letter from the DTSC also identified the outstanding state ENVIROSTOR record and the potential for the site to contain World War II-era munitions such as unexploded ordinance (UXO), Munitions of explosive concern (MEC), and munitions debris (MD) (See **Appendix G** for a copy of the DTSC letter and the County's response).

The County reviewed the ENVIROSTOR record and reviewed previously submitted documentation presented to DTSC. Documentation associated with the ENVIROSTORE record referred to the September 2011 Draft Final Site Investigation (SI) Report for the Thermal Ground Air Station Base, Riverside County, California.

The Final Site Inspection Report for the Former Thermal Ground Air Base, Riverside County, CA, was completed for USACE in September 2011, which was submitted to DTSC. The County reviewed the report, which identified the locations of both the MRS site and burial pits. As shown on Figure ES-1 of the report and Attachment B of the County's Response to the DTSC letter (see **Appendix G**), both areas associated with the ENVIROSTOR record and subsequent investigation are outside of the airport and, therefore, outside of the proposed project's limits of disturbance. The Skeet Range MRS was located approximately 7.400 feet (1.4 miles) west of the project site, and the Burial Pit MRS was located approximately 8,500 feet (>1.6 miles) southwest of the proposed project site. The nearest project component, the addition of Runway 12 hold lights, would occur entirely within the airfield and is more than 0.35 mile from the Skeet Range MRS. Moreover, the Final SI Report concluded:

The SI Report evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS including MEC and (MD) and concluded the following.

- **Skeet Range MRS:** The report identified that the former Skeet Range MRS, the site nearer to the airport, is within a graded and developed area, and the original Department of Defense (DoD) era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, a "No Department of Defense Action Indicated" (NDAI) determination is warranted (USACE 2011; Table 8-1).

- **Burn Pits MRS:** The report identified that MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted (USACE 2011, Table 8-1).

The ENVIROSTOR record included a 2011 letter from the DTSC to the USACE following review of the SI Report. The letter stated that DTSC concurred with the "Draft Final SI Report recommendation of 'No Defense Action Indicated' for the Munitions Response Site (MRS) designated Skeet Range and Burial Pits because no MEC/MC was found at these sites" (see **Appendix G**).

The Phase I ESA did not identify any known Recognized Environmental Conditions (RECs) associated with the proposed ATCT site. The Phase I identified the capped hazardous waste site located on TRM, and it noted that the hazardous waste site is outside the area associated with the proposed ATCT. The Phase I report also noted that the site has been closed and capped with asphalt. The Phase I report concludes that there is a low likelihood that closed site would affect or be affected by ATCT construction (EEI, 2024).

Although the risk of encountering previously unknown (UXO), MEC, or MD is low, the discovery would be considered a significant impact.

Impact HAZARD-1: Discovery of previously unknown UXO, MEC, or MD. The discovery of previously unknown ordnance, munitions debris during site grading or construction could pose risks to human health.

To reduce the potential for potential impacts to human health associated with former military use, and as identified in DTSC correspondence of May 12, 2025 (see **Appendix G**), the following mitigation measures will be implemented:

- **Mitigation Measure HAZARD-1: Brief construction crews about the potential presence of munitions and debris, cease work if potential unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) are discovered during site grading or construction, and identify construction worker education and cease work measures in construction documents.** Prior to project construction, construction crews will be briefed on the identification of UXO, MEC, and MD, and safe actions to be taken in the event they are encountered, including leaving the area immediately and noting the location in which the material was encountered. Upon departing the site, the crew leader will call 911 and the County's Airports Director. The Airports Director will procure the services of qualified hazardous materials personnel to review and determine potential hazards. Work will continue after an appropriate assessment has been made and the materials have been removed by appropriate personnel.

The implementation of **Mitigation Measure HAZARD-1** would reduce **Impact HAZARD-1** to less than significant with mitigation incorporated.

As described in the Phase I ESA, Site 2 is not located in an area known to contain contaminated soils, no impact is anticipated, and the potential to encounter contaminated soil residual staining, or odors associated with the release of hazardous materials is low.

Impact HAZARD-2: Discovery of previously unknown hazardous materials. The discovery of previously unknown hazardous materials associated with a release of hazardous materials during site grading or construction could pose risks to human health.

The discovery and disturbance of hazardous materials would be a significant impact. To reduce the potential impacts and as noted in DTSC correspondence (see **Appendix G**), the following mitigation measure will be implemented.

- **Mitigation Measure HAZARD-2: Alert construction crews to signs of contaminated soil, residual staining, or odors, and cease work if they are encountered during site grading or construction.** Construction documents will specify that construction crews shall be alerted to signs of contaminated soil, residual staining, or odors and instruct crews to cease work if these conditions are encountered. The Airports Director will be alerted to the potential presence of hazardous materials and procure a qualified hazardous materials or environmental services personnel to evaluate the potentially hazardous material. Work will continue after an appropriate evaluation of the condition has been made, appropriate treatment or remediation is undertaken, and hazardous materials/environmental personnel determine that it safe to continue construction activities.

The implementation of **Mitigation Measure HAZARD-2** would reduce potential **Impact HAZARD-2** to less than significant with mitigation incorporated.

e) Riverside County prepared and adopted an Airport Land Use Compatibility Plan (ALUCP) for the Jacqueline Cochran Regional Airport in 2006. The proposed project is located on Airport and within the Airport Influence Area in the ALUCP. The proposed project will not alter aircraft operations or the fleet mix, and it will not necessitate ALUCP revision.

The proposed ATCT is a safety improvement project that will enhance communication among aviators and improve safety for aviators and people living and working on or near the Airport. Since the proposed ATCT will not increase Airport capacity, affect the type of aircraft that operate at TRM, or affect flight paths; therefore, the proposed ATCT will not affect aircraft noise exposure to create a permanent increase in aircraft noise for people living or working in the project area.

Construction crews will be exposed to aircraft noise throughout the construction period; however. Construction documents will require the use of hearing protection and other personal protective equipment as appropriate during construction activities. This temporary impact is less than significant.

f) The proposed project will be located within Airport boundaries and neither temporary nor permanent impacts to nearby roadway systems will occur to affect community connectivity. The proposed project will not impair the implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan. No impact would occur.

g) The proposed project will be located within the boundaries of an existing airport located in a suburban area. Construction of the proposed ATCT will not create or expose people or structures to a risk of loss, injury, or death involving wildland fires. No impact would occur.

X. HYDROLOGY AND WATER QUALITY

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?				**X**
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				**X**
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in a substantial erosion or siltation on- or off-site;			**X**	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			**X**	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			**X**	
iv) impede or redirect flood flows?				**X**
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				**X**
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				**X**

a) TRM is equipped with a storm drainage system, wastewater system, water supply system, and water facilities that serve the Airport as a whole. The proposed ATCT will include connections to the existing stormwater drainage system, and a storm drain is present in the project area. Operation of the proposed project will include a new connection to the waste and sanitary systems.

Construction of the proposed project will include the development and implementation of a project-specific stormwater pollution prevention plan (SWPPP) by the project contractor in accordance with local codes and regulations. The SWPPP will include the implementation of Best Management Practices (BMPs), such as the implementation of a sediment and erosion control plan and other measures to prevent construction-related erosion both on and off-site. Construction related runoff associated with the project construction would be directed to the existing Airport drainage system.

A National Pollutant Discharge Elimination System (NPDES) permit will be required for construction, the permit will include implementation of standard water quality control measures. The Riverside Water Quality Control Board (RWQCB) has established water quality standards required by the Clean Water Act and regulates discharges to ensure compliance with water quality standards. The proposed project will comply with local regulations and construction codes, and it will not violate any water quality standards or waste discharge requirements. No impact would occur.

b) TRM is located in in the Whitewater River Region of the Colorado River Basin. The proposed project does not include a connection to groundwater source. Neither project construction nor operation will require the use of groundwater, and project related runoff associated with the additional 0.24 acre of impervious surface associated with tower construction and associated parking will be directed to existing stormwater management facilities at the Airport, which include water quality management measures. The proposed project will not interfere with groundwater recharge or impeded sustainable groundwater management. No impact would occur.

c) The proposed project would not substantially alter the existing drainage pattern of the site or area, and it would not alter the course of a stream or river or through the addition of impervious surfaces.

   i) Operation of the proposed project will not result in substantial erosion or siltation on- or off-site. As previously mentioned, the construction contractor will be required to develop and implement a SWPPP and Sediment and Erosion Control Plan in accordance with RWQCB requirements. The project-specific SWPPP will include applicable BMPs to prevent substantial erosion or siltation. All project related runoff would be directed to existing on-site stormwater management facilities. A less-than-significant impact would occur.

   ii) The proposed project is located in a previously distributed and graded portion of the Airport property. Approximately 1.15 acre of new impervious surface will be created in this previously disturbed area. On-site runoff will be directed or connected to existing drainage facilities serving the Airport, which include sufficient capacity to address development within Airport boundaries. The proposed project will not result in on-site or off-site flooding. A less-than-significant impact would occur.

   iii) Drainage from the new pavement and project area will be directed into an existing drainage ditch and directed to the Airport's existing stormwater drainage system, which has the capacity to accept the slight increase in stormwater runoff. The proposed project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. A less than significant impact would occur.

   iv) The Airport includes sufficient stormwater management and drainage infrastructure to accommodate the proposed project, and the proposed project would include connections to these facilities. The proposed project would not impede or redirect flood flows. No impact would occur.

d) The Airport is located approximately 75 miles east of the Pacific Ocean and is outside of a designated tsunami, seiche, or flood hazard zone (CalOES, 2024). The Airport is included within the bounds of Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map No. 06065C2270H dated March 6, 2018. The project area is not located within the 100-year or 500-year flood hazard areas (FEMA, 2024). The project does not risk the release of pollutants. No impact would occur.

e) The Airport is located in the Whitewater River Region of the Colorado River Basin and within the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB). The region developed a Water Quality Control Plan (WQCP) for the Colorado River Basin Region to preserve and enhance the quality of water resources (California Water Board, 2024). As previously stated, the project will not require the use of groundwater or prevent groundwater recharge. The proposed project will not conflict with or obstruct the implementation of the WQCP or sustainable groundwater management plan. No impact would occur.

XI. LAND USE AND PLANNING

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				**X**
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				**X**

a) The project is located entirely on Airport property. It will not involve the construction of new facilities or interrupt access to divide an established community. No impact will occur.

b) The project is subject to the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and the Riverside County ALUCP for Jacqueline Cochran Regional Airport.

- As previously described the proposed project is within the area associated with the Coachella Valley MSHCP, but the proposed project is not located in an area designated for habitat conservation.
- The proposed project is consistent with the Riverside County ALUCP. The proposed Airport project will not affect the runway length, aircraft operations, or fleet mix; therefore, it will not necessitate changes to the ALUCP.

The proposed plan will not conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact will occur.

XII. MINERAL RESOURCES

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				**X**
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

a) California Department of Conservation records were reviewed to identify the location of known mineral resources, and none were identified in the project vicinity. The nearest known mineral resource is a decomposed granite site (Painted Hills Quarry) located approximately 35 miles northwest of the project site (California Department of Conservation, 2024d). The project site is not located within an area of known mineral resources; therefore, the proposed project would not result in a loss of known mineral resources that would be valuable to the region or state. No impact would occur.

b) The Riverside County General Plan designates the project site as a Public Facility (Riverside County Planning Department, 2024). The project is not located within an area of known mineral resources; therefore, the proposed project will not result in the loss of a locally important mineral resource recovery site. No impact would occur.

XIII. NOISE

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?		X		

a) The Riverside County's General Plan, Noise Ordinance, and the Riverside County ALUCP for TRM were reviewed to determine whether the proposed project would result in substantial temporary or permanent increases in noise levels that would exceed limits established by the General Plan.

Construction of the proposed project will result in temporary construction-related noise associated with the use of construction vehicles and equipment. The Riverside County Noise Ordinance exempts capital improvement projects of a governmental agency. The Riverside County General Plan's Noise Element provides policies pertaining to temporary construction noise. The following policies would apply to the proposed project:

- **Policy N 13.1:** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- **Policy N 13.2:** Ensure that construction activities are regulated to establish hours of operation in order to prevent and / or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Policy N.13.4:** Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- **Policy N 7.2:** Adhere to applicable noise compatibility criteria when making decisions regarding land uses adjacent to Airports. Refer to the Airports section of the Land Use Element (Page LU-32) and the Airport Influence Area sections of the corresponding Area Plans.
- **Policy N 7.4:** Check each development proposal to determine if it is located within an Airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable Airport land use noise compatibility criteria.

ATCT Construction

The proposed project does not include nighttime construction. Construction activities will be limited to the hours of 7 AM to 7 PM to prevent potential impacts to sensitive receptors, such as the residential areas located approximately 0.75mile northeast of the Airport. In addition, project-related construction documents will identify County noise policies related to the hours of construction and the use of noise-reduction features on construction equipment that are at least equal to those features originally installed by the manufacturer.

The Riverside County Noise Ordinance (Ordinance No. 847 as amended) identifies acceptable noise levels at public facilities to be within 65 decibels between 7 AM and 10 PM and at 45 decibels overnight (10 pm to 7 am). Construction-related noise will be limited between the hours of 7 AM and 7 PM and will not exceed 65 decibels at the location of the nearest sensitive receptors, which are residents living approximately 0.75mile from the project site (Riverside County, 2024e).

The proposed ATCT is located within the Airport Influence Area for the Jacqueline Cochran Regional Airport; the project is compatible with aviation, and its location is fixed by function.

ATCT Operation

Noise associated with proposed ATCT operations will be limited to indoor noise associated with air traffic control and the emergency use of a diesel generator during power outages. This noise will not be perceptible to sensitive receptors located approximately 0.75mile from the proposed ATCT.

Impact NOISE-1: Compliance with County noise policy and ordinances. The proposed project will not result in temporary or permanent increases that will exceeds the standards established in the local general plan or conflict with the County's noise ordinance. Although the proposed noise impacts are less than significant, implementation of **Mitigation Measures NOISE-1 and NOISE-2** will further reduce the potential for noise impacts:

- **Mitigation Measure NOISE-1: Specify work hours in construction documents.** Construction documents will specify that all project-related construction activities will occur between the hours of 7AM and 7PM.
- **Mitigation Measure NOISE-2: Require construction equipment to be equipped with noise mufflers.** Construction documents will require that all construction equipment be equipped with noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

b) The proposed projects will result in temporary increases in ground borne vibration and noise. Potential impacts will be reduced to less than significant and further reduced with the application of **Mitigation Measures NOISE-1 and NOISE-2**. The nearest sensitive receptor is located 0.75 mile from the project site. A less than significant impact would occur.

c) The proposed project is located at a public-use airport that is included in the adopted Riverside County Airport Land Use Compatibility Plan. The project will not cause a change in aircraft patterns or the fleet mix. There will be no permanent increase in aircraft noise exposure to those residing or working in the area.

Impact NOISE-2: Temporary exposure of construction workers to aircraft noise. Construction workers will be exposed to aircraft noise throughout the construction period at levels exceeding 65

CNEL, which would result in a significant impact. **Mitigation Measure NOISE-3** will be implemented to reduce noise exposure at elevated levels during construction activities:

- **Mitigation Measure NOISE-3: Identify the need for personal protective equipment for hearing protection by construction personnel in contract documents.** Construction documents will identify that the proposed project is located on an airport and within an area that will include aircraft noise exposure at levels exceeding 65 CNEL and require the use of hearing protection by Construction workers to the extent practicable.

The implementation of **Mitigation Measure NOISE-3** will reduce noise exposure at excessive levels by people working in the project area to less than significant.

XIV. POPULATION AND HOUSING

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				**X**
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				**X**

a) During the estimated six-month construction period, a maximum of 35 construction workers would be required. The proposed project will not create the need for temporary construction workers to relocate to the project area. Operation of the proposed project would require a maximum of three full-time and three part-time air traffic controllers. Department of Housing City / County Population and Housing Estimates identified a 2.7 percent vacancy rate for a total of 288 vacant housing units in the City of Coachella in 2024 (California Department of Finance, 2024). Available housing is sufficient to accommodate temporary construction workers and a maximum of six ATCT workers.

   The proposed project will not induce population growth to create direct or indirect housing or infrastructure needs. No impact would occur.

b) The project is located on Airport property and will not displace people or housing to necessitate the need for replacement housing elsewhere. The City of Thermal and surrounding areas have sufficient vacant housing units to accommodate temporary construction workers and up to six ATCT controllers. Neither construction nor operation of the proposed project would displace people or housing to necessitate the need for replacement housing elsewhere. No impact would occur.

XV. PUBLIC SERVICES

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?			**X**	
ii) Police protection?			**X**	
iii) Schools?			**X**	
iv) Parks?			**X**	
v) Other public facilities?				**X**

a) The proposed ATCT will not induce population growth or require additional government services. The project will be served by the existing emergency response providers and will not create a need for additional fire, sheriff, or other services to maintain response times.

i) The project site is located less than ¼-mile from Riverside County Fire Station 39, which is located near the intersection of Polk Street and Avenue 58. During construction, there may be increased traffic near corner of Polk Street and Avenue 58; however, the project includes a temporary haul route and access gate that will direct traffic south of the fire station to prevent interference with fire station operations. The fire station would serve the ATCT following construction. A less than significant impact would occur.

ii) The Airport is served by the Thermal Sheriff Station, which is located in the northeastern portion of the Airport. The project will not create an increased need for police protection. A less than significant impact would occur.

iii) The proposed project would require an average of three daily employees (one employee per shift) and a maximum of six employees during peak periods (two employees per shift). The proposed project will not induce population growth to create the need for new or modified school use facilities. A less than significant impact would occur.

iv) The nearest park is the Bagdouma Park located approximately 3 miles northwest of the Airport. The potential addition of three to six employees and their families would be unlikely to create the need for additional park facilities. A less than significant impact would occur.

v) The project site is a public facility located entirely within Airport property boundaries, and the Airport is served by existing public facilities. The proposed project will not affect or create the need for additional public facilities. No impact would occur.

XVI. RECREATION

Issues	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

a) The project is located entirely on Airport property. While it is possible that up to six controllers and their families would use parks and recreational facilities during time off, this incremental increase in use would not result in the physical deterioration in these facilities. The potential effect is less than significant.

b) The proposed project does not include recreational facilities or require the construction or expansion of a recreational facility which might have an adverse physical effect on the environment. No impact would occur.

XVII. TRANSPORTATION

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?				**X**
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
d) Result in inadequate emergency access?				**X**

a) The Circulation Element of the County's General Plan was reviewed to determine if the proposed project would conflict with any program, plan, ordinance, or policy addressing the circulation system. Construction of the proposed project will temporarily create traffic near the Airport, specifically on Polk Street and Avenue 58. During the 6-month construction period, a maximum of 35 construction workers are anticipated at peak utilization, with an average utilization of 15 staff members on-site per day. During operation, a maximum of four staff members will be needed daily. The proposed project does not conflict with any program, plan, ordinance, or policy addressing the circulation system of the County. The addition of up to 70 trips per day during construction and up to 12 trips per day during operation would not reduce the level of service on adjacent roads. A less than significant impact would occur.

b) CEQA Guidelines Section 15064.3, subdivision (b) indicates that projects within a half mile radius of an existing major transit stop or along an existing high-quality transit corridor are presumed to cause a less-than-significant impact on the environment. The section also considers whether the vehicle miles traveled in association with a proposed project would exceed an applicable threshold of significance.

c) The SunLine Transit Agency's System, which serves the Airport vicinity was reviewed to identify the location of the nearest transit stop (SunLine Transit Agency, 2024). The System Map indicates that the Airport is not located within ½-mile of an existing major transit stop or a stop along an existing high quality transit corridor. A total of six to 12 employee trips would be generated in association with the proposed project. This increase in daily trips on local roads would not decrease the current level of service provided. In addition, the County conducted an air quality analysis that considered the potential effect of worker travel to and from the Airport by a maximum of six employees (see **Appendix B**). The analysis indicated that the proposed project would not cause emissions that would exceed applicable thresholds. The proposed project will be constructed within Airport boundaries, and it will not alter public roads to increase hazards due to geometric designs or incompatible uses. No impact would occur.

d) The proposed project will be located within Airport boundaries and includes the construction of an internal site access road from Avenue 58 to the ATCT. During construction, the internal access road will be separate and apart from the road associated with the Riverside County Fire Station No. 39 to prevent conflicts. Neither tower construction nor operation will interrupt access to the Fire Station. No impact would occur.

XVIII. TRIBAL CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				X
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

a) The project would not cause a substantial adverse change in the significance of a tribal cultural resource.

i) According to the Cultural Resources Assessment prepared for the proposed project, no listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources were identified within the APE. The Cultural Resource Assessment included a Sacred Lands File search with the Native American Heritage Commission (NAHC). The NAHC stated in a letter dated July 9, 2024, that the Sacred Lands File search was completed with negative results (Applied EarthWorks, 2024). No impact would occur.

ii) The cultural resources investigation conducted in support of the proposed project included a literature review and outreach to the NAHC, and consultation with identified tribal representatives, and an intensive pedestrian survey. Two cultural resources were identified within the APE, the Cahuilla village of Temal Wakhish (site 33-000148) and the Thermal Army Airfield (site 33-020989); however, the site was identified to have a low potential for containing resources of significance to a California Native American tribe.

The County reached out to Tribes identified in the NAHC as having a potential interest in the site. Representatives from one Tribe, the Agua Caliente Band of Cahuilla Indians, expressed interest in the project site, specifically the inadvertent discovery of previously unknown resources.

The proposed project has the potential to disturb previously unknown cultural and paleontological resources (see **Impacts CUL-1 and CUL-2**). Working with a tribal representative, the County developed **Mitigation Measures CUL-1 and CUL-2**, which would reduce the potential impact associated with the inadvertent discovery of previously unknown resources to be less than

significant. The following mitigation measures were identified for implementation prior to and during initial project construction.

- **Mitigation Measure CUL-1: Conduct cultural resources monitoring during initial ground disturbing activities.** The Project Archaeologist and Tribal Representatives shall monitor initial ground disturbing activities. (Ongoing disturbance of the same area will not require ongoing monitoring.) Approximately 60 days prior to construction, the Project Archaeologist, in consultation with the Monitoring Tribe(s), shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing, and responsibility of archaeological and cultural activities that will occur on the project site such as: project grading and development scheduling.

  The CRMP will include measures for the coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the County. The CRMP shall identify the protocols and stipulations that the County, Monitoring Tribe(s), and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resources. They shall have the authority to stop and redirect excavation in order to evaluate the significance of any archaeological resources discovered within 60 feet of the find (see Mitigation Measure CUL-2). A decision regarding the find and its effect on construction activities must be determined with 48 hours.

- **Mitigation Measure CUL-2: Inadvertent discovery of Native American cultural resources.** If during ground disturbance activities unanticipated previously unknown Native American cultural resources are discovered during the course of grading or ground disturbance for this project, all ground disturbance activities within 60 feet of the resource shall be halted, and a meeting shall be convened among the Project Archaeologist and Native American Tribal Monitor to discuss the significance of the find. At that meeting, a decision is to be made, with the concurrence of the Aviation Division, as to the appropriate treatment of the resource (documentation, recovery, avoidance). Resource evaluations shall be limited to non-destructive analysis. Further ground disturbance shall not resume within the area of discovery until the appropriate treatment has been accomplished. The following procedures shall be carried out for the treatment and disposition, which shall be further described in the project-related CRMP:

  - **Temporary On-Site Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site with Native American Tribal Monitor oversight of the process.

  - **Curation:** The County shall relinquish ownership of all cultural resources. The Project Archaeologist, following consultation with the Monitoring Tribe(s), shall deliver the materials to a qualified repository in Riverside County that meets or exceeds federal standards per Code of Federal Regulations (CFR) Title 36, Part 79, and that shall be made available to all qualified researchers and tribal representatives.

  - **Treatment and Final Disposition:** The County shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all cultural materials and nonhuman remains, as part of the required mitigation for impacts to cultural resources.

  - **Reporting.** The Project Archaeologist shall prepare a final archaeological report within 60 days of project completion. The report shall follow Cultural Resources Management Plan (CRMP).

The disturbance and destruction of previously unknown cultural resources would result in a significant impact. The implementation of **Mitigation Measures CUL-1 and CUL-2** will reduce the potential impact to less than significant with mitigation incorporated.

XIX. UTILITIES AND SERVICE SYSTEMS

Issues Would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			**X**	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			**X**	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				**X**

a) The Airport is equipped with water, wastewater treatment, storm water, drainage, electrical power, and telecommunications facilities. The proposed project will include the installation of utility connections including of a stormwater pipe, an electrical duct bank, a sewer line connection, and a waterline connection. The installation of these utilities includes trenching of up to 6-foot depth. The Airport includes services for each utility and has sufficient compacity to accommodate the proposed ATCT, and all utility trenching will occur within Airport boundaries. Construction BMPs will be implemented during the project. A DigAlert ticket will be submitted before the start of construction to mark or locate facilities at the project site.

   The project will not require the addition of new facilities to cause significant environmental effects. A less than significant impact would occur.

b) The proposed ATCT will include one new lavatory (one toilet and one sink) to support a maximum of two employees per shift. The ATCT will be connected to the existing water and wastewater systems serving the Airport, which is sufficient to serve the project during normal, dry, and multiple dry years. A less than significant impact would occur.

c) The project will be connected to the existing wastewater treatment line at the Airport, which is sufficient to serve the project's projected demand. No additional capacity would be required. A less than significant impact would occur.

d) Project construction will not generate excessive solid waste. Solid waste that is generated during ATCT operation will include a minimal amount of office / paper trash and trash from the employee break area. Waste from construction and operation will be transported off-site for recycling or disposal. Riverside County Landfills accept construction waste and has adequate capacity for waste generated by the project (Riverside County Department of Waste Resources, 2024). A less than significant impact would occur.

e) The project will comply with federal, state, and local management and reduction statutes and regulations. Riverside County has implemented a Construction and Demolition (C&D) Waste Diversion Program which complies with the California Integrated Waste Management Act (AB 939) and the CALGreen Building Code, Materials Conservation and Resource Efficiency section.

   Riverside County Landfills accept Construction and Demolition waste provided it does not contain asbestos or other hazardous materials (Riverside County Department of Waste Resources, 2024). Construction and operation of the proposed project will not require facility demolition that require the use of asbestos.

   AB 939 requires each jurisdiction in California to divert at least 50% of its waste stream away from landfills every year (CalRecycle, 2024). The County implements recycling and waste reduction measures at its facilities. No impact would occur.

XX. WILDFIRE

Issues If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				**X**
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				**X**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				**X**
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				**X**

a) The project will not impair emergency response or evacuation procedures related to wildfire or other emergencies. The project is located within Airport boundaries, and neither construction nor operation of the ATCT will interrupt an adopted response plan or emergency response plan. The addition of up to 70 vehicle trips per day during construction and up to 12 employee trips per day during operation will not be creating sufficient traffic to degrade service on roads designated for emergency response or evacuation plans. No impact would occur.

b) The Airport is not located in a fire hazard zone (CalFire, 2024), and the proposed project will not exacerbate wildfire risks due to slope, winds, or other factors. Project occupants will not be exposed to pollutant concentrations or uncontrolled spread of a wildfire due to the project. No impact would occur.

c) The proposed ATCT will be constructed on an existing airport. County Fire Station No. 39 is located on site, and the Airport is equipped with hydrants that would serve as an emergency water source. The proposed project will not require the installation of power lines or other infrastructure that would cause a temporary or permanent increase in fire risk. No impact would occur.

d) As previously stated, the proposed project would be served by the existing stormwater management system and drainage facilities that have sufficient capacity to include the proposed project. The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. The proposed project would not pose a hazard and will not increase runoff to increase flooding. No impact would occur.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Issues	Potentially Significant Impact	Less Than Significant W/ Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		**X**		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			**X**	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			**X**	

a) The proposed project would be constructed in a previously disturbed area on an existing airport and is intended to enhance safety. The project site does not include any critical habitat. Based on the results of a Biological Resources Assessment (Caskey, 2024; **Appendix B**), the proposed project will not have an adverse effect on any listed species or its habitat, and **Mitigation Measure BIO-1: Conduct a preconstruction survey for nesting birds** would reduce the potential to affect nesting birds if construction were to begin during the nesting season; therefore, the proposed project would not substantially degrade the quality of the environment, reduce any habitat, cause a fish or wildlife population to drop, threaten to eliminate any species, reduce the number or restrict the range of a special-status species.

The results of the cultural investigation did not identify the presence of known cultural resources and indicates that the project area has a low potential to include cultural resources, but the disturbance of previously unknown cultural and paleontological resources would be a significant Impact (see impacts **CUL-1, CUL-2,** and **PALEO-1**). **Mitigation Measures CUL-1: Conduct cultural resources monitoring during initial ground disturbing activities, CUL-2: Inadvertent discovery of Native American cultural resources, and CUL-3: Discovery of human remains**, will prevent potential effects to unknown cultural resources, including tribal resources. Although the project area has a high sensitivity to contain paleontological resources, the implementation of **Mitigation Measure PALEO-1: Discovery of previously unknown paleontological resources** will reduce the risk of adversely affecting such resources to less than significant. Based on the results of project-specific studies and the implementation of proposed mitigation measures, the proposed project would not reduce or eliminate examples of major periods of California history or prehistory (EarthWorks, 2024).

The proposed project would result in a less-than-significant impact with mitigation incorporated.

b) Riverside County considered the potential cumulative effect of the proposed project by considering the effects of projects that were completed within 0.25 mile of the project site during a timeframe includes projects completed during the past 3 years or envisioned during the next 5 years. The 0.25-mile radius cumulative impact area included only projects identified at the Jacqueline Cochran Regional Airport. Proposed projects within a 0.25-mile radius of the project site include:

- Runway Rehabilitation 17/35 Lighting Install Airfield Guidance Signs – 2024. This project includes replacement of wire, conduit, and lights, as well as replacement of the signs on the pads.
- Taxiway A Relocation Design and Construction – 2025. The proposed project includes relocation of Taxiway A. No environmental impacts were identified.
- PCC Apron Expansion Design and Construction – 2026. The proposed project includes expansion to the PCC Apron.
- Taxiway F Electrical and Lighting Rehabilitation Design – 2029. The proposed project includes replacing lights and signs at Taxiway F.

All anticipated projects identified for the next 5 years are airfield maintenance projects. All projects will comply with existing federal and state environmental laws, regulations, and applicable polices.

The proposed project would not contribute impacts that are individually limited but cumulatively considerable. A less than significant impact would occur.

c) The proposed project will include only temporary, construction-related noise and air quality effects. Project construction documents and specifications will identify the need for hearing protection for on-site workers, and construction activities will occur only during designated daytime hours as prescribed by the Riverside County General Plan and Noise Ordinance. The air quality analysis identified that temporary construction-related emissions would not exceed regulatory thresholds. The project will not cause environmental effects that will affect humans either directly or indirectly.

As previously stated, the proposed project would not increase Airport capacity, affect the fleet mix, or alter air traffic patterns. The project will provide benefits to humans by enhancing safety for air travelers and those living and working near the Airport. A less-than- significant impact would occur.

SUPPORTING INFORMATION SOURCES:

Applied EarthWorks, Inc. (2024). Cultural Resources Assessment for Air Traffic Control Tower at the Jacqueline Cochran Airport near Thermal, California. Hemet, CA.

Applied Earthworks. 2024b. Paleontological Technical Letter report of the Air Traffic Control Tower at the Jacqueline Cochran Regional Airport near the community of Thermal, Riverside County, CA. Letter dated November 11, 2024.

California Air Resources Board (2024). South Coast Air Basin and Coachella Valley Air Quality Plans. https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/nonattainment-area-plans/south-coast-air

California Department of Conservation (2024a). California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/

California Department of Conservation (2024b). Williamson Act Program. https://www.conservation.ca.gov/dlrp/wa

California Department of Conservation (2024c). California Geological Survey. Earthquake Zones of Required Investigation. https://maps.conservation.ca.gov/cgs/EQZApp/app/

California Department of Conservation (2024d). Mineral Resources Program. https://www.conservation.ca.gov/cgs/minerals/storymap?utm_source=minerals+page&utm_medium=referral&utm_campaign=minerals+storymap

California Department of Finance. 2025. Report E-5: Population and Housing Estimates for Cities, Counties, and the State, January 1, 2021-2024, with 2020 Benchmark. Demographics Research Unit. Sacramento California. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdof.ca.gov%2Fwp-content%2Fuploads%2Fsites%2F352%2FForecasting%2FDemographics%2FDocuments%2FE-5-2024_Geo_InternetVersion.xlsx&wdOrigin=BROWSELINK

California Department of Fish and Wildlife (2024). California Natural Diversity Database. https://wildlife.ca.gov/Data/CNDDB

California Department of Transportation (2025a). GIS Data – Vistas. https://gisdata-caltrans.opendata.arcgis.com/datasets/56afa8c826fc4bc0af3b6bf1cd7d5c2a_0/about

California Department of Transportation (2025b). GIS Data – CA State Scenic Highway System Map. https://www.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

California Governor's Office of Emergency Services (CalOES) (2024). MyHazards. https://myhazards.caloes.ca.gov/

California Native Plant Society (2024). Online Inventory of Rare and Endangered Plants. https://rareplants.cnps.org/

California Regional Water Quality Control Board (2006). Water Quality Control Plan. Colorado River Basin – Region 7. https://www.waterboards.ca.gov/coloradoriver/publications_forms/publications/docs/basinplan_2006.pdf

California Water Boards (2022). State Water Resources Control Boards. https://www.waterboards.ca.gov/waterboards_map.html

Caskey Biological Consulting LLC. (2024). Biological Resource Assessment and Jurisdictional Delineation Report.

City of Murrieta (2011). General Plan Update. Geology and Seismic Hazards. https://www.murrietaca.gov/DocumentCenter/View/790/05-08---Geology-and-Seismic-Hazards-PDF

Coachella Valley Conservation Commission. 2025. Coachella Valley Multiple Species Habitat Conservation Plan. https://cvmshcp.org/plan-documents/

County of Riverside (2015). Multipurpose Open Space Element. Available at: https://planning.rctlma.org/sites/g/files/aldnop416/files/migrated/Portals-14-genplan-general-plan-2016-elements-Ch05-MOSE-120815.pdf

County Riverside (2019). Climate Action Plan Update. https://planning.rctlma.org/sites/g/files/aldnop416/files/migrated/Portals-14-CAP-2019-2019-CAP-Update-Full.pdf

Department of Toxic Substances Control. September 21, 2011. Letter from O. Patrick to C. Garcia, U.S. Army Corps of Engineers regarding Draft-Final Site Investigation Report for the Thermal Ground Air Station Base. Cypress, CA. Available at: https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7840290665%2FThermal-SIR.pdf

EEI Engineering Solutions (EEI). 2024. Phase I Environmental Site Assessment, Jacqueline Cochran Regional Airport, Potential Tower locations No. 1-4. APN 759-100-013 and 759-070-005 (a portion of) (Unincorporated) City of Thermal Riverside County, California 92274. Carlsbad, CA.

Federal Aviation Administration (2024). National Plan of Integrated Airport Systems. https://www.faa.gov/airports/planning_capacity/npias

Federal Emergency Management Agency (2024). Flood Map Service Center. https://msc.fema.gov/portal/home

Google (2024). Google Earth. https://earth.google.com/web/

Mead & Hunt, Inc. (2024a). Memorandum: TRM Tower Construction Emissions.

Mead & Hunt, Inc. (2024a). Memorandum: TRM National Historic Preservation Act Section 106, Review of Built-Environment Resources.

National Plan of integrated Airport Systems (2024). Appendix A: List of NPIAS Airports.

NPIAS, 2025-2029, Appendix A: List of NPIAS Airports, updated October 2024

Riverside County Airport Land Use Commission. Airport Land Use Compatibility Plan for the French Valley Airport. Riverside, CA https://rcaluc.org/sites/g/files/aldnop421/files/2023-06/french%20valley.pdf

Riverside County (2024b). Planning Department. Western Riverside County Multiple Species Habitat Conservation Plan. https://planning.rctlma.org/epd/wr-mshcp

Riverside County (2024c). Department of Waste Resources (2024). Construction and Demolition (C&D) Waste. https://rcwaste.org/waste-guide-cd

Riverside County (2024d). Map My County. https://gis1.countyofriverside.us/Html5Viewer/?viewer=MMC_Public

Riverside County (2024e). Ordinance No. 847 (As amended through 947.1): An Ordinance of the County of Riverside Amending Ordinance No 847 Regulating Noise. Available at: https://rivcocob.org/sites/g/files/aldnop311/files/migrated/ords-800-847.pdf

Riverside County (2024f). Ordinance No. 742 (As amended through 742.1): An Ordinance of the County of Riverside Amending Ordinance No. 742 Relating to the Control of Fugitive Dust and the Corresponding PM10 Emission in the Coachella Valley, and also Adopting the Coachella Valley Fugitive Dust Control Handbook Produced by Air Quality Management District (AQMD). https://rivcocob.org/sites/g/files/aldnop311/files/migrated/ords-700-742.1.pdf

Riverside County (2015). General Plan. https://planning.rctlma.org/riverside-county-general-plan

South Coast Air Quality Management District (2024). https://www.aqmd.gov/

South Coast Air Quality Management District (2025). Emergency Generators: Fact Sheet on Emergency Backup Generators. Available at: https://www.aqmd.gov/home/permits/emergency-generators#Fact11

State of California (2024). CalFire. Fire Hazard Severity Zones. https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

State of California (2024). CalRecycle. https://calrecycle.ca.gov/lgcentral/enforcement/

State of California (2024). Department of Toxic Substances Control. EnviroStor. https://www.envirostor.dtsc.ca.gov/public/

SunLine Transit Agency (2023). System Map. https://sunline.org/sites/default/files/Final-System-Map-Jan-2023-WEB.pdf

United States Army Corps of Engineers. 2011. Final Site Inspection Report, Former Thermal Ground Air Station Base, Riverside County, CA. FUDS project No. J09cCA064502. Los Angeles, CA. Available at: https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7840290665%2FThermal-SIR.pdf

United States Fish and Wildlife Service (2024). Information for Planning and Consultation System. https://ipac.ecosphere.fws.gov/

United States Geological Survey (2008). National Geological Map Database. https://ngmdb.usgs.gov/Prodesc/proddesc_83959.htm

United States Geological Survey (2016). Earthquake Hazards Program. ShakeMap. https://earthquake.usgs.gov/scenarios/eventpage/sclegacyspsanandreascom7p0_se/shakemap/intensity

APPENDICES

APPENDIX A
FAA TOWER SITING MEETING MINUTES

Jacqueline Cochran Regional Airport (TRM)

FCT Initial Construction

AFTIL 1 & 2 Meeting Minutes Ver 1.0

July 18, 2024

Federal Aviation Administration (FAA) representatives from the Western Service Area (WSA), FAA Air Traffic Control (ATC)[1], Jacqueline Cochran Regional Airport (TRM), and Airport Facilities Terminal Integration Laboratory (AFTIL) personnel participated in an AFTIL 1 & 2 initial construction of a Federal Contract Tower (FCT) Airport Traffic Control Tower (ATCT)[2] siting activity from April 9–11, 2024. Panel member representatives from Los Angeles District Office and Southern California TRACON ATC, TRM representatives, and key AFTIL personnel attended the meeting on-site at the French Valley Airport (F70). All other attendees participated via Zoom. The team followed FAA Siting Order 6480.4B AFTIL-(1 & 2) procedures. Riverside County identified three preferred sites for evaluation by FAA ATC panel members to identify placement, analysis, and assessment of orientation of the ATCT cab to the field, control positions, equipment, mullions, and stairwell location for overall optimal visibility of the field (AFTIL-2 process). The proposed sites were evaluated by the FAA ATC panel members for the lowest height with the best visibility for minimal Line of Sight (LOS) issues in conjunction with financial practicality coordinated with the airport organization (AFTIL-1 process). Upon completion of the evaluations, a Comparative Safety Analysis (CSA)was performed for each of the preferred sites. The FAA ATC and Riverside County panel members rated the sites in order of preference and selected a recommended site, followed by a virtual mockup of equipment for the ATC-recommended site.

The AFTIL 1 & 2 tower siting processes were conducted and completed using a cab structure designed by Brian Lally of CTBX. While viewing the equipment phase mockup, discussion took place concerning the cab structure, which appeared to be designed to Florida hurricane specifications. Questions were brought up regarding the cab structure design necessary for Southern California earthquake specifications. After discussion among the attendees and AFTIL engineers, the AFTIL National Coordinator determined that a rerun of the AFTIL 1 & 2 processes to review a cab structure designed for Southern California earthquake specifications would be necessary. The results of this review are captured in this document.

[1] There is no existing ATCT at TRM. William Woods and Ryan Munro acted as the ATC representative panel members.

[2] In a letter received by Angela Jamison from the FAA dated April 19, 2022, the Jacqueline Cochran Regional Airport was accepted as a candidate for the Federal Aviation Administration Contract Tower (FCT) program.

Jacqueline Cochran Regional Airport (TRM)

FCT Initial Construction

AFTIL 1 & 2 Meeting Minutes Ver 1.0

July 18, 2024

Facilitator: Terence Moore / Bryan Grossman

FAA ATC: William "Woody" Woods, District Support Manager Planning & Requirements Los Angeles District (TWLA); Ryan Munro, Operations Manager (OM) Southern California TRACON (SCT)

Jacqueline Cochran Regional Airport: Angela Jamison, Riverside County Director of Airports

AFTIL ATC Subject Matter Expert (SME): Bryan Grossman

AFTIL Modeler: Lawrence Rovani

AFTIL Engineer: Ed Chapleski

AFTIL Software Engineers: Charlotte Hannon, Nolan Foy, Ryan Drexel,

Safety Management System (SMS) Team: Dave Ailes, AFTIL Safety Specialist; Garry Brown and Larry Crowley, WSA Safety Management System (SMS) Quality Control Group (QCG)

Participants: See Attachment 1

Purpose of meeting: To determine the location, optimum height, cab size, and ATC position locations for the initial construction of an FCT ATCT at TRM.

1. **Agenda**
   A) Introductions: After the meeting member introductions of both on-site and virtual Zoom attendees, Terence Moore displayed a PowerPoint agenda and provided in-brief presentation of the AFTIL 1 & 2 processes.
   B) ALP overview: The draft TRM Airport Layout Plan (ALP), dated June 2022, was reviewed for existing and future changes to the airport.
   C) 3D training for control personnel: Provided on-site at the French Valley Airport (F70), located in Murrieta/Temecula, California, by Nolan Foy.
   D) Assessment of preferred sites: Three sites were proposed: Site 1, Site 2, and Site 3.
   E) Safety Risk Management (SRM) panel assessment: A Comparative Safety Analysis was performed on the preferred sites. FAA ATC found a potential hazard in all three sites concerning the sun positioning effects on the southwestern orientational view during specific times. (Detailed information to be included in the SRM document.)
   F) Recommended site: FAA ATC and TRM Airport representatives agreed on the following order of preference: #1: Site 2, #2: Site 3, and #3: Site 1.

2. Overview of Airport Model and Preferred Sites

A) An overview of the airport, as modeled from the TRM Airport Layout Plan (ALP) dated June 2022, was displayed to all participants, defining colors depicted:

- Gray: Existing pavement
- Black: Future runway extension
- Yellow: Future building construction
- Red: Pavement to be removed
- Tan: Future movement/non-movement areas
- Blue: Existing buildings
- Green: To be excavated and graded

B) Pre-siting summary: A 360-degree review of the airport was provided. The TRM Airport representatives validated the model.

3. Siting Assessment Issues

FAA ATC areas of concern:

- There is no existing ATCT at the TRM Airport.
- FAA ATC reviewed the model for unobstructed visibility of the airport environment, including all movement areas and all approach and departure paths.

4. Preferred Site Assessment by the Air Traffic Control Team

(See Attachment 2)

5. Recommended Site: After collaboration, FAA ATC and Riverside County representatives identified Site 2 as the preferred recommended site, followed by Site 3 and Site 1. Site 2 provides the best cost-effective overall optimal central view of the field. (See Attachment 2 for details and Attachment 3 for the site comparison chart).

Jacqueline Cochran Regional Airport (TRM)

FCT Initial Construction

AFTIL 1 & 2 Meeting Minutes Ver 1.0

July 18, 2024

Attachment 1: Participant List

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Attachment 2: Sites Assessed

A total of three sites were evaluated for field locations and eye-level heights.

1. **Site 1** (#3 FAA ATC/TRM Airport-recommended site)
   A. Reference location: Site 1 is in the eastern half of the field, approximately midfield east of RWY 17/35, approximately 4,100 ft south-southeast of the landing threshold RWY 17, approximately 4,600 ft north of the landing threshold RWY 35.
   Lat: 33°37'41.3600"N Long: 116° 09'10.0900"W
   B. Airport quadrant: Eastern
   C. Acreage: Data not available at time of document
   D. ATCT orientation: West-southwest (as determined by direction of LC position).
   E. Position locations: See Attachment 8 (cab orientation)
   F. Stair location: The stairs and comfort station are in an area of least distraction on the opposite side of the cab from LC, with the stairwell entrance to the left.
   G. No effect height: Data not available
   H. Cab height: The cab eye-level height was raised from the 0.8 lookdown height of 92 ft above ground level (AGL) to 100 ft AGL to help ATC distinguish aircraft on taxiway (TWY) C from aircraft on the first third of the approach end of runway (RWY) 12. (Detailed information to be included in the SRM document.)
   I. Column/mullion structure and assessment: 4 columns (12 in wide x 14 in deep) with 2 silicone joints between glass panes between each pair of columns. (Detailed information to be included in the SRM document.)
   J. 2-point lateral discrimination: No potential hazards were found. (Detailed information to be included in the SRM document.)
   K. Console discussion: Slat wall
   L. Utilities: Data can be found in the TRM Draft Tower Siting Report, not included.
   M. Access: Riverside County will provide secure access. (Detailed information to be included in the TRM document.)
   N. Construction issues: There is no existing ATCT at the TRM Airport. (No construction issues.)
   O. Weather: Representatives from the TRM Airport reported no weather issues. (Detailed information to be included in the SRM document.)

P. Cab size evaluation: A new 448-sq-ft cab of non-standard design was used for the evaluation. (Detailed information to be included in the SRM document.)

Q. Rotating beacon: The rotating beacon is located on the main terminal side of the field, approximately 4,100 ft northwest of Site 1 at an approximate height of 51 ft AGL. (Detailed information to be included in the SRM document.)

R. Advantages:
- Good central location on the field
- Unobstructed view of the field

Disadvantages:
- Sun glare during dusk and sunset, particularly during Spring and Summer, affects visibility of aircraft on approach to RWY 12.
- Difficulty seeing the hold short line for RWY 12 on TWY C.
- Difficulty distinguishing whether aircraft are on TWY C or the first third of RWY 12.
- Possible parallax issues with approach to RWY 12/30.

S. Safety risk management panel: A safety analysis was conducted on Site 1. Sun glare during dusk and sunset of runway 12 approach, especially during Spring and Summer, was identified by FAA ATC as a potential hazard. (Detailed information to be included in the SRM document.)

2. Site 2 (# 1 FAA ATC/TRM Airport-recommended site)

A. Reference location: Site 2 in the eastern quadrant of the field, approximately midfield east of RWY 17/35, approximately 4,800 ft south-southeast of the landing threshold RWY 17, approximately 3,900 ft north of the landing threshold RWY 35.

Lat: 33°37'34.6100"N Long: 116° 09'10.1700"W

B. Airport quadrant: Eastern

C. Acreage: Data not available at time of document

D. ATCT orientation: West-southwest (as determined by direction of LC position)

E. Position locations: See Attachment 8 (Cab Orientation)

F. Stair location: The stairs and comfort station are in an area of least distraction on the opposite side of the cab from LC, with the stairwell entrance to the left.

G. No effect height: Data not available

H. Cab height: The cab eye-level height remained at the 0.8 lookdown height of 95 ft AGL.[3] (Detailed information to be included in the SRM document.)

I. Column/mullion structure and assessment: 4 columns (12 in wide x 14 in deep) with 2 silicone joints between glass panes between each pair of columns. (Detailed information to be included in the SRM document.)

J. 2-point lateral discrimination: No potential hazards were found. (Detailed information to be included in the SRM document.)

K. Console discussion: Slat wall

L. Utilities: Data can be found in the TRM Draft Tower Siting Report, not included.

M. Access: The TRM Airport will provide secure access. (Detailed information to be included in the SRM document.)

N. Construction issues: There is no existing ATCT at the TRM Airport. (No construction issues.)

O. Weather: Representatives from the TRM Airport reported no weather issues. (Detailed information to be included in the SRM document.)

P. Cab size evaluation: A new 448 sq ft cab of non-standard design was used for the evaluation. (Detailed information to be included in the SRM document.)

Q. Rotating beacon: The rotating beacon is located on the main terminal side of the field, approximately 4,500 ft northwest of Site 2 at an approximate height of 51 ft AGL. (Detailed information to be included in the SRM document.)

R. Advantages:
- Best central location on the field
- Unobstructed view of the field
- Good visibility of Runway 12 and parallel taxiways
- Improves possible parallax issues with approach to RWY 12/30

Disadvantages:
- Distance to helipad east of runway 17

S. Safety risk management panel: A safety analysis was conducted on Site 2. Sun glare during dusk and sunset of RWY 12 approach, especially during Spring and Summer, was identified by FAA ATC as a potential hazard. (Detailed information to be included in the SRM document.)

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[3] FAA ATC were concerned with the ability to see the hold short line of RWY 12 on TWY C. To resolve this issue, TRM will install signage lighting for this area.

3. Site 3 (# 2 FAA ATC/TRM Airport-recommended site)

A. Reference location: Site 3 is in the eastern quadrant of the field, approximately midfield east of RWY 17/35, approximately 6,650 ft south of the landing threshold RWY 17, approximately 2,300 ft northeast of the landing threshold RWY 35.
Lat: 33°37'16.8600"N Long: 116° 09'10.3300"W

B. Airport quadrant: Eastern

C. Acreage: Data not available

D. ATCT orientation: West-southwest (as determined by direction of LC position)

E. Position locations: See Attachment 8 (Cab Orientation)

F. Stair location: The stairs and comfort station are in an area of least distraction on the opposite side of the cab from LC with the stairwell entrance to the left

G. No effect height: Data not available

H. Cab height: The cab eye-level height remained at the 0.8 lookdown height of 113 ft AGL. (Detailed information to be included in the SRM document.)

I. Column/mullion structure and assessment: 8 mullions (6 in wide x 9 in deep) with 1 silicone joints between glass panes between each mullion. (Detailed information to be included in the SRM document.)

J. 2-point lateral discrimination: No potential hazards were found. (Detailed information to be included in the SRM document.)

K. Console discussion: Slat Wall

L. Utilities: Data can be found in the TRM Draft Tower Siting Report, not included.

M. Access: The TRM Airport will provide secure access. (Detailed information to be included in the SRM document)

N. Construction issues: There is no existing ATCT at the TRM Airport. No construction issues.

O. Weather: Representatives from the TRM Airport reported no weather issues that would affect Site 3. (Detailed information to be included in the SRM document.)

P. Cab size evaluation: A new 448-sq-ft cab of non-standard design was used for the evaluation. (Detailed information to be included in the SRM document.)

Q. Rotating beacon: The rotating beacon is located on the main terminal side of the field, approximately 5,900 ft northwest of Site 2 at an approximate height of 51 ft AGL. (Detailed information to be included in the SRM document.)

R. Advantages:

- Good visibility of airport markings.
- Best visibility of RWY 12/30 and the corresponding parallel taxiways.
- Proximity to the approach end RWY 35.
- Good location on the field.
- Unobstructed view of the field.
- Resolves possible parallax issues with approach to RWY 12/30.

Disadvantages:

- Distance to runway 17 approach and helipad east of runway 17.

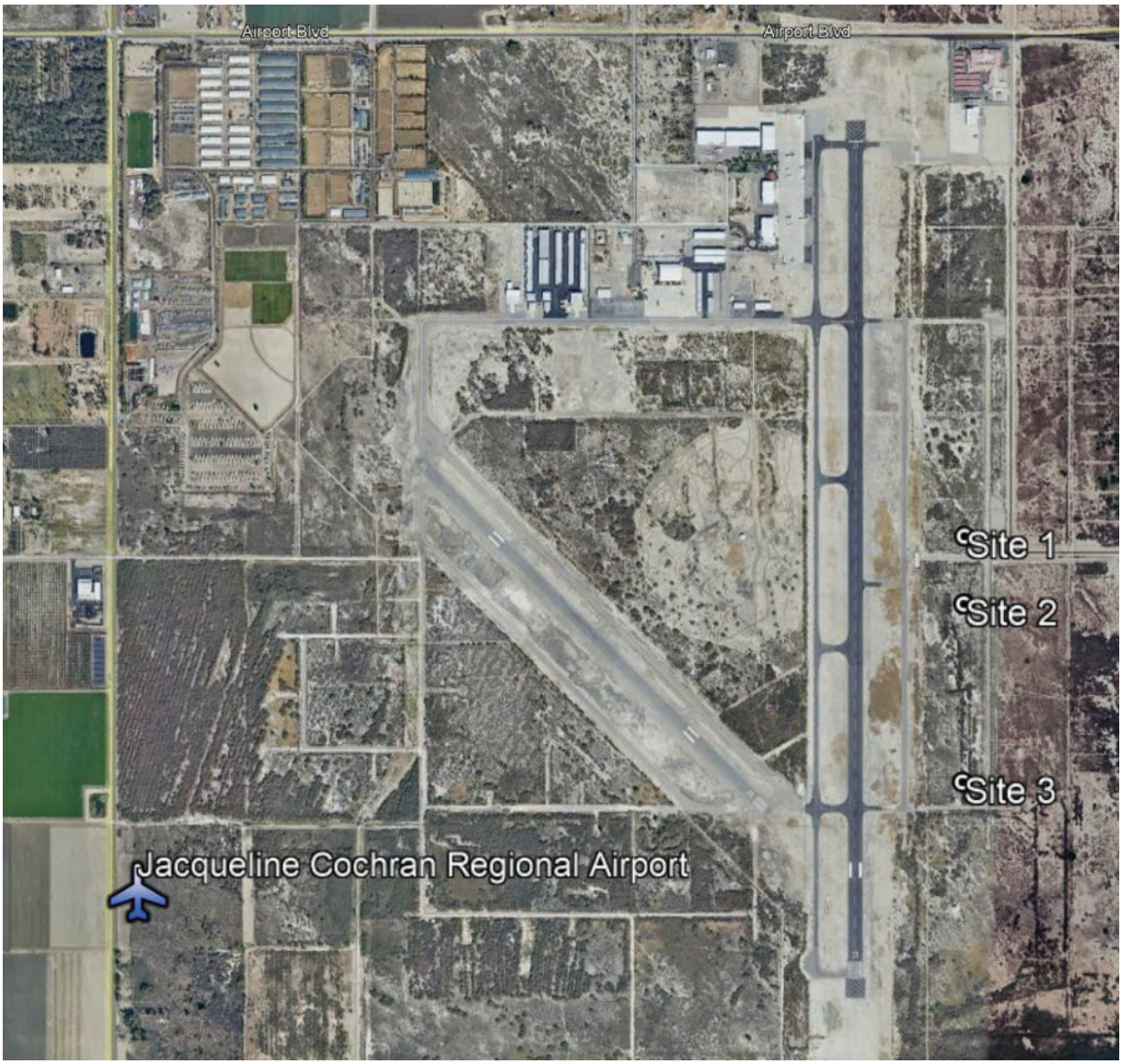
S. Safety risk management panel: A safety analysis was conducted on Site 3. Glare during dusk and sunset of runway 12 approach, especially during Spring and Summer, was identified by FAA ATC as a potential hazard. (Detailed information to be included in the SRM document.)

Attachment 3: Site Comparison Chart

Jacqueline Cochran Regional Airport (TRM) FCT Initial ATCT AFTIL 1&2 Site Comparison Chart			
Item Description	**Site 1**	**Site 2**	**Site 3**
Recommended Site:	#3 Recommended Site	**#1 Recommended Site**	#2 Recommended Site
Location	Site 1 is in the eastern quadrant of the field approximately midfield east of RWY 17/35, approximately 4,100 ft south-southeast of the landing threshold RWY 17, approximately 4,600 ft north of the landing threshold RWY 35	**Site 2 is in the eastern quadrant of the field approximately midfield east of RWY 17/35, approximately 4,800 ft south-southeast of the landing threshold RWY 17, approximately 3,900 ft north of the landing threshold RWY 35**	Site 3 is in the eastern quadrant of the field approximately midfield east of RWY 17/35, approximately 6,650 ft south of the landing threshold RWY 17, approximately 2,300 ft northeast of the landing threshold RWY 35
Latitude	33°37'41.3600"N	**33°37'34.6100"N**	33°37'16.8600"N
Longitude	116° 09'10.0900"W	**116° 09'10.1700"W**	116° 09'10.3300"W
Estimated Ground Level (ft AMSL)	-129	**-130**	-135
Cab Floor Level (ft AGL)	95	**90**	108
Cab Floor Level (ft AMSL)	-34	**-40**	-27
Eye-Level (ft AGL)	100	**95**	113
Eye-Level (ft AMSL)	-29	**-35**	-22
Top of Tower (TOT) 35 (Standard) ft above Cab Floor	130	**125**	143
Top of Tower (TOT) *AMSL* (35 (Standard) ft above Cab Floor	1	**-5**	8
Maximum Distance: Key Point (KP) (the most distant point of a runway which is furthest from the ATCT)	6,101 ft KP Future RWY 35	**5,703 ft.KP RWY 12**	6,564 ft.KP RWY 17

2-Point Lateral Discrimination (Pass/Fail)	Pass			**Pass**			Pass		
Object Discrimination (Pass/Fail) Front View (Dodge Caravan)	Probability (detection) Pass: XX.X% Probability (recognition) Pass: XX.X% Data Not Available			**Probability (detection) Pass: XX.X% Probability (recognition) Pass: XX.X% Data Not Available**			Probability (detection) Pass: XX.X% Probability (recognition) Pass: XX.X% Data Not Available		
Line of Sight Angle of Incidence	Pass X.XX Degrees Data Not Available			**Pass X.XX Degrees Data Not Available**			Pass X.XX Degrees Data Not Available		
ATCT Orientation Direction	West Southwest			**West Southwest**			West Southwest		
Cab Size	448 sq ft (custom design)			**448 sq ft (custom design)**			448 sq ft (custom design)		
Columns/Mullions	4 columns (12 in wide x 14 in deep), 4 mullions (6 in wide x 9 in deep) with 1 silicone joiner between each mullion and column			**4 columns (12 inch wide x 14 inch deep), 4 mullions (6 inch wide x 9 inch deep) with 1 silicone joiner between each mullion and column**			8 mullions (6 inch wide x 9 inch deep) with 2 silicone joiners between each mullion		
Console Type (traditional, slat wall)	Slat wall			**Slat wall**			Slat wall		
Land Area	See Attachment if available			**See Attachment if available**			See Attachment if available		
Access to ATCT Site (Yes or No)	Yes			**Yes**			Yes		
Tech Ops Preliminary Review Issues	See Attachment if available			**See Attachment if available**			See Attachment if available		
TERPS Impacts	See Attachment if available			**See Attachment if available**			See Attachment if available		
14 CFR Part 77 Impacts	See Attachment if available			**See Attachment if available**			See Attachment if available		
Environmental Issues	See Attachment if available			**See Attachment if available**			See Attachment if available		
Comparative Cost Estimate ($100K per vertical foot ground to cab floor)	$9,500,000.00			**$9,000,000.00**			$10,800,000.00		
Safety Assessment	**L**	**M**	**H**	**L**	**M**	**H**	**L**	**M**	**H**
Initial Risk Ranking	1	0	0	**1**	**0**	**0**	1	0	0
Predicted Residual Risk Ranking	1	0	0	**1**	**0**	**0**	1	0	0

Attachment 4: Site Location Aerial View



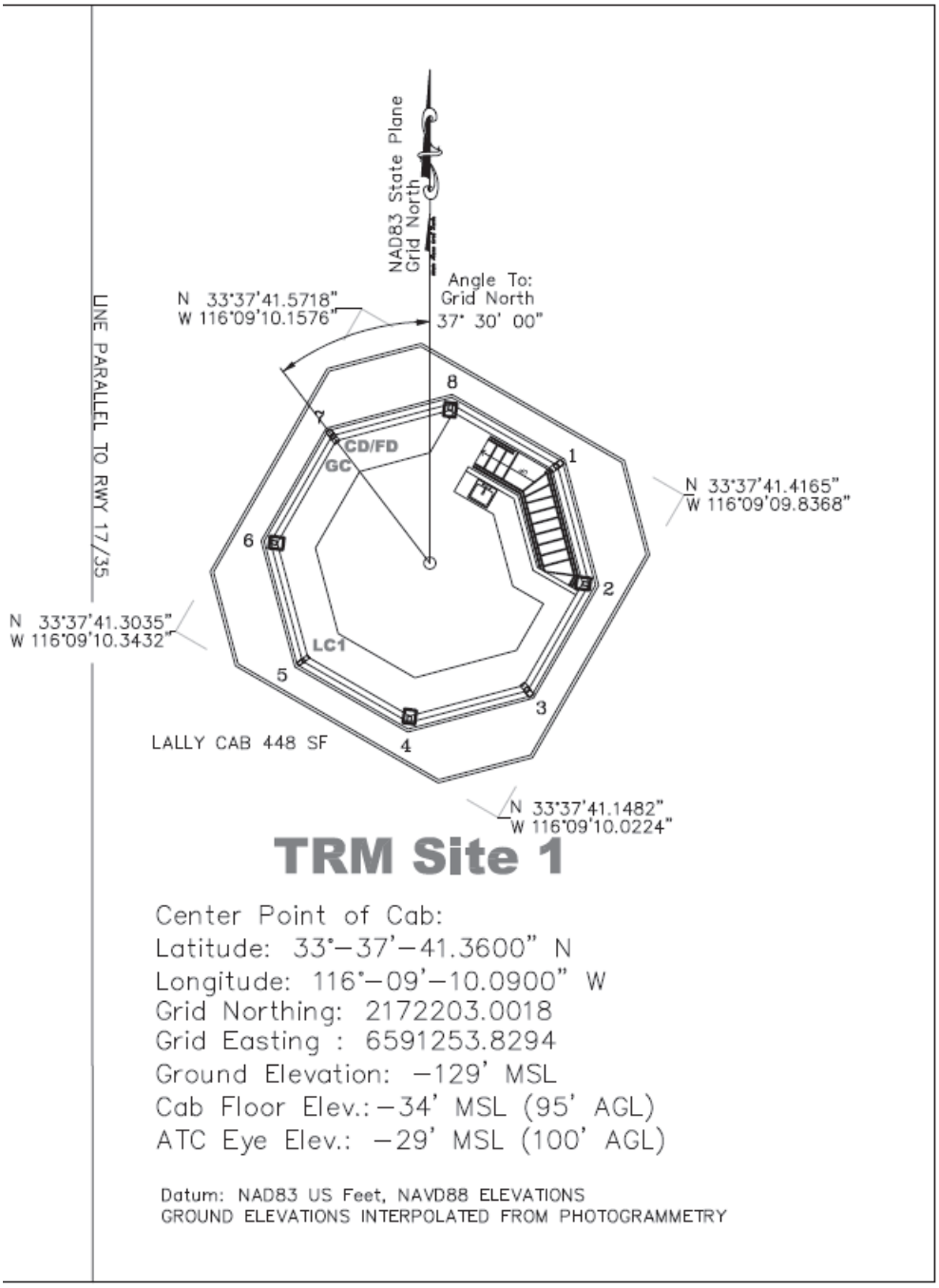
Attachment 5: Air Traffic Control Visibility Analysis Tool (ATCVAT) (Data not available to complete)

Attachment 6: TERPS Analysis (Data not available)

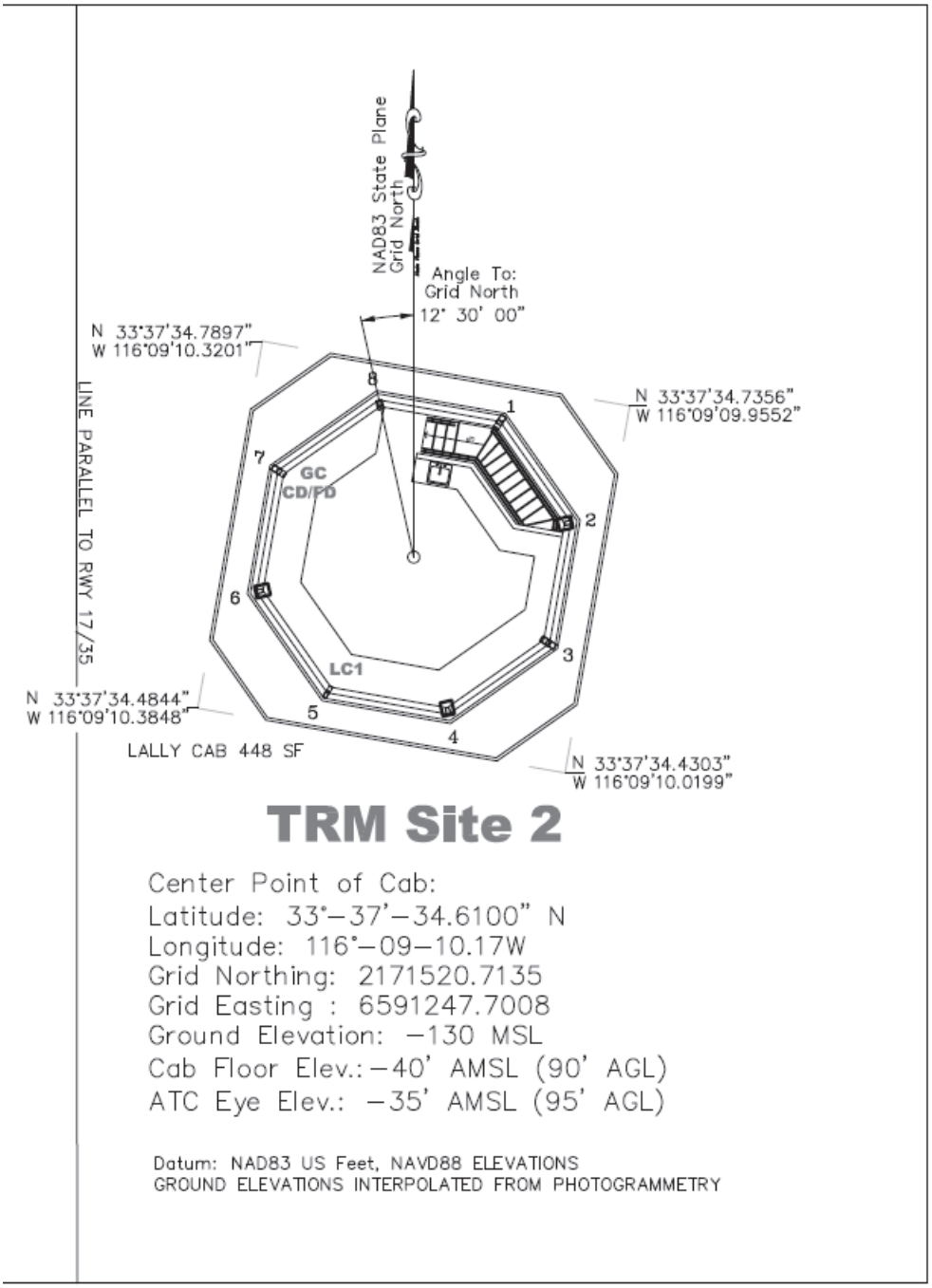
Attachment 7: Technical Operations Preliminary Review (TOPR) (Data not available)

Attachment 8: Controller Position/Cab Orientation Drawings

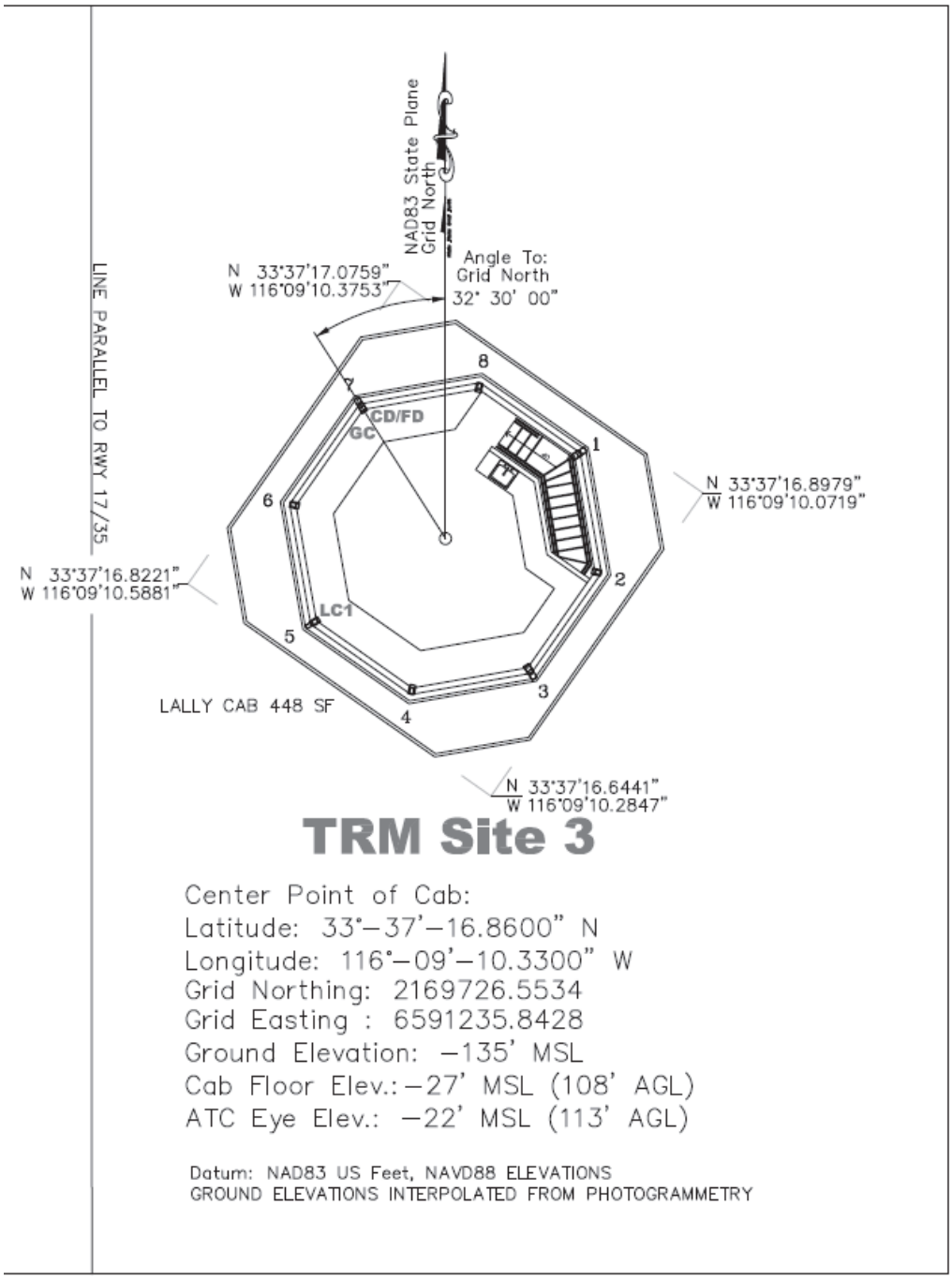
Site 1 Cab Orientation



Site 2 Cab Orientation



Site 3 Cab Orientation



Attachment 9: Memo of Record

(To be provided by the AFTIL National Coordinator)

Attachment 10: Post-siting Actions

(To be provided by the AFTIL National Coordinator)

APPENDIX B
AIR QUALITY ANALYSIS

MEMORANDUM: TRM Tower Construction Emissions

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1 Introduction

Jacqueline Cochran Regional Airport (TRM) is a public use airport that is located in Riverside County California, approximately 33 miles southeast of Palm Springs. The airport serves general aviation, pilot training, and charter operations. The airport has 2 runways: Runway 17-35, and Runway 12-30. The secondary Runway 12-30 has a Runway Protection Zone (RPZ) area which briefly crosses Taxiway A. Riverside County proposes to construct a new air traffic control tower (ATCT) to be able to safely monitor, designate, and communicate with flight operations at the airport. The proposed project will not increase airport capacity or operations but provide a means of airfield safety through effective air traffic communication and ground movement.

Construction of the proposed ATCT is anticipated to commence in 2026 with a construction duration period of 6 to 11 months. The maximum number of construction workers is anticipated to be 35 employees/day at peak utilization (3 months during main tower construction), with average of 15 workers per day. The project site is estimated to be 3.9 acres with the tower footprint, including parking space, being 19,600 square feet, an interior roadway area leading from the public street to the tower that is an estimated 11,135 square feet in area. An additional 31,677 square feet of trenching is required to connect utilities from the tower to the public road and the vault room located by the entrance of the airport. Although a six month duration is anticipated, a maxmum 11-month construction schedule was estimated schedule is as follows:

1. Mobilization after Notice-to-Proceed (NTP) – 1 month
2. Rough site grading and main utility installation to stubs – 2 months
3. Final site grading, site paving, foundation placement – 1 month
4. Foundation curing, parking lot electrical and striping – 1 month
5. Main tower structure construction – 3 months
6. Connection of utilities to tower, tower equipment, interior completion – 4 months
7. Fencing and security gate, final closeout items, substantial completion – 1 month

This memorandum documents the air quality analysis, and results associated with the construction and operation of the proposed ATCT in support of a forthcoming Initial Study/Mitigated Negative Declaration in accordance with the California Environmental Quality Act (CEQA).

The analysis results show that the estimated construction and operations emissions for each criteria pollutant do not exceed the CEQA thresholds for significant air quality effects used by Riverside County. Riverside County's thresholds are based on the air quality significance thresholds developed by the South Coast Air Quality Management District (SCAQMD).

2 CEQA and the Riverside County Emission Thresholds

This memorandum documents the project's adherence to CEQA requirements. Appendix G of the CEQA Guidelines contains the Environmental Checklist Form, which addresses Air Quality and Greenhouse Gas (GHG) Emissions. The proposed project's air quality emissions were assessed using the California Emissions estimator Model (CalEEMod), a statewide land use emissions model (vertical and linear-roadway land uses to provide a uniform platform for quantifying ozone precursors, criteria pollutants, and greenhouse gas emissions from construction and operations. CalEEMod calculates construction and operations emissions from land use development projects and construction emissions from linear projects. The model results can be used to support preparation of air quality and GHG analyses in CEQA documents or show compliance with local agency rules by local air districts.

The proposed project must comply with the Federal Clean Air Act (CAA). To comply with the CAA, the proposed impacts to air quality must conform to the conditions of the applicable State implementation Plan (SIP), also known as General Conformity. The CEQA thresholds and requirements act as an equivalent to the EPA's *de minimis* thresholds for California projects. If a project's net emissions are less than the thresholds, then the project is considered to be too small to adversely affect the air quality status of the area and is automatically considered to conform with the applicable SIP, thereby complying with general conformity requirements.

When evaluating the emissions associated with a proposed project, Riverside County uses the CEQA thresholds for criteria pollutants established by SCAQMD, which provide a minimum threshold for air pollutants by type to assess localized air quality impacts. **Table 1** presences the threshold for each pollutant by daily and annual thresholds. Thresholds are provided for both project construction and project operations once the project is complete and operational.

Table 1 Tons/Year of Pollutant by Source for CEQA Thresholds

Pollutant	Oxides of Nitrogen (NO_x)	Volatile Organic Compounds (VOCs)	Particulate Matter ,10 microns in diameter (PM_{10})	Particulate Matter ,2.5 microns in diameter ($PM_{2.5}$)	Oxides of Sulfur (SO_x)	Carbon monoxide (CO)	Lead (Pb)	Greenhouse Gases (CO_2e)*
Construction Emissions								
Daily Threshold (lb/day)	100	75	150	55	150	550	3	60,400.55
Annual Threshold (ton/yr)	18.25	13.69	27.38	10.04	27.38	100.38	0.55	11,023.10
Operation Emissions								
Daily Threshold (lb/day)	55	55	150	55	150	550	3	60,400.55
Annual Threshold (ton/yr)	10.04	10.04	27.38	10.04	27.38	100.38	0.55	11,023.10

Source: South Coast Air Quality Management District
*For industrial facilities, converted from 10,000 metric tons/year

3 Methodology

The California Emissions Estimator Model (CalEEMod), version 2022.1.1.28 was used to estimate the construction emissions associated with the proposed project and its elements. CalEEMod was originally developed for the California Air Pollutions Officers Association in collaboration with the SCAQMD as a modeling tool to assist local public agencies with estimating air quality impacts from local projects. CalEEMod calculates construction and operations emissions from land use development projects and construction emissions from linear projects. The model quantifies maximum daily, average daily, average quarterly, and annual emissions. For this project the model was used to calculate the short-term construction emissions from the vertical (areal) and linear project components associated with demolition, site preparation, grading, building construction, paving, and architectural coating from the following sources:

- Construction
  - Exhaust emissions from off-road construction equipment.
  - Exhaust emissions from on-road mobile vehicles (workers, vendors, hauling, and onsite trucks).
  - Fugitive dust emissions from grading, bulldozing, truck loading, demolition, and on-road vehicles traveling along paved and unpaved roads.
  - Evaporative volatile organic compound (VOC) emissions from architectural coating and paving activities.
  - Indirect GHG emissions from electricity consumption.
- Operations
  - Daily travel to and from the Tower by workers and visitors

CalEEMod incorporates the latest California Emissions Factors from where the project is located (EMFAC 2017). For the linear (Roadway) components (Bridge/Overpass Construction, Road Construction, Road Widening, and User Defined Linear), CalEEMod incorporates the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RCEM), Version 9.0.0 (last updated in 2018).

CalEEMod Land Use types do not include specific subtypes that fully encompass the construction of an airport ATCT, so a 'User Defined Industrial' subtype was selected to best represent the land use type of an airport ATCT. The CalEEMod a model run was carried out for the project and was determined to consist exclusively of vertical components for emissions analysis. The Vertical Components, phases, schedule, and duration are shown in

Table 2.

Table 2 Vertical Components and Assumptions

Phase Name	Phase Type	Start Date	End Date	Days/Week	Work Days per Phase
Site Preparation	Site Preparation	5/4/2027	5/6/2027	5 Days/Week	3
Grading	Grading	5/6/2027	7/28/2027	5 Days/Week	60
Construction	Building Construction	8/6/2027	3/23/2028	5 Days/Week	165
Paving	Paving	7/28/2027	8/5/2027	5 Days/Week	7
Architectural Coating	Architectural Coating	3/24/2028	4/13/2028	5 Days/Week	15

The CalEEMod model default assumptions for each activity construction equipment, and characteristics including engine tier, numbers horsepower, and load factors were then reviewed and used for the analysis. For this project, additional equipment was added to the default list to provide a more comprehensive equipment list specific to the construction of an ATCT. The equipment is modeled for each construction phase. The model defaults for fuel type, engine tier, and horsepower were used in conjunction with manually adjusted number/day and hours/day working times for each equipment type. **Table 3** presents a selection of equipment used for the building construction phase of the proposed project.

Table 3 ATCT Building Construction Phase CalEEMod Off-Road Construction Equipment List

Equipment Type	Fuel Type	Engine Tier	Number/Day	Hours/Day	Horsepower	Load Factor
Cranes	Diesel	Average	1	7	367	0.29
Forklifts	Diesel	Average	3	8	82	0.2
Generator Sets	Diesel	Average	1	8	14	0.74
Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37
Welders	Diesel	Average	1	8	46	0.45
Aerial Lifts	Diesel	Average	1	8	46	0.31
Air Compressors	Diesel	Average	1	8	37	0.48
Bore/Drill Rigs	Diesel	Average	1	8	83	0.5
Cement and Mortar Mixers	Diesel	Average	1	8	10	0.56
Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73
Crawler Tractors	Diesel	Average	1	8	87	0.43
Crushing/Proc. Equipment	Gasoline	Average	1	8	12	0.85
Dumpers/Tenders	Diesel	Average	1	8	16	0.38
Excavators	Diesel	Average	1	8	36	0.38
Graders	Diesel	Average	1	8	148	0.41
Other Construction Equipment	Diesel	Average	1	8	82	0.42
Other General Industrial Equipment	Diesel	Average	1	8	35	0.34
Other Material Handling Equipment	Diesel	Average	1	8	93	0.4
Pavers	Diesel	Average	1	8	81	0.42
Paving Equipment	Diesel	Average	1	8	89	0.36
Plate Compactors	Diesel	Average	1	8	8	0.43
Pressure Washers	Diesel	Average	1	8	14	0.3
Pumps	Diesel	Average	1	8	11	0.74
Rollers	Diesel	Average	1	8	36	0.38
Rough Terrain Forklifts	Diesel	Average	1	8	96	0.4
Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Rubber Tired Loaders	Diesel	Average	1	8	150	0.36
Scrapers	Diesel	Average	1	8	423	0.48
Signal Boards	Diesel	Average	1	8	6	0.82
Skid Steer Loaders	Diesel	Average	1	8	71	0.37

Scrapers	Diesel	Average	1	8	399	0.3
Signal Boards	Diesel	Average	1	8	6	0.82
Skid Steer Loaders	Diesel	Average	1	8	71	0.37
Surfacing Equipment	Diesel	Average	1	8	399	0.3
Sweepers/Scrubbers	Diesel	Average	1	8	36	0.46
Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37
Trencher	Diesel	Average	1	8	40	0.5

Sources: CalEEMod and Mead & Hunt

For On Road emissions, the number of trips for workers, vendors (water trucks, cement trucks), hauling to/from the site, and on-site vehicle use were then reviewed and updated by engineers familiar with the construction of ATCTs. The assumptions for fugitive dust created by equipment movement for each phase are presented **in Table 4**.

Table 4 Construction On-Road Fugitive Dust Assumptions

	Percent (%) of Travel on Paved Roads				Roadway Characteristics			Vehicle Characteristics	
Phase Name	% Pave Worker	% Pave Vendor	% Pave Hauling	% Pave Onsite Truck	Road Silt Loading (g/m^2)	Material Silt Content (%)	Material Moisture Content (%)	Average Vehicle Weight (tons)	Mean Vehicle Speed (mph)
Site Preparation	100	100	100	0	0.1	8.5	0.5	2.4	40
Grading	100	100	100	0	0.1	8.5	0.5	2.4	40
Architectural Coating	100	100	100	0	0.1	8.5	0.5	2.4	40
Construction	100	100	100	0	0.1	8.5	0.5	2.4	40
Paving	100	100	100	0	0.1	8.5	0.5	2.4	40

Once the project is operational the following conservative assumptions were used for the operational emissions analysis.

- Two air traffic controllers on duty at all times/six per day (in most cases, only one controller will be present)
- Three shifts per day
- Twelve daily trips per day (six work-to-home trips and six home to work trips per day (2 trips per worker) with average trip distance of 27.98 miles per trip (from CalEE inputs for Riverside County)
- Six work-to-other trips per day for lunch etc. and 13.77 miles per trip
- Two other-to-other trips per day for visitors and other miscellaneous trips.
- 80 percent of trips made by private vehicles and 20 percent made by light duty trucks

4 Modeling Results and Conclusion

Table 5 provides a comparison of the construction project level emissions for each criteria pollutant alongside the thresholds established by SCAQMD (provided in Table 1). **Table 6** provides the operational emissions for ATCT operations.

As shown, the project level emissions for all the criteria pollutants fall well below the *de minimis* thresholds; therefore, the proposed project is presumed to conform, and a formal General Conformity Determination is not required. In addition, the proposed project would not significantly affect air quality, because no criteria pollutant would exceed its respective threshold. The operations emissions also fall well below the CEQA Thresholds.

Table 5. Summary of Construction Emissions and CEQA Thresholds

Pollutant	NO_x	VOC/ROG	PM_{10}	$PM_{2.5}$	SO_x	CO	CO_2e
Construction Emissions Thresholds							
Daily Threshold (lb/day)	100	75	150	55	150	550	60,400.55
Annual Threshold (ton/yr)	18.25	13.69	27.38	10.04	27.38	100.38	11,023.10
Estimated Unmitigated Construction Emissions							
Daily (lb/day)	12.59	12.59	5.07	1.53	0.05	42.11	5641.15
Annual (ton/yr)	2.30	2.30	0.92	0.28	0.01	7.68	933.96

Table 6 Summary of Operations emissions and CEQA Thresholds

Pollutant	NO_x	VOC/ROG	PM_{10}	$PM_{2.5}$	SO_x	CO	CO_2e
Operation Emissions Thresholds							
Daily Threshold (lb/day)	55	55	150	55	150	550	60,400.55
Annual Threshold (ton/yr)	10.04	10.04	27.38	10.04	27.38	100.38	11,023.10
Estimated Unmitigated Operations Emissions							
Daily (lb/day)	3.66	0.86	1.35	0.64	0.01	6.37	1158.93
Annual (ton/yr)	0.67	0.16	0.25	0.12	0.00	1.16	191.87

APPENDIX C
BIOLOGICAL RESOURCE ASSESSMENT AND JURISDICTIONAL DETERMINATION

Jacqueline Cochran Regional Airport

Air Traffic Control Tower Siting

Biological Resource Assessment & Jurisdictional Delineation

prepared for

Mead and Hunt
180 Promenade Circle, Suite 240
Sacramento, California 95834
Contact: Lisa Harmon
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February 2024

Caskey
biological consulting

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Appendix A Special-Status Species Evaluation Tables

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Appendix C Plant and Wildlife Observations

1 Introduction

Caskey Biological Consulting, LLC (Caskey) prepared this biological resource assessment and jurisdictional delineation report to document the existing conditions for the Jacqueline Cochran Regional Airport (TRM) Air Traffic Control Tower (ATCT) Siting Project (Project) and to evaluate the potential for Project-related impacts to sensitive biological resources and waterways.

The purpose of this document is to provide technical information on the Project site and survey buffers (Study Area), and to determine to what extent the Project may impact special-status species and sensitive natural communities.

1.1 Project Location

The Study Area is located in the City of Thermal within the TRM airfield. Regionally, the Study Area is in the central portion of Riverside County (Figure 1). The approximate center of the Project site is at latitude 33.62747°N and longitude -116.15287°W (WGS84) (Figure 2) and is located within the *Indio, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 3). The Project site elevation ranges between approximately 125 and 135 feet (ft.) below mean sea level (msl).

1.2 Project Description

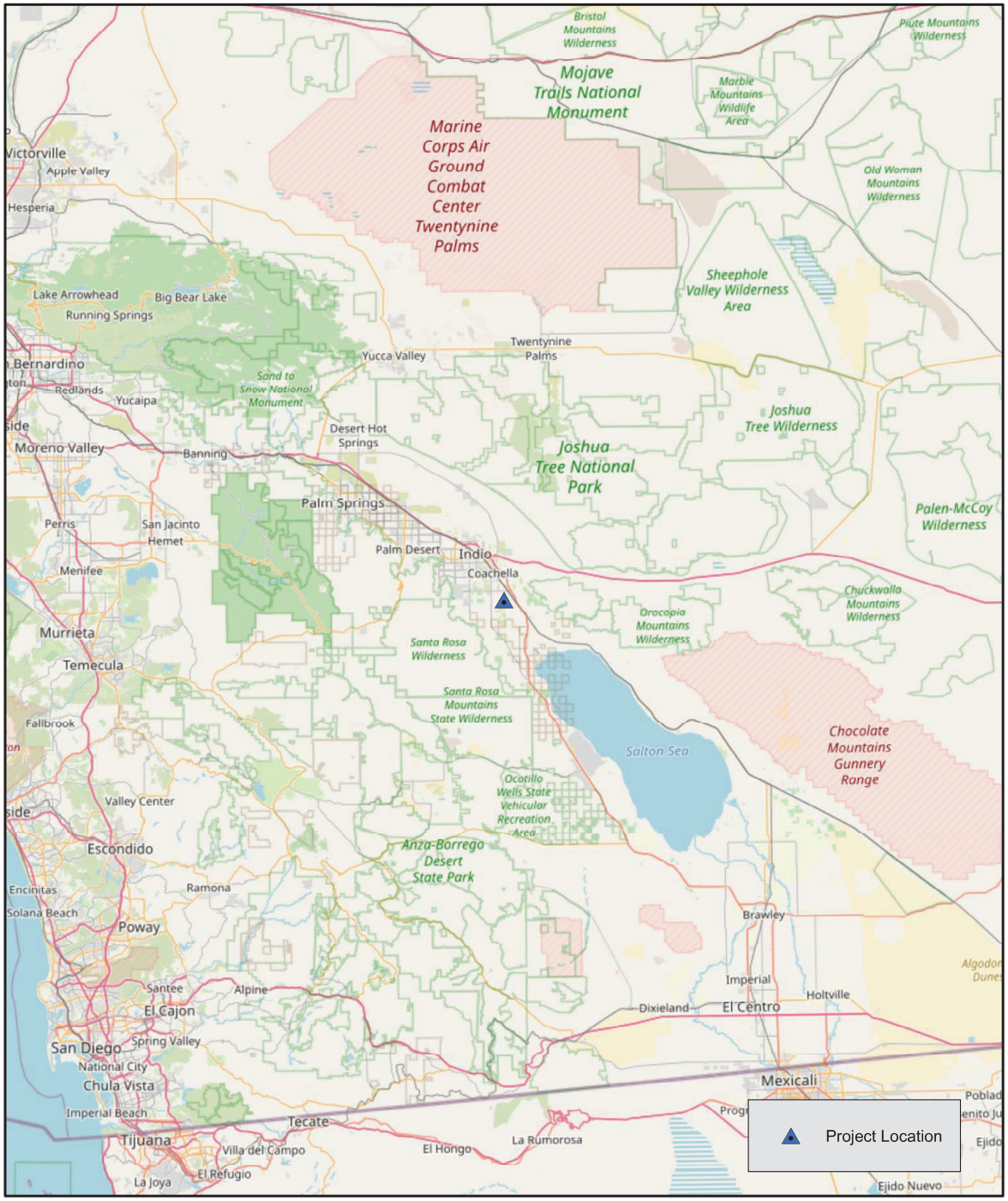
The Project will involve the construction of a new ATCT within the TRM airfield. Currently, Riverside County, the owner and operator of TRM, is conducting an assessment on three potential locations for the new ATCT.

Proposed ATCT Site No. 1 is located east of Runway 17/35 within the Study Area. The site is approximately 1,100 feet east of the runway centerline and is accessible from an unnamed airport road that intersects with Polk Street which runs parallel to the eastern edge of the Study Area and airport boundary. ATCT construction would require a paved parking area, additional paved interior road to connect the site to the airport access road, security fencing, and lighting (Figure 2).

Proposed ATCT Site No. 2 is located east of Runway 17/35 and south of Proposed Site 1 within the Study Area. The site is approximately 1,100 feet east of the runway centerline and is accessible from an unnamed airport road that intersects with Polk Street which runs parallel to the eastern edge of the Study Area and airport boundary. ATCT construction would require a paved parking area, additional paved interior road to connect the site to the airport access road, security fencing, and lighting(Figure 2).

Proposed ATCT Site No. 3 is located east of Runway 17/35 and south of Proposed Site 2 within the Study Area. The site is approximately 1,100 feet east of the runway centerline and is accessible from an unnamed airport road that intersects with Polk Street which runs parallel to the eastern edge of the Study Area and airport boundary. ATCT construction would require

a paved parking area, additional paved interior road to connect the site to the airport access road, security fencing, and lighting (Figure 2).



Caskey biological consulting

FIGURE 1
Regional Location

DATE: February 22, 2024
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI (feet)
SOURCE: ESRI Open Street Map, CBC

PROJECT:
Jacqueline Cochran Regional Airport
Air Traffic Control Tower Siting

Figure 1 - Regional Map

Figure 2 - Study Area Map

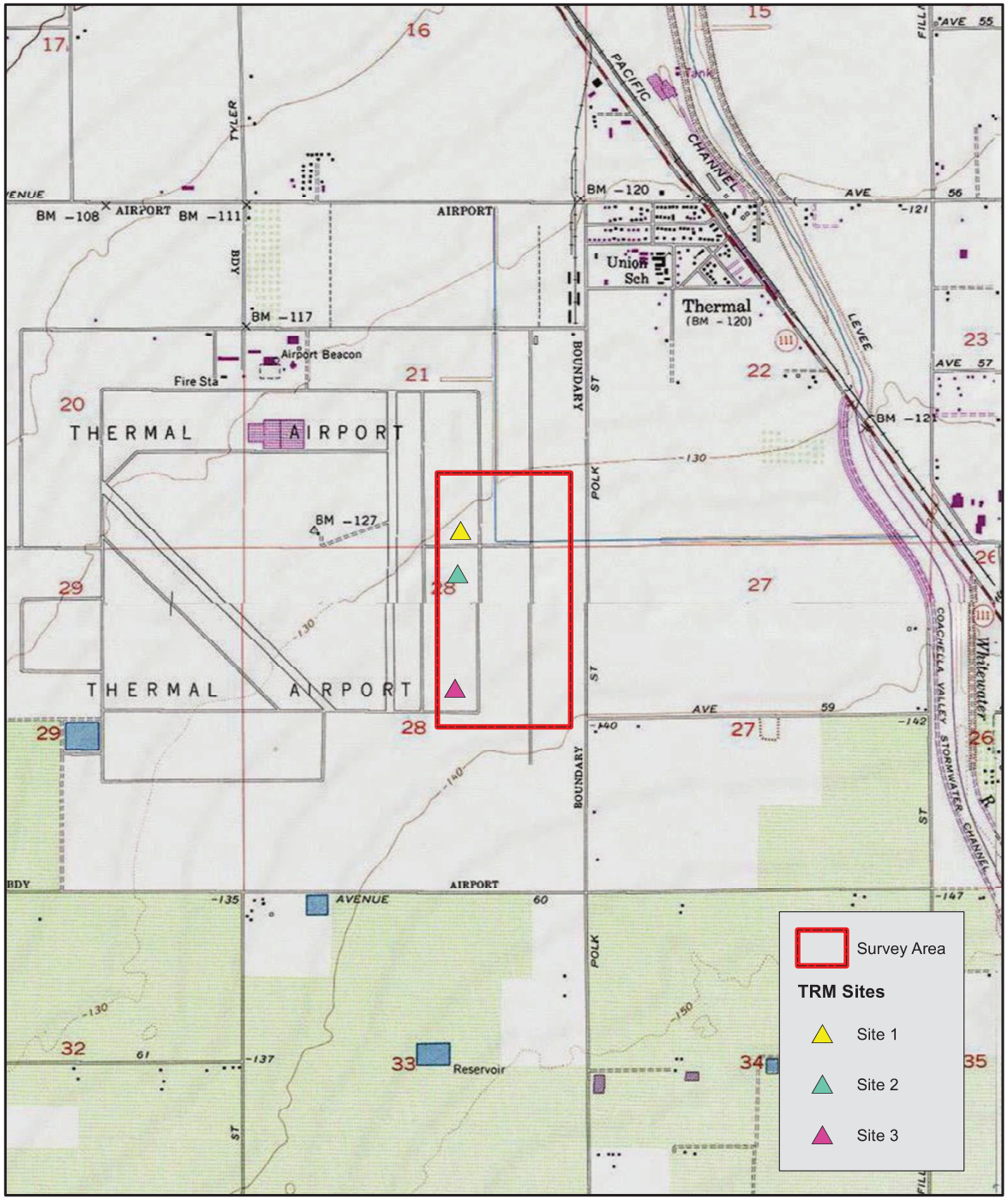


FIGURE 3
Work Area
USGS Topographic Map

DATE: February 22, 2024
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI (feet)
SOURCE: ESRI USA Topo Maps, CBC

PROJECT:
Jacqueline Cochran Regional Airport
Air Traffic Control Tower Siting

Figure 3 – Work Area Topographic Map

2 Methodology

2.1 Database and Literature Review

Prior to conducting the field surveys, thorough literature review and records searches were conducted to determine which special-status biological resources may potentially occur on or within the vicinity of the survey area. Previous special-status plant and wildlife species occurrence records within the USGS *Indio* quadrangle were determined through queries of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system (IPaC; USFWS 2024), CDFW California Natural Diversity Database (CNDDB, CDFW 2024a), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2024a). All federally- and state-listed, fully protected species (FP), Species of Special Concern (SSC), Watch List (WL), and plants with a California Rare Plant Ranking (CRPR) of 1-4 that could be present based on the record search were evaluated. Species were not discussed if there is no record of occurrence, or the species has been extirpated within one mile of the proposed action area. The results from these scientific database queries were compiled into a table provided in Appendix A. In addition to the above sources, Caskey reviewed aerial imagery depicting the Project site (Google Earth 2024), the Web Soil Survey (United States Department of Agriculture, Natural Resources Conservation Service [USDA NRCS] 2024), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Wetland Geodatabase (USFWS 2024), and other available background information.

2.2 Regulatory Overview

Regulated or sensitive biological resources and potentially jurisdictional waterbodies studied and analyzed herein include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, and non-wetland and wetland waters. Regulatory authority over biological resources and jurisdictional waterbodies is shared by federal, state, and local authorities.

2.2.1 Special-Status Plant Species and Communities

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA);
- Species listed or candidates for listing as rare, threatened, or endangered under the California Endangered Species Act (CESA) or Native Plant Protection Act (NPPA);
- Plant species with a California Rare Plant Rank (CRPR) of 1-4; and
- Sensitive Natural Communities under CDFW (2024b) and California Native Plant Society (CNPS).

2.2.2 Special-Status Wildlife Species

For the purposes of this report, special-status species include:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA);
- Species listed or candidates for listing as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Species designated as Fully Protected (FP) by Fish and Game Code (CFGC) Sections 3511, 4700, 5050, and 5515;
- Species identified as Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- Species designated as Watch List (WL) by the CDFW;
    - WL defined as taxa that were previously designated as SSC, but no longer merit that status, or which do not yet meet SSC criteria, but for which there is a need for additional information to clarify status (CNDDB, 2024b); and
- Avian species protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act.

2.2.3 Non-Wetland Waters of the United States

The United States Army Corp of Engineers (USACE) defines non-wetland waters of the U.S. (WOTUS) in the Arid West Region by determining the ordinary high water mark (OHWM) in stream channels. The OHWM is defined in 33 CFR 328.3€ as:

> *"…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."*

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WOTUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

2.2.4 Wetland Waters of the United States

According to routine delineation procedure within the *Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b), three indicators are used to classify an area as a wetland under the jurisdiction of the USACE: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soil saturation, at least seasonally (wetland hydrology).

The 2020 USACE National Wetland Plant List was used to determine the indicator status of the examined vegetation by the following indicator status categories: Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland (FACW), and Obligate Wetland (OBL).

Additionally, Caskey evaluated sources of water, potential connections and distances to traditional navigable waters (TNWs), and other factors that affect whether waters qualify as WOTUS under current regulations. Due to recent efforts by the USACE to replace the Clean Water Rule with the pre-existing regulations and guidance, specific attention was dedicated during the survey to any features where jurisdictional status would be affected by the regulatory changes.

2.2.5 Waters of the State

The State Water Resources Control Board (SWRCB) has formally implemented the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019)*, which provides a wetland definition, framework for determining if a wetland is a water of the State, and wetland delineation procedures. The SWRCB defines an area as a wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland. The SWRCB Procedures only apply to wetlands, and they do not include updated definitions or delineation methods for non-wetland aquatic features.

The limits of waters of the State, as defined under the Porter-Cologne Act (California Water Code section 13000 et seq.), were determined by first examining the topography and morphology to identify those features with an OHWM. The extent of waters of the State was delineated within these features as the boundaries of the streams/channels OHWM, coterminous with USACE's jurisdiction.

2.2.6 CDFW Streams and Riparian Habitat

The extent of potential streambeds, streambanks, and riparian habitat subject to CDFW jurisdiction under Section 1600 et seq. of the California Code, Fish and Game Code was delineated by reviewing the topography and morphology of potentially jurisdictional features to determine the outer limit of riparian vegetation, where present, or the tops of banks for stream features.

2.3 Field Survey

Caskey principal biologist, Jason Caskey, conducted a site visit and field survey on February 14, 2024. The Study Area, measuring approximately 183 acres, included the anticipated area of disturbance and a 100-foot buffer. Temperatures ranged from 61-64°F, and wind ranged from 2 to 5 miles per hour. The survey included walking meandering transects throughout the entirety of the Study Area to document the existing site conditions and to identify potentially jurisdictional waterbodies, including any potential wetlands and non-wetlands waters exhibiting an OHWM that could constitute WOTUS or WOS, along with associated riparian resources. During the survey, top of bank, including any associated riparian habitat, OHWM, and other observation points were mapped using FieldMaps for ArcGIS connected to a Geode + GNSS submeter unit and antenna global positioning system.

The potential for presence of sensitive biological resources, including sensitive plant and animal species, sensitive plant communities, and habitat for nesting birds protected by Federal and State laws were also evaluated. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species listed in the USFWs IPaC consultation report, species occurrence records within three-mile radius of the Study Area from the CNDDB, and the survey results of the Study Area. The potential for each special-status species to occur in the Study Area were evaluated according to the following criteria:

- **Absent.** Few or none of the habitat components meeting the species requirements are present (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality, no documented CNDDB species occurrences within five miles of project, or documented occurrence is extirpated or species would have been identified on-site during biological surveys (focused-level, protocol-level, or otherwise), if present. The species is not likely to be found on the site.
- **Unlikely to Occur**. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a low probability of being found on the site.
- **Likely to Occur.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a moderate to high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last five years).

Representative photos from the site visits are provided in Appendix B. During the survey, an inventory of all plant and animal species observed was compiled and is provided in Appendix C.

3 Existing Site Conditions

This section summarizes the results of the literature review, habitat assessment, and jurisdictional delineation. Discussions regarding the general environmental setting, vegetation communities present, plants and animals observed, potential special-status species issues, soil types, regional and local hydrology, and other possible constraints regarding the biological resources within the Study Area are presented below. Representative photographs of the Study Area are provided in Appendix B and a complete list of all plant and animal species observed on site during the field survey is provided in Appendix C.

The Study Area is located in Thermal, California, within the TRM Airport. Land uses in and around the Study Area consist of an airfield, airplane hangars, residential apartments, and agricultural fields.

3.1 Vegetation Communities and Land Cover Types

Vegetation communities and land cover type in the Study Area include arrow weed thickets (Table 1) (Figure 4). For a full list of vegetation observed during the field survey, please refer to Appendix C.

- **Arrow Weed Thickets**: This native community was present through the entirety of the Study Area and is the main cover type within the proposed work area. Arrow weed (*Pluchea sericea*) was the dominant species with associated species primarily consisting of other native and non-native shrub and grass species such as big saltbush (*Atriplex lenitofrmis*), saltcedar (*Tamarix ramosissima*) and alkali jimmyweed (*Isocoma acradenia*). The area containing the arrow weed thicket is characterized as an alkali sink. Alkali sink communities have a characteristically undulating surface composed of low “sinks” devoid of perennial vegetation where water ponds, surrounded by higher micro-uplands which support perennial grasses and shrubs. These sinks are often located in low desert basins in which water collects and evaporates, leaving behind a salty soil. Vegetation often associated with alkali sinks often have a tolerance for high salt concentrations in the soil and are characterized as halophytes.

Table 1 - Vegetation Communities and Land Cover Types within the Study Area

Vegetation Community/ Cover Types	Acreage	Global/State Sensitivity[1]
Arrow weed thicket	183.65	G4/S3
Total	**183.65**	

G4 = apparently secure outside of California; S3 = vulnerable in California, but secure outside California (CDFW 2024b).

3.2 Soils

The USDA NRCS Web Soil Survey depicts four soil units within the Study Area: Gilman fine sandy loam, 0 to 2 percent slopes, Gilman silt loam wet, 0 to 2 percent slopes, Indio fine sandy loam wet, and Indio very fine sandy loam wet.

Gilman fine sandy loam, 0 to 2 percent slopes (GcA) is a moderately well-drained alluvium soil found generally within alluvial fans. GcA has a typical soil profile of fine sandy loam from 0 to 8 inches and stratified loamy sand to silty clay loam from 8 to 60 inches. The soil is not rated as hydric (USDA NRCS 2024).

Gilman silt loam wet, 0 to 2 percent slopes (GfA) is a moderately well-drained alluvium soil found generally within alluvial fans. GfA has a typical soil profile of silt loam from 0 to 8 inches and stratified loamy sand to silty clay loam from 8 to 60 inches. The soil is not rated as hydric (USDA NRCS 2024).

Indio fine sandy loam wet (Ir) is a moderately well-drained alluvium soil found generally within alluvial fans. Ir has a typical soil profile of fine sandy loam from 0 to 10 inches and very fine sandy loam from 10 to 60 inches. The soil is not rated as hydric (USDA NRCS 2024).

Indio very fine sandy loam wet (It) is a moderately well-drained alluvium soil found generally within alluvial fans. It has a typical soil profile of very fine sandy loam from 0 to 60 inches. The soil is not rated as hydric (USDA NRCS 2024).

3.3 Hydrology

The Study Area is located within the Lower Whitewater River Hydrological Unit Code (HUC) 1810020108. The Lower Whitewater River watershed, within the Whitewater River subbasin, contains the Whitewater River, which drains an area encompassing approximately 1,500 square miles. Flows from stormwater run-off collects in Whitewater River where they flow southeast to the Salton Sea within the Sonoran Desert. The Whitewater River's terminus is at the Salton Sea located in Riverside County, California (USGS 2024).

Caskey reviewed the USFWS National Wetlands Inventory (NWI) and the USGS National Hydrography Dataset prior to conducting the delineation. There were no mapped areas indicating potential wetlands or waterways within the NWI or National Hydrography Dataset database search.

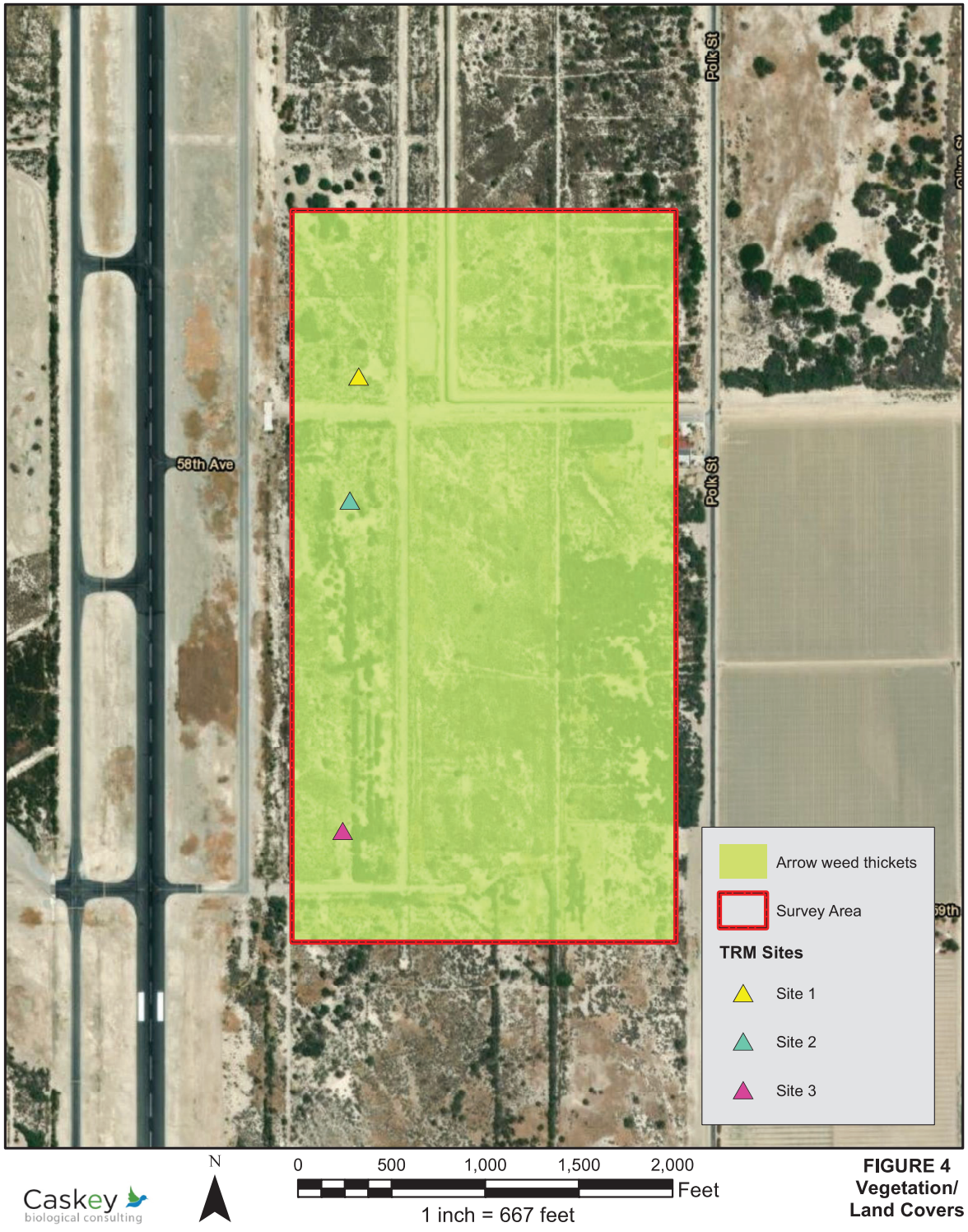


Figure 4 - Vegetation/Land Covers Map

3.4 Observed Wildlife

No special-status species were observed within the Study Area during the biological resource assessment. Observed avian species included, greater roadrunner (*Geococcyx californianus*), white-crowned sparrows (*Zonotrichia leucophrys*), mourning dove (*Zenaida macroura*), and American kestrel (*Falco sparverius*). Abundant signs of coyote (*Canis latrans*) in the form of scat and tracks were observed within the Study Area. See Appendix C for a full list of species observed.

4 Results

This section discusses the findings of the biological resource assessment and jurisdictional delineation conducted within the Study Area. The criteria used to evaluate potential Project-related impacts to biological resources are presented in Section 2.3. For a complete evaluation of all species with a potential to occur, please refer to Appendix A.

4.1 Special-Status Species

4.1.1 Special-Status Plant Species

According to the CNDDB and CNPS three-mile radius search, one (1) special-status plant species is known to have the potential to occur within the vicinity of the Study Area (Appendix A) while an additional species was identified by the USFWs IPaC system. The following 1B, 2B, and federally or state listed special-status plant species with records within three miles of the Study Area that were reviewed are shown below:

- Chaparral sand-verbena (*Abronia villosa* var*. aurita*), CRPR 1B.1
- Coachella Valley milk-vetch (*Astragalus lentiginosus* var*. coachellae*), Federally Endangered, CRPR 1B.2.

Based on recent species records, the lack of suitable habitat, and the results of the field survey, none of the species identified above have the potential to occur

4.1.2 Special-Status Wildlife Species

According to the CNDDB three-mile radius search, five (5) special-status wildlife species are known to occur or have the potential to occur within the vicinity of the Study Area (Appendix A) and five additional special-status species were identified by the USFWs IpaC system. The following special-status wildlife species with records within three-miles of the Study Area that were reviewed are shown below:

- burrowing owl (*Athene cunicularia*) CDFW SSC
- Monarch butterfly (*Danaus plexippus*), Federal candidate
- Crissal thrasher (*Toxostoma crissale*) CDFW SSC
- least Bell's vireo (*Vireo belli pusillus*) Federally Endangered, State Endangered
- vermilion flycatcher (*Pyrocephalus rubinus*) CDFW SSC
- western yellow bat (*Lasiurus xanthinus*) CDFW SSC
- Peninsular big horn (*Ovis canadensis 14elson*) Federally Endangered
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis)* Federally Endangered
- Coachella Valley fringe-toed lizard (*Uma inornata*), Federally threatened, State Endangered
- desert tortoise (*Gopherus agassizii*), Federally Threatened, State Threatened

Of the ten (10) species reviewed, four (4) special-status species, the monarch butterfly, Crissal thrasher, least Bell's vireo, and vermillion flycatcher, have the potential to occur within the Study Area based on the presence of suitable habitat and documented observations.

Monarch Butterfly

The monarch is a large butterfly that is currently a candidate species for listing under FESA. This species has a wide range of habitat types including prairies, meadows, grasslands, and even populated areas such as parks, neighborhoods, and back yards. Milkweed is the host plant for this species' larvae and is a requirement for suitable habitat. Large, mature trees for roosting are required for overwintering habitat requirements. During the biological resource assessment, no milkweed was observed, nor were there any large mature trees in the area that could provide overwintering habitat. Any future potential for the species to occur is likely limited to flyovers as the site is lacking many of the qualities needed for suitable habitat. Likewise, the species was not observed during the habitat assessment and is considered unlikely to occur.

Crissal Thrasher

The Crissal thrasher is a CDFW-listed species of special concern. This species occupies a relatively large variety of desert riparian and scrub habitats. The common factor, regardless of habitat type and species of shrub, is dense, low scrubby vegetation. Near the Salton Sea area, habitat loss and fragmentation due to agricultural and urban development and the invasive tamarisk has resulted in the Crissal thrasher becoming increasingly local and uncommon (Patten et al. 2003). According to the CNDDB, a Crissal thrasher was last observed within 3-miles of the Study Area in 1922, however, the eBirds database shows multiple observations as recently as 2020. Based on the amount of tamarisk within the Study Area and the negative field survey results, the proposed action is unlikely to have an impact on the Crissal Thrasher. This species is considered unlikely to occur.

Least Bell's Vireo

Least Bell's vireo, a federally and state endangered bird, is reported to primarily inhabit riparian habitat along the coast and western edge of the Mojave Desert. The least Bell's vireo requires dense riparian shrubbery preferably where flowing water is present. Vegetation characteristics of riparian stands between five to ten years of age are most suitable for nesting least Bell's vireo (Kus, 2002). The study area does contain some areas of moderately dense riparian vegetation, including salt cedar and arrow weed, within the alkali sink areas. While some of the habitat components were observed, there have not been any records of this species occurring within 3-miles of the Study Area. Any observation of the species would likely be limited to a flyover. This species has a low probability of being found onsite and is unlikely to occur.

Vermillion Flycatcher

The vermillion flycatcher is a CDFW-listed species of special concern and occupies arid scrub, farmlands, savanna, agricultural areas, and riparian woodland associated with surface water.

The vermillion flycatcher avoids dense riparian growth, preferring to stay within open habitats. According to the CNDDB, vermillion flycatcher was last observed within 3-miles of the Study Area in 1948. The Study Area does contain riparian species and there are agricultural fields within the vicinity. Caskey Biological's principal biologist, Jason Caskey, has directly observed the species during past work at the TRM airport as recently as 2016. Due to past observations and habitat types within the airfield and vicinity, this species is considered likely to occur.

4.1.3 Migratory Birds

Nesting birds are protected under CFGC and MBTA. The non-native grasslands and coastal sage scrub habitats observed within the Study Area could be used by numerous species of nesting birds protected under CFGC. Additionally, there are numerous structures near the laydown area and access entry points that could provide nesting opportunities. The survey was conducted inside of the nesting bird season (February 15 – August 31) and suitable nesting habitat was observed to be present within the Study Area.

4.2 Sensitive Plant Communities

According to the CNDDB three-mile radius search, no sensitive natural communities have been documented within the vicinity of the Study Area.

4.3 Critical Habitats

The Study Area is not located within USFWS-designated critical habitat (USFWS 2024).

4.4 Potentially Jurisdictional Areas

There were no potentially jurisdictional waterways or wetlands located within the Study Area.

5 Discussion and Conclusion

This section discusses the results of the literature and database review, the biological resource assessment, and jurisdictional delineation. Based on the literature and data review and the results of the habitat assessment and jurisdictional delineation, it is reasonable to conclude that there is minimal potential for special-status plant and/or wildlife species to occur within the Study Area. There were no non-wetland or wetland waters that would be considered jurisdictional observed within the Study Area. The criteria used to evaluate potential Project-related impacts to biological resources are presented in Section 2.3.

5.1 Special-Status Species

5.1.1 Special-Status Plant Species

The Study Area does not contain any of the habitat requirements including sand dunes, blow sand, or creosote bush scrub, for the two special-status plant species identified during the literature and database review. All special-status species are considered absent from the Study Area. No other special-status plant species were observed during the habitat assessment. The analysis of potential for occurrence is based on habitat suitability along with IPaC and CNDDB occurrences within a three-mile radius.

5.1.2 Special-Status Wildlife Species

As discussed in Section 4.1.2, four special-status animal species, the monarch butterfly, least Bell's vireo, Crissal thrasher, and vermillion flycatcher have the potential to occur in the Study Area based upon known ranges, habitat preferences for the species, and species occurrence records in the vicinity of the Study Area, as documented in the CNDDB, IPaC, and other records. Milkweed, the primary food source for the Monarch butterfly larvae, was absent during the habitat assessment. However, large, mature eucalyptus were observed in the vicinity of Study Area that could provide overwintering habitat thus observation would likely be limited to a flyover. Dense shrubs were observed in the Study Area, but the amount of saltcedar observed would likely deter Crissal thrashers from being onsite thus making the species unlikely to occur. There were some riparian species observed in the Study Area and some riparian habitat in the near vicinity, but outside of the Study Area, that would be preferred by the least Bell's vireo. Any observation of the species would likely be limited to flyovers. Lastly, there are open spaces on the edge of dense shrubbery within the Study Area as well as open agricultural fields in the near vicinity that would be preferred habitat for the vermillion flycatcher. Principal biologist, Jason Caskey, has directly observed the species at the TRM airport in the past thus making the species potential likely to occur. No other special-status wildlife species or their sign was observed during the habitat assessment.

5.2 Potentially Jurisdictional Waterbodies

No wetland and non-wetland waters of the U.S., waters of the State, or CDFW streams and riparian habitat, occur within the Study Area.

6 References

Calflora. 2024. Information on wild California plants for conservation, education, and appreciation. Berkeley, CA. Updated online and accessed via: www.calflora.org.

California Department of Fish and Wildlife (CDFW). 2024a. California Natural Diversity Database, Rarefind V. Accessed February 2024.

_____. 2024b. Vegetation Classification and Mapping Program's current list of vegetation Alliances, Associations, and Special Stands, and their Global and State rarity ranks. Accessed via: wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities.

California Native Plant Society (CNPS). 2024a. Inventory of Rare and Endangered Plants. V.7-08c-Interim 8-22-02. Updated online and accessed via: www.rareplants.cnps.org.

Google Earth. 2024. Imagery date May 21, 2023.

Kus, B. 2002. Least Bell's Vireo (*Vireo bellii pusillus*). The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html

Patten, M. A.; McCaskie, G. and Unitt, P. 2003. Birds of the Salton Sea: Status, Biogeography, and Ecology. Univ Calif. Press, Berkeley

State Water Resources Control Board (SWRCB). 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

United States Army Corps of Engineers (USACE). 1987. Wetlands Delineation Manual, Technical Report Y-8. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. + append.

USACE. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.

USACE. 2008b. A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States. A Delineation Manual. Lichvar and McColley.

United States Fish and Wildlife Service (USFWS). 2024. National Wetlands Inventory. https://www.fws.gov/wetlands/

United States Geological Survey (USGS). 2024. Science In Your Watershed. https://water.usgs.gov/wsc/index.

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. Accessed February 2024. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

United States Geological Survey. 2023. National Hydrography Dataset. Accessed February 2024 via The National Map. https://viewer.nationalmap.gov/advanced-viewer/.

United States Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation online project planning tool. Available at: https://ecos.fws.gov/ipac.

Appendix A: Special-Status Species Evaluation Tables

Special-Status Plant Species in the Regional Vicinity of the Study Area

Scientific Name Common Name	Status Fed/State ESA CRPR Rank	Habitat Requirements	Potential to Occur	Rationale
Plants				
Abronia villosa var. *aurita* Chaparral sand-verbena	None/None 1B.1	Inhabits low, dry deserts primarily in creosote bush communities in well-drained sandy soils. Blooms between March and September.	Absent	The Study Area lacks what would be considered suitable habitat for the species.
Astragalus lentiginosus var. *coachellae* Coachella Valley milk-vetch	Endangered/ None/1B.2	Annual and perennial herb. Desert dunes and Sonoran desert scrub in sandy soils. Occurs between 130 and2,150 feet in elevation. Blooms from February to May.	Absent	The Study Area lacks what would be considered suitable habitat for the species.

CRPR (CNPS California Rare Plant Rank)

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3=Review List: Plants about which more information is needed

4=Watch List: Plants of limited distribution

CRPR Threat Code Extension

.1=Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Special Status Animal Species in the Regional Vicinity of the Project Site

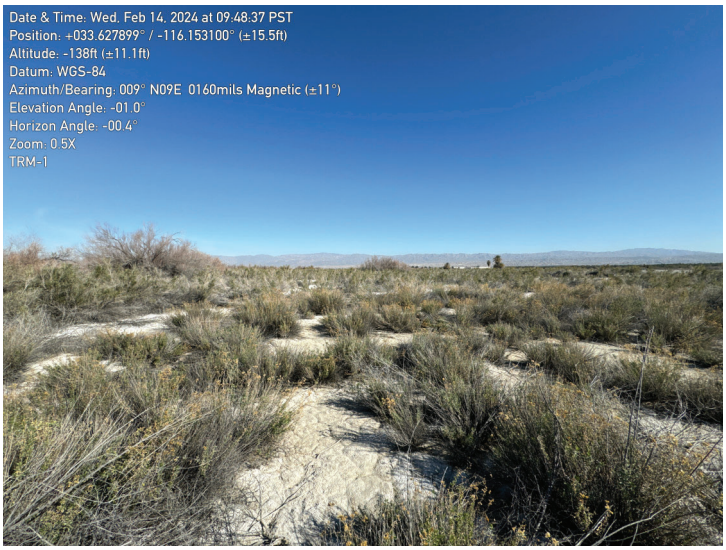
Scientific Name Common Name	Status Fed/State ESA/ CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Danaus plexippus monarch butterfly	Candidate/ None/None	Monarchs are observed across North America where host plants occur. Host plant genera include *Asclepias.*	Unlikely to occur	There were no milkweed, the host plant for the species, observed within the Study Area. According to the CNDDB records, there were no recorded observations within three-miles of the Study Area.
Birds				
Athene cunicularia burrowing owl	None/None SSC	Located in open areas with sparse vegetation including deserts, grasslands and urban environments. Nesting occurs in areas with high burrow densities associated with high mammal populations.	Absent	There was a lack of quality mammal burrows the species would require. There has been observations documented in CNDDB, but they are from 1929 and are considered outdated. No occupied burrows or species sign (scat, whitewash, pellets, etc) were observed during the habitat assessment.
Vireo belli pusillus least Bell's vireo	Endangered/ Endangered/ None	Found almost entirely in dense shrubs and trees in riparian woodland habitats in southern California. Nests in dense foliage in drainages	Unlikely to occur	There are some riparian species within the Study Area, but there is lack of flowing water and species records that would be required to support the species. Observations would likely be limited to flyovers.
Toxostoma crissale Crissal thrasher	None/None SSC	Inhabits a large variety of desert riparian and scrub habitats, with a preference for low, dense vegetation	Unlikely to occur	According to the CNDDB, there has not been an observation within 3-miles of the Study Area since 1922. However, the eBirds database show multiple observations as recently as 2020. There are areas with riparian vegetation, although, no observations of the species were made.

Scientific Name Common Name	Status Fed/State ESA/ CDFW	Habitat Requirements	Potential to Occur	Rationale
Pyrocephalus rubinus vermillion flycatcher	None/None SSC	Inhabits arid scrub, farmlands, savanna, agricultural areas, and riparian woodland. They are often associated with surface water.	Likely to occur	There are habitat components within the Study Area and vicinity that the species would require for habitation. While species records are lacking, the current consulting biologist has made an observation of the species at previous TRM project.
Rallus obsoletus yumanensis Yuma Ridgway's rail	Endangered/ None None	Inhabits regenerating freshwater marshes generally with mature cattails and bulrush for nesting and foraging	Absent	The Study Area lacks what would be considered suitable habitat for the species.
Mammals				
Lasiurus xanthinus Western yellow bat	None/None SSC	Inhabits palm tree oases and roosts in large, mature palm trees.	Absent	The Study Area does not contain any palm tree oases and is lacking suitable habitat for the species.
Ovis canadensis nelsoni peninsular bighorn sheep	Endangered/ Threatened none	Typically inhabit steep, mountainous terrain with high visibility and low density of vegetation.	Absent	The Study Area lacks what would be considered suitable habitat for the species.
Reptiles				
Uma inornata Coachella Valley fringe-toed lizard	Threatened/ Endangered None	Inhabits sparsely-vegetated arid areas with fine wind-blown sand including dunes, washes, and flats. Needs fine, loose sand for burrowing.	Absent	There are no dunes or blow sands required by the species. The Study Area lacks what would be considered suitable habitat for the species

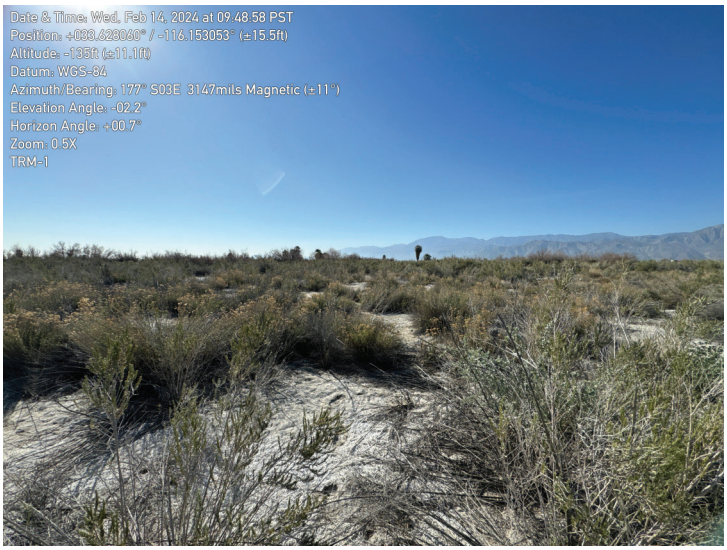
Scientific Name Common Name	Status Fed/State ESA/ CDFW	Habitat Requirements	Potential to Occur	Rationale
Gopherus agassizii desert tortoise	Threatened/ Threatened None	Inhabit a variety of habitats including desert washes, desert flats, bajadas, alluvial fans, rolling hills, rocky hills and valleys.	Absent	The Study Area lacks what would be considered suitable habitat for the species. Likewise, there are no species records within 3-miles of the Study Area.

Appendix B: Site Photographs

Caskey
biological consulting



View North - Tower Site 1



View South - Tower Site 1

View South - Tower Site 2

View North - Tower Site 2

View South - Tower Site 3

View North - Tower Site 3

View Northwest - General View of Study Area

View Southeast - General View of Study Area

Appendix C: Plant and Wildlife Observations

Plant Species Observed Within the Study Area

Scientific Name	Common Name
ANGIOSPERMS (EUDICOTS)	
ASTERACEAE	**SUNFLOWER FAMILY**
*Sonchus oleraceus**	common sowthistle
Isocoma acradenia	alkali goldenbush
Pluchea sericea	arrowweed
BRASSICACEAE	**MUSTARD FAMILY**
*Brassica nigra**	black mustard
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
*Salsola tragus**	Russian thistle
Suaeda nigra	bush seepweed
Atriplex lentiformis	big saltbush
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	redstem filaree
TAMARICACEAE	**TAMARISK FAMILY**
*Tamarix ramosissima**	saltcedar
ANGIOSPERMS (MONOCOTS)	
POACEAE	**GRASS FAMILY**
*Distichlis spicata**	saltgrass
*Bromus diandrus**	ripgut grass
*Bromus rubens**	red brome
ARECACEAE	**PALM FAMILY**
*Washingtonia robusta**	Mexican fan palm

*Non-Native Species, +Ornamental, Unlikely to be Invasive

Wildlife Species Observed Within the Study Area

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Haemorhous mexicanus	house finch	None	Native
Zenaida macroura	mourning dove	None	Native
Zonotrichia leucophrys	white-crowned sparrow	None	Native
Sturnus vulgaris	European starling	None	Introduced
Falco sparverius	American kestrel	None	Native
Corvus corax	common raven	None	Native
Mimus polyglottos	northern mockingbird	None	Native
Geococcyx californianus	greater roadrunner	None	Native
Callipepla californica	California quail	None	Native
Polioptila caerulea	blue-gray gnatcatcher	None	Native
Buteo jamaicensis	Red-tailed hawk	None	Native
Mammals			
Otospermophilus beecheyi	California ground squirrel	None	Native
*Canis latrans**	Coyote	None	Native

*observed indirectly via sign (i.e. scat, tracks)

APPENDIX D
CULTURAL RESOURCES ASSESSMENT

Cultural Resource Assessment for the Air Traffic Control Tower at the Jacqueline Cochran Regional Airport, near the Community of Thermal, Riverside County, California

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October 2024

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MANAGEMENT SUMMARY

The Riverside County Economic Development Agency's Aviation Division (EDA) proposes development of an air traffic control tower and associated parking and utilities at the Jacqueline Cochran Regional Airport (Project) in the community of Thermal, Riverside County, California. The proposed Project will require approval from the Federal Aviation Administration (FAA) and is a federal undertaking pursuant to Section 106 of the National Historic Preservation Act. Under contract to Mead & Hunt, Inc., Applied EarthWorks, Inc. (Æ) conducted a cultural resource assessment of the Project's Area of Potential Effects (APE) in accordance with Title 36 Code of Federal Regulations, Part 800. The FAA is the lead agency for Section 106 compliance and the Riverside County EDA is the lead agency for the purposes of the California Environmental Quality Act.

The purpose of the investigation was to determine whether the Project would affect historic properties or historical resources in the APE eligible for nomination to or listed on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), respectively. This report summarizes the methods and results of the cultural resource assessment of the APE. Æ's assessment includes a records search and literature review, a Sacred Lands File search with the Native American Heritage Commission (NAHC), and an archaeological survey of the approximately 47-acre APE.

The Eastern Information Center of the California Historical Resources Information System ceased operations indefinitely as of June 2024. Consequently, Æ completed an in-house literature and records search on August 26, 2024. The results indicated that 23 cultural resources have been documented within a 1-mile radius of the APE. Two of these cultural resources, the Cahuilla village of *Temal Wakhish* (site 33-000148) and the Thermal Army Air Field (site 33-020989), are documented within the APE.

Æ Senior Archaeologist Andrew DeLeon and Staff Archaeologist Reneé Elder Gonzalez completed an intensive pedestrian archaeological survey of the APE on August 27 and 29, 2024. No cultural remains associated with sites 33-000148 or 33-020989 were observed within the APE, which is heavily disturbed by grading and development of the airport. Given these conditions, there is a low likelihood that archaeological deposits or features will be found during construction; therefore, Æ recommends no further cultural resource management within the APE.

Results of the NAHC file search and Native American contact list are included to assist the FAA and Riverside County EDA with their consultation efforts.

Field notes documenting the current investigation are on file at Æ's Hemet office. A copy of this report and site record updates will also be submitted to the appropriate forthcoming information center, once it is established for Riverside County.

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1
INTRODUCTION

The Riverside County Economic Development Agency's Aviation Division (EDA) proposes the development of an air traffic control tower and associated parking and utilities within the Jacqueline Cochran Regional Airport (Project) in the community of Thermal, Riverside County, California. The Project will require approval from the Federal Aviation Administration (FAA) and is a federal undertaking pursuant to the National Historic Preservation Act (NHPA). The FAA is the lead agency for compliance with Section 106 of the NHPA. The Project also requires discretionary approval from the EDA and is therefore subject to the requirements of the California Environmental Quality Act (CEQA); EDA is the lead agency for compliance with CEQA. Under contract to Mead & Hunt, Inc., Applied EarthWorks, Inc. (Æ) conducted a cultural resource assessment of the Project's Area of Potential Effects (APE) in accordance with Title 36 Code of Federal Regulations (CFR), Part 800.

Æ Principal Investigator Joan George (B.S., Registered Archaeologist 28093) was responsible for overall quality control for the Project, and Æ Senior Archaeologist Andrew DeLeon (M.A., Registered Professional Archaeologist 17087) served as project manager. The report was compiled and written by Æ Staff Archaeologist Jessica Cochrane (B.A.). DeLeon and Æ Staff Archaeologist Reneé Elder Gonzalez completed the field survey.

For the purposes of this study, the Area of Potential Effects (a NHPA term) encompasses the Project Area Limits (a CEQA term). Consequently, "APE" is used throughout the remainder of this report.

1.1 PROJECT LOCATION AND DESCRIPTION

The Project is in the central portion of the community of Thermal, in Riverside County (Figure 1-1). Specifically, the Project is mapped within Sections 20, 21, and 28, Township 6 South, Range 8 East, as shown on the U.S. Geological Survey (USGS) Indio, California 7.5-minute topographic quadrangle map (Figure 1-2). Elevations within the APE range from approximately 135 feet to 160 feet below mean sea level (bmsl).

The potential tower site is west of Polk Street and encompasses 58th Avenue. The primary objective of the Project is to enhance the operational efficiency and safety of the Jacqueline Cochran Regional Airport. The FAA has designated Site No. 2 as the optimal location for the construction of a 448-square-foot hexagonal tower, which will stand at a height of 125 feet. The Project will cover a total area of 8.5 acres, including a 200-foot by 200-foot construction staging area. The air traffic control tower footprint will occupy 0.24 acres (10,404 square feet). The Project will provide 10 parking spaces, and a paved access road featuring a motorized security gate. Essential utilities, such as a water line for potable water, a sewer line for wastewater management, a stormwater system for runoff, and electrical and communication lines, will connect to the air traffic control tower to support operational functions. The maximum depth of ground disturbance during the construction phase is not expected to exceed 6 feet.

Figure 1-1 Project vicinity in Riverside County, California.

Figure 1-2 Project location on USGS Indio 7.5-minute topographic quadrangle.

1.2 REGULATORY CONTEXT

1.2.1 Federal Laws and Regulations

Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties. A historic property as defined in 36 CFR 800.16(l)(1) means any precontact or historical district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Undertakings include any federally funded, licensed, or permitted project (36 CFR 800.16[y]): In the context of a federally permitted undertaking, such as this Project, a historic property generally is at least 50 years old and meets one or more of the four NRHP criteria of historic significance:

A. That are associated with events that have made a significant contribution to the broad patterns of our history;

B. That are associated with the lives of persons significant in our past;

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important to prehistory or history.

In order to be eligible for nomination to the NRHP, the historic property also must possess integrity of location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4), so that it is considered a good representative of a significant historical theme or pattern. A consultant's role is to render a professional recommendation rather than an administrative determination of NRHP eligibility. In the case of this Project, the FAA in consultation with the State Historic Preservation Officer (SHPO) and Native American tribes, if applicable, will determine NRHP eligibility. If the SHPO, tribes, and FAA disagree about a resource's NRHP eligibility, the Advisory Council on Historic Preservation (ACHP) or the Keeper of the NRHP may become involved in the eligibility determination process, if requested.

If a cultural resource is determined to be an eligible historic property under 36 CFR 60.4, then Section 106 requires that the effects of the proposed undertaking be assessed and considered in planning the undertaking. According to 36 CFR 800, "Regulations of the ACHP Governing the Section 106 Review Process," the lead agency, the SHPO or the Tribal Historic Preservation Officer, and ACHP:

> should be sensitive to the special concerns of Indian tribes in historic preservation issues, which often extend beyond Indian lands to other historic properties. When an undertaking may affect properties of historic value to an Indian tribe on non-Indian lands, the consulting parties shall afford such tribe the opportunity to participate as interested persons. Traditional cultural leaders and other Native Americans are considered interested persons with respect to undertakings that may affect historic properties of significance to such persons [36 CFR 800:3].

1.2.2 State Laws and Regulations

The Project also requires discretionary approval from the EDA and is therefore subject to the requirements of CEQA. The CEQA Statute and Guidelines direct lead agencies to determine whether a project will have a significant impact on historical resources. A cultural resource considered "historically significant" is considered a "historical resource," if it is over 50 years of age and is included in a local register of historical resources or is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR) under any one of the following criteria (Title 14, California Code of Regulations [CCR], Section 15064.5):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Compliance with CEQA's cultural resource provisions typically involves several steps. Briefly, archival research and field surveys are needed, and identified cultural resources are inventoried and evaluated in prescribed ways. Precontact and historic archaeological sites, as well as standing structures, buildings, and objects deemed historically significant and sufficiently intact (i.e., historical resources), must be considered in project planning and development.

A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (14 CCR 15064.5[b]), and the lead agency is responsible for identifying potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource (14 CCR 15064.5[b]4).

1.3 AREA OF POTENTIAL EFFECTS

The APE encompasses approximately 47 acres within the existing Jacqueline Cochrane Regional Airport and consists of two discontiguous areas: one east of the runway (46 acres) and one west of the runway (0.2 acres). In addition, installation of approximately 7,371 linear feet of FAA communication line is also included in the APE.

1.4 REPORT ORGANIZATION

This report documents the results of a cultural resource investigation of the APE. Chapter 1 has described the Project and its location, defined the scope of the study, stated the regulatory context, and defined the APE. Chapter 2 presents the natural and cultural setting of the APE and surrounding region. Chapter 3 summarizes the results of the archaeological literature and records search and the Sacred Lands File (SLF) search with the Native American Heritage Commission (NAHC). Chapter 4 provides the cultural resource survey methods and results. Cultural resource

management recommendations are included in Chapter 5, followed by references in Chapter 6. The California Department of Parks and Recreation (DPR) 523-series recording forms are provided in Appendix A, and results of the SLF search are included in Appendix B.

2
SETTING

This chapter describes the precontact, ethnographic, and historical setting of the Project to provide a context for understanding the nature and significance of cultural resources identified throughout the region. The nature and distribution of human activities in the region have been affected by such factors as topography and the availability of water and natural resources. Therefore, prior to a discussion of the cultural setting, the environmental setting of the area is summarized below.

2.1 ENVIRONMENTAL SETTING

The Project is east of the Peninsular Ranges in the southern portion of the Coachella Valley at the western edge of the Colorado Desert. The Coachella Valley is bordered to the southwest by the San Jacinto and Santa Rosa mountains (part of the Peninsular Ranges) and to the northeast by the low, rolling Indio and Mecca hills. From the steep slopes of the San Jacintos surmounted by San Jacinto Peak at 10,804 feet above mean sea level (amsl), the desert floor descends sharply to sea level approximately 2 miles eastward at the City of Indio, northwest of the Project.

To the southeast, elevations gradually drop to 300 feet below mean sea level at the Salton Sea Basin. This basin has filled periodically throughout the Pleistocene and Holocene, when the Colorado River shifted its course near its mouth at the Gulf of California, flowing north into the basin, forming a large freshwater lake commonly known as precontact Lake Cahuilla. A major water source flowing through the central valley is the Whitewater River, which prior to the development of the Coachella Valley, drained the southern slope of the San Bernardino Mountains for thousands of years (Laflin 1998), flowing in a generally south-southeast direction 50 miles toward the Salton Sea. The Whitewater River was likely the largest perennial stream that entered the Salton Basin prior to European contact, replenishing the underground aquifer during nonlacustrine intervals. A few small streams, such as Snow, Chino, Tahquitz, and Andreas creeks, form high in the San Jacinto and Santa Rosa mountains, descending into the northern end of the Coachella Valley. Several minor drainages of ephemeral streams coming off the Mecca Hills are also evident across the landscape east of the APE. Additionally, there are numerous springs along the San Andreas fault zone at the southwestern base of the Indio Hills. These are usually marked by native fan palm oases.

Prior to the mid-1900s, the climate of the Project region was characterized by low relative humidity, very low rainfall, high summer temperatures of up to 125 degrees Fahrenheit, and mild winters. During the spring and late fall, high winds are common and are accompanied by blowing sand and dust. Precipitation occurs primarily during the winter months and varies radically from one area to another. Within the desert areas, the average annual rainfall is as sparse as 2.5 inches per year; however, at the higher elevations in the San Jacinto Mountains, the average annual precipitation may range from 10 inches to as much as 30 inches per year.

As the climate of the region is largely determined by topographic features, climate, in turn, largely dictates the character of the biotic environment exploited by native populations. Bean and Saubel (1972) described three primary life zones that were exploited by the Cahuilla, known

ethnographically to have occupied the Coachella Valley: Lower Sonoran, Upper Sonoran, and Transitional. Characteristic plants and animals found in these life zones are listed below.

The Lower Sonoran life zone, which extends from the desert floor to approximately 3,500 feet amsl, is characterized by low rainfall (about 4 inches per year), fine-textured alluvial to sandy soils, and xerophytic plant communities. Creosote bush and bur-sage are the dominant plants, replaced by saltbush in areas of more saline or alkaline soils. Adjacent to washes and ephemeral streams, desert willow, smoke tree, palo verde, desert ironwood, and catclaw are found. California fan palm, mesquite, screwbean, and arrowweed grow adjacent to more permanent water sources and in areas with a very shallow groundwater table. Frost-sensitive plants such as ocotillo, barrel cactus, cholla, century plant, creosote bush, and Mojave yucca exist on the well-drained slopes adjacent to the desert floor. Approximately 40 percent of the plant species exploited by the Cahuilla are found in this biotic region; the fruits of the fan palm and the flowers and pods of mesquite and screw bean were highly favored (Bean and Saubel 1972:13). Economically important animals found in this life zone include kangaroo rats, ground squirrels, wood rats, desert cottontail, and black-tailed jackrabbit; desert bighorn sheep are found at the upper reaches of this life zone.

The Upper Sonoran life zone, extending from 3,500 to 5,000 feet amsl, is characterized by warm summers and cold winters with rainfall averaging 15 inches annually. Pinyon pine and California juniper are the dominant plant species of this zone. Other species include red shank or ribbon wood, chamise, ironwood, antelope bush, scrub oak, ocotillo, manzanita, buckthorn, and barrel cactus. Approximately 45 percent of the food plant species used by the Cahuilla are found in this life zone, and pinyon pine nuts, manzanita, and elderberry were highly favored. Important animal resources found in this life zone include wood rats, kangaroo rats, black-tailed jackrabbit, ground squirrel, desert bighorn sheep, and mule deer.

The Transitional life zone, ranging from 5,000 to 7,000 feet amsl, is characterized by relatively cool summers and cold winters with an annual precipitation of 20–30 inches. This zone is composed primarily of coniferous forests containing scattered oak groves; willows and cottonwoods occur along stream courses. Common species include ponderosa pine, Jeffrey pine, incense cedar, bigcone spruce, manzanita, mountain mahogany, and elderberry. Probably the most important plant food species from this life zone are the black oak, manzanita, and elderberry. Approximately 15 percent of the plants utilized by the Cahuilla are found in this life zone. Important animal resources found in this life zone include mule deer and ground squirrel.

2.1.1 Lake Cahuilla

Environmental conditions in the Colorado Desert area have changed greatly during the past 10,000 years of human occupation. Probably the most important environmental change in the Colorado Desert in the past 2,000 years was the formation of precontact Lake Cahuilla, also known geologically as Lake Le Conte and historically as Blake's Lake or the Salton Sea. Lake Cahuilla formed numerous times throughout the Pleistocene and Holocene Epochs in response to the western diversion of the Colorado River into the Salton Trough. During each filling of Lake Cahuilla, freshwater was impounded north of the barrier created by the Colorado River Delta. The lake continued to fill until the water reached an altitude of 40 feet, the minimum crest of the delta at Cerro Prieto, where excess discharge would overflow into the Gulf of California (Waters

1983). Wilke (1976) calculated about 12 to 20 years would be required to fill Lake Cahuilla to an elevation of 40 feet if the lake were to receive the entire flow of the Colorado River, and 60 years would be required to completely desiccate the lake without input from the Colorado River.

The most recent documented shorelines of Lake Cahuilla extend from about 20 miles south of the international border with Mexico to just northwest of Indio (and northwest of the APE). Inundating the entire lower portion of the Coachella Valley, Lake Cahuilla was approximately 115 miles long, about 34 miles wide, and nearly 320 feet deep. During these periods of high water, the maximum elevation of the lake was 40 feet amsl (Wilke 1976:53). Lake Cahuilla offered an especially productive environment for aboriginal populations of the western Colorado Desert. When inflow from the Colorado River was sufficient to maintain a relatively stable lake level, extensive marshes would have formed around its margins and freshwater fish and freshwater shellfish populations would have flourished. Furthermore, Lake Cahuilla also was on the Pacific Flyway for migratory birds; hence, ducks, geese, and other migratory birds would have been available. It is likely that 30 years of progressive recession or lowering the surface of the lake by approximately 60 feet, would have sufficiently altered the chemical and ecological balance of the lake to all but eliminate its economically important plant and animal resources. However, as Lake Cahuilla gradually desiccated, mesquite thickets expanded to follow the retreating shoreline, allowing for different resource exploitation patterns by the precontact inhabitants of the region (Smith and Brock 1998).

The lacustrine chronology is important not only for understanding occupational sequences and changing land use, settlement, and subsistence strategies in Coachella Valley prehistory, but also for determining when volcanic glass was available from the Obsidian Butte source (Hughes 1986) near the southern end of the Salton Sea in Imperial County. In late precontact times, especially after A.D. 1000, lithic raw material from Obsidian Butte was used widely in Southern California. However, the source was inundated, and its glass was inaccessible whenever Lake Cahuilla's surface elevation was between 131 feet bmsl and 39 feet amsl (Schaefer and Laylander 2007). Thus, whether expanding or receding, the lake would have prevented access to Obsidian Butte glass.

2.2 PRECONTACT CHRONOLOGY

Excluding various controversial claims of human activity in the California deserts 20,000 to more than 100,000 years ago, as critically assessed by Moratto (1984:39–49) and Taylor et al. (1985), scholars have not yet determined when people actually first entered the Colorado Desert. Based on the facts that (1) fluted Clovis points and "Clovis-like" bifaces have been found throughout much of North America, including at dozens of sites in California (Dillon 2002; Moratto 1984; Rondeau 2015), (2) such artifacts evidently were produced as early as approximately 13,250–12,800 calibrated years before present (B.P.) (Waters and Stafford 2007:1123), and (3) evidence for pre-Clovis occupation has been found widely in South and North America (Adovasio and Pedler 2013; Collins et al. 2013; Graff et al. 2013; Jenkins et al. 2013; Waters et al. 2011), it seems quite probable that humans first arrived in southeastern California more than 130 centuries ago.

People who lived in this area witnessed great environmental changes. During the Pleistocene-to-Holocene transition, temperatures became warmer, precipitation declined, evapotranspiration

increased, and desert conditions spread northward from Mexico into the American Southwest. Preceding or coincident with these changes, the great Rancholabrean animals (megafauna) vanished, and a host of smaller desert-adapted creatures came to occupy the emerging arid environments (Grayson 2016; Kurten and Anderson 1980; Martin 2005). By middle Holocene times, the earlier steppe and woodland landscapes featuring numerous pluvial lakes had given way to xerophytic vegetation, dry lakebeds (playas), and sere desert landscapes.

The environmental changes were neither permanent nor unidirectional. Rather, they fluctuated throughout the Holocene epoch. As a result of variable climatic regimes and geomorphic conditions, droughts came and went; lakes appeared, filled, and receded; the species composition, density, and distribution of vegetation were dynamic; and the availability of faunal resources varied concomitantly. These environmental changes significantly affected human adaptive strategies and demographic patterns.

Many attempts have been made over the years to relate, classify, and determine the age of archaeological cultures in the California deserts (see Altschul 1993; Hall 2000; Laylander 2010; McDonald 1992; Rogers 1966; Schaefer 1994, 1995; Schaefer and Laylander 2007; Sutton 1996, 2011; Sutton et al. 2007; Warren 1984; Weide and Barker 1974). The following broad "periods" are generally accepted by most scholars:

- **Historical Period** (A.D. 1540–1850). The initial date for this period varies from one locality to another, depending on when contacts between Native Americans and outsiders began.

- **Late Prehistoric Period** (circa A.D. 700–1800). Various local cultural manifestations are recognized. In the Coachella Valley, Patayan I–III phases (previously called Yuman I–III) are assigned to this period. Recently, Sutton (2011) defined Peninsular I, II, and III phases of the Palomar Tradition within what was previously called Patayan III.

- **Late Archaic Period** (circa 2500 B.C.–A.D. 700). This interval coincides more or less with the Gypsum, Newberry, and Amargosa periods (Sutton 2011:Figure 2).

- **Early Archaic Period** (circa 6500–2500 B.C.). This is largely synonymous with the Pinto Period as used elsewhere in the deserts of southeastern California (see Schroth 1994).

- **Late Paleoindian Period** (circa 10,800–6500 B.C.). This period coincides with the Western Pluvial Lakes Tradition in interior Southern California (and in the Great Basin) and the related, perhaps consequential, San Dieguito Complex.

- **Middle Paleoindian Period** (circa 11,300–10,800 B.C.). The Clovis cultural tradition was widespread in North America during this period. Early manifestations of the Western Stemmed Point Tradition also appeared during this interval.

- **Early Paleoindian Period** (pre-11,300 B.C.). This is a yet undefined pre-Clovis period as indicated by the discovery of pre-Clovis cultural remains elsewhere in North (as well as South) America (cf. Graff et al. 2013; Waters et al. 2011).

2.2.1 Late Prehistory

The Late Prehistoric Period in the Colorado Desert and far western Arizona is marked by certain kinds of artifacts and technological innovations, and is defined as the Patayan Pattern (Cleland 1998; Cordell 1997; Cultural Systems Research 1986; Reid and Whittlesey 1997:111–130; Schaefer 1994, 1995) or the Palomar Tradition, including Patayan I, II, and III, and Peninsular I, II, and III phases of the Palomar Tradition within what was previously referred to as Patayan III (cf. Sutton 2011).

The Patayan Pattern or Palomar Tradition (Sutton 2011) is typified by several different settlement and economic systems (Schaefer 1995). Three phases of Patayan are generally recognized in addition to the preceramic phase (Schaefer 1995). These are defined by changes in pottery frequencies and by the cultural and demographic effects of the filling and desiccation of ancient Lake Cahuilla. The Patayan I phase appears to have been confined to the Colorado River vicinity and began approximately 1,200 years ago with the introduction of pottery. The artifacts typical of this phase bear the closest similarity to those of the Hohokam (cf. Cordell 1997; Haury 1976; Schaefer 1995; Waters 1983). The Patayan II phase, beginning about 950 years ago, is contemporary with Lacustrine Interval 5 of Lake Cahuilla. Attracted to highly productive microenvironments along the Lake Cahuilla shoreline, people on both its eastern and western shores were making pottery by the time the lake was full.

The final phase, Patayan III, began approximately 500 years ago, coinciding with Lake Cahuilla Lacustrine Interval 2. This phase, encompassing Sutton's (2011) Peninsular I–III phases, is characterized by new pottery types that reflect changes in settlement patterns as well as intensified communication among tribes of the Colorado River and Peninsular Range. Long distance travel increased as people living around the former Lake Cahuilla shore dispersed to their base territories, and the Imperial and Coachella valleys became increasingly dry (Schaefer 1995). The Patayan III phase continued into the early Historical Period, ending in the late nineteenth century when Euro-American incursions disrupted the traditional culture. The Patayan III peoples include the Cahuilla who occupied the western Colorado Desert region, as well as the Quechan, Mojave, and Cocopah of the Colorado River region.

Recently, Sutton (2011) proposed that the proto-Cahuilla cultures occupying the Peninsular Range and northern Coachella Valley during the Late Prehistoric Period resulted from an eastward movement of people of Yuman ethnicity speaking Takic languages (a branch of Uto-Aztecan) from the inland valley areas of coastal Orange County and northern San Diego County. Sutton (2011:6) proposed that the impetus for this migration was the filling of Lake Cahuilla after circa 1070 B.P. Sutton identified this eastward movement of people, and the concomitant introduction of new technologies and ideas into the region, as Peninsular I, II, and III phases of the Palomar Tradition (Sutton 2011:1–74).

The Peninsular I phase, dating from circa 900 to 750 B.P., reflects the initial movement of people into the northern Coachella Valley from the interior valleys as Lake Cahuilla filled, the establishment of major villages along the Lake Cahuilla shoreline, and the adoption of a lacustrine-based subsistence system. The arriving Peninsular I groups would have encountered existing Yuman (Patayan I) groups and either "absorbed or replaced them" (Sutton 2011:21). Groups associated with the Peninsular II phase in the northern Coachella Valley, dating from

circa 750 to 300 B.P., are thought to have been the proto-Cahuilla (Sutton 2011:5). Peninsular II is "proposed to reflect the changes in settlement and subsistence that were instituted to adapt to the fluctuations of Lake Cahuilla, prior to its 'final' desiccation" (Sutton 2011:42).

The Peninsular III phase, dating from circa 300 to 150 B.P., represents the historical Cahuilla who were encountered by the first European explorers to visit the region. With the final desiccation of Lake Cahuilla, lacustrine-based subsistence strategies were abandoned, and terrestrial-based subsistence systems adopted. Critical economic resources (e.g., cultigens) may also have been obtained from Yuman groups along the Colorado River and from Euro-Americans.

2.3 ETHNOGRAPHIC SETTING

At the time of Spanish contact, the APE was likely used by the Cahuilla. The Cahuilla have been studied extensively by Dr. Lowell Bean and much of the following discussion is derived from Bean's description of the Cahuilla in Volume 8 of the Handbook of North American Indians (Bean 1978:575–587).

The Cahuilla belong to the nonpolitical cultural nationalities speaking a language belonging to the Takic branch of the Shoshonean family, part of the larger Uto-Aztecan language stock. The Cahuilla in precontact times had nonpolitical, nonterritorial patrimoieties that governed marriage patterns as well as patrilineal clans and lineages. The Cahuilla were, for the most part, hunting, collecting, harvesting, and protoagricultural peoples. Clans were apt to occupy land in valleys, foothill, and mountain areas, providing them with the resources of many different ecological niches. Individual lineages or families used specific resource areas within the clan territory. Although any given village had rights to a wide array of necessary resources, briskly flourishing systems of trade and exchange gave them access to the resources of their neighboring villages and of distant peoples.

As in most of California, acorns were a major staple, but the roots, leaves, seeds, and fruit of many other plants also were used. Fish, birds, insects, and large and small mammals were available. Bighorn sheep, mule deer, and antelope are some of the large mammals hunted. Mountain lions, black bear, grizzly bear, and wild boar also were hunted in historical times.

2.4 HISTORICAL SETTING

The historical development of the Coachella Valley prior to 1820 is not well documented. However, in 1821, a party of Cocomaricopa Indians arrived at the San Gabriel Mission, announcing they had traveled from the Colorado River in only 6 days using the Cocomaricopa Trail (Warren et al. 1981:85). This trail began east of Blythe and approximated the present route of Interstate 10 across the Chuckwalla Valley, traversing the Mecca-Indio area and Coachella Valley to the San Gorgonio Pass (northwest of the Project area). In the early 1850s, the Maricopa-Bradshaw route, paralleling the old Cocomaricopa Trail, was established to serve the mining camps developing near La Paz, Arizona (Warren et al. 1981:85). Also in the 1850s, the U.S. government strongly promoted the establishment of railroad route to connect the east and west coasts. Because of competing economic and a political considerations, however, it was not until 1877 that the Southern Pacific Railroad (SPRR) transected the western Colorado Desert

(Warren et al. 1981:89). This route connected the San Gorgonio Pass to the town of Yuma via the eastern shore of the Salton Sea.

The process of surveying and mapping the Colorado Desert began in 1852, when Henry Washington and a small party of surveyors ascended the San Bernardino Mountains and established the San Bernardino Baseline and Meridian. From 1854 to 1857, Washington extended this line to the Colorado River, working his way through uncharted territory (Warren et al. 1981:94).

The U.S. government also sent Indian Commissioners into the deserts of Southern California in the 1850s. Although not authorized to make any commitments to the Native Americans, the commissioners set aside large tracts of land for reservations (Warren et al. 1981:94). Most of these areas were never fully developed as reservations, although the Torres-Martinez and Agua Caliente (Palm Springs) reservations were eventually set aside from the larger reserves delineated by the Indian Commission. After the Native American population was confined to the reservations, the remaining land was made available for mining, ranching, and other uses.

Management of the desert lands was largely the responsibility of the General Land Office, and later, the Department of Agriculture's Grazing Administration. Until the passage of the Taylor Grazing Act of 1934, however, no control was exercised over the California desert lands. Because of the extremely arid nature of the California deserts, this act had virtually no impact on the region. The Bureau of Land Management made the first attempts at range management in the California desert when it assumed responsibility for these lands in 1946. Since that time, the Bureau of Land Management also has been engaged in evaluating lands for their "uses" and classifying them for different types of management (Warren et al. 1981).

The paucity of water in many areas of the Colorado Desert discouraged farming, and agricultural development only flourished when water could be imported in significant quantities. The relatively high water table in the Coachella Valley allowed the agricultural industry to develop prior to the importation of water by means of drilling artesian wells. Beginning in the first decade of the twentieth century, Coachella Valley farmers planted extensive date, fig, and grape acreage, and towns that developed with the agricultural growth included Thermal, Mecca, Indio, and Coachella. The extensive farming efforts seriously depleted the water table in the Coachella Valley, stimulating the formation of the Coachella Valley County Water District (CVCWD) in 1918 to replenish and to promote the conservation of the groundwater basin. Following passage of the Boulder Canyon Project Act of 1928, the waters of the Colorado River were harnessed for the development of agriculture in Imperial and Coachella valleys. The CVCWD cooperated with the Imperial Irrigation District to develop the All-American Canal and the Coachella Valley extension. Branching off the All-American Canal near the U.S.-Mexico border, the Old Coachella Canal extends 123.5 miles northeast, up the east side of the Salton Sea and about 10 miles from the APE, to the northern Coachella Valley, and brought the first imported irrigation water to the valley in 1949 (Nordland 1978).

2.4.1 Torres-Martinez Reservation

The Torres-Martinez Reservation is immediately south of the APE. The modern Torres-Martinez Reservation occupies blocks of land in the southern Coachella Valley extending from Indio

southward to the Salton Sea, and from Alamo in the west to near the Mecca Hills in the east. The fact that only even-numbered mile-square sections of federal land were initially granted as reservation holdings was because odd-numbered sections had already been held in reserve for the SPRR, as railroad grant land, when the reservation was established. Thus, the granting of particular sections of land as reservation land does not necessarily reflect the prior location of historical Cahuilla villages and oases on these lands. After 1900, some odd-numbered sections were included in the reservation.

The historical Desert Cahuilla communities of Toro (*Maaūlmiī*) and Martinez, and associated mesquite woodland oasis sites, formed the political basis of the reservation grant as it existed in the 1890s. The Martinez community is immediately due south of the APE. Owing to a major trail and travel route having passed through the region (Lawton and Bean 1972), Cahuilla settlements and associated wells in this area were summarily described in 1824 during the Romero Expedition and in greater detail by travelers during the 1850–1870 era. The principal features of settlements in the area, from at least as early as the mid-1820s, were mesquite woodland (which provided a major food staple in the mesquite bean), oasis gardens of pumpkins, melons, and other crops, and walk-in dug wells and springs that provided water for irrigation and domestic use (Wilke and Lawton 1975).

Sorting out the nineteenth-century political geography of native settlement in the Torres-Martinez region is complicated by the considerable movement of clan and lineage groups from place to place over time. Some of these movements were recalled by Cahuilla elders interviewed by anthropologists during early and later decades of the twentieth century, including William Duncan Strong and Lowell Bean (Barrows 1900; Bean 1972; Gifford 1918; Hooper 1920; Strong 1929). One of Strong's important consultants was Francisco Nombre:

> Francisco Nombre, now living at Martinez Reservation, was born at that place a year or so before the Mormons settled San Bernardino in 1851. He is the acting chief of the Awilem (dogs) clan, and from him was obtained a census of all the towns and clans of the desert region when he was a boy. These data were corroborated and checked by informants from the Torros reservation and appeared to be exact [Strong 1929:38].

This information can be corroborated with earlier travelers and other accounts of native communities and political leaders in the nineteenth century.

During the nineteenth century, the Cahuilla, like the neighboring Serrano, were organized into territorial clans (sometimes also called sibs). In the case of both the Cahuilla and Serrano, all clans were assigned to one of two ceremonial moiety divisions, Coyote or Wildcat, and individuals from clans of the same moiety division could not marry one another. Unlike the Serrano, however, the Cahuilla recognized named territorial lineages within clans that sometimes occupied distinct named village sites. Thus, in some cases, groups of named lineages living in separate locations would make up a clan or sib. In other instances, all the lineages making up a clan might live in the same locality. By the 1850s–1870s, a given settlement location with water on the Coachella Valley floor might have several lineage or clan groups residing at it. Such co-resident lineage or clan groups were sometimes connected by common descent or sharing a common region of origin in the mountains, but not always (Strong 1929:42–51).

The region surrounding Toro, Martinez, Alamo, and Agua Dulce (Oasis) was occupied by clans and lineages with ties to the Santa Rosa Mountains (Strong 1929:40–56). These groups tended to move between the mountain/foothill canyons to the west and the Coachella Valley floor, sometimes seasonally and sometimes using one or another of these environmental zones as a base for longer periods of time. Although this branch of the "Desert Cahuilla" has been thought of by both archaeologists and by the sometimes-romantic authors of Colorado Desert lore as "desert Indians," they were really "mountain–canyon–desert oasis" native people. Farther to the east, in the Coachella Valley, were groups more exclusively oriented to the valley floor and the desert.

2.4.2 Thermal and Sandy Korner

The community of Thermal in the Coachella Valley, Riverside County originated in 1877 as a railroad siding where the SPRR, while laying tracks toward Los Angeles, drilled a well and hit an artesian flow (Van Horn et al. 1990:20). The area stands 100 feet below sea level and its aquifer water could be found as little as 3 feet below the surface. This find, along with subsequent improvements to drilling technology, transformed one of the hottest deserts in the nation into productive farmland. Thermal, along with surrounding small towns, developed apace.

The open lands of the Coachella Valley were offered to homesteaders under the Homestead Act of 1862, and immigrants started relocating to the valley in earnest from 1885–1898. Kokell, as Thermal was then known, excelled in the production of cantaloupe and table grapes, crops which tolerated its particularly alkaline soil and high summer temperatures, and produce distribution was aided by its location on the Southern Pacific line. By 1902, a townsite map was filed which officially changed the name of the town to "Thermal" (Gunther 1984:542). At the turn of the century, the town had several hundred inhabitants and a two-room schoolhouse (Nordland 1978:08).

Thermal has lost sections of its built environment repeatedly in fires, including those of 1908 and 1920. By 1943, several blocks of dense single-family housing units occupied the area just west of the train tracks and Highway 86, suggesting worker and staff housing for the military. Two miles southeast of the town, today's municipal airport encompasses a former World War II Army/Navy airfield and base and retains one of the 1942 hangars.

The area west of Thermal and just east of the Augustine reservation was known as Sandy Corner in 1900 because of the sand dunes which formed in the area causing difficulty for rural horse-drawn wagons. State and county roads were built through the area specifically to connect Indio with rural Coachella Valley areas, including Sandy Corner. The common spelling slowly changed to "Sandy Korner" through the 1940s. A filling station located there since 1901 became the tire shop on Harrison Street and Airport Road, which burned in 2017 (NBC Palm Springs 2017).

2.4.3 Thermal Army Air Field

According to Bischoff (2006:148), the Thermal Army Air Field (AAF) was the headquarters of flight activity for the Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA), an NRHP-eligible discontiguous historic district. The significance of the DTC/C-AMA lies in its

mission to prepare U.S. troops for the rigors of desert warfare and in exemplifying the leadership of significant American military leaders. Because of its success, the training mission was expanded to include war maneuver training beyond the North Africa theater of operations. The DTC was in operation between 1942 and 1944. It later expanded into Arizona and Nevada becoming the C-AMA, the largest ground training facility of its kind in U.S. military history.

General George S. Patton arrived on scene at March Field south of Riverside on March 4, 1942. His mission was to scout the desert in California, Arizona, and Nevada and find a suitable location for a ground forces desert training facility. The decision to establish such a facility had already been made by Lieutenant General Lesley J. McNair, then director of Army Ground Forces and Combat Training (Henley 1992:5). The attack on Pearl Harbor a few short months earlier had precipitated the U.S. involvement in World War II (WWII), and it appeared likely that U.S. forces would join the British in North Africa.

After viewing the terrain from air and ground, Patton selected 10,000 square miles of desert terrain in California. His choice was based on the low population density, varied mountain and desert terrain, harsh climate, and available transportation. Although bleak in many respects, the area surrounding Desert Center was intersected by the Colorado River Aqueduct and supported three railroads and a new highway system; nearby were existing military bases. Mobilization of troops and equipment for training and prompt deployment to the European and African fronts required such logistical readiness.

The DTC officially opened on April 30, 1942. Its mission was to develop and test equipment as well as train ground troops in the doctrine and tactics of desert warfare (Bureau of Land Management 1986:1; Henley 1992:5; Schmidt and Tang 1994). At least 12 divisional camps were established under the DTC/C-AMA, eight of which were located in California: Camps Young, Coxcomb, Iron Mountain, Granite, Ibis, Clipper (formerly Essex), Pilot Knob, and Rice. Camp Young, near Chiriaco Summit, served as the main headquarters of the DTC/C-AMA. It encompassed 34,000 acres, consisting of an encampment with temporary housing structures, an evacuation hospital, observers' camp, an ordnance campsite, quartermaster truck site, and maneuver area.

Patton left for North Africa in July 1942, but his training center continued to expand. It eventually encompassed 18,000 square miles of desert in the tri-state area. With geographic expansion and broadening of the center's training mission the name was changed to California-Arizona Maneuver Area. More than a million men are said to have attended training at the facility before its closure on April 30, 1944 (Bureau of Land Management 1986:1). The Thermal AAF, which encompasses what is now known as the Jacqueline Cochran Regional Airport where the APE is located, was an air base of the DTC/C-AMA.

In 1986, BLM planned to nominate each of the division camps in California to the NRHP, to develop an interpretive program for the DTC/C-AMA, and to provide historical resources protection through designation as an Area of Critical Environmental Concern (Bischoff 2000:134). Subsequently, Bischoff (2000:133), in considering the historical and archaeological contexts for the DTC/C-AMA, found that it was a historically significant resource under all four criteria of the NRHP. Therefore, he recommended that the facility be nominated to the NRHP as a discontiguous district of clearly functionally and temporally related resources. He further

proposed that the facility be recorded as multiple properties consisting of contributing and noncontributing elements of the district. DTC/C-AMA can be thought of as an interconnected landscape of WWII training sites that are highly significant for their association with General George S. Patton, and for their contribution to our understanding of how American soldiers were trained during WWII.

3
SOURCES CONSULTED

The following section details the sources consulted during the pre-field research portion of the Project. These include a cultural resource literature and records search and historical map review of the APE.

3.1 CULTURAL RESOURCE LITERATURE AND RECORDS SEARCH

The Eastern Information Center (EIC) of the California Historical Resources Information System ceased operations indefinitely as of June 2024. Consequently, Æ completed an in-house literature and records search for the Project on August 26, 2024. The objective of this records search was to determine whether any prehistoric or historical cultural resources had been recorded previously within the APE or a 1-mile-wide radius of the APE.

The records search review indicated 30 cultural resource investigations have been conducted previously within a 1-mile-wide radius of the APE (Table 3-1). None of the previous studies involve the APE. As a result, none of the APE has been previously studied.

Table 3-1
Previous Cultural Resource Studies in the 1-Mile Search Radius

EIC Reference	Author(s)	Date	Title
RI-00244	Nelson, Leonard N III, Phillip J. Wilke, Richard Lando, and Daniel Bell	1977	*An Archaeological and Ethnographical Evaluation of the Thermal Airport Property*
RI-00245	Swenson, James D., and Stephen Bouscaren	1980	*A Reassessment of the Archaeological Remains as Thermal Airport, Riverside County, California*
RI-00629	Giansanti, Rene	1979	*Environmental Impact Evaluation: An Archaeological Assessment of Tentative Parcel 14941, Menifee Area of Riverside County, California*
RI-00652	Lando, Richard	1979	*Cultural Resources Reconnaissance (Stage II) of Flood Control Alternatives for the Whitewater River Basin, Riverside County*
RI-01919	Von Werlhof, Jay	1974	*A Cultural Impact Survey Phase 1*
RI-01922	Dominici, Debra	1985	*Report of an Archaeological Survey for the Proposed 86 Expressway in Riverside County*
RI-01924	Dominici, Debra	1992	*Negative Archaeological Survey Report- Sixth Addendum*
RI-01925	Dominici, Debra	1992	*Negative Archaeological Survey Report- Seventh Addendum*
RI-01936	Parr, Robert E.	1985	*An Archaeological Assessment of a Proposed Wastewater Treatment Plant Site and Pipeline Alignment, La Quinta Area of Riverside County, California*
RI-03245	Van Horn, David M., Laurie S. White, and Robert S. White	1990	*Cultural Resources Sensitivity Overview for the Coachella Valley Enterprise Zone*

Table 3-1
Previous Cultural Resource Studies in the 1-Mile Search Radius

EIC Reference	Author(s)	Date	Title
RI-03835	Becker, Kenneth M, and Anne Duffield-Stoll	1994	*Cultural Resources Reconnaissance of the Kohl Ranch, Riverside County, California*
RI-03866	Drover, Christopher E.	1994	*Environmental Impact Evaluation: An Archaeological Assessment of the Coachella Valley Golf Club, Parcel Nos. APN 759-100-002, 003, Thermal, California*
RI-04553	Brock, James	2002	*Phase 1 Cultural Resources Assessment for 56831 Olive Street, Thermal, Riverside County, California (APN 757-061-010-9)*
RI-06259	Chambers Group Inc.	2006	*Cultural Resources Survey Report, Union Pacific Railroad, Fingal-Thermal Phase III Expansion, Riverside County, California*
RI-06262	Earth Touch, Inc.	2006	*New Tower (NT) Submission Packet, FCC Form 620: Airport Blvd.*
RI-06434	Tang, Bai, Michael Hogan, Deidre Encarnacion, Casey Tibbet, and Daniel Ballester	2004	*Historical/Archaeological Resources Survey Report: Thermal 551 Brookfield Project, Near the Community of Thermal Riverside County, California*
RI-06615	Tang, Bai, Michael Hogan, Deidre Encarnacion, Casey Tibbet, and Daniel Ballester	2006	*Historical/Archaeological Resources Survey Report: Thermal Street, Water, and Sewer Improvements, Near the Community of Thermal, Riverside County, California*
RI-06619	Tang, Bai, Michael Hogan, Nina Gallardo and Daniel Ballester	2005	*Historical/ Archaeological Resources Survey Report: APNS 763-290-002, 763-310-009, -010, -013 and 014, Near the Community of Thermal, Riverside County, California*
RI-06749	Brunzell, David	2006	*Cultural Resources Assessment: Jacqueline Cochran Regional Airport Sheriff Station, Forensic Laboratory and Helipad, Unincorporated community of Thermal, Riverside County, California*
RI-07018	Keller, Jean A.	2006	*A Phase I Cultural Resources Assessment of Tentative Parcel Map 34281, +/- 9.1 Acres of Land Near Lake Riverside, Riverside County, California*
RI-07770	Formica, Tracy H.	2007	*Class III Cultural Resources Survey of the Airport Boulevard Water Transmission Pipeline Project Corridor for the Coachella Valley Water District, Thermal, Riverside County, California*
RI-07835	Brock, James	2008	*Phase 1 Archaeological and Historical Resources Assessment of 43632 Washington Street, City of La Quinta, Riverside County, California*
RI-07853	Tang, B. Tom	2008	*Letter Report: Addendum to Historical/Archaeological/ Paleontological Resources Survey Report Thermal Street, Water, and Sewer Improvements in and near the Community of Thermal, Riverside County, California*
RI-07892	Encarnacion, Dierdre, Thomas Melzer, and Laura H Shaker	2008	*Phase 1 Archaeological Assessment: Thermal Fire Station #39, Portion of Assessor's Parcel No. 759-100-005 (RDA/CEQA-2008-03) near the Community of Thermal, Riverside County, California*

Table 3-1
Previous Cultural Resource Studies in the 1-Mile Search Radius

EIC Reference	Author(s)	Date	Title
RI-07929	Tang, Bai, and Harry Quinn	2008	*Letter Report: Re: Historical/ Archaeological/ Paleontological Survey of Whitewater River Channel Thermal 551 Brookfield Project Near the Community of Thermal, Riverside County, California*
RI-07999	Tang, Bai, Clarence Bodmer, Daniel Ballester, and Laura Shaker	2008	*Phase 1 Archaeological Assessment 1898 DACE-Ranch Housing Alliance Valle Estrella's Project, Assessor's Parcel Nos. 757-090-001 through 757-090-003, near the unincorporated community of Thermal, Riverside County, California*
RI-08260	Billiat, Lorna	2009	*Collocation (CO) Submission Packet FCC for 621, Desert Shore*
RI-08721	McDougall, Dennis, Vanessa Mirro and Joan George	2011	*Phase 1 Cultural Resources Assessment for the Avenue 60 Domestic Water Transmission Main Project*
RI-09252	Bray, Madeleine, and Candace Ehringer	2012	*Phase I Cultural Resources Assessment for the Jacqueline Cochran Regional Airport Land Acquisition and Exchange Project*
RI-09699	Thomas, Roberta, and Josh Smallwood	2015	*Phase I Cultural Resources Assessment for the Coachella Valley Water District's Airport Drain Replacement Project Near Thermal, Riverside County, California*

The records search resulted in the identification of 23 previously recorded cultural resources within the 1-mile search radius. Of these, 10 are archaeological resources: 1 isolated artifact, 1 prehistoric site, and 8 historical sites. In addition, 13 built-environment resources were identified within the 1-mile search radius (Table 3-2). Two of the cultural resources, the Cahuilla village of *Temal Wakhish* (33-000148) and the Thermal AAF (33-020989) are documented within the APE. These resources are briefly described below and in Appendix A.

Table 3-2
Previously Recorded Cultural Resources in the 1-Mile Search Radius

Primary No.	Trinomial	Description
Prehistoric Resources		
33-000148 [a]	CA-RIV-148	Cahuilla village of Temal Wakhish Site
Isolated Historical Resources		
33-005586	—	One amethyst glass fragment
Historical Resources		
33-017259	—	Coachella Vally Whitewater Channel
33-020750	CA-RIV-10672	Historical segment of Fillmore Street
33-020921	CA-RIV-10846	Historical asphalt-paved private driveway
33-020926	CA-RIV-10852	Historical asphalt-paved road
33-020927	CA-RIV-10853	Historical asphalt-paved road
33-020928	CA-RIV-10854	Historical asphalt-paved road
33-020989 [a]	CA-RIV-10869H	Thermal AAF
33-024105	—	Historical segment of Avenue 58

Table 3-2
Previously Recorded Cultural Resources in the 1-Mile Search Radius

Primary No.	Trinomial	Description
Built-Environment Resources		
33-009498	CA-RIV-6381H	Union Pacific Railroad
33-005637	—	1915 single-family home
33-005638	—	1913 single-family home
33-005639	—	1935 Mediterranean/Spanish single-family home
33-005640	—	1905 single-family home
33-005641	—	1915 single-family home
33-005642	—	1910 single-family home
33-005643	—	1910 single-family home
33-005646	—	1915 single-family home
33-005684	—	1912 Mediterranean/Spanish single-family home
33-005705	—	Wasteway No. 3 and Detention Dike No. 2 for the Coachella Canal System
33-011223	—	1941 single-family home
33-017520	—	1952 single-family home

a - Cultural resources within the APE.

3.2 CULTURAL RESOURCES WITHIN THE APE

3.2.1 33-000148 (CA-RIV-148)

A segment of the Cahuilla village of *Temal Wakhish* is located at the southeastern edge of the APE. Site 33-000148 was first documented in 1951 as a prehistoric site and updated in 1971, 1980, 1990, 1995, 2007, and 2008 (Mirro and Mirro 2008). Site 33-000148 was initially a series of small, seasonal fishing camps around A.D. 1525 during the recession of Lake Cahuilla. It was later reoccupied as a village, potentially as early as the seventeenth century (Leonard 1977). The site features a broad scatter of artifacts, mainly pottery, along with visible human cremation features observed in dune blowouts, indicating occupation prior to 1877, when cremation customs ceased (Lando and Modesto 1977; Leonard 1977). Identified as part of the Cahuilla village *Temal Wakhish* by tribal elder Ruby Modesto, the village is also marked on an 1856 Government Land Office Plat map as "La Mesa," encompassing Sections 19 and 20 of Township 6 South, Range 8 East, with ethnographic accounts suggesting it later extended into Section 18 (Formica 2007).

3.2.2 33-020989 (CA-RIV-10869H)

The Thermal AAF is directly associated with the DTC/C-AMA. The site was first documented in 1995 and updated in 2012, 2015, and 2019. The resource has not yet been formally evaluated for eligibility in the NRHP, although Thomas and Smallwood (2015) presumed eligibility for the NRHP. According to the 1942 as-built drawing in Smallwood's 2015 update, fuel storage tanks associated with the Thermal AAF were within the eastern portion of the APE.

3.3 HISTORICAL MAP REVIEW

In addition to the record search research, a series of historical maps and aerial photographs from various sources were consulted to assess land use and development in the study area. Æ reviewed and compiled information from:

- USGS topographic quadrangles (https://ngmdb.usgs.gov/topoview/): Indio 1:125,000 (1904), Coachella 1:62,500 (1941 and 1943), Santa Ana 1:250,000 (1947, 1949, 1956, and 1965), and Palm Springs 1:100,000 (1984); and

- Aerial photographs of the area (historicaerials.com/viewer): images from 1952 to 1972.

The APE consisted of agricultural lands with no structures or roads until the development of the Thermal AAF and State Route 99 in 1942. None of the reviewed historical maps show any structures, roads, or historical features within or near the APE until the development of Thermal AAF and State Route 99 in 1942.

3.4 SACRED LANDS FILE SEARCH

On June 20, 2024, Æ contacted the NAHC for a review of their SLF, to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity) are present within or adjacent to the APE. The NAHC responded on July 9, 2024, stating the SLF search was completed with negative results. The NAHC provided a list of Native American individuals and organizations to be contacted to elicit information and/or concerns regarding cultural resource issues related to the proposed Project. Results of the NAHC file search and Native American contact list are included in Appendix B to assist the FAA and Riverside County EDA with their consultation efforts.

4
CULTURAL RESOURCE SURVEY METHODS AND RESULTS

The following sections detail the methods and results of the cultural resource surveys for the APE. The information provided below represents the means by which conclusions regarding archaeological sensitivity of the APE were reached. With the exception of the 7,371 linear feet of FAA communication line, the APE was accessible during the survey which was completed by *Æ* Senior Archaeologist Andrew DeLeon and Staff Archaeologist Reneé Elder Gonzalez on August 27 and 29, 2024.

4.1 SURVEY METHODS

Prior to conducting a Phase I cultural resource and built-environment survey, *Æ*'s staff conducted background research to identify areas within the Project where archaeological deposits might exist or extant historical-aged buildings, structures, or objects might be present. The APE for the Project consists of two discontiguous segments with one small segment on the west side of the runways and a larger segment immediately east of the runways. The APE also includes a communications line that was not included in the pedestrian survey.

DeLeon and Elder Gonzalez performed a Phase I cultural resource survey of approximately 47-acre area APE on August 27 and 29, 2024. The first field visit on August 27, 2024, began at the smaller western portion of the APE within an existing taxiway (Figure 4-1). The survey continued on the eastern segment of the APE (Figure 4-2) starting in the northeast corner, proceeding westward immediately north and south of 58th Avenue, with transects oriented east to west, spaced 10 meters apart.

The second field visit on August 29, 2024, continued in the eastern segment of the APE east of the runway, starting at the southcentral portion. Transects were oriented east to west spaced 10 meters apart and moving northward. The 7,371 linear feet of FAA communication line was not subjected to the pedestrian survey, as the entire line is within existing roadways and disturbance. Any newly identified resources were to be photographed and mapped with an Arrow 100 Global Navigation Satellite System receiving unit and iPad.

4.2 WESTERN APE SEGMENT

The western segment of the APE is entirely developed and serves as an operating taxiway for the airport (Figure 4-3). Ground visibility within this segment of the APE was generally poor at approximately 10 percent, due to pavement completely covering the ground surface. No cultural resources were observed in this portion of the APE during the survey.

Figure 4-1 **Overview of the western segment of the APE in the taxiway, from northern corner facing southeast.**

Figure 4-2 **Overview of the eastern segment of the APE, from the northwestern corner facing southeast.**

Figure 4-3 Overview of the western segment of the APE from the east corner facing northwest.

4.3 EASTERN APE SEGMENT

The eastern segment of the APE is significantly disturbed with evidence of grading and clearing throughout the APE. Currently, a large majority of the APE is obscured by dense vegetation (Figure 4-4). This portion of the APE appears entirely cleared and graded, and berms of plowed soil are evident throughout the APE. Approximately 60 percent of the APE was inaccessible due to thick brush at least 5 feet high. Ground visibility was generally fair at approximately 40 percent when accessible. No cultural resources were observed in this portion of the APE during the survey.

Figure 4-4 Overview of the eastern segment of the APE , from the southwestern corner facing east.

4.4 PREVIOUSLY DOCUMENTED RESOURCES

4.4.1 33-000148 (CA-RIV-148)

The western segment of the APE falls within the southeastern edge of the Cahuilla village of *Temal Wakhish* (33-000148) (Figure 4-5). No features or elements of 33-000148 were observed, and the eastern boundary of this site has been completely developed as an operational taxiway for the Jacqueline Cochran Regional Airport. Although only a small portion of the current APE falls within the previously recorded site, further development of the airport is observable into the existing site beyond the APE. A site record update is included in Appendix A.

4.4.2 33-020989 (CA-RIV-10869H)

The entire APE falls entirely within the mapped boundaries of Thermal AAF (33-020989; Figure 4-5). As noted in Chapter 3, the 1942 as-built drawings indicated that fuel storage tanks associated with the Thermal AAF were within the APE. However, no remnants of the fuel storage tanks or any other associated features were observed during the survey. As previously noted, there is evidence of clearing and grading due to existing berms of soil throughout this portion of the APE, likely associated with the decommissioning of the Thermal AAF. A site record update is included in Appendix A.

Figure 4-5 Cultural resources and survey coverage within the APE.

5
MANAGEMENT RECOMMENDATIONS

Æ did not encounter any previously unrecorded cultural resources within the APE during the intensive pedestrian survey. However, a segment of the Cahuilla village of *Temal Wakhish* (33-000148) is documented at the southeastern edge of the APE, and the Thermal AAF (33-020989) encompasses the APE. During the intensive pedestrian survey, Æ's archaeologists did not observe any features or elements associated with these two resources within the APE. In addition, the entire APE is heavily disturbed by grading, clearing, and development, including the unsurveyed communication line portion of the APE, which traverses paved taxiways and a portion of the existing east runway. Therefore, the entire APE is viewed as having low sensitivity for buried historic properties. Consequently, a finding of No Historic Properties Affected is recommended for the Project as presently planned, and no further cultural resource management of the Project is recommended.

However, if the APE is expanded to include areas not covered by this study or other recent cultural resource investigations, additional cultural resource studies may be required.

As stated, updated California Department of Parks and Recreation (DPR) 523-series recording forms are provided in Appendix A, and the results of the NAHC file search and Native American contact list are included in Appendix B to assist the FAA and Riverside County EDA with their consultation efforts.

6
REFERENCES

Adovasio, James M., and David R. Pedler

2013 The Ones That Still Won't Go Away: More Biased Thoughts on the Pre-Clovis Peopling of the New World. In *Paleoamerican Odyssey*, edited by Kelly E. Graff, Carolyn V. Ketron, and Michael R. Waters, pp. 511–520. Center for the Study of the First Americans, Department of Anthropology, Texas A&M University, College Station.

Altschul, Jeffrey H. (editor)

1993 *Research Design for the Lower Colorado River Region*. Statistical Research Technical Report 93-19. Statistical Research, Inc., Tucson, Arizona. Prepared for U.S. Bureau of Reclamation, Lower Colorado River Regional Office, Boulder City, Nevada.

Barrows, David P.

1900 *Ethno-Botany of the Coahuilla Indians of Southern California*. University of Chicago Press, Chicago, Illinois.

Bean, Lowell J.

1972 *Mukat's People: The Cahuilla Indians of Southern California*. University of California Press, Berkeley.

1978 Cahuilla. In *California*, edited by Robert F. Heizer, pp. 575–587. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell J., and Katherine S. Saubel

1972 *Temalpakh, Cahuilla Indian Knowledge and Usage of Plants*. Malki Museum Press, Banning, California.

Bischoff, Matt C.

2000 *The Desert Training Center/California-Arizona Maneuver Area, 1942–1944: Historical and Archaeological Contexts*, Vol. 1. Statistical Research Technical Series 75. Tucson, Arizona.

2006 *The Desert Training Center/California-Arizona Maneuver Area, 1942–1944: Historical and Archaeological Contexts for the Arizona Desert*, Vol. 2. Statistical Research Technical Series 75. Tucson, Arizona.

Bureau of Land Management

1986 *Desert Training Center: California-Arizona Maneuver Area - Interpretive Plan*. Bureau of Land Management, California Desert District.

Cleland, James H.
1998 From Paleo-Indian to Protohistoric: The Chronology of Human Occupation of the Salton Sea Test Base. *Proceedings of the Society for California Archaeology* 12:10–14.

Collins, Michael B., Dennis J. Stanford, Darrin L. Lowrey, and Bruce A. Bradley
2013 *North America before Clovis: Variance in Temporal/Spatial Cultural Patterns*. Paleoamerican Odyssey, Kelly E. Graff, Caroline V. Ketron, and Michael R. Waters, general editors. Center for the Study of the First Americans, Department of Anthropology, Texas A&M University, College Station.

Cordell, Linda
1997 *Archaeology of the Southwest*. 2nd ed. Academic Press, San Diego, California.

Cultural Systems Research, Inc.
1986 *Cultural Resources Testing and Data Recovery, Tahquitz Canyon Project Research Design*, edited by Lowell J. Bean and Sylvia B. Vane. Cultural Systems Research, Inc., Menlo Park, California.

Dillon, Brian D.
2002 California Paleoindians: Lack of Evidence, or Evidence of Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga*, edited by William J. Wallace and Francis A. Riddell, pp. 110–128. Contributions of the University of California Archaeological Research Facility Vol. 60. University of California Press, Berkeley.

Formica, Tracy H.
2007 *Class III Cultural Resources Survey of the Airport Boulevard Water Transmission Pipeline Project Corridor for the Coachella Valley Water District, Thermal, Riverside County, Califor*. Applied EarthWorks, Inc., Hemet, California. Prepared for Coachella Valley Water District, Coachella, California.

Gifford, Edward W.
1918 *Clans and Moieties in Southern California*. University of California Publications in American Archaeology and Ethnology Vol. 14(2). University of California Press, Berkeley.

Graff, Kelly E., Carolyn V. Ketron, and Michael R. Waters (editors)
2013 *Paleoamerican Odyssey.* Center for the Study of the First Americans, Texas A&M University, College Station.

Grayson, Donald K.
2016 *Giant Sloths and Sabertooth Cats: Extinct Mammals and the Archaeology of the Ice Age Great Basin*. University of Utah Press, Salt Lake City.

Gunther, Jane Davies
1984 *Riverside County, California, Place Names: Their Origins and Their Stories*. Rubidoux Printing, Riverside, California.

Hall, Matthew C.
2000 *Archaeological Survey of 2472 Acres in Adjacent Portions of Lava, Lead Mountain, and Cleghorn Pass Training Areas, Marine Corps Air Ground Combat Center, Twentynine Palms, California*. Archaeological Research Unit, University of California, Riverside, Riverside. Submitted to U.S. Marine Corps, Natural Resources and Environmental Affairs Division, Twentynine Palms, California.

Haury, Emil W.
1976 *The Hohokam: Desert Farmers and Craftsmen: Excavations at Snaketown, 1964-1965*. University of Arizona Press, Tucson.

Henley, David C.
1992 *"The Land That God Forgot..." the Saga of Gen. Patton's Desert Training Camps*. Western American History Series. Western Military History Association.

Hooper, Lucille
1920 *The Cahuilla Indians*. University of California Publications in American Archaeology and Ethnology Vol. 16:316–380. University of California Press, Berkeley.

Hughes, Richard E.
1986 Trace Element Composition of Obsidian Butte, Imperial County, California. *Bulletin of the Southern California Academy of Science* 85:35–45.

Jenkins, Dennis L., Loren G. Davis, Thomas W. Stafford Jr., Paula F. Campos, Thomas J. Connolly, Linda S. Cummings, Michael Hofreiter, Bryan S. Hockett, Katelyn MacDonough, Mark E. Swisher, Frances White, Bonnie Yates, Robert M. Yohe, II, Chad L. Yost, and Eske Willerslev
2013 Geochronology, Archaeological Context, and DNA at the Paisley Caves. In *Paleoamerican Odyssey*, edited by Kelly E. Graff, Caroline V. Ketron, and Michael R. Waters, pp. 485–510. Center for the Study of the First Americans, College Station, Texas.

Kurten, Bjorn, and Elaine Anderson
1980 *Pleistocene Mammals of North America*. Columbia University Press, New York.

Laflin, Patricia
1998 *Coachella Valley California*. Donning Company Publishers, Virginia Beach, Virginia.

Lando, Richard, and Ruby E. Modesto
1977 *Temal Wakhish*: A Desert Cahuilla Village. *Journal of California Archaeology* 4(1):95–112.

Lawton, Harry W., and Lowell J. Bean
1972 A Preliminary Reconstruction of Aboriginal Agricultural Technology among the Cahuilla. Appendix 1. In *Temalpakh (from the Earth): Cahuilla Indian Knowledge and Usage of Plants*, edited by Lowell J. Bean and Katherine S. Saubel, pp. 197–210. Malki Museum Press, Banning, California.

Laylander, Don
2010 Linguistic Prehistory and the Archaic-Late Transition in the Colorado Desert. *Journal of California and Great Basin Anthropology* 30:141–155.

Leonard, N. Nelson, III
1977 *An Archaeological and Ethnographical Evaluation of the Thermal Airport Property*. Archaeological Research Unit, University of California, Riverside. Prepared for County of Riverside, Department of Airports, Riverside, California.

Martin, Paul S.
2005 *Twilight of the Mammoths: Ice-Age Extinctions and the Rewilding of America*. University of California Press, Berkeley and Los Angeles.

McDonald, Alison Meg
1992 *Indian Hill Rockshelter and Aboriginal Cultural Adaptation in the Anza-Borrego Desert State Park, Southweastern California*. Ph.D. dissertation, Department of Anthropology, University of California. Riverside.

Mirro, Michael, and Vanessa Mirro
2008 *Buried Site Testing Report: Airport Boulevard Water Transmission Pipeline Project*. Applied EarthWorks, Inc., Hemet, California. Prepared for Coachella Valley Water District, Coachella, California.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando, Florida.

NBC Palm Springs
2017 *Owners Believe Old Tire Shop Fire Is Arson*. Electronic document, https://nbcpalmsprings.com/2017/06/07/owners-believe-old-tire-shop-fire-is-arson/, accessed October 8, 2024.

Nordland, Ole J.
1978 *Coachella Valley's Golden Years: History of the Coachella Valley County Water District*. Rev. ed. Coachella Valley Water District, Coachella, California.

Reid, J. Jefferson, and Stephanie Whittlesey
1997 *The Archaeology of Ancient Arizona*. University of Arizona Press, Tucson.

Rogers, Malcolm J.
1966 *Ancient Hunters of the Far West*. Union-Tribune Publishing, San Diego, California.

Rondeau, Michael F.
2015 Fluted Point Studies in the Far West. In *Clovis: On the Edge of a New Understanding*, edited by Ashley M. Smallwood and Thomas A. Jennings, pp. 39–51. Texas A&M University Press, College Station.

Schaefer, Jerry
1994 The Challenge of Archaeological Research in the Colorado Desert: Recent Approaches and Discoveries. *Journal of California and Great Basin Anthropology* 16(1):60–80.

1995 Prehistoric Cultural Setting. In *Archaeological, Ethnographic, and Ethnohistoric Investigations at Tahquitz Canyon, Palm Springs, California*. Vol. IA of 4:Management Summary, Forward, Introduction, Environmental Setting, Prehistoric Cultural Setting, Research Orientation, Ethnography. Cultural Systems Research, Inc., Menlo Park, California. Prepared for Riverside County Flood Control and Conservation District, Riverside, California.

Schaefer, Jerry, and Don Laylander
2007 The Colorado Desert: Ancient Adaptations to the Wetlands and Wastelands. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 247–257. AltaMira Press, Lanham, Maryland.

Schmidt, James J., and Bai Tom Tang
1994 *Report of a Section 106 Cultural Resource Investigation of a Nine-Acre Bureau of Land Management Parcel in Eastern San Bernardino County, California*. Greenwood and Associates, Pacific Palisades, California. Prepared for the Bureau of Land Management, Needles Resource Area, Needles, California.

Schroth, Adella B.
1994 *The Pinto Point Controversy in the Western United States*. Ph.D. dissertation, Department of Anthropology, University of California. Riverside.

Smith, Brenda D., and James Brock
1998 From Shoreline to Mesquite Dune: Changing Subsistence Strategies at CA-RIV-4754, La Quinta. *Proceedings of the Society for California Archaeology* 12:1–4.

Strong, William Duncan
1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology Vol. 26(1):1–358. University of California Press, Berkeley.

Sutton, Mark Q.
1996 The Current Status of Archaeological Research in the Mojave Desert. *Journal of California and Great Basin Anthropology* 18(2):221–257.

2011 The Palomar Tradition and Its Place in the Prehistory of Southern California. *Pacific Coast Archaeological Society Quarterly* 44(4):1–74.

Sutton, Mark Q., Mark E. Basgall, Jill K. Gardner, and Mark W. Allen
2007 Advances in Understanding the Mojave Desert Prehistory. In *California Prehistory: Colonization, Culture and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 229–245. Altamira Press, Lanham, Maryland.

Taylor, R. Erwin, Louis A. Payen, Christina A. Prior, Peter J. Slota, Jr., John Gillespie, A. J. Gowlett, Rogert E. M. Hedges, A. J. Timothy Jull, Theodore H. Zabel, Douglas J. Donahue, and Ranier Berger
1985 Major Revisions in the Pleistocene Age Assignments for North American Human Skeletons by C-14 Accelerator Mass Spectrometry: None Older Than 11,000 C-14 Years B.P. *American Antiquity* 50:136–140.

Thomas, Roberta, and Josh Smallwood
2015 *Phase I Cultural Resources Assessment for the Coachella Valley Water District's Airport Drain Replacement Project near Thermal, Riverside County, California*. Applied EarthWorks, Inc., Hemet, California. Prepared for Coachella Valley Water District, Coachella, California.

Van Horn, David M., Laurie S. White, and Robert S. White
1990 *Cultural Resources Sensitivity Overview for the Coachella Valley Enterprise Zone*. Archaeological Associates, Ltd., Sun City, California. Prepared for County of Riverside, Economic Development Agency, Indio, California on behalf of Cotton/Beland Assocaites, Inc., Pasadena, California.

Warren, Claude N.
1984 The Desert Region. In *California Archaeology*, pp. 339–430. Academic Press, New York.

Warren, Elizabeth von Till , Robert H. Crabtree, Claude N. Warren, Martha Knack, and Richard McCarty
1981 *A Cultural Resources Overview of the Colorado Desert Planning Units*, edited by Eric W. Ritter. Cultural Resources Publications, Anthropology-History. U.S. Department of the Interior, Bureau of Land Management, California Desert District, Riverside, California.

Waters, Michael R.
1983 Late Holocene Lacustrine Chronology and Archaeology of Ancient Lake Cahuilla, California. *Quaternary Research* 19(3):373–387.

Waters, Michael R., Steven L. Forman, Thomas A. Jennings, Lee C. Nordt, Steven G. Driese, Joshua M. Feinberg, Joshua L. Keene, Jessi Halligan, Anna Lindquist, James Pierson, C. T. Hallmark, Michael B. Collins, and James Wiederhold
2011 The Buttermilk Creek Complex and the Origins of Clovis at the Debra L. Friedkin Site, Texas. *Science* 331:1599–1603.

Waters, Michael R., and Thomas W. Stafford, Jr.
2007 Redefining the Age of Clovis: Implications for the Peopling of the Americas. *Science* 315(5815):1122–1126.

Weide, Margaret, and James P. Barker
1974 *Background to Prehistory of the Yuha Desert Region*, edited by Philip J. Wilke. Bureau of Land Management, Riverside, California.

Wilke, Philip J.
1976 *Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California*. Ph.D. dissertation, Department of Anthropology, University of California. Riverside.

Wilke, Philip J., and Harry W. Lawton
1975 Early Observations on the Cultural Geography of the Coachella Valley. In *The Cahuilla Indians of the Colorado Desert: Ethnohistory and Prehistory*, edited by Lowell John Bean, Part 1, pp. 9–43. Ballena Press Anthropological Papers No. 3. Ramona, California.

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APPENDIX A

California Department of Parks and Recreation
Series 523 Record Updates

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APPENDIX B

Sacred Lands File Search

APPENDIX E
BUILT ENVIRONMENTAL AND SECTION 106 MEMO

Technical Memorandum

Angela Jamison, Airports Manager
Riverside County Transportation and Land Management Agency

From: Brian Matuk, Mead & Hunt, Inc.

Date: November 6, 2024

Subject: National Historic Preservation Act (NHPA), Section 106 Review of Built-Environment Resources in support of a proposed Air Traffic Control Tower at the Jacqueline Cochran Regional Airport (TRM), Thermal, Riverside County, California

The Riverside County Transportation and Land Management Agency (TLMA) proposes to construct an air traffic control tower (ATCT) and associated parking and utility connections at the Jacqueline Cochran Regional Airport (Project). The proposed project is a Federal Action pursuant to the National Environmental Policy Act of 1969 (NEPA), which requires compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106). The Federal Aviation Administration (FAA) is the lead agency pursuant to NEPA, and Riverside County is the Project Sponsor.

Approach

To determine whether the proposed Project has the potential to affect Historic Properties under Section 106 or Historical Resources under CEQA, Brian Matuk, a qualified historian, identified a project-specific area of potential effects for built-environment resources (Built-Environment APE). Using this Built-Environment APE, Mr. Matuk conducted a desktop review of previously recorded resources and reports within 0.25-mile of the Built-Environment APE. The previously recorded resources provided by subconsultant Applied Earthworks, which was engaged to undertake a cultural resources investigation for the same project. In addition, Mr. Matuk reviewed historic aerial photographs and from airfield construction plans (1943) to identify the potential for any extant built-environment resources within the APE that would qualify as Historic Properties under Section 106 or as Historical Resources under CEQA.

Analysis

The Built-Environment APE encompasses 124.1 acres. Note that this APE is not the same as the APE identified for archaeological resources established for the cultural resource assessment, as that APE addresses site-related disturbance. The Built-Environment APE is located primarily within airport property boundaries and includes the limits of disturbances associated with the proposed Project, but a portion of the APE extends beyond the proposed Project site to account for potential visual effects that the construction of the proposed ATCT may have on Historic Properties or Historical Resources. The Built-Environment APE extends the area within to a 0.25-mile of the proposed ATCT to account for any visual effects that the new building may have on Historic Properties.

The Built-Environment APE overlaps with the boundaries of the previously identified built-environment resource, Thermal Army Air Field (Thermal AAF), which is recorded with the identifier 33-020989 (CA-RIV-10869H). While this resource has not been previously evaluated, it is assumed eligible for listing in the National Register of Historic Places (National Register). For the purposes of the proposed ATCT project, this resource will be assumed eligible for listing in both the National Register and the California Register of Historic Places (California Register), for compliance with Section 106 and CEQA, respectively. Therefore, the Thermal AAF resource is assumed to qualify as a Historic Property under Section 106 and a Historical Resource under CEQA.

Based on the November 24, 2024, cultural resource assessment conducted by Applied Earthworks, no built-environment resources dating from the period of significance occur within the Built-Environment APE.[a] As such, there are no extant buildings or structures within the APE that would be affected by physical effects of the proposed work or visual effects of the proposed ATCT. As the proposed project activities relate to the Thermal AAF resource as an assumed Historic Property under Section 106 and an assumed Historical Resource under CEQA, the proposed project is not anticipated to cause an adverse effect to Historic Properties under Section 106 or a substantial adverse change to Historical Resources under CEQA.

Conclusion

A review of previously identified resources, available reports, historic aerial photographs suggests that a portion of the former Thermal AAF is the only resource within the APE, and it is assumed to qualify as a Historic Property under Section 106 following previous identification. The proposed project activities are not expected to cause an adverse effect under Section 106 or a substantial adverse change under CEQA to the Thermal AAF; therefore, no impacts to Historic Properties or Historical Resources would occur as result of the proposed project.

[a] Applied Earthworks documented these recent findings on a record update included as part of their Cultural Resource Assessment for the proposed ATCT project.

APPENDIX F
PALEONTOLOGICAL RESOURCES SENSITIVITY MEMO

Applied EARTHWORKS Inc.

133 N. San Gabriel Blvd., Suite 201
Pasadena, CA 91107-3414
O: (626) 578-0119 | F: (626) 204-5500
www.appliedearthworks.com

November 11, 2024

Lisa Harmon, Project Planner, Aviation
Mead & Hunt, Inc.
180 Promenade Circle, Suite 240
Sacramento, CA 95834
Transmitted via email to lisa.harmon@meadhunt.com

RE: Paleontological Technical Letter Report for the Air Traffic Control Tower at the Jacqueline Cochran Regional Airport near the Community of Thermal, Riverside County, California

Dear Ms. Harmon,

At the request of Mead & Hunt, Inc., Applied EarthWorks, Inc. (Æ) completed a paleontological technical letter report for the development of an air traffic control tower and associated parking and utilities within the Jacqueline Cochran Regional Airport (Project) north of 60th Avenue, near the community of Thermal, Riverside County, California.

Æ's scope of work included a desktop review of geologic maps, paleontological literature, and museum records searches. This technical letter report summarizes the findings and was written by staff who meet mitigation paleontology industry-wide standards (Murphey et al., 2019), as well as qualification standards of the Society of Vertebrate Paleontology (2010). Æ completed this paleontological memorandum in partial satisfaction of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements. Riverside County (County) accepts federal Airport Improvement Program (AIP) grant funding to construct and maintain airport facilities; therefore, as a project within federal jurisdiction, this memo satisfies the requirements of NEPA, which covers all portions of the Project within airport boundaries. The Federal Aviation Administration (FAA) is the lead agency under NEPA and Riverside County is the lead agency under CEQA.

PROJECT DESCRIPTION AND BACKGROUND

The Project area is southwest of the community of Thermal in Riverside County. The Project is mapped in Sections 21 and 28, Township 6 South, Range 8 East, as shown on the U.S. Geological Survey (USGS) Indio and Valerie, California, 7.5-minute topographic quadrangle maps.

The potential tower site is west of Polk Street and encompasses 58th Avenue. Its purpose is to enhance the operational efficiency and safety of the Jacqueline Cochran Regional Airport. The Project will cover a total area of 8.5 acres, including 0.24 acres (10,404 square feet) for the Control Tower and a 200-foot by 200-foot construction staging area. The Project will provide ten parking spaces and a paved access road featuring a motorized security gate. Essential utilities, such as a water line for potable water, a sewer line for wastewater management, a stormwater system for runoff, and electrical and communication lines, will connect to the Air Traffic Control Tower to support operational functions. The maximum depth of ground disturbance during the construction phase is not expected to exceed 6 feet.

REGULATORY CONTEXT

This Project is subject to both state laws and local goals and policies. The following section provides an overview of the relevant laws and regulations.

Federal

When a proposed project involves federal funding and/or is on federal land or land under federal jurisdiction, Section 101(b)(4) of the Regulations for Implementing the Procedural Provisions of the NEPA directs federal agencies to use all practicable means to "preserve important historic, cultural, and natural aspects of our national heritage." Paleontological resources are "natural aspects of our national heritage." Although this Project does not occur on federal lands, it is an airport development regulated by the FAA. Therefore, consideration of paleontological resources is required under NEPA, and an Environmental Assessment (EA) is being prepared pursuant to FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions; and Order 1050.1F, Environmental Impacts: Policies and Procedures.

State

At the state level, paleontological resources are protected under CEQA, which requires detailed studies that analyze the environmental effects of a proposed project. If a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. Specifically, Section VII(f) of Appendix G of the CEQA Guidelines, the Environmental Checklist Form, poses the question, "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" If paleontological resources are identified as being within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

Local

There are several policies covering paleontological resources within the County's *General Plan*, *Multipurpose Open Space (OS) Element* (Riverside County Planning Department, 2015:OS-51):

- **OS 19.6:** Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8, a paleontological resource impact mitigation program (PRIMP) shall be filed with the Riverside County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

- **OS 19.7:** Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the Riverside County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

- **OS 19.8:** Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the

Riverside County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.

- **OS 19.9:** Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

PALEONTOLOGICAL RESOURCE POTENTIAL

The FAA does not include specific protocols or measures pertaining to paleontological resources within their EA guidelines. Many professional paleontologists in California follow the Society of Vertebrate Paleontology (2010) guidelines to determine the course of paleontological mitigation for a given project unless specific city, county, state, or federal guidelines are available. The County has assessed the paleontological sensitivity of geologic units and outlines measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development (County of Riverside, 2015). Consequently, this assessment utilizes the County's ranking system.

The County has assigned various paleontological sensitivity rankings to the various geologic units exposed within its boundaries—Low, Undetermined, High A (Ha), and High B (Hb) Potential (County of Riverside, 2015). Geologic units are considered to be "sensitive" for paleontological resources and have a High paleontological resource potential if they are known to contain significant fossils anywhere in their extent, even if outside the Project area. High A (Ha) sensitivity is based on the occurrence of fossils that may be present at the ground surface of the Project area, whereas High B (Hb) sensitivity is based on the occurrence of fossils at or below a depth of 4 feet, which may be impacted during construction activities (County of Riverside, 2015). A coarse-grained paleontological sensitivity map of Riverside County is included in the OS Element, which indicates the sensitivity rankings across the ground surface (County of Riverside, 2015:Figure OS-8, OS-55).

METHODS

Æ completed desktop studies to assess the paleontological sensitivity of geologic units mapped at the ground surface and those likely to occur in the subsurface of the Project area. Æ first researched published geologic maps and paleontological literature for the region. Æ then retained the Natural History Museum of Los Angeles County (NHMLAC) and the Western Science Center (WSC) in Hemet, California, to conduct searches of fossil localities recorded in their collections. To augment these results, Æ also conducted searches of the online Paleobiology Database (PBDB) and the University of California Museum of Paleontology (UCMP). The PBDB lists a large collection of museum records and publications of fossil materials, whereas the UCMP is the largest repository of fossils on the West Coast of the U.S. with an older history of collection than several other regional natural history museums.

RESOURCE CONTEXT

The Project area is northwest of the Salton Sea in the Coachella Valley portion of the Colorado Desert geomorphic province[1] (California Geological Survey, 2002). Much of the Colorado Desert lies within

[1] A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and tectonic history (American Geological Institute, 1976).

the Salton Trough, a large structural depression that extends from the San Gorgonio Pass in the north to the Gulf of California in the south (Norris and Webb, 1976). The Salton Trough is a graben, bounded by roughly parallel northwest-trending faults, including the San Andreas Fault Zone to the northeast and the San Jacinto fault zone to the southwest.

The Salton Trough formed as a topographic depression from spreading and subsidence associated with the rift system that opened the Gulf of California (Alles, 2011). Rifting initiated in the late Miocene (Dorsey et al., 2007), as shown by magnetostratigraphy and biostratigraphy dating the oldest basin-filling deposits at approximately 8 million years old (Dorsey et al., 2007). Seawater spilled into the trough and undisputed marine sequences began in the Pliocene (Alles, 2011). From the Pliocene to late Pleistocene, an immense volume of sediment eroded from downcutting of the Grand Canyon, resulting in the formation of a massive delta across the seaway by deposition from the ancestral Colorado River. This delta eventually separated the marine waters of the Gulf of California from the brackish and fresh waters of the Salton Trough, evidenced by the transition from marine to terrestrial fossils preserved in sedimentary strata (Dorsey et al., 2007).

From the late Pleistocene to early Holocene, the ancient freshwater Lake Cahuilla periodically occupied the Salton Trough. This lake formed, drained, and reformed several times between approximately 10,000 to 240 years before present (B.P.) due to fluctuations in the course of the Colorado River and the subsequent diversion of the river's mouth from the Gulf of California to the Salton Trough (Norris, 1979; Deméré, 2018). During its last high stand, Lake Cahuilla measured approximately 105 miles long, 35 miles wide, and reached a maximum depth of 300 feet.

According to Bedrossian et al. (2012), the surficial geology of the Project area is mapped as early to middle Holocene young alluvial valley deposits (Qya). Unit Qya includes unconsolidated to slightly consolidated and slightly dissected sandy and gravelly deposits associated with streams and larger river valleys.

A former shoreline of Lake Cahuilla is exposed at the ground surface near the San Andreas Fault Zone approximately 4 miles east of the Project area, which suggests these surficial deposits correspond to the most recent interval of inundation of the ancient lake (Norris, 1979; Waters, 1983; Dibblee and Minch, 2008; Deméré, 2018). The proximity of the Lake Cahuilla shoreline to the Project area indicates the Lake Cahuilla beds likely also occur at shallow depth beneath the surficial Holocene alluvial deposits or may be interstratified with the deposits in the immediate subsurface and difficult to distinguish, particularly in fresh cuts. For instance, tufa and travertine coatings are occasionally present on silts and clays of the Lake Cahuilla beds.

Trenches excavated by Whistler et al. (1995) near the Project area indicate the Lake Cahuilla beds are at least 60 feet thick in the vicinity of the Project area. As Project-related excavations are expected to be no more than 6 feet bgs, it is unlikely that excavations will extend into underlying geologic units. Therefore, discussion in this section is limited to the Lake Cahuilla beds and Qya, as mapped at the surface.

Holocene deposits, particularly those less than 5,000 years old, are typically too young for the fossilization process to occur (Society of Vertebrate Paleontology, 2010). However, certain factors can speed the mineralization process and result in partial, if not complete, fossilization of microbial, plant, and animal remains. The physical and chemical environment of dry playa lakes is particularly suitable

for fossil preservation due to their arid and often alkaline conditions that promote abundant carbonate precipitation required for tufa and travertine formation. In fact, a diverse assemblage of fossils is known from late Holocene localities within the Lake Cahuilla beds approximately 2 miles southwest of the Project area, southeast of the city of La Quinta (Whistler et al., 1995). These fossiliferous strata are radiocarbon-dated to 1125 ± 80 and 2545 ± 50 years B.P. Fossils include various freshwater diatoms, land plants, sponges, ostracods, mollusks, fish, small terrestrial vertebrates, and traces found in shallow excavations. These Holocene deposits are stratigraphically above Pleistocene and Pliocene deposits; however, the contact depth is unknown and the Lake Cahuilla beds can be up to 300 feet thick in the center of the Salton Trough (Norris and Webb, 1976). The proximity of these fossiliferous beds to the Project area indicates they may be present at shallow depths beneath the surficial alluvial deposits.

RECORDS SEARCH RESULTS

No paleontological localities are previously recorded within the Project area. However, the NHMLAC listed one vertebrate and four invertebrate fossil localities within seven miles of the Project area. The WSC did not list any fossil localities. However, their records search radius is only 1 mile from the Project area. A previous WSC records search for a nearby project resulted in one invertebrate locality. In addition, three other localities are listed in record search results from previous Æ projects within a 10-mile radius. These several localities are in Pleistocene and Holocene deposits like those mapped either at the surface or likely at depth in the Project area. The PBDB and UCMP online databases do not list any fossil localities from Pleistocene or Holocene alluvial deposits within the Project area or a 10-mile radius. Table 1 lists known paleontological resources within a 10-mile radius of the Project area.

Multiple localities have been documented within the Lake Cahuilla beds in the vicinity of the Project area. The closest to the Project area, LACM IP 4776, is a locality of unspecified invertebrate fossils approximately 1 mile to the northeast. LACM IP 17946 and LACM IP 474, approximately 3.5 and 4 miles, respectively, also are unspecified invertebrate fauna localities. The depth at which LACM IP 4776 fossils were collected is unknown, whereas fossils at LACM IP 17946 and LACM IP 474 were collected from surficial sediments. Imagine Coachella, approximately 5 miles north of the Project area, and Æ's JC-072313-01, approximately 5 miles northwest of the Project area, are also invertebrate localities that include invertebrate fauna of small, freshwater bivalves and gastropods recovered during construction monitoring.

Table 1
Fossil Localities Reported within a 10-Mile Radius of the Project Area, by Distance

Locality No.	Geologic Unit (Date)	Taxa	Depth	Approx. Distance from Project Area
LACM IP 4776[a]	Lake Cahuilla Beds (Holocene)	Invertebrates (unspecified)	Unknown	1 mile
LACM IP 17946[a]	Lake Cahuilla beds (Holocene)	Invertebrates (unspecified)	Surface	3.5 miles
LACM IP 474[c]	Lake Cahuilla beds (Holocene)	Invertebrates (unspecified)	Surface	4 miles
JC-072313-01[c]	Lake Cahuilla beds (Holocene)	*Anodonta* (bivalve) *Littorina* (gastropod) *Planorbella* (gastropod) *Pomatiopsis* (gastropod)	Unknown	5 miles

Table 1
Fossil Localities Reported within a 10-Mile Radius of the Project Area, by Distance

Locality No.	Geologic Unit (Date)	Taxa	Depth	Approx. Distance from Project Area
Imagine Coachella[b, c]	Lake Cahuilla beds (Holocene)	*Chara* (freshwater algae) *Anodonta californiensis* (bivalve) *Pisidium* (bivalve) *Gyraulus parvus* (gastropod) *Physella humerosa* (gastropod) *Planorbella trivolvis* (gastropod) *Pyrgulopsis longinqua* (gastropod) *Tryonia protea* (gastropod) Podocopoidea (ostracod)	Unknown	5 miles
LACM VP 6252-6256 LACM IP 16830, 16831[a]	Lake Cahuilla beds, lacustrine claystone (Holocene)	*Perognathus* (pocket mouse) *Sylvilagus* (rabbit) *Dipodomys* (kangaroo rat) *Peromyscus longimenbris* (deer mouse) *Neotoma lepida* (pack rat) *Ammospermophilus leucurus* (antelope ground squirrel) *Chionactis occipitalis* (western shovelnose snake) *Pituophis melanoleucus* (gopher snake) *Crotalus cerastes* (rattlesnake) *Hypsiglena torquata* (night snakes) *Sonora semiannulata* (ground snake) *Phrynosoma platyrhinos* (horned lizard) *Sceloporus magister* (spiny lizard) *Uma inornata* (fringe-toed lizard) *Urosaurus graciosus* (tree lizard) Passeriformes (songbirds) *Xyrauchen texanus* (razorback sucker) *Cyprinodon macularius* (pupfish) *Gila elegans* (western chub) *Anodonta californiensis* (bivalve) *Pisidium casertanum* (bivalve) *Amnicola longinqua* (gastropod) *Ferrissia walkeri* (gastropod) *Gyralus parvus* (gastropod) *Helisoma trivolvis* (gastropod) *Physella ampullacea* (gastropod) *Physella humerosa* (gastropod) *Tryonia protea* (gastropod) *Cypridopsis vidua* (ostracod) *Cypronotus torosa* (ostracod) *Limnocythere ceriotuberosa* (ostracod)	5 feet bgs	6 miles
LACM IP 4775[a]	Unknown formation (Pleistocene)	Invertebrates (unspecified)	Unknown	6 miles
LACM IP 4781, 4783[a]	Lake Cahuilla Beds (Holocene)	*Anodonta cygnea* (river mussels) *Heliosoma tenue ammon* (ram's horn snail)	7 feet bgs	7 miles

Table 1
Fossil Localities Reported within a 10-Mile Radius of the Project Area, by Distance

Locality No.	Geologic Unit (Date)	Taxa	Depth	Approx. Distance from Project Area
SBCM 5.8.7–5.8.15[c, d]	Lake Cahuilla beds (Holocene)	*Thomomys* (pocket gopher) *Odocoileus* (deer) Osteichthyes (bony fish) *Anodonta californiensis* (bivalve) *Pisidium* (bivalve) *Fossaria* cf. *parva* (gastropod) *Tryonia protea* (gastropod) *Planorbella tenuis* (gastropod) *Physella concolor* (gastropod) *Physella humerosa* (gastropod)	Unknown	7 miles

a - NHMLAC.
b - WSC.
c - Records search from previous Æ projects.
d - San Bernardino County Museum.

Several additional localities have been recorded more than 5 miles from the Project area. LACM VP 6252–6256 and LACM IP 16830–16831 are 6 miles west-northwest of the Project area, and on both sides of Madison Street north of Avenue 58. These localities yielded a large number of terrestrial and freshwater vertebrate and invertebrate fauna from a single trench west of Madison Street, although another trench east of Madison Street yielded a similar fauna that was not collected. Depths at which fossils were collected or observed ranged from 3 to 6 feet bgs (Whistler et al., 1995). Whistler et al. (1995) also noted multiple diatom and land plant taxa, although these specimens have not been accessioned into the NHMLAC and are not included in the records search results. Six miles southeast of the Project area, in the city of Mecca, is LACM IP 4775, an additional Lake Cahuilla Bed locality. However, the NHMLAC records search did not provide an exact location or identifications for the taxa recovered from this locality.

Lastly, LACM IP 4781, 4783 and SBCM 5.8.7–5.8.15 are approximately 7 miles north of the Project area. They yielded unspecified land plants along with vertebrate and invertebrate fauna similar to those closer to the Project area.

FINDINGS AND RECOMMENDATIONS

Æ used the results from the desktop studies to determine the paleontological sensitivity of the Project area. According to the Riverside County Planning Department (2015) paleontological sensitivity map, the entire Project area is mapped as High A. Æ's desktop studies support this assessments. If no paleontological resources are observed at the ground surface or shallow depths within the Project area during subsurface soil sampling or construction monitoring, the paleontological sensitivity of the Project area could potentially be reassigned to a High B ranking, which is based on the occurrence of fossils at or below 4 feet bgs. This minimum depth for High B geologic units is actually closer to the depths reported for the nearby Lake Cahuilla fossils (Whistler et al., 1995).

As a result of the demonstrated high sensitivity of sedimentary beds within the Project area, Æ recommends that a qualified paleontologist prepare a Paleontological Resource Impact Mitigation

Program (PRIMP) prior to the start of Project-related, ground-disturbing activities. The paleontologist should meet industry standards (Murphey et al., 2019) and/or qualifications standards of the Society of Vertebrate Paleontology (2010). The purpose of the PRIMP is to establish mitigation monitoring procedures and discovery protocols, based on industry-wide best practices (Murphey et al., 2019), for any paleontological resources that may be encountered as a result of earth-disturbing activities during construction of the Project. A PRIMP also will indicate where construction monitoring will be required for the Project and the frequency of required monitoring (i.e., full-time, spot checks, etc.). The collection and processing (e.g., wet- or dry-screening) of sediment samples to analyze for the presence or absence of microvertebrates and other small fossils also would be addressed in a PRIMP. In addition to monitoring and sampling procedures, a PRIMP also will provide details about fossil collection, analysis, and preparation for permanent curation at an approved repository, such as the WSC. Lastly, the PRIMP describes the different reporting standards to be used for monitoring with negative findings versus monitoring resulting in fossil discoveries. Worker's Environmental Awareness Program training should be prepared prior to the start of Project-related ground disturbance and presented in person to all field personnel to describe the types of fossils that may occur and the procedures to follow if any are encountered in the Project area.

It has been a pleasure assisting you with this Project. If you have any questions, please do not hesitate to contact me at (626) 578-0119 ext. 403.

Sincerely,

Melissa Macias, M.S.
Senior Paleontologist
Applied EarthWorks, Inc.

Edited and Approved By:

Amy Ollendorf, Ph.D., M.S., RPA 12588
Paleontology Program Manager
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REFERENCES

Alles, D. L. 2011. Geology of the Salton Trough. Western Washington University. Available at https://fire.biol.wwu.edu//trent/alles/GeologySaltonTrough.pdf.

American Geological Institute. 1976. Dictionary of geological terms. Anchor Press, Garden City, New York, 472 pp.

Bedrossian, T. L., P. D. Roffers, C. A. Hayhurst, J. T. Lancaster, and W. R. Short. 2012. Geologic compilation of Quaternary surficial deposits in southern California. CGS Special Report 217 (revised). California Department of Conservation, California Geological Survey, Sacramento, California, 25 pp.

California Geological Survey. 2002. California geomorphic provinces. California Geological Survey Note 36. California Department of Conservation, Sacramento.

County of Riverside. 2015. Cultural and Paleontological Resources; pp. 4.9-1–4.9-50 in Draft Environmental Impact Report No. 521Riverside County General Plan Updated Project, General Plan Amendment No. 960. Riverside County Planning Department, Riverside, California.

Deméré, T. A. 2018. Silent beaches: ancient Lake Cahuilla. San Diego Natural History Museum. Accessed September 12, 2018.

Dibblee, T. W., Jr., and J. A. Minch. 2008. Geologic map of the Palm Desert and Coachella 15-minute quadrangles. Dibblee Geological Foundation Map DF-373. Santa Barbara Museum of Natural History, Santa Barbara, California.

Dorsey, R. J., A. Fluette, K. McDougall, B. A. Housen, S. U. Janecke, G. J. Axen, and C. R. Shirvell. 2007. Chronology of Miocene–Pliocene deposits at Split Mountain Gorge, southern California: A record of regional tectonics and Colorado River evolution. Geology 35(1):57–60.

Murphey, P. C., G. E. Knauss, L. H. Fisk, T. A. Deméré, and R. E. Reynolds. 2019. Best practices in mitigation paleontology. Proceedings of the San Diego Society of Natural History No. 47, 43 pp.

Norris, R. M. 1979. Rifting, Transpression, and Neotectonics in the Mecca Hills, Salton Trough, A. G. Sylvester (ed.). Fall Field Trip Guide Book, September 25-26, 1999. Society for Sedimentary Geology, Pacific Section.

Norris, R. M., and R. W. Webb. 1976. Geology of California. Wiley and Sons, Santa Barbara, California.

Riverside County Planning Department. 2015. Riverside County General Plan. Riverside, California.

Society of Vertebrate Paleontology. 2010. Standard procedures for the assessment and mitigation of adverse impacts to paleontological resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee. Available at https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf. Accessed April 27, 2022. 11 pp.

Waters, M. R. 1983. Late Holocene Lacustrine Chronology and Archaeology of Ancient Lake Cahuilla, California. Quaternary Research 19(3):373–387.

Whistler, D. P., E. B. Lander, and M. A. Roeder. 1995. A Diverse Record of Microfossils and Fossil Plants, Invertebrates, and Small Vertebrates from the Late Holocene Lake Cahuilla Beds; pp. 109–118 in P. Remeika and A. Sturz (eds.), Paleontology and Geology of the Western Salton Trough Detachment: Anza-Borrego Desert State Park, California. San Diego Geological Society.

APPENDIX G
COMMENT RECEIVED ON THE MITIGATED NEGATIVE DECLARATION AND COUNTY RESPONSE LETTER

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
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Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

May 12, 2025

Angela Jamison
Airports Manager
Riverside County Aviation Division
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RE: MITIGATED NEGATIVE DECLARATION FOR AIRPORT TRAFFIC CONTROL TOWER CONSTRUCTION AT THE JACQUELINE COCHRAN REGIONAL AIRPORT DATED APRIL 17, 2025, STATE CLEARINGHOUSE NUMBER 2025040919

Dear Angela Jamison,

The Department of Toxic Substances Control (DTSC) reviewed the Mitigated Negative Declaration (MND) for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (Project). The Jacqueline Cochran Regional Airport (Airport) is a public-use Airport that is owned and operated by the County of Riverside. The County proposes to construct a 448-square-foot octagonal Air Traffic Control Tower (ATCT) to enhance safety by improving communication among aircraft to reduce the risk of accidents, incursions, and other hazards. The proposed Project will not increase airport capacity or alter the aircraft fleet mix. Riverside County and the FAA conducted research to identify an appropriate ATCT location wherein, Riverside County will construct the ATCT on a previously graded and disturbed area of airport property located east of the runway. The 8.5-acre project area includes the tower site and all limits of disturbance along with a 200-foot by 200-foot construction staging area. Construction is anticipated in late 2026.

DTSC recommends and requests consideration of the following comments:

1. The Airport Traffic Control Tower Construction project is located near formerly used defense sites (FUDS), Thermal Ground Air Sta Base and Army Airport. Information, if available, can be requested from the U.S. Army Corps of Engineers through a Freedom of Information Act (FOIA) request at: FOIA-SPL@usace.army.mil.
2. The proposed Project is located in close proximity to several FUDS in which munitions testing during the World War II era occurred. While it appears that the FUDS are outside of the proposed Project area, due to the nature of FUDS use, and the potential that unexploded ordnance (UXO), munitions of explosive concern (MEC) and/or munitions debris (MD) may be discovered, proper health and safety measures are recommended prior to intrusive activities. If UXO, MEC or MD is/are encountered, follow the 3 Rs of Explosives Safety: Recognize, Retreat and Report: Recognize, when you have encountered munitions; Retreat, note your location as you are backing away. Do not approach, touch, or disturb a suspect munitions, safely leave the area and Report, immediately what was found to state and or local law enforcement – call 911.
3. DTSC recommends being aware of signs of contaminated soil, residual staining, or odors during the construction process and advises collecting appropriate samples for waste characterization and contacting DTSC if further assessment is necessary. DTSC recommends compliance with all applicable or relevant and appropriate environmental laws.
4. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil and fill material there should be documentation of the origins of the soil or fill material and, if applicable,

sampling be conducted to ensure that the imported soil and fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the fill and knowledge of prior land use. Additional information can be found by visiting DTSC's Human and Ecological Risk Office (HERO) webpage.

DTSC would like to thank you for the opportunity to comment on the MND for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via our CEQA Review email for additional guidance.

Sincerely,

Dave Kereazis

Dave Kereazis
Associate Environmental Planner
HWMP-Permitting Division – CEQA Unit
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cc: (via email)

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Riverside County Aviation

June 3, 2025

Mr. David Kereazis
Associate Environmental Planner
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826-3200

Sent via email

Subject: Mitigated Negative Declaration for Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport, SCH No. 2025040919

Dear Mr. Kereazis,

Thank you for your letter of May 12, 2025, and your review of the Mitigated Negative Declaration (MND) for Airport Traffic Control Tower (ATCT) Construction at the Jacqueline Cochran Regional Airport (TRM). The following letter addresses the comments you provided.

Comment No. 1. The Airport Traffic Control Tower Construction project is located near formerly used defense sites (FUDS), Thermal Ground Air Sta Base and Army Airport. Information, if available, can be requested from the U.S. Army Corps of Engineers through a Freedom of Information Act (FOIA) request at: FOIASPL@usace.army.mil.

Comment Response. TRM is located on land that was formerly used by the U.S. Army as the Thermal Ground Air Station Base (ASB) as part of the federal Desert Training Center. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, and supported Navy carrier aircraft service units. The property was deeded to the county of Riverside, the Coachella Valley County Water District, and the United Date Growers of California between June 1947 and December 1948 (USACE, 2011). Much of the land associated with the former Thermal Ground ASB is currently owned by Riverside County and associated with TRM, but the footprint of the ASB extends beyond the current airport property. Adjacent area outside of the airport boundary is owned by the County or private entities (USACE, 2011).

In response to your letter and the results of a Phase I Site Investigation prepared in support of the proposed project, the County identified one record associated with the Thermal Ground Air Station Base (ASB), FUDs Property No. J09CA0645, and Estor/EPA ID 80000402, Site code 410505. The County reviewed the associated Site Investigation Report prepared by the USACE dated November 17, 2011, entitled *Site Inspection Report, Former Thermal Ground Air Station Base, Riverside County California* (Site Investigation Report; see **Attachment A** to this letter).

Based on the available documentation, the County concluded the following:

- The Site Investigation Report addressed two Munitions Response Sites (MRSs), both of which are located outside of the airport boundary (see **Attachment B**). As shown on Attachment B, the Burial Pits MRS is not located on County-owned property and is not associated with TRM.
- The Skeet Range MRS, though located on County Property, is located outside of the fence-enclosed airfield; the area has been almost entirely paved and developed as the Camper Land RV Park. A small portion of the area remains undeveloped and covered in trees and brush.
- The proposed project does not have the potential to affect the area identified by the Site Investigation Report

Comment No. 2. The proposed Project is located in close proximity to several FUDS in which munitions testing during the World War II era occurred. While it appears that the FUDS are outside of the proposed Project area, due to the nature of FUDS use, and the potential that unexploded ordnance (UXO), munitions of explosive concern (MEC) and/or munitions debris (MD) may be discovered, proper health and safety measures are recommended prior to intrusive activities. If UXO, MEC or MD is/are encountered, follow the 3 Rs of Explosives Safety: Recognize, Retreat and Report: Recognize, when you have encountered munitions; Retreat, note your location as you are backing away. Do not approach, touch, or disturb a suspect munitions, safely leave the area and Report, immediately what was found to state and or local law enforcement – call 911.

Comment Response. The Site Investigation Report evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS including munitions of explosive concern (MEC) and/or munitions debris (MD).

- **Skeet Range MRS.** The report identified that the former Skeet Range MRS, the site nearer to the airport, is within a graded and developed area, and the original Department of Defense (DoD) era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, a “No Department of Defense Action Indicated (NDAI) determination is warranted (USACE 2011; Table 8-1).
- **Burn Pits MRS.** The report identified that MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MEC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

In a letter dated September1, 2011, Department of Toxic Substances Control (DTSC) concurred with the NDAI recommendation presented in the Draft-Final Site Investigation Report (see **Attachment C**).

The County appreciates DTSC's comment regarding the risk posed by World War II-era munitions and activities. While the risk associated with encountering such materials is low, the County remains aware that the discovery of such materials would pose risk. The County has incorporated the following mitigation measures into its MND to reduce the potential impact associated with exposure to MEC/MD exposure during field activities.

- **Mitigation Measure HAZARD-1. Brief construction crews about the potential presence of munitions and debris, cease work if potential unexploded ordnance (UXO), munitions of explosive concern (MEC), or munitions debris (MD) are discovered during site grading or construction, and identify construction worker education and cease work measures in construction documents.** Prior to project construction, construction crews will be briefed on the identification of UXO, MEC, and MD, and safe actions to be taken in the event they are encountered, including leaving the area and noting the location in which the material was encountered. Upon departing the site, the crew leader will call 911, and the County's Airports Director. The Airports Director will procure the services of qualified hazardous materials personnel to review and determine potential hazards. Work will continue after an appropriate assessment has been made and the materials have been removed by appropriate personnel.

Comment No. 3. DTSC recommends being aware of signs of contaminated soil, residual staining, or odors during the construction process and advises collecting appropriate samples for waste characterization and contacting DTSC if further assessment is necessary. DTSC recommends compliance with all applicable or relevant and appropriate environmental laws.

Comment Response. As previously mentioned, the County undertook a Phase I ESA in support of the proposed project. The Phase I ESA did not identify the presence of hazardous materials in the area associated with the proposed tower site or limits of disturbance. While the potential to encounter contaminated soils, residual staining or odors is low, the County developed the following mitigation measure to alert crews and further reduce risks associated with the presence of unknown hazardous material releases.

- **Mitigation Measure HAZARD-2. Alert construction crews to signs of contaminated soil, residual staining, or odors, and cease work if they are encountered during site grading or construction.** Construction documents will specify that construction crews shall be alerted to signs of contaminated soil, residual staining, or odors and instruct crews to cease work if these conditions are encountered. The Airports Director will be alerted to the potential presence of

hazardous materials and procure a qualified hazardous materials or environmental services personnel to evaluate the potentially hazardous materials. The County will comply with relevant environmental laws, and work will continue after an appropriate evaluation of the condition has been made, and necessary treatment or remediation is undertaken.

Comment No. 5. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary.

Comment Response. The County does not anticipate that soil or fill material will be imported to the airport in association with the proposed project. No additional mitigation measure is warranted.

The County appreciates the DTSC's interest in its proposed project and the safety of site users and construction crews. The documents used to reach our conclusions to your comments are provided as attachments to this letter. Should you have any questions, please feel free to reach out to me by phone (916-955-9418) or email (ajamison@rivco.org).

Sincerely,

Angela Jamison

Angela Jamison
Riverside County Airports Director

FINAL

Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

U.S. Army Corps of Engineers
Southwest IMA Region

FUDS Project No. J09CA064502
Contract No. W912DY-04-D-0005
Task Order 0009

Prepared for

U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Blvd
Los Angeles, California 90017-3401
and
U.S. Army Corps of Engineers
South Pacific Division Range Support Center

September 2011

The views, opinions, and/or findings contained in this report are those of th author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation

PARSONS
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September 21, 2011

U.S. Army Corps of Engineers, Los Angeles District
ATTN: CESPL-PM-M (Ms. Claudia Garcia)
3636 N. Central Ave., Suite 900
Phoenix, AZ 85012-1939
(602) 640-2021 x 256

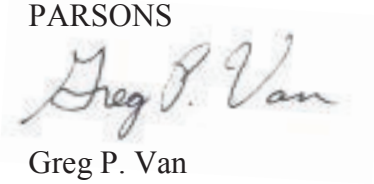
Subject: Contract W912DY-04-D-0005, Delivery Order 0009
MMRP SI for SW IMA Region – Final Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

Dear Ms. Garcia:

Parsons has prepared this Final Site Inspection (SI) Report for the former Thermal Ground Air Station Base. Stakeholder comments for the Draft Final SI Report have been incorporated into the Final SI Report as discussed at the 2nd TPP Meeting that was held on September 8, 2011. One electronic copy has been provided for your internal files. Six hard copies have been sent to Anna Ayala at the USACE Los Angeles District Office for distribution to the regulators and key stakeholders (DTSC, BLM, and County of Riverside). We have submitted a single hard copy of this document to the EMM. Electronic copies have also been provided to Brian Jordan, the EMS, and Rochelle Hance.

If you have any questions or comments, please contact me at (303) 764-1927 or the Program Manager (Mr. Don Silkebakken) at (678) 969-2384.

Sincerely,
PARSONS



Greg P. Van
SI Task Manager

cc: Brian Jordan (SPD) – 1 DVD
Rochelle Hance (CEMVS-EC-P) – 1 DVD
Deborah Walker (EMM) – 1 copy / 1 DVD
Dwayne Ford (EMM) – EKO
Terry Walker (EMS) – 1 DVD
Laura Kelley (Parsons – Project File 747217.94239b)

CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Parsons has completed the Final Site Inspection Report for the former Thermal Ground Air Station Base, California. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. The independent technical review verified compliance with established policy principles and procedures, using justified and valid assumptions. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

Scott Anderson — September 21, 2011
Study/Design Team Leader — Date

Brian Mouth, ELECTRONIC SIGNATURE — September 21, 2011
Study/Design Team Members — Date

Kimberley A. Beliel — September 21, 2011
Study/Design Team Members — Date

Scott Lowry, Kim A. Irwin — September 21, 2011
Review Team — Date

Greg P. Van — September 21, 2011
Independent Technical Review Team Leader — Date

Significant concerns and the explanation of the resolution are as follows:

None

As noted above, all concerns resulting from independent technical review of the project have been considered.

Laura Kelley — September 21, 2011
Parsons Program Manager(s) — Date

U.S. Army Corps of Engineers
Southwest IMA Region

FINAL
Site Inspection Report
Former Thermal Ground Air Station Base
Riverside County, California

FUDS Project No. J09CA064502

September 2011

In Support of

FUDS MMRP Site Inspections Project

Prepared by

Parsons
3577 Parkway Lane, Suite 100
Norcross, Georgia 30092

Prepared for

U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Boulevard
Los Angeles, California 90017-3401

and

U.S. Army Corps of Engineers
South Pacific Division Range Support Center

Contract No. W912DY-04-D-0005
Task Order 0009
Project No. 747217

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

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ACRONYMS AND ABBREVIATIONS

°F	degree Fahrenheit
ASB	Air Station Base
bgs	below ground surface
BLM	Bureau of Land Management
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHE	chemical warfare materiel hazard evaluation
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DGM	digital geophysical mapping
DQO	data quality objective
DTSC	California Department of Toxic Substances Control
EHE	explosive hazard evaluation
ER	Engineering Regulation
FUDS	Formerly Used Defense Site
GPS	global positioning satellite
HHE	health hazard evaluation
HRS	Hazard Ranking System
INPR	inventory project report
MC	munitions constituents
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
MQO	measurement quality objective
MRS	munitions response site
MRSPP	Munitions Response Site Prioritization Protocol
NARA	National Archives and Records Administration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAI	no Department of Defense action indicated
NGVD	national geodetic vertical datum
No.	Number
PA	preliminary assessment
Parsons	Parsons Infrastructure and Technology Group
PSAP	programmatic sampling and analysis plan
PWP	programmatic work plan
QC	quality control
QR	qualitative reconnaissance

RAC	risk assessment code
RI/FS	remedial investigation and feasibility study
SI	site inspection
SLERA	screening-level ecological risk assessment
SLRA	screening-level risk assessment
SS-WP	site-specific work plan
T&E	threatened and endangered
TPP	technical project planning
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
WAA	War Assets Administration

GLOSSARY OF TERMS

inhabited structure	Permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.
military munitions	All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.
munitions and explosives of concern (MEC)	Military munitions that may pose unique explosives safety risks, including unexploded ordnance, discarded military munitions, or munitions constituents present in high enough concentrations to pose an explosive or other health hazard.
munitions constituents (MC)	Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.
munitions debris	Remnants of munitions (e.g., penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.
munitions response	Response actions, including investigation, removal actions, and remedial actions, to address the explosive safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents, or to support a determination that no removal or remedial action is required.
munitions response area	Any area on a defense site that is known or suspected to contain unexploded ordnance, discarded military munitions, or munitions constituents. Examples include former ranges and munitions burial areas. A munitions response area includes one or more munitions response sites.

munitions response site (MRS)	A discrete location within a munitions response area that is known to require a munitions response.
projectile	Object projected by an applied force and continuing in motion by its own inertia. This includes bullets, bombs, shells, grenades, guided missiles, and rockets.
unexploded ordnance (UXO)	Military munitions that have been primed, fuzed, armed, or otherwise prepared for action; that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and that remain unexploded whether by malfunction, design, or any other cause.

EXECUTIVE SUMMARY

ES.1 The objective of this site inspection (SI) is to determine whether the former Thermal Ground Air Support Base (ASB) in Riverside County, California, warrants further investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The former Thermal Ground ASB was used from 1942 to 1945 as an air support command base. The SI at the former Thermal Ground ASB was performed to confirm the munitions response site (MRS) location and to evaluate evidence for the presence of munitions and explosives of concern (MEC) and munitions debris at the Formerly Used Defense Site (FUDS). To accomplish this objective, qualitative reconnaissance (QR) and a digital geophysical mapping (DGM) investigation were performed by Parsons on May 21 and 22, 2011, within the Burial Pits MRS at the FUDS (Thermal Ground ASB).

ES.2 Outcomes for the MRS could include MEC response actions or no Department of Defense (DoD) action indicated (NDAI), among others. If NDAI status is recommended and approved after evaluation of the SI data, the process to close out the former Thermal Ground ASB will be initiated. If an imminent threat is identified to the public or the environment, a time-critical removal action (TCRA) may be performed as an interim action, or a remedial investigation and feasibility study (RI/FS) may be initiated to evaluate feasible MEC response actions.

ES.3 The technical project planning (TPP) process determined that no soil sampling would be proposed to meet the SI project objectives because the Skeet Range MRS has been graded and developed at the former Thermal Ground ASB. However, approximately 4.8 miles of QR and a DGM investigation were conducted at the Burial Pits MRS. Due to the surface grading that has occurred, the original DoD-era ground surface is no longer present at either MRS.

ES.4 No MEC or munitions debris was observed at the former Thermal Ground ASB during the Inventory Project Report (INPR) field visit; however, an interview during the INPR with the then-current maintenance supervisor indicated that in the past, airport staff found “both dummy and real bombs” at the site. The location of the bombs was not discussed in the 1994 INPR and these findings were not substantiated. During the SI, the site visit team observed no MEC or munitions debris at the site. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk to exist at the Skeet Range MRS or the Burial Pits MRS.

ES.5 An MC exposure pathway is not considered complete unless all four of the following elements are present (United States Environmental Protection Agency, 1989):

- A source and mechanism for chemical release
- An environmental transport and/or exposure medium

- A receptor exposure point
- A receptor and a likely route of exposure at the exposure point

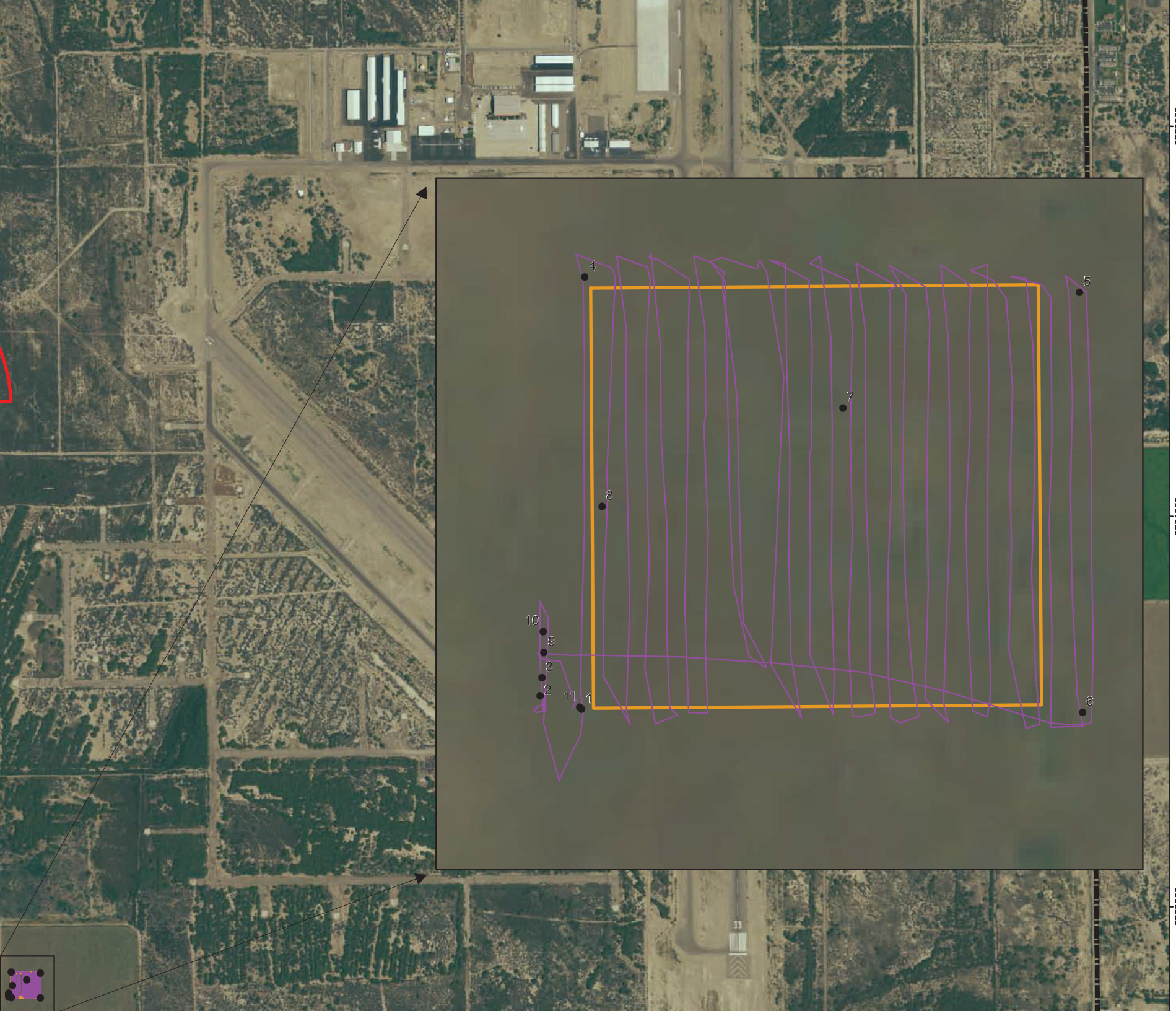
ES.6 Surface soil could have been directly affected by activities at the Skeet Range MRS. The TPP team determined that because the Skeet Range MRS has been graded and developed and the original DoD-era ground surface is no longer present, there is no need to sample surface soil at the former Thermal Ground ASB. Therefore, soil sampling was not conducted during the SI to evaluate MC contamination in the surface soil at the MRS. Subsurface soil could have been directly affected by activities at the Burial Pits MRS. no evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. Due to the grading that has occurred at the MRSs since DoD use of the property, it is highly unlikely that MC contamination remains in the surface soil. No change in land use is expected for the MRSs. For these reasons, the soil exposure pathways for human receptors are incomplete for the Skeet Range MRS and the Burial Pits MRS, and unacceptable risks to human receptors resulting from MC are not expected.

ES.7 The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk at the Skeet Range MRS. Furthermore, although an evaluation of the potential for MC contamination in surface soil at the Skeet Range MRS could not be conducted, it is unlikely that MC contamination remains in the surface soil because the original ground surface is no longer present. Based on the current land use at the Skeet Range MRS, all MC exposure pathways are considered incomplete for all receptors, and unacceptable risks to human receptors resulting from MC are not expected. Therefore, the Skeet Range MRS should proceed to NDAI status.

ES.8 Although an evaluation of the potential for MC contamination in surface soil at the Burial Pits MRS could not be conducted, it is unlikely that MC contamination remains in the surface soil because the original ground surface is no longer present. Based on the current land use at the Burial Pits MRS, all MC exposure pathways are considered incomplete for all receptors, and unacceptable risks to human receptors resulting from MC are not expected. The qualitative MEC risk evaluation concludes that there is no potential for an explosive safety risk at the Burial Pits MRS. Based on this information, it is recommended that the Burial Pits MRS proceed to NDAI. Table ES.1 and Figure ES.1 summarize the results of the SI and historical documentation of munitions use.

TABLE ES.1
SUMMARY OF RESULTS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	Recommendation	Rationale
Skeet Range	NDAI	The MRS is within a graded and developed area, and the original DoD-era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.
Burial Pits	NDAI	The MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.



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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 Parsons Infrastructure and Technology Group (Parsons) received Contract Number (No.) W912DY-04-D-0005, Task Order No. 0009 (Parsons, 2004), from the United States (U.S.) Army Corps of Engineers (USACE) Engineering and Support Center, Huntsville to perform a site inspection (SI) of the Thermal Ground Air Station Base (ASB) Formerly Used Defense Site (FUDS), Project No. J09CA064502, Federal Facilities Identification No. CA99799F563700. The former Thermal Ground ASB is in Riverside County in southeastern California, just west of Thermal and approximately 5 miles southeast of Indio, California. The coordinates for the subject FUDS are approximately 33° 37' 40" N and 116° 09' 54" W (USACE, 2004b). Figure 1.1 shows the site location.

1.1.2 The Department of Defense (DoD) established the Military Munitions Response Program (MMRP) to address DoD sites suspected of containing munitions and explosives of concern (MEC) or munitions constituents (MC). Under the MMRP, the USACE is conducting environmental response activities at FUDS for the Army, the DoD's executive agent for the FUDS program.

1.1.3 Pursuant to USACE Engineering Regulation (ER) 200-3-1 (USACE, 2004a) and the *Management Guidance for the Defense Environmental Restoration Program* (DERP; Office of the Deputy Under Secretary of Defense [Installations and Environment], 2001), the USACE is conducting FUDS response activities. All work is performed in accordance with the following:

- The DERP statute (10 *U.S. Code* [USC] 2701 et seq.);
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; 42 USC 9601 *et seq.*);
- Executive Orders 12580 and 13016; and
- The National Oil and Hazardous Substances Pollution Contingency Plan (NCP; 40 *Code of Federal Regulations* [CFR] Part 300).

1.1.4 The USACE is conducting SIs, as set forth in the NCP, to evaluate hazardous substance releases or threatened releases from eligible FUDS.

1.1.5 While not all MEC or MC constitute CERCLA hazardous substances, pollutants, or contaminants, the DERP statute authorizes the DoD to respond to releases of MEC or MC. DoD policy states that such responses shall be conducted in accordance with CERCLA and the NCP.

1.1.6 This report summarizes the work performed during the SI and describes any MEC and MC contamination identified at the FUDS. The SI is limited exclusively to MEC and MC contamination issues and does not consider unrelated hazardous and toxic waste concerns that the FUDS may pose. Per ER 200-3-1 guidance for conducting an SI, "The SI is not intended as a full-scale study of the nature and extent of contamination or explosive hazards"; it only requires collection of sufficient and appropriate information as defined in the Technical Project Planning (TPP) Memorandum for this site.

1.2 PROJECT OBJECTIVES

1.2.1 The primary objective of the MMRP SI is to determine whether a FUDS project warrants further response action under CERCLA. The SI collects sufficient and appropriate information necessary to make this determination, as well as it

1) Determines the potential need for a removal action;

2) Collects or develops additional data, as appropriate, for Hazard Ranking System (HRS) scoring by the U.S. Environmental Protection Agency (USEPA); and

3) Collects data, as appropriate, to characterize the release for effective and rapid initiation of the remedial investigation and feasibility study (RI/FS).

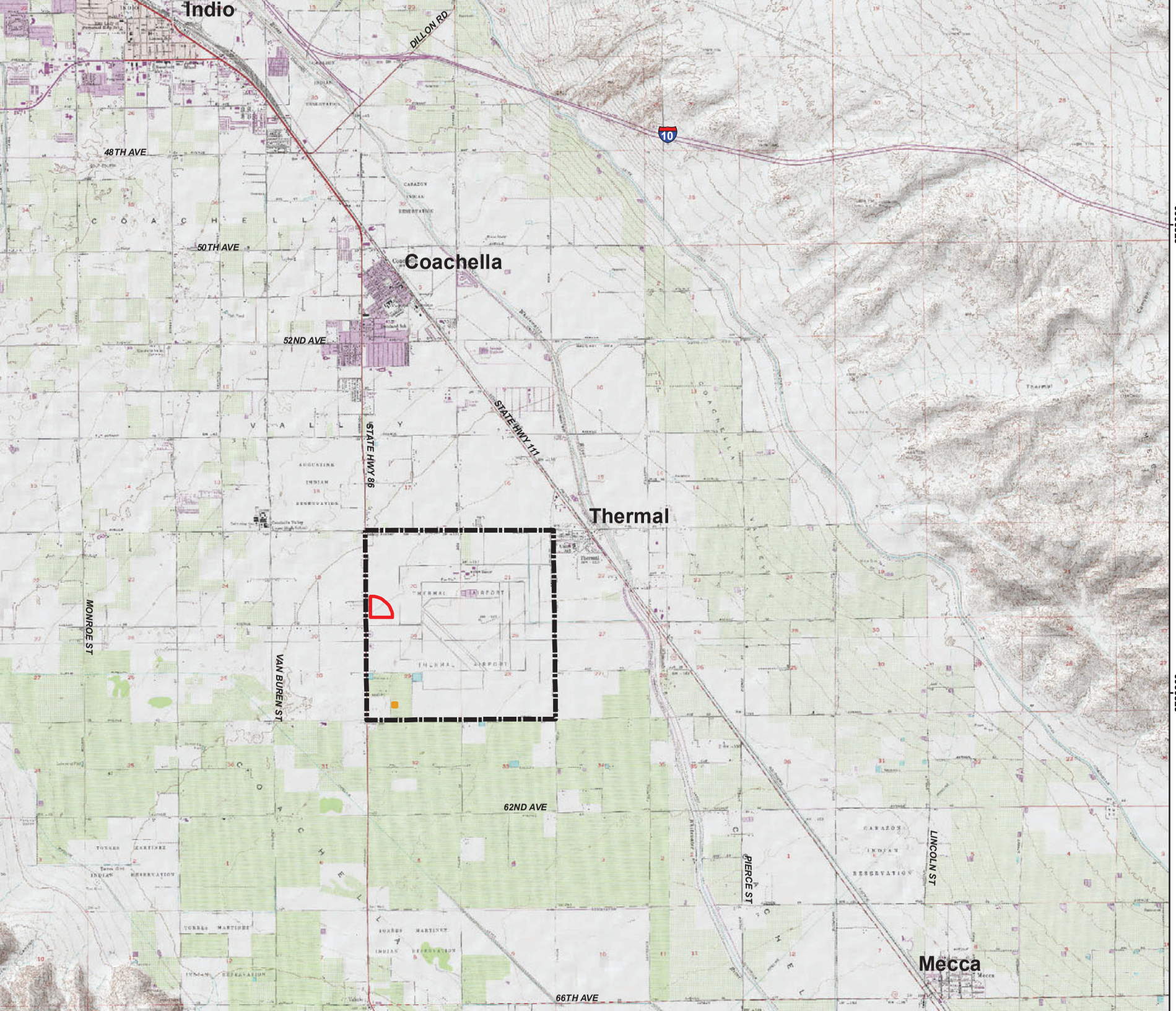
1.2.2 An additional objective of the MMRP SI is to collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).

1.3 PROJECT SCOPE

1.3.1 The primary project planning documents used to perform the SI include the Site-Specific Work Plan (SS-WP) Addendum for the Former Thermal Ground ASB (Parsons, 2011b), the South Pacific Division Range Support Center Programmatic Work Plan (PWP; Parsons, 2010), the Programmatic Sampling and Analysis Plan (PSAP; USACE, 2005), and the PSAP Addendum (Parsons, 2006). The performance work statement for this project is in Appendix A.

1.3.2 The USACE Los Angeles District facilitated a TPP meeting on November 17, 2010, that included representatives of the USACE, the Bureau of Land Management (BLM), the California Department of Toxic Substances Control (DTSC), the County of Riverside, and Parsons. The TPP Team unanimously concurred with the technical approach presented in the final TPP Memorandum (Parsons, 2011c). The TPP Team

determined that because the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. In addition, because no munitions are anticipated to be on the surface of the Burial Pits MRS, it was agreed that no soil samples would be collected within this MRS; however, a geophysical survey would be conducted to verify the presence or absence of a burial pit. The TPP team agreed that groundwater sampling was not warranted during the SI, based on the absence of groundwater wells within the MRSs.



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CHAPTER 2

PROPERTY DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

The former Thermal Ground ASB is in southeastern California, just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of Coachella in Riverside County, California (Figure 1.1). Figure 2.1 shows the FUDS and munitions response site (MRS) boundaries. The site contains the 26-acre Skeet Range MRS and the 1-acre Burial Pits MRS. Thermal Ground ASB was acquired by the Army in August 1942 and was used as an air support command base as part of the Desert Training Center. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units. The site was declared surplus effective November 16, 1945, and transferred to the War Assets Administration (WAA) January 23, 1947. The land was deeded to the county of Riverside, the Coachella Valley County Water District, and the United Date Growers of California between June 1947 and December 1948. The former Thermal Ground ASB is currently owned by Riverside County and several private entities and is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport).

2.2 SITE LOCATION AND SETTING

2.2.1 Topography and Vegetation

2.2.1.1 The former Thermal Ground ASB is in the Indio and the Valerie Quadrangles, Riverside County, 7.5-minute series (U.S. Geological Survey [USGS], 1972a and 1972b). The FUDS ranges from a high elevation of approximately 140 feet national geodetic vertical datum (NGVD) in the southeastern portion of the FUDS to a low of approximately 100 feet NGVD in the northwestern portion of the FUDS (Figure 2.1). The topographic quadrangles indicate that the site terrain slopes down to the northwest through the FUDS and MRSs toward the city of Indio, California. The surface water most likely follows local topography and flows in a northwest direction, but at least one of the ditches reroutes the flow to the south and then east in the northeastern portion of the site.

2.2.1.2 The former Thermal Ground ASB is within the Sonoran Basin and Range Ecoregion, which is characterized by vast expanses of hot, barren desert between Palm Springs, California, and Phoenix, Arizona. The Sonoran Basin and Range ecoregion

contain scattered, low mountains and large areas of palo verde-cactus shrub and giant saguaro cactus, with scattered creosote bush and grasses (USEPA, 2011b). Scattered brush and grasses interspersed with plowed fields were the predominant vegetation types observed during the SI, as shown in site photographs taken May 21, 2011 (Appendix E).

2.2.2 Soil

2.2.2.1 The Thermal Ground ASB FUDS is composed of four main soil types: Indio very fine sandy loam, wet (approximately 62.1 percent of the site); Salton silty clay loam (12.1 percent); Gilman fine sandy loam, wet, 0 to 2 percent slopes (11.1 percent); Gilman silt loam, wet, 0 to 2 percent slopes (9.1 percent). Indio fine sandy loam, wet (3 percent); and Coachella fine sand, wet, 0 to 2 percent slopes (1.4 percent) are also on site (Natural Resources Conservation Service, 2010).

2.2.2.2 Indio very fine sandy loam, wet includes the Indio and similar soils. Indio and similar soils are moderately well drained with high available water capacity. These soils are found on alluvial fans and typically consist of very fine sandy loam from 0 to at least 60 inches below ground surface (bgs).

2.2.2.3 Salton silty clay loam includes Salton and similar soils. Salton and similar soils are poorly drained with high available water capacity. These soils are found on basin floors and typically consist of silty clay loam from 0 to 42 inches and clay from 42 to at least 60 inches bgs.

2.2.2.4 Both Gilman fine sandy loam, wet, 0 to 2 percent slope and Gilman silt loam, wet, 0 to 2 percent slope include the Gilman and similar soils. Gilman and similar soils are moderately well drained with a high available water capacity. These soils are found on alluvial fans and typically consist of fine sandy loam from 0 to 8 inches and stratified loamy sand to silty clay loam from 8 to at least 60 inches bgs.

2.2.3 Climate

2.2.3.1 The nearest weather station to the former Thermal Ground ASB is at the Indio Fire Station in Indio, California, approximately 6 miles northwest of the FUDS. Climate data for the area are based on monthly or yearly averages derived from readings collected at this station. Rainfall is highest in December (0.54 inches), January (0.66 inches), and February (0.51 inches). The climate is driest from March to November, with an average of approximately 0.18 inches of precipitation. The hottest months are June through September, with average maximum temperatures of 104 degrees Fahrenheit (°F). The coldest month is January, with an average maximum temperature of 70.6°F and an average minimum of 39.1°F (Western Regional Climate Center, 2010).

2.2.3.2 Based on information for Coachella, California (roughly 3 miles north of Thermal), winds are highest in the spring, averaging approximately 7.5 miles per hour. Sunshine in the area is above the U.S. average, ranging from approximately 59 percent to 75 percent sunshine year round (City-Data.com, 2011).

2.2.4 Significant and Inhabited Structures

Numerous (more than 26) inhabited structures are within the FUDS (Google Earth, 2011). The structures consist mainly of airport facilities (hangars, terminal, and maintenance buildings), and other commercial/industrial buildings. The census-designated city of Thermal borders the FUDS on the eastern boundary and is approximately 2 miles from the MRS boundaries. Structures just outside the FUDS boundary include temporary and permanent residences, schools, churches, restaurants, and businesses. No inhabited structures are within the MRS boundaries. Inhabited structures are permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

2.2.5 Demographics

The former Thermal Ground ASB is in Riverside County, 3 miles south of the city of Coachella, California. According to U.S. Census 2010, the population density of Riverside County is 303.8 persons per square mile. The census data indicate that 44,154 people potentially live within 4 miles of the Skeet Range MRS, 30,001 people potentially live within 4 miles of the Burial Pits MRS, and 53,064 people potentially live within 4 miles of the FUDS boundary, as shown in Table 2.1 and Figure 2.2. The data indicate that no one lives within the FUDS or MRS boundaries (U.S. Census Bureau, 2011).

TABLE 2.1
POPULATION WITHIN 4-MILE BUFFER OF THE SITE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Range	On Site	0 to ¼ Mile	¼ to ½ Mile	½ to 1 Mile	1 to 2 Miles	2 to 3 Miles	3 to 4 Miles	Total
FUDS	0	1,256	424	3,433	12,865	19,365	15,721	53,064
Skeet Range MRS	0	176	0	94	6,320	19,038	18,526	44,154
Burial Pits MRS	0	0	97	292	953	7,076	21,583	30,001

Source: U.S. Census 2010 data. The population within the FUDS, MRS, or any buffer area is determined using a conservative approach to calculate the population of an area by including the total number of people for any census block that falls within or overlaps the site boundary, MRS boundary, or buffer line.

2.2.6 Current and Future Land Use

The County of Riverside and private entities currently own the lands on which the former Thermal Ground ASB existed. The former Thermal Ground ASB is currently operated as the Jacqueline Cochran Regional Airport (formerly known as the Desert Resorts Regional Airport), which serves the greater Palm Springs and desert resort area. There is also agricultural land around much of the periphery of the site.

2.3 SITE OWNERSHIP AND HISTORY

2.3.1 The former Thermal Ground ASB was originally used as an air support command base as part of the Desert Training Center. The primary function of the tactical units at this station was to provide air support for the ground units of the Desert Training

Center, which were preparing for Operation Torch, the invasion of North Africa. In December 1943, the Thermal Ground ASB was reassigned to the California-Arizona Maneuver Area under control of the Third Air Force. In December 1944, the Army made provisions for Navy use of the site on a temporary basis without transfer of the command jurisdiction or transfer of the real estate. Elements of Combat Application Group 98 arrived in late December 1944, and flight operations began. In addition to flying operations, the station served as a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units. The Navy officially commissioned Thermal on February 1, 1945, and closed the base on November 1, 1945 (California State Military Museum, no date).

2.3.2 On November 16, 1945, the site was declared surplus; it was transferred to the WAA on April 7, 1947. Portions of the site were deeded to the United Date Growers of California on June 20, 1947; the Coachella Valley County Water District on September 2, 1947; and the County of Riverside, California, on December 21, 1948. During its use by the Army and the Navy, the site was known by several aliases. During Army occupancy, the former Thermal Ground ASB was also known as the Thermal Army Airfield, the Thermal Air Support Command Base, and the Indio Airdrome. While under Naval control, the site was known as the Naval Air Facility at Thermal as well as the Naval Air Bases Detachment, Thermal. The airfield at the Thermal Ground ASB included a runway, hangar facilities, a motor park and utility yard, a hospital area, and living quarters (USACE, 1994; Parsons, 2011a).

2.3.3 The former Skeet Range was near the western boundary of the FUDS, with a firing arc of 90 degrees instead of the typical 180 degrees. The firing direction was to the northeast. The exact location of the Burial Pits MRS is unknown. The burial pit was assumed in the Inventory project Report (INPR) to be in the general location of the former ordnance storage area, which was in the southwest corner of the FUDS. The exact acreage of the burial pit is also unknown and was estimated to be 1 acre (USACE, 2004b).

2.4 SITE OPERATIONS AND WASTE CHARACTERISTICS

2.4.1 Munitions Response Site-Specific Descriptions and Operations

The former Thermal Ground ASB consists of the 2,553-acre FUDS with a 26-acre Skeet Range MRS and 1-acre Burial Pits MRS (USACE, 2004b). The land is owned by the County of Riverside and several private entities and is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport).

2.4.2 Regulatory Compliance

The USACE is conducting the SI at the former Thermal Ground ASB as part of FUDS response activities pursuant to and in accordance with the guidance, regulations, and legislation listed in Subchapter 1.1.

2.5 PREVIOUS INVESTIGATIONS

2.5.1 Parsons performed a document review for the former Thermal Ground ASB, including the INPR (USACE, 1994) and the INPR Supplement (USACE, 2004b). Under the direction of the USACE, Parsons in March 2011 also completed the Archival Research Site Summary, which compiles known information and is considered the preliminary assessment (PA) for this site (Parsons, 2011a).

2.5.2 Previous investigations determined that the former Thermal Ground ASB was under military control from 1942 to 1947 and used for use as an air support command base and a pre-embarkation training center for aviation, construction, ordnance, repairs, Navy carrier aircraft service units, and Seabee units between 1942 and 1945. The INPR identifies the site as a FUDS and includes interviews and two field visit reports. The INPR Supplement identifies the types of ordnance potentially used at the FUDS.

2.5.1 1994 Inventory Project Report

The USACE Los Angeles District completed a site survey and risk assessment in 1993 to determine whether the former Thermal Ground ASB was eligible for the DERP FUDS program. During June 1993 and August 1994 field visits, the field team observed no target features or munitions debris; however, an interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at the site. The resulting INPR concludes that the site was used by the DoD and is eligible for the FUDS program. A risk assessment code (RAC) worksheet in the report assigns a score of 4 to the site, indicating further required action. No additional hazards associated with past DoD use are identified for the former Thermal Ground ASB.

2.5.2 2004 Inventory Project Report Supplement

The USACE St. Louis District completed the INPR Supplement in November 2004. The INPR Supplement lists munitions potentially used at the site as general small arms ammunition associated with the Skeet Range MRS as well as several practice bombs that were assumed to be associated with the Burial Pits MRS. The INPR Supplement reports a RAC score of 5 for the Skeet Range MRS based on a hazard severity of *none* and a hazard probability of *frequent* and a RAC score of 4 for the Burial Pits MRS based on a hazard severity of *marginal* and a hazard probability of *occasional*.

2.5.3 2011 Archival Research Site Summary

2.5.3.1 Parsons completed the Archival Research Site Summary for the former Thermal Ground ASB in March 2011 under the direction of the USACE to document record reviews and examination of historical aerial photographs, site maps, and letters. No site visit was conducted as part of this assessment. Two maps pertinent to identification of munitions areas at the former Thermal Ground ASB were obtained from the National Archives and Records Administration (NARA): an aerial image titled "Thermal Air Base, Calif." dated April 20, 1943 (NARA, 2010c), and a map titled

"Ground Air Support Base Building Construction Layout Plan" dated August 17, 1942, with the last revision on December 19, 1944 (NARA, 2010a).

2.5.3.2 The map "Ground Air Support Base Building Construction Layout Plan" shows the location of the skeet range but not the location of any of the other potential ranges listed in the document "Status of Range Acquisitions and Construction" (NARA 2010b). However, the map labels the southwestern corner of the site as "Ordnance," and in the same general vicinity are buildings labeled "Small Arms Ammunition Warehouse" (one unit), "Pyrotechnic Storage" (one unit), "Ammunition Assembly and Maintenance Shop" (one unit), and "Fuse Storage Units" (10 units).

TABLE 2.2
SUSPECTED OR KNOWN MUNITIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

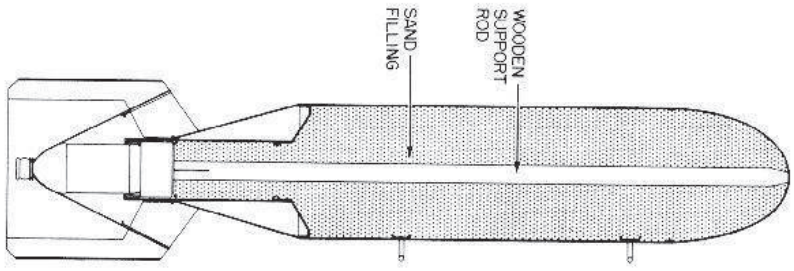
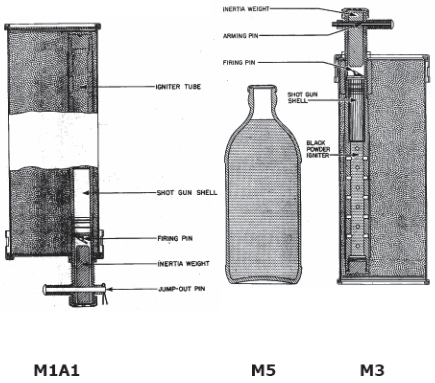
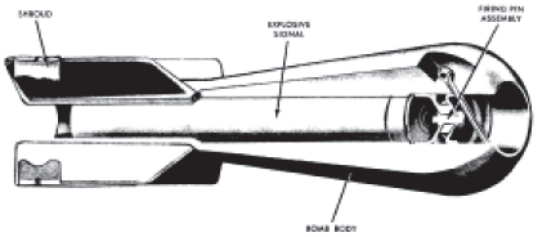
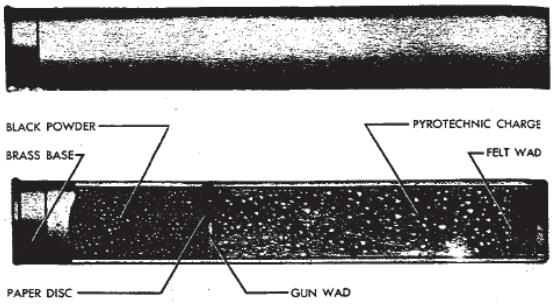
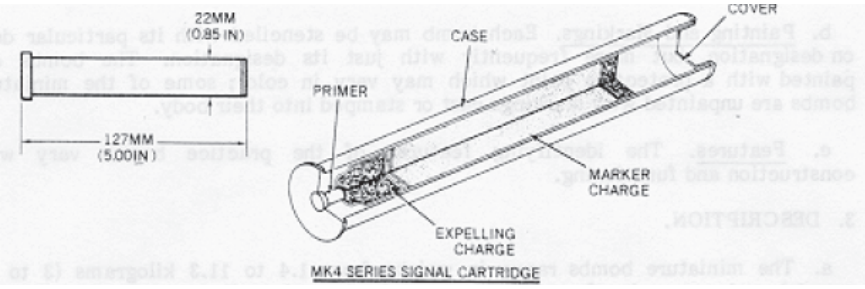
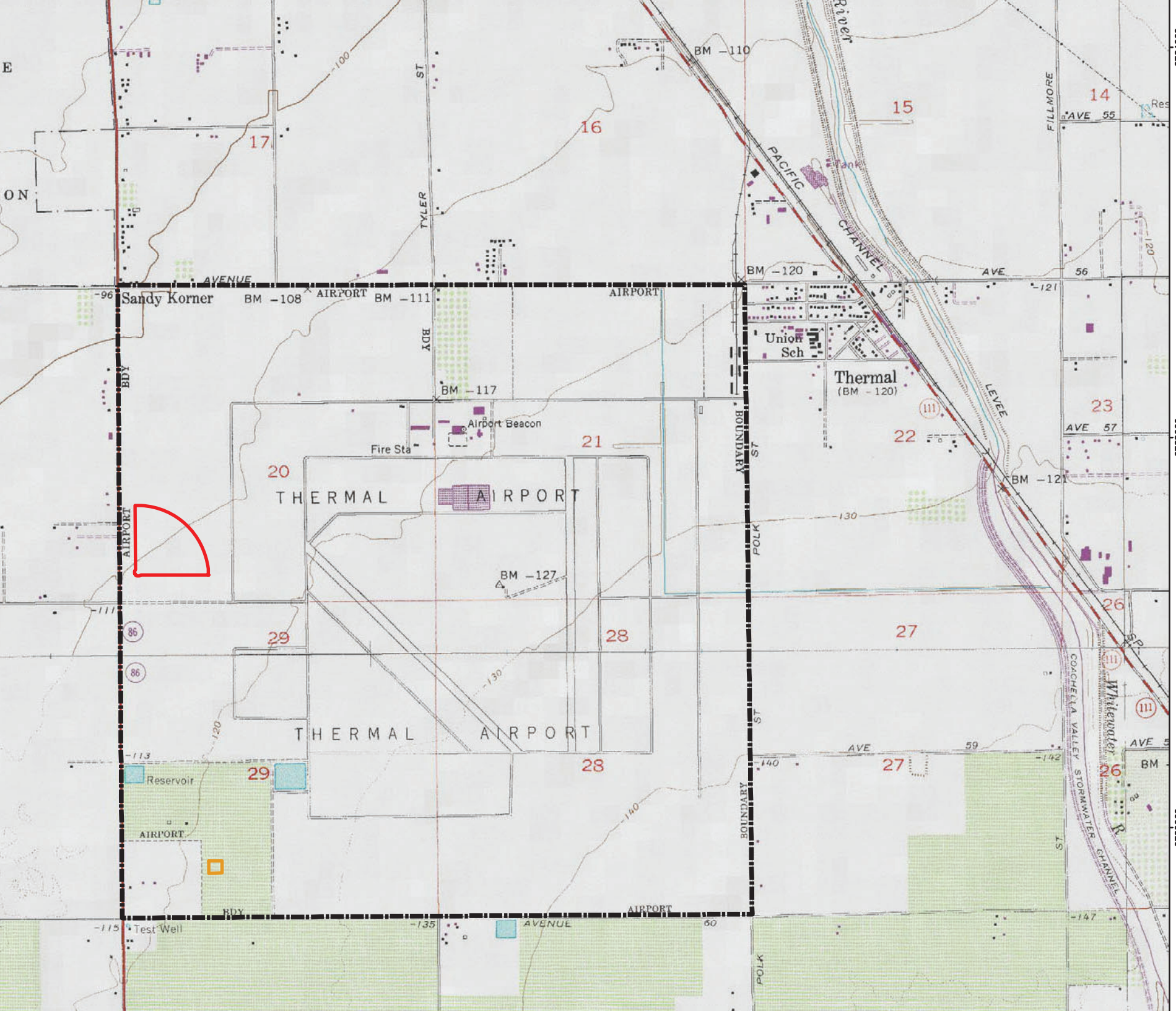
Munitions	Photograph/Diagram
Small arms ammunition, general: Shotgun, 12 gauge	
Bomb, 100 pound, practice, M38A2	
Charges, spotting, bomb, M1A1, M5, and M3	

TABLE 2.2 (Continued)
SUSPECTED OR KNOWN MUNITIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Munitions	Photograph/Diagram
Bomb, 3 pound, miniature practice, Mk5 and Mk23 **and** **Bomb, 4.5-pound, miniature practice, Mk43**	
Cartridge, signal, bomb, Mk4, Mods 0, 1, and 2	
Cartridge, signal, bomb, Mk4, Mods 3 and 4	



Legend

Skeet R

Burial P

FUDS E

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3720000

Image:

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DESIGNED BY:

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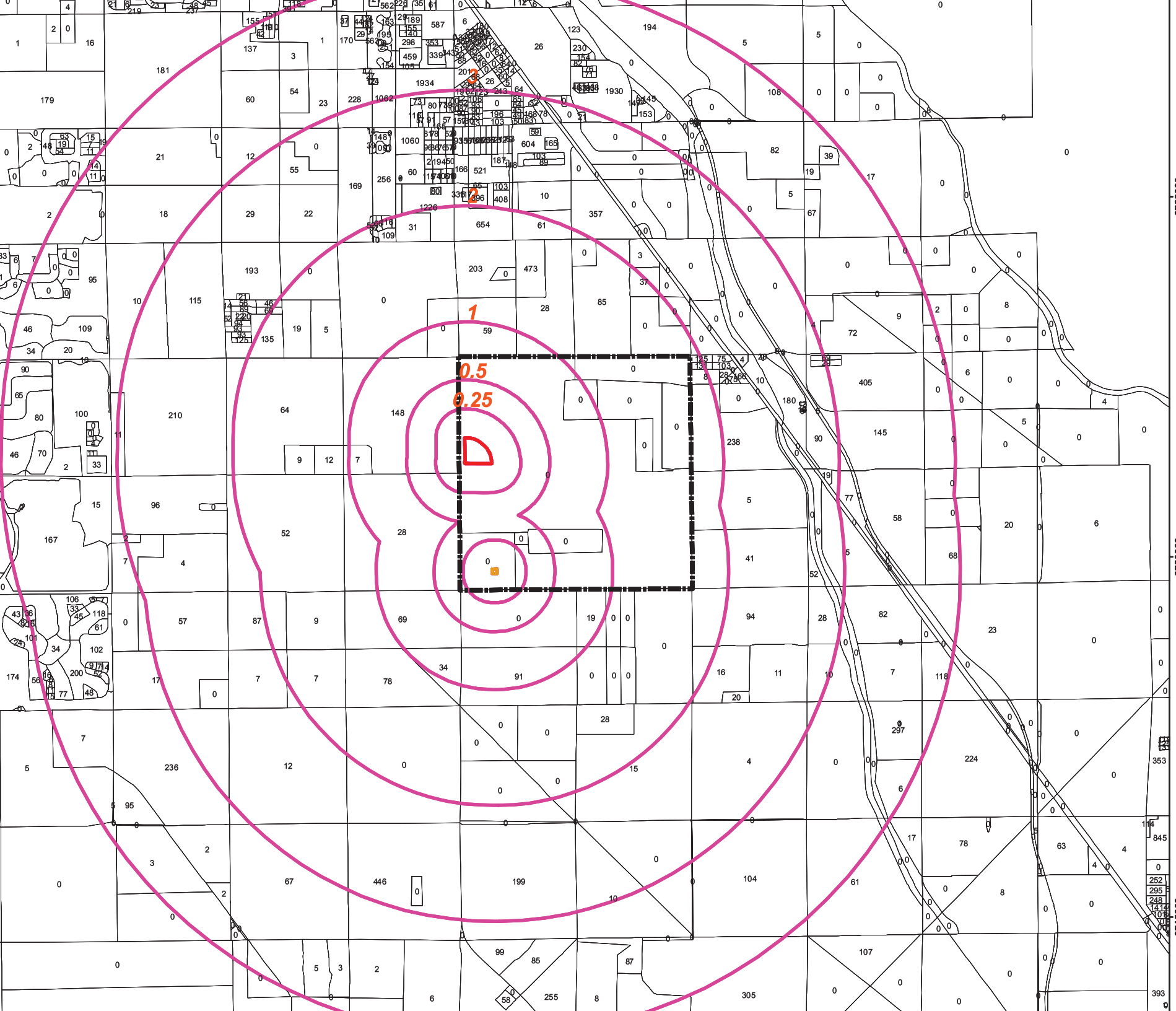
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CHAPTER 3

SITE INSPECTION TASKS

3.1 HISTORICAL RECORD REVIEW

Parsons performed a document review for the former Thermal Ground ASB, including the INPR, the INPR Supplement, and the Archival Research Site Summary.

3.2 TECHNICAL PROJECT PLANNING

The former Thermal Ground ASB falls under the purview of the USACE Los Angeles District, which facilitated a TPP meeting on November 17, 2010, that included representatives of the USACE Los Angeles District, the DTSC, the BLM, the County of Riverside, and Parsons. The TPP Team unanimously concurred with the technical approach presented in the Final TPP Memorandum issued in January, 2011 (Parsons, 2011c; Appendix B). Key TPP findings and decisions are summarized below:

- The TPP Team concurred with the technical approach (developed to aid the presumptive no DoD action indicated [NDAI] outcome) as presented and revised at the TPP meeting.

- The TPP Team determined that because the Skeet Range MRS has been developed and graded, there is no need to sample surface soil at the former Thermal Ground ASB.

- The TPP Team agreed that groundwater sampling was not warranted during the SI, based on the absence of groundwater wells within the MRSs.

- The Riverside County Economic Development Agency was to provide Parsons with a cultural study that was performed by Riverside County at the location of the Skeet Range at the former Thermal Ground ASB. Parsons has not received this information from the agency.

- The TPP Team agreed that Parsons would try to collect more historical information to help verify the location of the Burial Pits MRS. No additional information has been found.

3.3 NONMEASUREMENT DATA COLLECTION

3.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, Inc., which contacted the appropriate authorities and collated the well information received. According to the resulting report, no groundwater wells are within either the Skeet Range MRS or the Burial Pits MRS (Banks Environmental Data, 2010). The California Department of Public Health (CDPH) indicated that there are no wellhead protection areas within 4 miles or surface water intakes within 15 miles of the site (CDPH, 2010). The USEPA indicated that two drinking water wells are within tribal surface water protection areas within 4 miles of the site (USEPA, 2011a).

3.3.2 According to the National Heritage Area Program, the National Historic Landmarks Program, the National Register of Historic Places, and the California Office of Historic Preservation, no cultural or archeological resources are listed within the former Thermal Ground ASB (National Park Service, 2011b, 2011c, 2011d; National Register of Historic Places, 2011a, 2011b). The California Historical Resources Information System – Eastern Information Center has been contacted to provide information regarding any cultural resources that may be present within the MRS boundaries; however, no information has been received.

3.3.3 The following printed and electronic information sources were consulted for the former Thermal Ground ASB:

- USGS – topographic map
- U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory – Wetlands Mapper
- USFWS, Endangered Species Program – Threatened and Endangered Species System, http://ecos.fws.gov/tess_public/StateListing.do?state=all
- USFWS, National Wildlife Refuge System, http://www.fws.gov/refuges/profiles/bystate.cfm
- USFWS, Southwest Region Ecological Services
- U.S. Forest Service, http://www.fs.fed.us
- National Oceanic and Atmospheric Administration, Coastal Zone Management Program, http://coastalmanagement.noaa.gov
- National Park Service, http://www.nps.gov/applications/parksearch/geosearch.cfm
- National Park Service – National Heritage Areas, http://www.nps.gov/history/heritageareas/
- National Park Service – Lists of National Historic Landmarks, http://www.nps.gov/nhl/designations/listsofNHLs.htm

- National Park Service – National Historic Landmarks Program, http://www.nps.gov/history/nhl/
- National Park Service – National Register of Historic Places, NPS focus, http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome
- National Register of Historic Places, Riverside, http://www.historicdistricts.com/ca/riverside/districts.html and http://www.historicdistricts.com/ca/riverside/state.html
- California Department of Fish and Game – BioGeographic Data Branch, California Natural Diversity Database, http://www.dfg.ca.gov/biogeodata/cnddb/quick_ viewer_launch.asp
- INPR Supplement for the former Thermal Ground ASB, Riverside County, California

3.4 SITE-SPECIFIC WORK PLAN

3.4.1 The SS-WP augments the PWP and PSAP, as warranted, to present pertinent site-specific information and procedural adjustments that could not be readily captured in the programmatic documents or that resulted from TPP Team agreements that required modifying the preliminary SI technical approach. The PWP and PSAP are umbrella documents that set overall programmatic objectives and approaches, whereas the SS-WP provides site-specific details and action plans. The PWP, PSAP, and SS-WP accompanied the site visit team during the SI field work.

3.4.2 The SS-WP includes the project description, the field investigation plan, the sampling and analysis plan, the environmental protection plan, and the accident prevention plan specific to the former Thermal Ground ASB. The field investigation plan developed a technical approach to guide the geophysical investigation. Key elements of the technical approach include the conceptual site model (CSM), data quality objectives (DQOs), and geophysical transect locations. The sampling and analysis plan concluded that no soil sampling would be conducted, as agreed by the TPP Team. The environmental protection plan presents procedures for avoiding, minimizing, and mitigating potential impacts on environmental and cultural resources during site field activities. The health and safety plan supplements the programmatic accident prevention plan with site-specific emergency contact information and directions to the nearest hospital.

3.5 DEPARTURES FROM PLANNING DOCUMENTS

There were no departures from planning documents at the former Thermal Ground ASB.

CHAPTER 4

MUNITIONS AND EXPLOSIVES OF CONCERN FINDINGS

4.1 GENERAL INFORMATION

4.1.1 Digital Geophysical Mapping Investigation and Qualitative Reconnaissance

4.1.2.1 The former Thermal Ground ASB includes two MRSs: the Skeet Range MRS and the Burial Pits MRS. The TPP team agreed that the SI data collection would focus on a geophysical survey in the vicinity of the Burial Pits MRS. In addition, the TPP Team determined that since the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. On May 21 and 22, 2011, the site visit team conducted a digital geophysical mapping (DGM) investigation over the Burial Pits MRS to determine the presence or absence of a burial pit.

4.1.2.2 Prior to the investigation, the EM61-MK2 was checked according to the procedures specified in the instruction manual, as well as those outlined in the SS-WP to determine that the equipment was functioning properly. As a part of this process, an instrument battery check was performed on all components (EM61-MK2, and Allegro/data logger). Several quality control (QC) checks to monitor the instrument for signal noise, stability, and repeatability were conducted prior to use in accordance with the SS-WP. The quality control checks were all adequate (met MQOs) and the complete results of these tests are provided in Appendix I.

4.1.2.3 The site visit team performed 4.8 miles of qualitative reconnaissance (QR) simultaneously with the DGM survey (Figure 4.1). An unexploded ordnance (UXO) technician performed a sweep of the areas for surface debris using a Schonstedt GA-92XTi magnetic locator. The site was plowed and free of visible surface debris, and no MEC or munitions debris was observed during the SI. The site visit team's daily field reports are included in Appendix D, and the photograph documentation log is included in Appendix E. No photographs are available for the observations taken May 22, 2011; however, the May 21, 2011 photographs show similar observations.

4.1.2.4 The Burial Pits MRS geophysical investigation used survey lines spaced 3 meters apart across the entire site (Figure 4.2). Fiducial markers were inserted in the geophysical data file by the instrument operator at 15 meter intervals along each survey line to interpolate the geophysical data. Two seed items (1-inch diameter metal pipe, 6 inches long) were placed within the Burial Pits MRS to verify that the instrument was

working properly. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation (Figure 4.2).

4.1.2 Instrument Standardization

4.1.2.1 To ensure the quality of the mapped geophysical data, several tests were performed on the EM61-MK2. These tests, their objectives, and the acceptance criteria are described below. The results of these tests are in Appendix I.

4.1.2.2 As stated in the SS-WP a static test was conducted at the beginning and end of each day in an area known to be free of subsurface anomalies and other potential magnetic interference. This static test recorded the instrument background readings, monitored for electronic drift, identified potential interference, and determined the impulse response and repeatability produced by a "static bar," which consists of a polyvinyl chloride (PVC) pipe with a metal nut in the center set on the EM61-MK2 coils. The test was conducted by holding the instrument static and measuring the local background (without the static bar present) for about 3 minutes. Next, the static bar was placed across the center of the coil, where a maximum reading was obtained and an additional minute of data was collected. Improper instrument function, ambient electromagnetic noise, and instability in the earth's magnetic field during a magnetic storm are all potential sources of inconsistent or unrepeatable readings. The pre- and post-survey responses were not to exceed 20 percent of one another.

4.1.2.3 The EM61-MK2 was tested at the site over a test strip before the geophysical survey was conducted at the Burial Pits MRS. The test strip was in an area with minimal background anomalies and consisted of an area of 5 feet by 50 feet. The test strip contained four detection items (1-inch diameter metal pipe, 6-inches long). The items were placed on the ground in line separated by 10 feet and placed in the same direction and orientation throughout the project for repeatability. The test strip was surveyed twice per day in opposite directions and the responses of each of the test items did not exceed 75 percent of one another. Following the completion of activities at the site, all detection items were removed and accounted for.

4.1.2.4 Two noise checks (the operator and the cable shake tests) were performed once per day. The operator test collects data as the operator moves his/her body in relation to the sensor to ensure that there are no metallic items on the operator that will interfere with the measurements. The cable shake test collects data while the instrument cables are shaken to ensure that poor connectors and cables will not introduce noise into the data. The readings were observed by the operator during these tests to ensure that spikes in the data during either test did not occur.

4.1.2.5 The geophysical processor evaluated results of the test strip to determine the instrument latency correction necessary for the data set. Once determined, the latency value was applied to the whole data set.

4.1.3 Data Quality Objectives

4.1.3.1 Introduction

4.1.3.1.1 DQOs are qualitative and quantitative statements that clarify study objectives and specify the type and quality of the data necessary to support decisions. The development of DQOs for a specific site takes into account factors that determine whether the quality and quantity of data are adequate for project needs, such as data collection, uses, types, and needs. While developing these DQOs in accordance with the process presented in Chapter 3, paragraph 3.1.2, of the PWP, Parsons followed the *Guidance on Systematic Planning Using the Data Quality Objectives Process* (USEPA, 2006).

4.1.3.1.2 The goal of the TPP process is to achieve stakeholder, USACE, and applicable state and federal regulatory concurrence with the DQOs for a given site. The TPP Team approved the former Thermal Ground ASB DQOs at the TPP meeting on November 17, 2010. Appendix B of this SI Report presents the TPP documentation, including the DQO worksheets agreed to at the meeting. The updated DQO and measurement quality objectives (MQO) worksheets for the Skeet Range and Burial Pits MRSs are included in this report as Tables 4.1 through 4.5.

4.1.3.1.3 As stated in Subchapter 1.2 of this SI Report, data must be sufficient to do the following: 1) determine whether a removal action is necessary; 2) enable HRS scoring by the USEPA; 3) characterize the release for RI/FS initiation; and 4) complete the MRSPP.

4.1.3.1.4 DQOs cover four project objectives that SI data must satisfy: 1) evaluate potential presence of MEC; 2) evaluate potential presence of MC; 3) collect data needed to complete MRSPP scoring sheets; and 4) collect information for HRS scoring.

4.1.3.2 Munitions and Explosives of Concern Data Quality Objective

The MEC DQO was achieved by evaluating potential presence of MEC within the Burial Pits MRS boundary. The QR team searched for visual evidence of MEC and munitions debris along the QR transects. No MEC or munitions debris was found within the MRS boundary during the QR or DGM survey. Table 4.1 presents the MEC DQOs.

4.1.3.3 Digital Geophysical Data and Measurement Quality Objective

4.1.3.3.1 The quality control (QC) tests listed in Subchapter 4.1.2 were evaluated for compliance with the MQOs listed in Table 4.2. In addition to the instrument standardization tests, an analysis of the acquisition speed was applied to the whole dataset. The acquisition speed MQO required that no more than 10 percent of the data collected exceeded 3 mph, the maximum speed demonstrated at the test strip.

4.1.3.3.2 Positional accuracy of the fiducial method was verified with two seed items placed within the Burial Pits MRS (the same type of pipes used in the test strip described

in Subchapter 4.1.2). The geodetic accuracy MQO required that the location of a target over a seed item not exceed 1.5 meters from the actual location.

4.1.3.3.3 The DGM MQO was achieved by evaluating each dataset for pass/fail of the metrics shown in Table 4.2. All datasets passed the QC tests within the values required by the MQOs. A complete list of the results of these tests is in Appendix I.

TABLE 4.1
MEC DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

DQO Element Number(1)	DQO Element Description(1)	Site-Specific DQO Statement	Objective Met?
Intended Data Use(s):			
1	Project Objective(s) Satisfied	Evaluate potential presence of MEC	Yes
Intended Need Requirements:			
2	Data User Perspective(s)	Risk, remedy	Yes
3	Contaminant or Characteristic of Interest	MEC, munitions debris	Yes
4	Media of Interest	N/A	N/A
5	Required Locations or Areas	Burial Pits MRS	Yes
6	Number of Samples Required	N/A	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Identification of MEC or munitions debris during QR or DGM survey	Yes
Appropriate Sampling and Analysis Methods:			
8	Sampling Method	QR using Schonstedt GA-92XTi magnetic locator for avoidance in accordance with AHA; DGM (using Geonics EM61-MK2)	Yes
9	Analytical Method	N/A	N/A

(1) Refer to EM 200-1-2, Paragraph 4.2.

TABLE 4.2
GEOPHYSICAL MAPPING MEASUREMENT QUALITY OBJECTIVES
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MQO	Method	Criteria	Corrective action for QC failure	Objective Met?
Static Repeatability	Collect data over a test item twice daily and compare response with standard response.	Response (mean static spike – mean static background) is within ±20% of with standard response.	Day's data fails unless both the test strip test item and a fiducial positioning test item are mapped with repeatable characteristics.	Yes
Velocity	Evaluate each dataset using Geosoft Velocity Calculation QC tool.	90% of data are within maximum velocity demonstrated at the test strip.	Recollect areas of MQO-failing data until MQO is met.	Yes
Test-Strip Repeatability	Collect data over the test strip twice daily and compare response with standard response.	Measured responses are at least 75% of expected responses for items in the test strip	Day's data fails unless both the test strip test item and a fiducial positioning test item are mapped with repeatable characteristics.	Yes
Geodetic Accuracy of Fiducial Methods	Collect data over two fiducial positioning test items placed within the grid.	Fiducially positioned response is within 1.5m (i.e., 0.5m + ½ line spacing) of actual position of each fiducial positioning test item.	Recollect areas of MQO-failing data until MQO is met	Yes
Geodetic Accuracy of Fiducial Grid Boundaries	The geophysical team will use a GeoXT GPS capable of sub-meter accuracy to place grid corners and extents of fiducial data collection lanes. The GeoXT GPS antenna will be placed directly over a known location to measure accuracy.	The GeoXT will operate using recommended receiver quality metrics (SNR 3.5 and PDOP 7), though these metric may vary due to available satellites. Compare measured coordinates with known coordinates to confirm that the offset is <1.0m for the GeoXT.	N/A. GeoXT receiver quality metrics will be adjusted until required accuracy is met.	Yes

4.1.3.4 Munitions Constituents Data Quality Objective

The MC DQO was achieved by evaluating the potential presence of MC at the MRS at the former Thermal Ground ASB. The TPP team agreed that there is no need to sample surface soil at the former Thermal Ground ASB because the Skeet Range MRS has been graded and developed. Table 4.3 presents the MC DQOs.

TABLE 4.3
MC DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

DQO Element Number(1)	DQO Element Description(1)	Site-Specific DQO Statement	Objective Met?
Intended Data Use(s):			
1	Project Objective(s) Satisfied	Evaluate potential presence of MC	Yes
Intended Need Requirements:			
2	Data User Perspective(s)	Risk, remedy	Yes
3	Contaminant or Characteristic of Interest	See CSM and sampling rationale tables	Yes
4	Media of Interest	N/A	N/A
5	Required Sampling Locations or Areas and Depths	N/A. MC sampling is not proposed for this site.	N/A
6	Number of Samples Required	N/A. MC sampling is not proposed for this site.	N/A
7	Reference Concentration of Interest or Other Performance Criteria	N/A. MC sampling is not proposed for this site.	N/A
Appropriate Sampling and Analysis Methods:			
8	Sampling Method	N/A. DGM will be conducted.	N/A
9	Analytical Method	N/A. MC sampling is not proposed for this site.	N/A

(1) Refer to EM 200-1-2, Paragraph 4.2.

4.1.3.5 Munitions Response Site Prioritization Protocol Data Quality Objective

The MRSPP DQO was achieved by obtaining sufficient information to complete the MRSPP scoring sheets. Specific input data were collected, and the three modules for the MRSPP were populated as part of the SI. Appendix K includes the MRSPP scoring sheets. Table 4.4 presents the MRSPP DQOs.

TABLE 4.4
MRSPP DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Module	MRSPP Table No.	Table Description	Known Data	Current Data Gap	Data Source
Explosive Hazard Evaluation (EHE)	1	Munitions Type	X		Historical records or field findings
	2	Source of Hazard	X		Historical maps
	3	Location of Munitions	X		Historical records or field findings
	4	Ease of Access	X		Field findings
	5	Status of Property	X		Historical records
	6	Population Density	X		U.S. Census Bureau
	7	Population Near Hazard	X		Field findings
	8	Types of Activities/Structures	X		Regional zoning
	9	Ecological and/or Cultural Resources	X		USFWS, State Historic Preservation Office
	10	Determining the EHE	X		Scores from Tables 1 through 9
Chemical Warfare Materiel (CWM) Hazard Evaluation (CHE)	11	CWM Configuration	X		Historical records or field findings
	12	Sources of CWM	X		Historical records or field findings
	13	Location of CWM	X		Historical records or field findings
	14	Ease of Access	X		Field findings
	15	Status of Property	X		Historical records
	16	Population Density	X		U.S. Census Bureau
	17	Population Near Hazard	X		Field findings
	18	Types of Activities/Structures	X		Regional zoning
	19	Ecological and/or Cultural Resources	X		USFWS, State Historic Preservation Office
	20	Determining the CHE	X		Scores from Tables 11 through 19
Health Hazard Evaluation (HHE)	21	Groundwater Data	X		N/A
	22	Surface Water – Human Endpoint	X		N/A
	23	Sediment – Human Endpoint	X		N/A
	24	Surface Water – Ecological Endpoint	X		N/A
	25	Sediment – Ecological Endpoint	X		N/A
	26	Surface Soil	X		N/A
	27	Supplemental Contaminant Hazard Factor	X		N/A. DGM was conducted.
	28	Determining the HHE	X		Scores from Tables 21 through 27
	29	MRS Priority	X		Scores from Tables 10, 20, and 28
	A	MRS Background Information	X		DoD databases

4.1.3.6 Hazard Ranking System Data Quality Objective

The HRS DQO was achieved by including information in the SI report necessary for the USEPA to populate the HRS score sheets. Source documents for the HRS information include the INPR, the INPR Supplement, the Archival Research Site Summary (the PA), and information from local and state agencies regarding population, groundwater well users, and drinking water use. Table 4.5 presents the HRS DQOs.

TABLE 4.5
HRS DATA QUALITY OBJECTIVE WORKSHEET
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Data Description	Known Data	Current Data Gap	Data Source
Source Type	X		Historical records or field findings
Estimated Volume or Area	X		N/A
Hazardous Substance	X		Constituents of suspected munitions
Groundwater Sample Concentration	X		N/A
Groundwater Use	X		Well records and municipal data
Surface Water Sample Concentration	X		N/A
Surface Water Pathways	X		Field findings
Soil Sample Concentration	X		N/A
Soil Pathways	X		Field findings
Sensitive Environments	X		State Historic Preservation Office, U.S. Fish and Wildlife Service, various government agencies
Attractiveness/Accessibility	X		Field findings and land use records

4.2 SKEET RANGE MUNITIONS RESPONSE SITE

4.2.1 Historical Munitions and Explosives of Concern

4.2.1.1 The Skeet Range MRS consists of a 26-acre skeet range northwest of the original northwest-southeast runway at the Thermal Ground ASB FUDS. Historical records summarized in the INPR, INPR Summary, and Archival Research Site Summary indicate that the Skeet Range MRS was used from 1942 to 1945 for shotgun practice. The INPR states that general small arms ammunition (12-gauge shotgun) was the ordnance most likely used for training (USACE, 1994).

4.2.1.2 The field visits in June 1993 and August 1994 in support of the INPR observed no MEC or munitions debris; however, an interview with the maintenance supervisor in support of the INPR revealed that ordnance, both practice and live bombs, have been found by airport staff in the past. The location of these items was not discussed in the 1994 INPR, and it is unlikely that they were within the Skeet Range MRS.

4.2.2 Inspection Activities

The TPP Team agreed that no QR or soil sampling would be conducted within the Skeet Range MRS since the area has been graded and developed. The Skeet Range MRS is agricultural land and has been plowed and tilled.

4.3 BURIAL PITS MUNITIONS RESPONSE SITE

4.3.1 Historical Munitions and Explosives of Concern

4.3.1.1 The Burial Pits MRS consists of a 1-acre area southwest of the original northwest-southeast runway at the Thermal Ground ASB FUDS. Historical records summarized in the INPR, INPR Summary, and Archival Research Site Summary indicate that the Burial Pits MRS was used from 1942 to 1945. The INPR indicates that the location of the Burial Pits MRS is not known, and as a result, the Burial Pits MRS was inferred from an interview conducted during the 1994 INPR with the then-current maintenance supervisor. The maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at the site; however, he did not provide specific locations, and he is no longer the maintenance supervisor at the airport. The INPR Supplement indicates that according to standard practice, the bombs would either have been dropped on the airfield during practice bombing or they would have been discarded and buried in the airfield. Because there is no evidence of bombing targets or of cratering, burying the bombs was assumed (USACE, 1994 and 2004b).

4.3.1.2 In addition, a 1942 facility map, updated in 1944, shows the location of ordnance storage facilities in the southwestern portion of the site. The buildings in the ordnance area are referenced as a small arms and ammunition warehouse, pyrotechnic storage, an ammunition assembly and maintenance shop, and 10 fuse storage units. Although the location of the ordnance storage facility is known, the location(s) at which ordnance was found is not known. Accordingly, the location of the Burial Pits MRS was assumed to be in the general location of the former ordnance storage area. The exact area of the Burial Pits MRS is unknown but was estimated at 1 acre.

4.3.1.3 The field visits in June 1993 and August 1994 in support of the INPR observed no MEC or munitions debris; however, an interview with the maintenance supervisor in support of the INPR revealed that ordnance (both practice and live bombs) has been found by airport staff in the past. The location of these items was not disclosed in the 1994 INPR and these findings were not substantiated. It was assumed that the most likely location is the Burial Pits MRS (USACE, 1994 and 2004b). The INPR Supplement lists M38A2 practice bombs, M1A1 spotting charges, AN-Mk5, AN-Mk23, and AN-Mk43 miniature practice bombs, and Mk4 signal cartridges as the ordnance most likely used. M3 and M5 spotting charges were also typically used with M38A2 bombs (USACE, 2004b).

4.3.2 Inspection Activities

To assess the potential presence of a burial pit within the Burial Pit MRS, the site visit team conducted geophysical mapping. In addition, the site visit team conducted 4.8 miles of QR along the geophysical transects while conducting the DGM investigation within the Burial Pits MRS. Before conducting the geophysical mapping, the grid area was surveyed by the UXO escort. No evidence of MEC or munitions debris was observed on the surface. No evidence of a burial pit was found at the Burial Pits MRS during the

geophysical investigation (Figure 4.2). The site visit team observed that the area was plowed; however, no visual evidence of a burial pit was found.

Field Obs

Gro
FUDS P

Riv

Legend

Field C

Burial

Qualita

3719800

Projec

20

PARSO

DESIGNED BY:
BT

3719700

Seed2
Meters
10 5 0 10
Legend
Anomal
Geophy
Burial F
FUDS B
Fiducia
Proj
100
PARSO
DESIGNED BY:
BT
3720100
3720000
3719900
3719800
3719700
3719600

CHAPTER 5

EXPOSURE PATHWAYS AND RECEPTORS

5.1 INTRODUCTION

5.1.1 This chapter evaluates the potential presence of exposure pathways and receptors, based on site-specific conditions. It is necessary to evaluate site-specific conditions and land use to assess risks posed to potential receptors under current and future land use scenarios. Exposure pathways for groundwater, surface water and sediment, soil, and air are evaluated. The conceptual site exposure models for the former Skeet Range and Burial Pits MRSs (Appendix J) summarize which potential receptor exposure pathways are (or may be) complete and which are (and are likely to remain) incomplete. An exposure pathway is considered incomplete unless all four of the following factors (in italics) are present (USEPA, 1989). An example regarding a hypothetical groundwater exposure pathway accompanies the factors.

- *A source of contamination*. For example, a site has known MEC from which MC have leached and contaminated surface soil.

- *An environmental transport and/or exposure medium*. In the example, the MC in soil at the site are mobile and can contaminate groundwater.

- *A point of exposure at which the contaminant can interact with a receptor*. A well drawing from the contaminated aquifer is at the site.

- *A receptor and a likely route of exposure at the exposure point*. A resident uses groundwater from the onsite well as a source of drinking water.

5.1.2 In this hypothetical example, all four factors are present and, therefore, the groundwater exposure pathway is complete. If any single factor was not present (e.g., the MC were not present in soil, or the resident used drinking water from another source), the pathway would be incomplete.

5.1.3 This chapter presents the information required to evaluate whether exposure pathways at this site are complete. It also addresses those constituents that require further consideration in a screening-level risk assessment (SLRA) and a screening-level ecological risk assessment (SLERA). Chapter 6 assesses the potential significance of complete pathways (i.e., whether there is an unacceptable risk).

5.2 GENERAL INFORMATION

General information regarding the geology, hydrogeology, and hydrology of the former Thermal Ground ASB is presented below, followed by a discussion of MRS-specific characteristics and sampling results from the Skeet Range and Burial Pits MRSs.

5.2.1 Regional Geologic and Hydrogeologic Setting

5.2.1.1 The former Thermal Ground ASB is within the Salton Trough section of the Los Angeles Ranges Physiographic Province (USGS, 2002). The Salton Trough is a concave desert basin that descends to 235 feet below sea level at the Salton Sea (*Encyclopedia Britannica*, 2011). The former Thermal Ground ASB is within the Salton Sea Watershed in east-central Riverside County. Portions of the Salton Sea Watershed are in Imperial, Riverside, San Bernardino, and San Diego Counties and in Baja California, Mexico (USGS, 2010a). The Whitewater River flows from north to south, while the New River, originating in Mexico, flows to the north. These two rivers are the main tributaries in the Salton Sea Watershed, and both drain into the Salton Sea. The upper portions of the Salton Sea watershed are in the Santa Rosa Mountains, the San Jacinto Mountains, and the Little San Bernardino Mountains (USGS, 1995). These mountain ranges are mostly unforested, scrub-shrub, arid ecosystems that have burrobrush, cacti, and other succulent plants. The Salton Sea Watershed has no outlets, and thus all water entering the watershed flows directly into the Salton Sea (USGS, 1995; USGS, 2010a). Many ephemeral washes are found throughout the Salton Sea Watershed, none of which flow through the FUDS and MRSs. The Salton Sea Watershed includes the cities of Thermal, Mecca, Indio, Palm Springs, and La Quinta as well as numerous agricultural fields (USGS, 2010a).

5.2.1.2 The surface geology at the former Thermal Ground ASB is composed of Quaternary alluvium deposits. These deposits are characterized by alluvium, lake, playa, and terrace deposits, which tend to be unconsolidated to semiconsolidated and are mostly of nonmarine origin (USGS, 2010b).

5.2.1.3 The FUDS and MRSs are within the Indio Subbasin of the Coachella Valley Groundwater Basin. The Indio Subbasin is bounded by impermeable rocks of the San Jacinto and Santa Rosa Mountains to the south, the Banning fault to the north, and the semipermeable rocks of the Indio Hills in the eastern portion of the Coachella Valley (California Department of Water Resources, 2004). The Basin and Range basin fill aquifer system, which underlies the former Thermal Ground ASB, consists of alluvium-filled basins interspersed between mountain ranges (USGS, 2003). The alluvium fill of the basin aquifers generally consists of unconsolidated sand and gravel. Recharge to the aquifers is primarily from precipitation in the mountains surrounding the valley. Because of increased water demand in the Coachella Valley, water from the Colorado River is delivered to the valley for aquifer recharge efforts (Coachella Valley Water District, 2002). The water levels and direction of groundwater movement in a basin are determined by the geometry of the bedrock surrounding the basin and by the location and quantity of recharge and discharge within the basin. Although groundwater flows

through the basin-fill aquifers from areas of recharge to areas of discharge, the complex and partly interconnected network of aquifers in the basins causes groundwater to flow in many different directions, and the hydrology of each basin is unique (USGS, 1995).

5.2.2 Regional Groundwater Use

5.2.2.1 Although there are no state-regulated public groundwater supplies in the area (CDPH, 2010), there are two tribal drinking water supplies in the area (USEPA, 2011a).

5.2.2.2 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, there are 526 groundwater wells within 4 miles of the former Thermal Ground ASB, including two public/domestic wells and three other wells on site. Depth to groundwater is typically 28 feet bgs (Banks Environmental Data, 2010; Table 5.1 and Figure 5.1).

TABLE 5.1
GROUNDWATER WELLS WITHIN 4-MILE BUFFER OF THE FUDS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from FUDS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	2	0	0	3	5
0 to ¼ mile	13	1	0	0	14
¼ to ½ mile	8	2	0	2	12
½ to 1 mile	37	6	0	4	47
1 to 2 miles	86	14	0	13	113
2 to 3 miles	106	58	0	22	186
3 to 4 miles	92	44	0	13	149
Site to 4 miles	344	125	0	57	526

5.2.2.3 The former Thermal Ground ASB is used for agriculture and as the municipal airport (Jacqueline Cochran Regional Airport). Population information based on U.S. Census 2010 data indicates that 53,064 people potentially live within 4 miles of the FUDS boundary (Table 2.1 and Figure 2.2). More than 26 inhabited structures are within the FUDS or within 2 miles of the FUDS boundaries (Google Earth, 2011). However, there are no inhabited structures within the MRS boundaries. The site visit observations and the census data indicate that no one lives within the FUDS or MRSs.

5.2.3 Regional Hydrologic Setting

The former Thermal Ground ASB is within the Salton Sea watershed (USGS, 2010a). The USGS Indio and Valerie topographic quadrangles indicate that the site terrain slopes northwest through the FUDS and MRSs toward the City of Indio, California. Surface water at the former Thermal Ground ASB FUDS, the Skeet Range MRS, and the Burial Pits MRS likely follows local topography and also flows in the ditches and culverts

surrounding the site (USGS, 1972a and 1972b). No surface water intakes for drinking water systems are within 15 miles of the FUDS boundary (CDPH, 2010).

5.2.4 Regional Sensitive Environmental Resources

5.2.4.1 California supports 308 federally listed threatened and endangered (T&E) species consisting of 129 animals and 179 plants (USFWS, 2011b). Seven of these species are extirpated from the state of California but remain listed as endangered species. The USFWS identifies 111 plant and animal species that occur within Riverside County (USFWS, 2011c). According to the California Natural Diversity Database, two federally listed T&E species occur within the Indio and Valerie quadrangles: the Coachella fringe-toed lizard (*Uma inornata*) and the Coachella valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (California Department of Fish and Game, 2011a). Of the 237 state-listed T&E species in California, 39 are listed in Riverside County (California Department of Fish and Game, 2011b).

5.2.4.2 No federally designated critical habitat for any T&E species or suitable habitat for the Coachella Valley fringe-toed lizard or the Coachella Valley milk-vetch is within the MRSs or the FUDS. The USFWS Wetlands Mapper, through the National Wetlands Inventory, was used to identify wetlands within the former Thermal Ground ASB FUDS and MRSs (USFWS, 2011a). Wetlands are land areas that are transitional between terrestrial and deep-water habitats in which the water table usually is at or near the surface or in which the land is covered by shallow water. One wetland type was found within the FUDS (PUBHx: palustrine, unconsolidated bottom, permanently flooded, excavated), but none in the MRSs (USFWS, 2011a). The site visit team observed no T&E species or wetlands in the MRSs during the site visit. Based on this information and a review of the Army Checklist for Important Ecological Places (Department of the Army, 2005b), this site is not considered an important ecological place. Therefore, ecological receptors are not likely to be present at the site.

5.2.5 Sampling Locations and Analysis Methods

Direct release of MC from munitions activities at the former Thermal Ground ASB would have been to soil, with potential migration to surface water, sediment, groundwater, or air (through resuspended soil particulates). The TPP Team agreed that since the Skeet Range MRS has been graded and developed, there is no need to sample surface soil at the former Thermal Ground ASB. A DGM investigation of the subsurface soil was conducted at the Burial Pits MRS and is described in detail in Subchapter 4.1.

5.2.6 Data Quality Assessment

Not applicable because no samples were collected.

5.2.7 Background Concentrations

Not applicable because no samples were collected.

5.2.8 Munitions Constituents Source Evaluation

Not applicable because no samples were collected.

5.3 SKEET RANGE MUNITIONS RESPONSE SITE

5.3.1 Historical Munitions Constituents Information

The Skeet Range MRS consists of a 26-acre small arms range northwest of the original northwest-southeast runway. No historical MC-related groundwater, surface water, soil, or air sampling has been documented at this MRS.

5.3.2 Groundwater Exposure Pathway

Groundwater can serve as a contaminant transport mechanism that may affect surface water bodies, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil at the ground surface that can be transported to the groundwater, site-specific geology, climate, and the expected future land use.

5.3.2.1 Geologic and Hydrogeologic Setting

There are no known differences between the geologic and hydrogeologic setting at the Skeet Range MRS and the setting described for the site in Subchapter 5.2.

5.3.2.2 Releases and Potential Releases to Groundwater

No releases of MC to groundwater have been identified at the Skeet Range MRS. Groundwater would not have been directly affected by range activities. The TPP Team agreed that groundwater sampling was not warranted during the SI based on the absence of groundwater wells within the Skeet Range MRS. If there were releases of MC to soil as a result of the munitions-related activities, it is possible that the constituents would leach to groundwater at the site, which is typically at an average depth of 28 feet bgs (Banks Environmental Data, 2010).

5.3.2.3 Groundwater Exposure Pathway and Receptors

5.3.2.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, 340 groundwater wells are within 4 miles of the Skeet Range MRS, including 236 public/domestic wells (Banks Environmental Data, 2010), as shown on Figure 5.1 and listed in Table 5.2. No groundwater wells are reported within the Skeet Range MRS.

5.3.2.3.2 Using available population information based on U.S. Census 2010 data, 44,154 people potentially live within 4 miles of the Skeet Range MRS boundary (Table 2.1 and Figure 2.2). However, no people are reported as residing within the MRS

boundary. The site visit team observed no inhabited structures within the MRS and numerous (more than 26) within 2 miles of the Skeet Range MRS; therefore, residents are not considered potential receptors at this MRS. Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

TABLE 5.2
GROUNDWATER WELLS IN THE VICINITY OF THE SKEET RANGE MRS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from MRS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	0	0	0	0	0
0 to ¼ mile	1	0	0	1	2
¼ to ½ mile	2	0	0	1	3
½ to 1 mile	6	2	0	2	10
1 to 2 miles	53	10	0	6	69
2 to 3 miles	86	17	0	20	123
3 to 4 miles	88	31	0	14	133
Site to 4 miles	236	60	0	44	340

5.3.2.4 Groundwater Sampling Locations and Methods

As discussed in Subchapters 5.2.5 and 5.3.2, the TPP Team agreed that groundwater sampling was not warranted during the SI at the Skeet Range MRS, based on the absence of groundwater wells within the MRS. Therefore, groundwater samples were not collected during the SI.

5.3.2.5 Groundwater Sampling Analytical Results

Groundwater samples were not collected during the SI at the Skeet Range MRS.

5.3.2.6 Groundwater Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Due to the absence of groundwater wells within the MRS, the groundwater exposure pathway is incomplete for all potential receptors.

5.3.3 Surface Water and Sediment Exposure Pathway

Surface water and sediment can serve as contaminant transport mechanisms that may affect surface water bodies, sediment, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in the soil at the ground surface that can be transported to surface water and sediment through runoff and erosion.

5.3.3.1 Hydrologic Setting

No perennial surface water bodies are within the Skeet Range MRS (USFWS, 2011a; USGS, 1972a and 1972b). As described in Subchapters 5.2.2 and 5.2.3, no wellhead protection areas are within a 4-mile buffer of the MRS, and no surface water intakes are within a 15-mile buffer of the MRS (CDPH, 2010). Two tribal source water protection areas are within 4 miles of the MRS (USEPA, 2011a).

5.3.3.2 Releases and Potential Releases to Surface Water and Sediment

There is no evidence of MC releases to soil at the Skeet Range MRS. The lack of perennial surface water would prevent MC migration to surface water and sediment.

5.3.3.3 Surface Water and Sediment Exposure Pathway and Receptors

There is no perennial surface water at or near the Skeet Range MRS. Based on the absence of surface water, it is unlikely that commercial/industrial workers (e.g., airport and agricultural employees) and site visitors would be exposed to surface water or sediment via incidental ingestion or dermal contact.

5.3.3.4 Surface Water and Sediment Sampling Locations and Methods

Neither surface water nor sediment sampling was performed during the SI at the Skeet Range MRS because no perennial surface water bodies are within the MRS.

5.3.3.5 Surface Water and Sediment Sampling Analytical Results

Neither surface water nor sediment sampling was performed during the SI at the Skeet Range MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.3.3.6 Surface Water and Sediment Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Because no perennial surface water bodies are within the Skeet Range MRS, the surface water and sediment erosion/runoff exposure pathways are incomplete for all potential receptors at the Skeet Range MRS.

5.3.4 Soil Exposure Pathway

Potential soil exposure pathways include incidental ingestion, dermal contact, and inhalation of resuspended soil particulates by human receptors; leaching to groundwater; and runoff and erosion to surface water and sediment (when present). The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil exposed at the ground surface, site-specific geology, hydrogeology, climate, and the expected future land use.

5.3.4.1 Physical Source Access Conditions

There are no barriers to access at the Skeet Range MRS. Therefore, access to this site is unrestricted.

5.3.4.2 Actual or Potential Contamination Areas

Based on the munitions used at the Skeet Range MRS, the most likely location for contamination is throughout the small arms range. However, the TPP Team agreed that there is no need to sample surface soil since the Skeet Range MRS has been graded and developed.

5.3.4.3 Soil Exposure Pathway and Receptors

Human receptors may come into contact with MC in soil via dermal contact, incidental ingestion, and inhalation of resuspended soil particulates. Based on the known current and future land use at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.3.4.4 Soil Sampling Locations and Methods

As described in Subchapter 5.2.5, no surface soil samples were collected within the Skeet Range MRS.

5.3.4.5 Soil Sampling Analytical Results

Not applicable; no surface soil samples were collected within the Skeet Range MRS.

5.3.4.6 Soil Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors for soil include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors may be exposed to surface soil through dermal contact, incidental ingestion, and inhalation of resuspended particulate matter. Surface soils were not sampled at the Skeet Range MRS as contamination is unlikely because the Skeet Range MRS has been graded and developed, and DoD-era soil is unlikely to remain. The soil exposure pathways are incomplete for all potential receptors at the Skeet Range MRS.

5.3.5 Air Exposure Pathway

The air exposure pathway accounts for hazardous substance migration in gaseous or particulate form through the air. Inhalation of a contaminant can be a potential exposure for human receptors. No air sampling has been performed at the Skeet Range MRS, and the TPP Team agreed that air sampling would not be performed as part of this SI.

5.3.5.1 Climate

Subchapter 2.2.3 discusses climate.

5.3.5.2 Releases and Potential Releases to Air

There is no evidence of MC releases to air at the Skeet Range MRS. During dry and windy conditions, soil particulates can become airborne. If there were releases of MC to soil as a result of DoD munitions activities, it is possible that the constituents would migrate to air via resuspension of soil particles.

5.3.5.3 Air Exposure Pathways and Receptors

Because no known volatile MC are associated with the munitions used at the site, the only remaining air exposure pathway would be via the inhalation of resuspended soil particulates. Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.3.5.4 Air Sampling and Monitoring Locations and Methods

There is no historical record of air sampling at the former Thermal Ground ASB. Air sampling was not conducted as part of the SI within the Skeet Range MRS.

5.3.5.5 Air Sampling Analytical Results

Air sampling was not conducted as part of the SI at the Skeet Range MRS.

5.3.5.6 Air Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Skeet Range MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors could be exposed to surface soil through inhalation of suspended particulate matter through the air exposure pathway. As discussed in Subchapter 5.3.4.6, the Skeet Range MRS has been graded and developed, and therefore MC contamination in soil is not expected. Consequently, no potential for a receptor to be exposed to windblown contaminated soil particulates is expected, and the air exposure pathway is incomplete for all receptors at the Skeet Range MRS.

5.4 BURIAL PITS MUNITIONS RESPONSE SITE

5.4.1 Historical Munitions Constituents Information

The Burial Pits MRS consists of a 1-acre burial pit southwest of the original northwest-southeast runway. No historical MC-related groundwater, surface water, soil, or air sampling has been documented at this MRS.

5.4.2 Groundwater Exposure Pathway

Groundwater can serve as a contaminant transport mechanism that may affect surface water bodies, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil at the ground surface that can be transported to the groundwater, site-specific geology, climate, and the expected future land use.

5.4.2.1 Geologic and Hydrogeologic Setting

There are no known differences between the geologic and hydrogeologic setting at the Burial Pits MRS and the setting described for the site in Subchapter 5.2.

5.4.2.2 Releases and Potential Releases to Groundwater

No releases of MC to groundwater have been identified at the Burial Pits MRS. Groundwater would not have been directly affected by bombing activities. The TPP Team agreed that groundwater sampling was not warranted during the SI based on the absence of groundwater wells within the Burial Pits MRS. If there were releases of MC to soil as a result of the munitions-related activities, it is possible that the constituents would leach to groundwater at the site, which is typically at an average depth of 28 feet bgs (Banks Environmental Data, 2010).

5.4.2.3 Groundwater Exposure Pathway and Receptors

5.3.2.3.1 Well data are protected in California, so a request for well information was submitted through Banks Environmental Data, which contacted the appropriate authorities and collated the well information they received. According to the resulting report, 344 groundwater wells are within 4 miles of the Burial Pits MRS, including 248 public/domestic wells (Banks Environmental Data, 2010), as shown on Figure 5.1 and listed in Table 5.3. No groundwater wells are reported within the Burial Pits MRS, and no wells were observed in the MRS during the site visit.

5.3.2.3.2 Using available population information based on U.S. Census 2010 data, 30,001 people potentially live within 4 miles of the Burial Pits MRS boundary (Table 2.1 and Figure 2.2). However, no people are reported as residing within the MRS boundary. The site visit team observed no inhabited structures within the MRS and numerous (more than 26) within 2 miles of the Burial Pits MRS; therefore, residents are not considered potential receptors at this MRS. Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

TABLE 5.3
GROUNDWATER WELLS IN THE VICINITY OF
THE BURIAL PITS MRS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Distance from MRS	Public / Domestic Wells	Stock / Irrigation Wells	Prospecting Wells	Other Wells	Total
On site	0	0	0	0	0
0 to ¼ mile	0	0	0	0	0
¼ to ½ mile	1	0	0	0	1
½ to 1 mile	8	0	0	1	9
1 to 2 miles	34	5	0	7	46
2 to 3 miles	73	28	0	8	109
3 to 4 miles	132	27	0	20	179
Site to 4 miles	248	60	0	36	344

5.4.2.4 Groundwater Sampling Locations and Methods

As discussed in Subchapters 5.2.5 and 5.3.2, the TPP Team agreed that groundwater sampling was not warranted during the SI at the Burial Pits MRS, based on the absence of groundwater wells within the MRS. Therefore, groundwater samples were not collected during the SI.

5.4.2.5 Groundwater Sampling Analytical Results

Groundwater samples were not collected during the SI at the Burial Pits MRS.

5.4.2.6 Groundwater Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Due to the absence of groundwater wells within the MRS, the groundwater exposure pathway is incomplete for all potential receptors.

5.4.3 Surface Water and Sediment Exposure Pathway

Surface water and sediment can serve as contaminant transport mechanisms that may affect surface water bodies, sediment, drinking water supplies, vegetation, and sensitive environments such as wetlands. The likelihood of exposure is influenced by such factors as the mass and concentration of MC in the soil at the ground surface that can be transported to surface water and sediment through runoff and erosion.

5.4.3.1 Hydrologic Setting

No perennial surface water bodies are within the Burial Pits MRS (USFWS, 2011a; USGS, 1972a and 1972b). As described in Subchapters 5.2.2 and 5.2.3, no wellhead protection areas are within a 4-mile buffer of the MRS, and no surface water intakes are

within a 15-mile buffer of the MRS (CDPH, 2010). Two tribal source water protection areas are within 4 miles of the MRS (USEPA, 2011a).

5.4.3.2 Releases and Potential Releases to Surface Water and Sediment

There is no evidence of MC releases to soil at the Burial Pits MRS. The lack of perennial surface water would prevent MC migration to surface water and sediment.

5.4.3.3 Surface Water and Sediment Exposure Pathway and Receptors

There is no perennial surface water at or near the Burial Pits MRS. Based on the absence of surface water, it is unlikely that commercial/industrial workers (e.g., airport and agricultural employees) and site visitors would be exposed to surface water or sediment via ingestion as drinking water, incidental ingestion, or dermal contact.

5.4.3.4 Surface Water and Sediment Sampling Locations and Methods

Neither surface water nor sediment sampling was performed during the SI at the Burial Pits MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.4.3.5 Surface Water and Sediment Sampling Analytical Results

Neither surface water nor sediment sampling was performed during the SI at the Burial Pits MRS because no perennial surface water bodies are within the MRS and no surface water was present during the site visit.

5.4.3.6 Surface Water and Sediment Exposure Pathway Conclusions

Based on the known current and future uses of the land, the potential receptors at this MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. Because no perennial surface water bodies are within the Burial Pits MRS, the surface water and sediment erosion/runoff exposure pathways are incomplete for all potential receptors at the Burial Pits MRS.

5.4.4 Soil Exposure Pathway

Potential soil exposure pathways include incidental ingestion, dermal contact, and inhalation of resuspended soil particulates by human receptors; leaching to groundwater; and runoff and erosion to surface water and sediment (when present). The likelihood of exposure is influenced by such factors as the mass and concentration of MC in soil exposed at the ground surface, site-specific geology, hydrogeology, climate, and expected future land use.

5.4.4.1 Physical Source Access Conditions

There are no barriers to access at the Burial Pits MRS. Therefore, access to this site is unrestricted.

5.4.4.2 Actual or Potential Contamination Areas

Based on the potential munitions at the Burial Pits MRS, the most likely location for contamination is throughout the burial pit. However, the TPP Team agreed that there is no need to sample surface soil at the former Thermal Ground ASB.

5.4.4.3 Soil Exposure Pathway and Receptors

Human receptors may come into contact with MC in soil via dermal contact, incidental ingestion, and inhalation of resuspended soil particulates. Based on the known current and future land use at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.4.4.4 Soil Sampling Locations and Methods

As described in Subchapter 5.2.5, no surface soil samples were collected within the Burial Pits MRS.

5.4.4.5 Soil Sampling Analytical Results

Not applicable; no surface soil samples were collected within the Burial Pits MRS.

5.4.4.6 Soil Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors for soil include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. If munitions were buried, the receptors would not be expected to be exposed to surface soil through dermal contact, incidental ingestion, and inhalation of resuspended particulate matter. Surface soils were not sampled at the Burial Pits MRS because contamination resulting from buried munitions is more likely to be found in the subsurface soil than the surface soil. In addition, it is likely that the burial pit associated with the Burial Pits MRS was capped with non-DoD-era soil due to grading and plowing at the site. No evidence of a burial pit was found during the geophysical investigation. Because there is no evidence that munitions were buried within the MRS, the surface and subsurface soil exposure pathways are incomplete for all potential receptors at the Burial Pits MRS.

5.4.5 Air Exposure Pathway

The air exposure pathway accounts for hazardous substance migration in gaseous or particulate form through the air. Inhalation of a contaminant can be a potential exposure for human receptors. No air sampling has been performed at the Burial Pits MRS, and the TPP Team agreed that air sampling would not be performed as part of this SI.

5.4.5.1 Climate

Subchapter 2.2.3 discusses climate.

5.4.5.2 Releases and Potential Releases to Air

There is no evidence of MC releases to air at the Burial Pits MRS. During dry and windy conditions, soil particulates can become airborne. If there were releases of MC to soil as a result of DoD munitions activities, it is possible that the constituents would migrate to air via resuspension of soil particles.

5.4.5.3 Air Exposure Pathways and Receptors

Because no known volatile MC are associated with the munitions used at the site, the only remaining air exposure pathway would be via the inhalation of resuspended soil particulates. Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors.

5.4.5.4 Air Sampling and Monitoring Locations and Methods

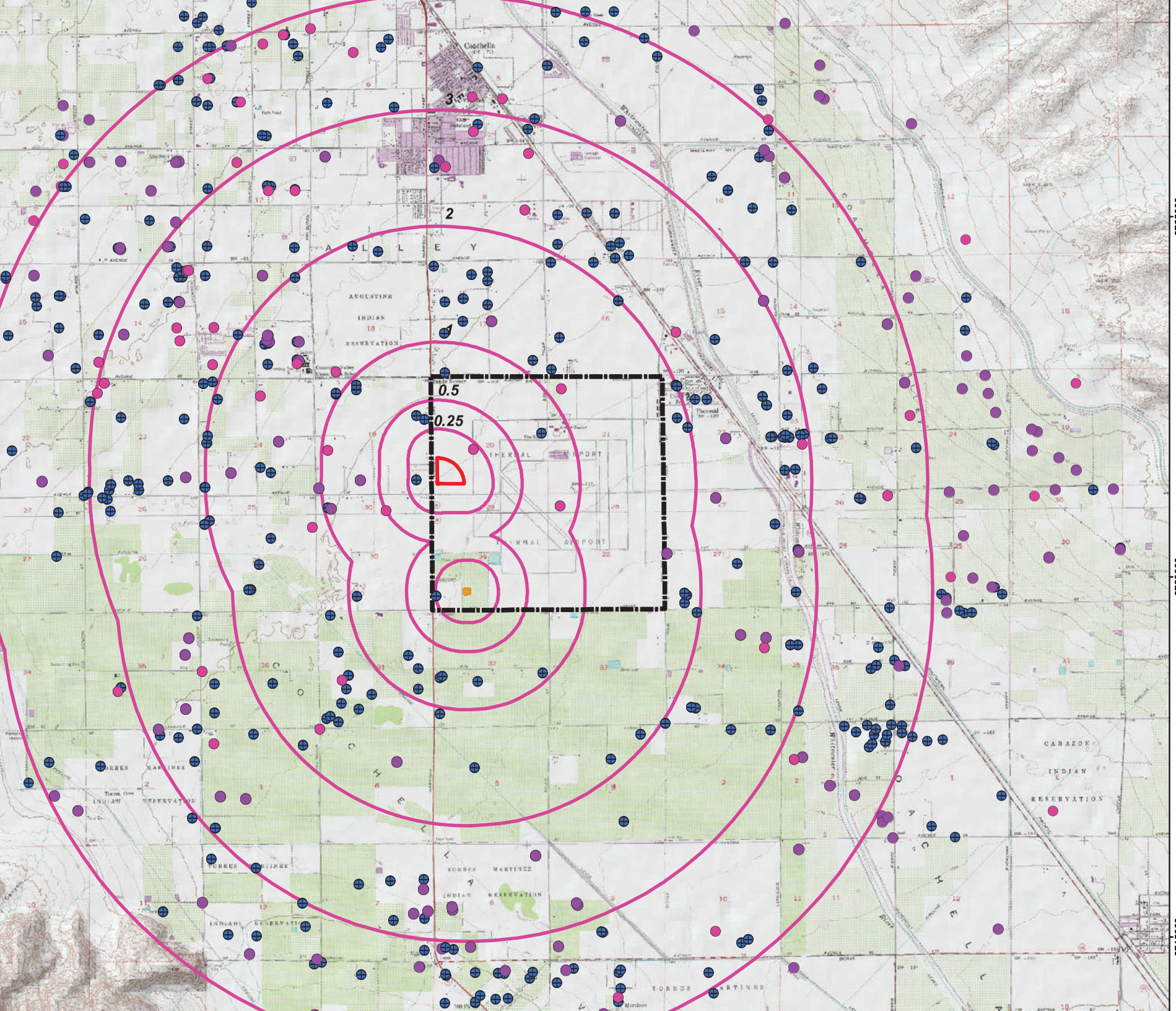
There is no historical record of air sampling at the former Thermal Ground ASB. Air sampling was not conducted as part of the SI within the Burial Pits MRS.

5.4.5.5 Air Sampling Analytical Results

Air sampling was not conducted as part of the SI at the Burial Pits MRS.

5.4.5.6 Air Exposure Pathway Conclusions

Based on the known current and future uses of the land at the Burial Pits MRS, the potential receptors are commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. These receptors could be exposed to surface soil through inhalation of suspended particulate matter through the air exposure pathway. As discussed in Subchapter 5.3.4.6, there is no evidence that munitions were buried within the MRS, and therefore MC contamination in soil is not expected. Consequently, no potential for a receptor to be exposed to windblown contaminated soil particulates is expected, and the air exposure pathway is incomplete for all receptors at the Burial Pits MRS.



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CHAPTER 6

SCREENING-LEVEL RISK ASSESSMENT

6.1 MUNITIONS AND EXPLOSIVES OF CONCERN SCREENING-LEVEL RISK ASSESSMENT

6.1.1 Introduction

6.1.1.1 A qualitative risk assessment evaluates the potential explosive safety risk to the public at the former Thermal Ground ASB and communicates whether a potential risk exists at the FUDS and the primary causes of that potential risk. The risk assessment is based on historical information in prior studies (e.g., the ASR and the ASR Supplement) and on observations made during the QR.

6.1.1.2 An explosive safety risk exists if a person can come near or into contact with MEC and interact with the MEC in a manner that results in a detonation. The potential for an explosive safety risk depends on the presence of three critical elements:

- A source (i.e., presence of MEC),
- A human receptor (i.e., a person), and
- The potential for interaction between the source and receptor (i.e., the possibility that the person might pick up or disturbed the MEC).

6.1.1.3 All three of these elements must be present for an explosive safety risk to exist; there is no risk if any one element is missing. Each of these three elements provides a basis for implementing effective risk management response actions.

6.1.2 Conceptual Site Model

The CSM for the former Thermal Ground ASB, included in Appendix J, summarizes conditions at the FUDS that could result in human exposure to MEC. It describes the types of MEC potentially present in the Skeet Range and Burial Pits MRSs, past MEC and munitions debris findings, and current and projected future land use and receptors.

6.1.3 Qualitative Risk Evaluation

6.1.3.1 For the Skeet Range and Burial Pits MRSs, the potential risk posed by MEC was characterized qualitatively by evaluating three primary risk factors, which are related to the three critical elements listed above:

1) MEC presence: whether there is potential for MEC at the MRS

2) MEC type: the types of MEC that might be at the MRS and the related potential explosive hazards

3) Site accessibility: how potential receptors at the MRS might interact with the MEC

6.1.3.2 The known or suspected presence of an explosive hazard at a given MRS and any potential human receptors at that MRS will typically be considered sufficient justification for RI/FS implementation at that MRS. The following paragraphs describe each of the primary risk factors.

6.1.3.3 **MEC presence** describes whether MEC have been confirmed or are suspected at the MRS, either at the surface or in the subsurface, based on historical information in prior studies (e.g., the INPR, the INPR Supplement, and the Archival Research Site Summary) and observations made during the QR. If there is historical evidence of potential MEC presence at a site, lack of confirmation of MEC presence during the QR will not be considered as evidence of MEC absence for this qualitative risk evaluation. Table 6.1 describes the three possible categories of MEC presence for this evaluation.

TABLE 6.1
CATEGORIES OF MEC PRESENCE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MEC Presence	Description
Confirmed or suspected	There is physical or confirmed historical evidence of MEC presence at the MRS, or there is physical or historical evidence indicating that MEC may be present at the MRS.
Small arms only(1)	The presence of small arms ammunition is confirmed or suspected, and there is evidence that no other types of munitions were used or are present at the MRS.
Evidence of no munitions	Following investigation of the MRS, there is physical or historical evidence that there are no UXO or discarded military munitions present.

(1) Small arms ammunition is "ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller or for shotguns" (Department of the Army, 2005a).

6.1.3.4 **MEC type** determines whether the MEC potentially present at the MRS might be detonated, resulting in a minor injury or worse to one or more human receptors. If multiple MEC types are potentially present at the MRS, the type that poses the greatest risk to public health is selected for this qualitative risk evaluation. This determination is

based on historical information in prior studies and observations made during the QR. Table 6.2 describes the three possible categories of MEC type for this evaluation.

TABLE 6.2
CATEGORIES OF MEC TYPE
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MEC Type	Description
Potentially hazardous	Fuzed or unfuzed MEC that may result in physical injury to an individual if detonated by an individual's activities.
Small arms only(1)	Small arms ammunition is confirmed or suspected, and there is evidence that no other types of munitions were used or are present at the MRS.
Inert	Munitions debris or other items that will cause no injury (e.g., training ordnance containing no explosives, fuzes, spotting charges, etc.).

(1) Small arms ammunition is defined as "ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller or for shotguns" (Department of the Army, 2005a).

6.1.3.5 **Site accessibility** describes whether human receptors have access to the MRS and, therefore, may interact with any MEC at the surface or in the subsurface. For this qualitative risk evaluation, if MEC are confirmed or suspected at the MRS, it is assumed that human receptors might come into contact with those MEC unless there is complete restriction to access. This assessment will also describe the potential receptors. Table 6.3 describes the two possible categories of site accessibility for this evaluation.

TABLE 6.3
CATEGORIES OF SITE ACCESSIBILITY
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

Site Accessibility	Description
Accessible	Access control is not complete: residents, site workers, or visitors can gain access to all or part of the MRS.
Complete restriction to access	Human receptors are completely prevented from gaining access to the MRS.

6.1.3.6 For this qualitative risk assessment, further evaluation (i.e., RI/FS) for the MRS will typically be justified if the following conditions are all met:

- MEC are confirmed or suspected to be present;
- The MEC confirmed or suspected to be present are potentially hazardous; and
- The MRS is accessible.

6.1.3.7 These primary risk factors were evaluated for Skeet Range and Burial Pits MRSs at the former Thermal Ground ASB using the data collected during the site visit and the historical data available from other studies. The following subchapters discuss

the qualitative risk evaluation by each primary risk factor to determine whether further evaluation is justified in the MRS.

6.1.4 Munitions and Explosives of Concern Risk Assessment: Skeet Range MRS

6.1.4.1 Based on the INPR and the INPR Supplement, no munitions debris was observed during previous field visits to the former Thermal Ground ASB. However, an interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found practice and live bombs at this site. The location of these items was not discussed in the 1994 INPR, and it is unlikely that they were found within the Skeet Range MRS. The ASR Supplement reports no other MEC incidents. Based on these findings and the known historic use of the site, MEC presence at the Skeet Range MRS is considered "Small Arms Only."

6.1.4.2 The INPR and the ASR Supplement list the known or suspected munitions at the Skeet Range MRS as general small arms ammunition (12-gauge shotgun). No other evidence has been discovered to contradict this. Expended small arms ammunition is munitions debris and poses no explosive hazards, and unexpended small arms ammunition does not present a significant explosive hazard (Department of the Army, 2005a). Based on this information, the MEC type at the Skeet Range MRS is assessed as "Small Arms Only."

6.1.4.3 The former Thermal Ground ASB is just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of the city of Coachella, California, and is used for agriculture and as a municipal airport. The site visit team encountered no barriers to access during the QR, and it is assumed that the site is accessible to anyone wishing to enter. Therefore, the Skeet Range MRS is considered "Accessible."

6.1.5 Munitions and Explosives of Concern Risk Assessment: Burial Pits MRS

6.1.5.1 Based on the INPR and the INPR Supplement, no munitions debris was observed during previous field visits to the former Thermal Ground ASB. An interview during the 1994 INPR with the then-current maintenance supervisor indicated that in the past, airport staff found "both dummy and real bombs" at this site. However, the location of these items was not discussed in the 1994 INPR and these findings are not substantiated. The 2011 site visit team observed no MEC or munitions debris. No evidence of a burial pit was found in the Burial Pits MRS during the geophysical investigation. Based on these findings, MEC presence at the Burial Pits MRS is considered "Evidence of No Munitions."

6.1.5.2 The INPR and the INPR Supplement list the known or suspected munitions at the Burial Pits MRS as M38A2 practice bombs; M1A1 spotting charges; AN-Mk5, AN-Mk23, and AN-Mk43 miniature practice bombs; and Mk4 signal cartridges. M3 and M5 spotting charges were also typically used with M38A2 bombs (USACE, 2004b). These items contain charges and cartridges that might present a residual explosive hazard if they

remain at the site intact. However, because the MEC presence is considered "Evidence of No Munitions," the MEC type at the Burial Pits MRS is assessed as "Not Applicable."

6.1.5.3 The former Thermal Ground ASB is just west of Thermal, approximately 5 miles southeast of Indio, and approximately 3 miles south of the city of Coachella, California, and is used for agriculture and as a municipal airport. The site visit team encountered no barriers to access during the QR, and it is assumed that the site is accessible to anyone wishing to enter. Therefore, the Burial Pits MRS is considered "Accessible."

6.1.6 Risk Summary

Table 6.4 summarizes the qualitative MEC risk evaluation for the former Thermal Ground ASB. Based on the qualitative evaluation of the Skeet Range MRS, no explosive hazards remain at the Skeet Range MRS; therefore, there is no explosive safety risk at this MRS. The qualitative evaluation of the Burial Pits MRS suggests that there is no potential for an explosive safety risk at this MRS.

TABLE 6.4
MEC RISK EVALUATION
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	MEC Presence	MEC Type		Site Accessibility	Further Evaluation?
Skeet Range MRS	Small Arms Only	Small arms ammunition, general: Shotgun, 12 gauge	Small Arms Only	Accessible	No
Burial Pits MRS	Evidence of No Munitions	Not Applicable	Not Applicable	Accessible	No

6.2 MUNITIONS CONSTITUENTS SCREENING-LEVEL HUMAN HEALTH RISK ASSESSMENT

Potential human receptors at the Skeet Range MRS or Burial Pits MRS include commercial/industrial workers (e.g., airport and agricultural employees) and site visitors. The MRSs have been graded, and the original DoD-era ground surface is no longer present. Additionally, there are no perennial surface water bodies or groundwater wells within the MRSs. Therefore, no soil, air, surface water, sediment, or groundwater sampling was conducted at the Skeet Range MRS or Burial Pits MRS. As described in Subchapters 5.3.2, 5.3.3, 5.3.4, and 5.3.5 for the Skeet Range MRS and Subchapters 5.4.2, 5.4.3, 5.4.4, and 5.4.5 for the Burial Pits MRS, all MC exposure pathways at these MRSs are considered incomplete for all receptors. Because a complete exposure pathway is required for a risk to be present, unacceptable risks to human receptors resulting from MC are not expected as a result of exposure to groundwater, surface water or sediment, surface soil, subsurface soil, or air at the Skeet Range MRS or the Burial Pits MRS.

6.3 MUNITIONS CONSTITUENTS SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT

As discussed in Subchapter 5.2.4, the former Thermal Ground ASB is not an important ecological place, therefore ecological receptors are not considered to be present at the MRSs. Because a complete exposure pathway is required for a risk to be present, unacceptable ecological risk resulting from exposure to MC is not expected at the Skeet Range MRS or Burial Pits MRS.

CHAPTER 7

SUMMARY AND CONCLUSIONS

7.1 SUMMARY

7.1.1 The SI performed at the former Thermal Ground ASB in Riverside County, California, evaluated site-specific conditions that could affect the potential for complete exposure pathways on human receptors at the FUDS. The project was planned and performed to satisfy the DQOs set for the project: 1) evaluate potential presence of MEC; 2) evaluate potential presence of MC; 3) collect data needed to complete MRSPP scoring sheets; and 4) collect information for HRS scoring. Successful completion of the DQOs allowed determination of whether this FUDS project warrants further response action under CERCLA.

7.1.2 The SI included approximately 4.8 miles of QR and a DGM investigation of the subsurface soil at the Burial Pits MRS. The TPP team determined that since the Skeet Range MRS has been graded and developed, there was no need to sample surface soil at the former Thermal Ground ASB.

7.1.3 The site visit team found no MEC or munitions debris during the QR. No evidence of a burial pit was found during the geophysical investigation.

7.2 CONCLUSIONS REGARDING POTENTIAL MUNITIONS AND EXPLOSIVES OF CONCERN EXPOSURE PATHWAYS

7.2.1 The evaluation of potential MEC exposure (Subchapter 6.1) concluded that the MEC exposure pathway is incomplete for the Skeet Range MRS, based on no MEC or munitions debris observed during the SI and the INPR field visits. Based on the current use of the site, there is no potential for human receptors to come into contact with surface or subsurface MEC at the Skeet Range MRS. Consequently, there is no potential explosive safety risk at the MRS.

7.2.2 The evaluation of potential MEC exposure (Subchapter 6.1) concluded that the MEC exposure pathway is incomplete for the Burial Pits MRS, based on no MEC or munitions debris observed during the SI and the INPR field visits. Based on the current use of the site, there is no potential for human receptors to come into contact with surface or subsurface MEC at the Burial Pits MRS. Consequently, there is no potential explosive safety risk at the MRS.

7.3 CONCLUSIONS REGARDING POTENTIAL MUNITIONS CONSTITUENTS EXPOSURE PATHWAYS

7.3.1 An exposure pathway is considered incomplete unless all four of the following elements are present (USEPA, 1989):

- A source and mechanism for chemical release;
- An environmental transport and/or exposure medium;
- A receptor exposure point; and
- A receptor and a likely route of exposure at the exposure point.

7.3.2 As agreed by the TPP Team, no MC sampling was conducted at the site because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. A DGM investigation was conducted at the Burial Pits MRS to determine the potential presence of munitions debris; none was found. Therefore, soil sampling was not conducted during the SI to evaluate MC contamination in the surface soil at the MRSs. Due to the grading/development that has occurred at the MRSs since DoD use of the property, it is highly unlikely that MC contamination remains in the surface soil or the subsurface soil. No change in land use is expected for either MRS. Therefore, the soil exposure pathways for human receptors are incomplete for the Skeet Range MRS and the Burial Pits MRS, and unacceptable risks to human receptors from MC are not expected.

CHAPTER 8

RECOMMENDATIONS

8.1 The Skeet Range MRS at the former Thermal Ground ASB is recommended to proceed to NDAI status (Table 8.1) based on the following:

- During the INPR field visit, no munitions debris or MEC were observed. An interview during the INPR with the then-current maintenance supervisor indicated that in the past, airport staff found practice and live bombs at this site. The location of these items was not discussed in the INPR, and it is unlikely that they were within the Skeet Range MRS. Explosive hazards are not expected to be present.

- As agreed by the TPP Team, no MC sampling was conducted at the site because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. Therefore, human exposure pathways are incomplete.

8.2 The Burial Pits MRS at the former Thermal Ground ASB is recommended to proceed to NDAI status (Table 8.1) based on the following:

- During the INPR field visits, no munitions debris or MEC were observed.

- During the SI, the site visit team observed no MEC or munitions debris during the QR. No evidence of a burial pit was found during the geophysical investigation. Explosive hazards are not expected to be present.

- As agreed by the TPP Team, no MC sampling was conducted at the former Thermal Ground ASB because the Skeet Range MRS is graded and developed, and the original DoD-era ground surface is no longer present. Therefore, human exposure pathways are incomplete.

TABLE 8.1
RECOMMENDATIONS
FORMER THERMAL GROUND ASB, RIVERSIDE COUNTY, CALIFORNIA

MRS	Recommendation	Rationale
Skeet Range	NDAI	The MRS is within a graded and developed area, and the original DoD-era ground surface is no longer present. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.
Burial Pits	NDAI	The MRS is within a graded area, and the original DoD-era ground surface is no longer present. In addition, no evidence of a burial pit was found during the geophysical investigation. There is no potential for an explosive safety risk at the MRS, and the MC exposure pathways for human receptors are incomplete. Therefore, an NDAI determination is warranted.

CHAPTER 9

REFERENCES

Banks Environmental Data. 2010. Water Well Report: Thermal Air Station, Riverside County, California. December 6.

California Department of Fish and Game. 2011a. California Natural Diversity Database. Online Map Viewers. http://imaps.dfg.ca.gov/viewers/cnddb_quickviewer/app.asp.

California Department of Fish and Game. 2011b. Threatened and Endangered Species of California. http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/index.html.

California Department of Public Health (CDPH). 2010. Email from Paul Richter to Cynthia Frazier, Parsons. February 23.

California Department of Water Resources. 2004. Coachella Valley Groundwater Basin, Indio Subbasin . *Hydrologic Regions of California: Colorado River*. Basins and Subbasins of the Colorado River Hydrologic Region. California's Groundwater Bulletin 118. http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-21.01.pdf.

California State Military Museum. No date. Historic California Posts: Naval Air Facility, Thermal (Thermal Ground Support Base, Thermal Army Air Field). Prepared by M.L. Shettle. http://www.militarymuseum.org/ThermalAAF.html.

City-Data.com. 2011. Thermal, California. http://www.city-data.com/city/Thermal-California.html.

Coachella Valley Water District. 2002. Coachella Valley Aquifer Recharge Gets Underway. http://www.cvwd.org/news/press/whitewaterrecharge.pdf.

Department of the Army. 2005a. Memorandum for the Assistant Chief of Staff for Installation Management. Subject: Munitions Response Terminology. Prepared by the Office of the Assistant Secretary, Installations and Environment. April 21.

Department of the Army. 2005b. Technical Document for Ecological Risk Assessment: Process for Developing Management Goals. Prepared by the U.S. Army Biological Technical Assistance Group. August.

Encyclopedia Britannica. 2011. Salton Trough. http://www.britannica.com/EBchecked/topic/519929/Salton-Trough.

Google Earth. 2011. Visual observation made from review of project site using Google Earth® software. Aerial photographs dated May, 2009.

National Archives and Records Administration (NARA). 2010a. Ground Air Support Base, Thermal, California, Building Construction Layout Plan. NARA Pacific Region (Riverside). Tracking number: NARARVKM047. Accessed April 2010.

National Archives and Records Administration. 2010b. Status of Range Acquisitions and Construction, prepared in Engr. Office, Hq, Third Air Force, 16 March 1944. Tracking number: NARACPEA081. Accessed March 2010.

National Archives and Records Administration. 2010c. Thermal Air Base, Calif. NARA Pacific Region (Riverside). Block 6 Schedule "I" (V-3-126N-11). Tracking number: NARARVKM037. Accessed April 2010.

National Oceanic and Atmospheric Administration. 2011. Ocean and Coastal Resource Management. http://coastalmanagement.noaa.gov.

National Park Service. 2011a. Geographic Search. http://www.nps.gov/applications /parksearch/geosearch.cfm.

National Park Service. 2011b. National Heritage Areas. http://www.nps.gov/history /heritageareas/.

National Park Service. 2011c. National Historic Landmarks Program: Lists of National Historic Landmarks. http://www.nps.gov/history/nhl/designations/listsof NHLs.htm.

National Park Service. 2011d. National Register of Historic Places: NPS Focus. http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome.

National Register of Historic Places. 2011a. Historic Districts: California – Riverside County. http://www.historicdistricts.com/ca/riverside/districts.html.

National Register of Historic Places. 2011b. State Listings: California – Riverside County. http://www.historicdistricts.com/ca/riverside/state.html.

Natural Resources Conservation Service. 2010. Web Soil Survey. http://websoilsurvey .nrcs.usda.gov.

Office of the Deputy Under Secretary of Defense. 2001. *Management Guidance for the Defense Environmental Restoration Program*. September.

Parsons. 2004. Basis Munitions Response Contract W912DY-04-D-0005. February 27.

Parsons. 2006. *Final Sampling and Analysis Plan Addendum: Military Munitions Response Program Site Inspections, Southwest Region*. August.

Parsons. 2010. *Final Programmatic Work Plan for Southwest IMA Region, South Pacific Division Range Support Center FUDS Military Munitions Response Program for Site Inspections at Multiple Sites*. February.

Parsons. 2011a. Archival Research Site Summary: Thermal Ground Air Station Base. March.

Parsons. 2011b. *Final Site-Specific Work Plan Addendum to the Programmatic Work Plan: The Former Thermal Ground Air Station Base, Riverside County, California.* May.

Parsons. 2011c. Final Technical Project Planning Memorandum and Associated Documentation for Former Thermal Ground Air Station Base, Riverside County, California. January.

State Parks.com. 2007. State Parks.com→USA→California. http://www.stateparks.com/ca.html.

U.S. Army Corps of Engineers (USACE). 1994. Inventory Project Report: Thermal Ground Air Station Base. Riverside County, California. DERP-FUDS Site No. J09CA064500. Prepared by USACE Los Angeles District. October 1993 and August 1994.

U.S. Army Corps of Engineers. 2004a. *Environmental Quality: Formerly Used Defense Sites (FUDS) Program Policy*. ER 200-3-1. May 10. http://www.usace.army.mil/publications/eng-regs/er200-3-1/entire.pdf.

U.S. Army Corps of Engineers. 2004b. INPR Supplement: Thermal Grd Air Sta Base. Prepared by USACE St. Louis District. November.

U.S. Army Corps of Engineers. 2005. *Final Programmatic Sampling and Analysis Plan: Military Munitions Response Program Site Inspections*. Prepared by USACE Engineering Support Center, Huntsville. Final. September.

U.S. Army Corps of Engineers. 2006. *Screening-Level Ecological Risk Assessments for FUDS MMRP Site Inspections*. Prepared by the USACE HTRW CX.

U.S. Census Bureau. 2011. United States Census 2010. http://factfinder2.census.gov /faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_GCTPH1.CY 07&prodType=table.

U.S. Environmental Protection Agency (USEPA). 1989. *Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part A), Interim Draft.* Office of Emergency and Remedial Response. EPA/540/1-89/002. December.

U.S. Environmental Protection Agency. 2006. *Guidance on Systematic Planning Using the Data Quality Objectives Process*. EPA QA/G-4, EPA/240/B-06/001. February.

U.S. Environmental Protection Agency. 2011a. Email from Karl Banks, USEPA, to Cindy Conway, Parsons. May 31.

U.S. Environmental Protection Agency. 2011b. Western Ecology Division, Ecoregions of North America. http://www.epa.gov/wed/pages/ecoregions/na_eco.htm#Downloads.

U.S. Fish and Wildlife Service (USFWS). 2011a. National Wetlands Inventory: Wetlands Mapper. http://www.fws.gov/wetlands/Data/mapper.html.

U.S. Fish and Wildlife Service. 2011b. Species Reports: Listings and Occurrences for California—Summary of Animals Listings. http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=CA&s8fid=112761032792&s8fid=112762573902&s8fid=24012871586874.

U.S. Fish and Wildlife Service. 2011c. Species Reports: Species by County Report—County: Riverside, CA. http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=06065.

U.S. Forest Service. 2010. Recreational Activities: Find a Forest by State. http://www.fs.fed.us/recreation/map/state_list.shtml#California.

U.S. Geological Survey (USGS). 1972a. Indio Quadrangle, California – Riverside, Co. 7.5-Minute Series (topographic, photorevised 1972).

U.S. Geological Survey. 1972b. Valerie Quadrangle, California – Riverside, Co. 7.5-Minute Series (topographic, photorevised 1972).

U.S. Geological Survey. 1995. *Ground Water Atlas of the United States: California, Nevada*. Prepared by M. Planert and J.S. Williams. http://pubs.usgs.gov/ha/ha730/ch_b/B-text4.html.

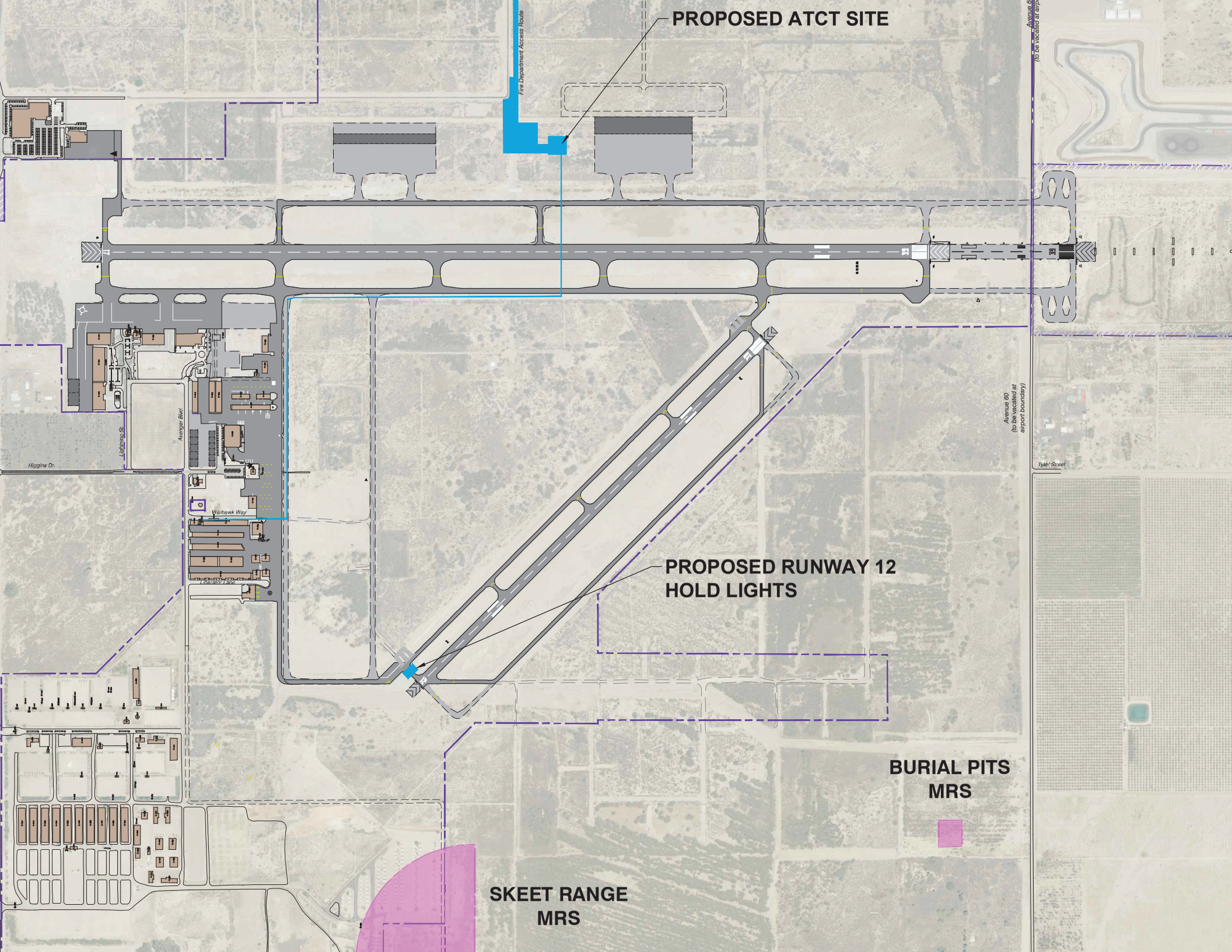
U.S. Geological Survey. 2002. A Tapestry of Time and Terrain: The Union of Two Maps – Geology and Topography. http://tapestry.usgs.gov/physiogr/physio.html.

U.S. Geological Survey. 2003. Principal Aquifers of the 48 Conterminous United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands, Vector Digital Data: aquifrp025.tar.gz. http://nationalatlas.gov/atlasftp.html?openChapters=chpwater#chpwater.

U.S. Geological Survey. 2010a. Science in Your Watershed. Salton Sea Watershed. http://water.usgs.gov/lookup/getwatershed?18100200/www/cgi-bin/lookup/getwatershed.

U.S. Geological Survey. 2010b. Mineral Resources On-Line Spatial Data. http://tin.er.usgs.gov/geology/state/sgmc-unit.php?unit=CAQ;0.

Western Regional Climate Center. 2010. Indio Fire Station, California (044259). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4259.


PROPOSED ATCT SITE
Fire Department Access Route
Avenue 60
(to be vacated at airport boundary)
Lightning St.
Avenger Blvd
Higgins Dr.
Warhawk Way
Liberator Lane
Tyler Street
PROPOSED RUNWAY 12
HOLD LIGHTS
BURIAL PITS
MRS
SKEET RANGE
MRS

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Deborah O. Raphael, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

September 21, 2011

Ms. Claudia Garcia
Project Manager
United States Army Corps of Engineers
Los Angeles District
915 Wilshire Boulevard, Suite 15018
Los Angeles, California 90017

DRAFT DRAFT FINAL SITE INVESTIGATION REPORT FOR THE THERMAL GROUND AIR STATION BASE, RIVERSIDE COUNTY, CALIFORNIA

Dear Ms. Garcia:

The Department of Toxic Substances Control (DTSC) has completed its review of the draft final Site Inspection (SI) Report detailing the site investigation results for munitions and explosives of concern (MEC) and munitions constituents (MC) in soil, surface water and groundwater.

DTSC concur with the draft final SI Report recommendation of 'No Defense Action Indicated' for the Munitions Response Site (MRS) designated Skeet Range and Burial Pits because no MEC/MC was found at these sites.

DTSC looks forward to the final Site Investigation Report submittal. If you should have any questions regarding this matter, please call me at (714) 484-5452.

Sincerely,

Shelia Lowe

for Omoruyi Patrick, P. E.,
Brownfields and Environmental Restoration Program

APPENDIX H
MITIGATION MONITORING AND REPORTING PROGRAM

Airport Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (TRM)

Mitigation Monitoring and Reporting Program

Public Resources Code, Section 21081.6 (Assembly Bill 3180) requires a public agency to adopt a reporting or monitoring program that can be used to track and implement the mitigation measures identified in an environmental review document prepared in accordance with the California Environmental Quality Act (CEQA). This Mitigation Monitoring Program (MMRP) has been prepared to ensure that the mitigation measures included in the Mitigated Negative Declaration (MND) for the Air Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport (TRM) (State Clearinghouse # 2025040919) are implemented.

Riverside County - Aviation is the agency responsible for implementation of the mitigation measures identified in the Mitigated Negative Declaration (MND) for the proposed Airport Traffic Control Tower Construction at the French Valley Airport (F70). This MMRP provides a summary table to identify all mitigation measures and includes the following information for each mitigation measure:

- Phase of the project during which the required mitigation measure must be implemented;
- Phase of the project during which the required mitigation measure must be monitored;
- Responsible party or agency sponsible for conducting the mitigation; and
- Verification of compliance (monitoring party, date of monitoring, and comments).

	Implementation Phase	Monitoring Phase/Timing	Responsible Party (Monitoring)	Verification of Con		
				Initial	Date	
orate County provisions for fugitive dust control set forth in County documents. ance 742.1 of the County of Riverside to control the fugitive dust and PM10 in ted into construction documents to minimize the volume of particulates generated	Preparation of final plans and construction documents	Pre-Construction Documentation / Construction Activities	Riverside County Aviation-Contractor			
uct a preconstruction survey for nesting birds. he nesting season for migratory birds, which extends from February 15 to August reconstruction survey within 3 to 7 days of construction to identify the potential er. In the event that a nest for the vermillion flycatcher is observed within the project's ffer will be established, and work shall not commence within the buffered area until						
uct cultural resources monitoring during initial ground disturbing activities. ribal Representatives shall monitor initial ground disturbing activities. (Ongoing not require ongoing monitoring.) Approximately 60 days prior to construction, the on with the Monitoring Tribe(s), shall develop a Cultural Resources Monitoring Plan ing, and responsibility of archaeological and cultural activities that will occur on the g and development scheduling. for the coordination of a monitoring schedule as agreed upon by the Monitoring , and the County. The CRMP shall identify the protocols and stipulations that the Project Archaeologist shall follow in the event of inadvertent cultural resources discovered cultural resources. They shall have the authority to stop and redirect significance of any archaeological resources discovered within 60 feet of the find . A decision regarding the find and its effect on construction activities must be	Preparation of final plans and construction documents	Pre-Construction Documentation / Construction Activities	Riverside County Aviation, Project Archaeologist and Native American Tribal Monitor(s)			
vertent discovery of Native American cultural resources. ities unanticipated Native American cultural resources are discovered during the bance for this project, all ground disturbance activities within 60 feet of the resource be convened among the Project Archaeologist and Native American Tribal Monitor ind. At that meeting, a decision will need to be made, with the concurrence of the priate treatment of the resource (documentation, recovery, avoidance). Resource -destructive analysis. Further ground disturbance shall not resume within the area eatment has been accomplished. The following procedures shall be carried out for h shall be further described in the project-related CRMP: **tion and Storage:** During the course of construction, all discovered resources shall a secure location on site with Native American Tribal Monitor oversight of the ll relinquish ownership of all cultural resources. The Project Archaeologist, following nitoring Tribe(s), shall deliver the materials to a qualified repository in Riverside eeds federal standards per Code of Federal Regulations (CFR) Title 36, Part 79, vailable to all qualified researchers and tribal representatives. **position:** The County shall relinquish ownership of all cultural resources, including , and all cultural materials and nonhuman remains, as part of the required mitigation ources. Archaeologist shall prepare a final archaeological report within 60 days of project	Preparation of final plans and construction documents	Construction Activities	Riverside County Aviation, Project Archaeologist and Native American monitor(s)			

	Phase	Phase/Timing	(Monitoring)	Initial	Date	
overy of human remains. (or remains that may be human) are discovered within the construction areas, all hall be immediately halted. Any discovery of human remains shall be immediately gist and Native American monitor(s) to the County Coroner. If the human remains rican, the County Coroner shall notify the Native American Heritage Commission NAHC shall appoint a Most Likely Descendant (MLD). The MLD shall make onsultation with the County Airports Division and Project Archaeologist concerning ovided in California Public Resources Code 5097.98. ve American human remains and / or funerary objects shall be kept confidential and rther disturbance. In the case where discovered human remains cannot be fully ed on the same day, the remains and associated funerary objects, sacred objects al patrimony shall be covered with an opaque material or placed in opaque cloth e.g., metal plate, concrete slab that can be moved by heavy equipment) shall be on opening to protect the remains until examination by the MLD. If this type of vailable, a 24-hour guard shall be posted outside of working hours. the inspection and make recommendations or preferences for treatment within 48 ccess to the site. The MLD shall identify and direct the most appropriate means of ns and any associated funerary object(s). As determined through consultation with l make recommendations that allow the burial to remain in situ and protected. port of all activities associated with or resulting from the discovery of human remains NAHC. l be treated with respect and dignity. California state law (California Health & Safety d regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public require a defined protocol if human remains are discovered in the State of California rn or archaeological.	Preparation of final plans and construction documents	Construction Activities	Riverside County Aviation, Project Archaeologist and Native American monitor(s)			
Obtain a permit to construct from the South Coast AQMD. f an emergency backup generator, the County shall consult with the South Coast ergency generator and obtain a permit to Construct the emergency generator.	Preparation of final plans and construction documents	Pre-construction Documentation / Construction Activities	Riverside County Aviation			
ITOLOGICAL RESOURCES						
scovery of previously unknown paleontological resources. ring procedures and discovery protocols, based on industry-wide best practices for ay be encountered during earth-disturbing activities in a PRIMP. The Project MP to identify where construction monitoring will be required during project activities equired (i.e., full-time, spot checks, etc.); address the collection and processing of e presence or absence of micro vertebrates and other small fossils; provide details d curation at an approved repository; and describes the different reporting standards mental awareness training.	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Riverside County Aviation, Project Paleontologist			
ERIALS						
Brief construction crews about the potential presence of munitions and nexploded ordnance (UXO), munitions of explosive concern (MEC), or vered during site grading or construction, and identify construction worker ures in construction documents. ruction crews will be briefed on the identification of UXO, MEC, and MD, and safe ey are encountered, including leaving the area immediately and noting the location ered. Upon departing the site, the crew leader shall call 911 and the County's ector will procure the services of qualified hazardous materials personnel to review Work will continue after an appropriate assessment has been made and the appropriate personnel	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Construction Manager and Riverside County Airports Director,			

	Phase	Phase/Timing	(Monitoring)	Initial	Date	
Alert construction crews to signs of contaminated soil, residual staining, or e encountered during site grading or construction. y that construction crews shall be alerted to signs of contaminated soil, residual s to cease work if these conditions are encountered. The Airports Director will be f hazardous materials and procure a qualified hazardous materials or o evaluate the potentially hazardous material. Work will continue after an tion has been made, appropriate treatment or remediation is undertaken, and l personnel determine that it safe to continue construction activities.	Preparation of final plans and construction documents	Pre-Construction Documentation/ Construction Activities	Construction Manager and Riverside County Airports Director,			
ecify work hours in Construction documents. y that all project-related construction activities will occur between the hours of 7AM	Preparation of final plans and construction documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			
quire construction equipment to be equipped with noise mufflers. re that all construction equipment be equipped with noise reduction features (e.g. are no less effective than those originally installed by the manufacturer.	Final plans and Construction Documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			
ntify the need for personal protective equipment for hearing protection by act documents. fy that the proposed project is located on an Airport and within an area that will evels exceeding 65 CNEL and require the use of hearing protection by Construction	Preparation of final plans and construction documents	Preconstruction Documentation / Construction Activities	Riverside County Aviation, Construction Contractor			

Notice of Completion & Environmental Document Transmittal

Appendix C

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH#

Project Title: Air Traffic Control Tower Construction at the Jacqueline Cochran Regional Airport
Lead Agency: Riverside County Aviation Division
Contact Person: Angela Jamison
Mailing Address: 4080 Lemon Street, 14th Floor
Phone: (951) 955-9418
City: Riverside **Zip:** 92501
County: Riverside

Project Location:
County: Riverside
City/Nearest Community: Thermal
Cross Streets Airport Service Road and Avenue 58
Zip Code: 92274
Longitude/Latitude (degrees, minutes & seconds)**:** 33° 37' 34.61" N / 116° 09' 10.17" N
Total Acres: 8.5 disturbance/1.5-acre facility.
Assessor's Parcel No.: 759100013 **Section:** 28 **Twp:** 6S **Range:** 8E **Base:** NAD 83
Within 2 Miles: **State Hwy:** 111, 86 **Waterways:** Whitewater River
Airports: TRM **Railways:** Union Pacific Railroad **Schools:** John Kelly Elem.,, La Familia HS, Alternative Edn. School

Document Type:
CEQA: ☐ NOP ☐ Draft EIR **NEPA:** ☐ NOI **Other:** ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.): ☐ Draft EIS ☐ Other:
☒ Mit Neg Dec Other: ☐ FONSI

Local Action Type:
☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☒ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other:

Development Type:
☐ Residential: Units Acres ☒ Transportation: Type Air Traffic Control Tower
☐ Office: Sq.ft. Acres Employees ☐ Mining: Mineral
☐ Commercial: Sq.ft. Acres Employees ☐ Power: Type MW
☐ Industrial: Sq.ft. Acres Employees ☐ Waste Treatment: Type MGD
☐ Educational: ☐ Hazardous Waste Type
☐ Recreational: ☐ Other
☐ Water Facilities: Type MGD

Project Issues Discussed in Document:

☒ Aesthetics	☒ Energy	☒ Mandatory Findings of Significance	☐ Solid Waste
☒ Agriculture and Forestry Resources	☐ Fiscal Impacts	☒ Mineral Resources	☒ Transportation
☒ Air Quality	☐ Flood Plain/Flooding	☒ Noise	☒ Tribal Cultural Resources
☒ Biological Resources	☒ Geology/Soils	☒ Population/Housing	☒ Utilities/Service Systems
☐ Coastal Zone	☒ Greenhouse Gas Emissions	☒ Public Services	☐ Vegetation
☒ Cultural Resources	☐ Growth Inducement	☒ Recreation	☐ Wetland/Riparian
☒ Cumulative Effects	☒ Hazards & Hazardous Materials	☐ Schools/Universities	☒ Wildfire
☐ Drainage/Absorption	☒ Hydrology/Water Quality	☐ Septic System	
☐ Economic/Jobs	☒ Land Use/Planning	☐ Sewer Capacity	☐ Other:

Present Land Use/Zoning/General Plan Designation:

Land Use Designation: Public Facilities (PF) Zoning Designation: Manufacturing-Heavy (M-H)

Project Description (please use a separate page if necessary)**:**

The Jacqueline Cochran Regional Airport (TRM) is a public-use airport that is owned and operated by Riverside County and included in the Federal Aviation Administration's National Plan of Integrated Airport Systems (NPIAS). The FAA determined that TRM is eligible for the Federal Control Tower Program in 2022. The County proposes to construct a 488-square-foot Airport Traffic Control Tower (ATCT) at an FAA-approved location on the airport to enhance safety by improving communication among aircraft and to reduce the risk of accidents, incursions, and other hazards. The proposed project will not increase airport capacity or alter the aircraft fleet mix.

The County will construct the ATCT, access road, parking area, and install an emergency generator and lighting on a previously disturbed and graded area of the airport east of the runway. The facility will be served by existing utilities (sewer, water, communications, and electricity). Runway hold lights will be installed in pavement at the end of Runway 12.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X". If you have already sent your document to the agency please denote that with an "S".

___	Air Resources Board	X	Office of Historic Preservation
___	Boating & Waterways, Department of	___	Office of Public School Construction
___	California Emergency Management Agency	___	Parks & Recreation, Department of
___	California Highway Patrol	___	Pesticide Regulation, Department of
___	Caltrans District # ___	___	Public Utilities Commission
X	Caltrans Division of Aeronautics	___	Regional WQCB # ___
___	Caltrans Planning	___	Resources Agency
___	Central Valley Flood Protection Board	___	Resources Recycling and Recovery, Department of
___	Coachella Valley Mtns. Conservancy	___	S.F. Bay Conservation & Development Comm.
___	Coastal Commission	___	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
___	Colorado River Board	___	San Joaquin River Conservancy
___	Conservation, Department of	___	Santa Monica Mtns. Conservancy
___	Corrections, Department of	___	State Lands Commission
___	Delta Protection Commission	___	SWRCB: Clean Water Grants
___	Education, Department of	___	SWRCB: Water Quality
___	Energy Commission	___	SWRCB: Water Rights
X	Fish & Game Region # 6	___	Tahoe Regional Planning Agency
___	Food & Agriculture, Department of	___	Toxic Substances Control, Department of
___	Forestry and Fire Protection, Department of	___	Water Resources, Department of
___	General Services, Department of	___	
___	Health Services, Department of	___	
___	Housing & Community Development	X	Other: South Coast Air Quality Management District
X	Native American Heritage Commission	___	Other: ___

Local Public Review Period (to be filled in by lead agency)

Starting Date: April 18, 2025 **Ending Date:** May 19, 2025 at 5 PM

Lead Agency (Complete if applicable):

Consulting Firm: Mead & Hunt, Inc.
Address: 180 Promenade Circle
City/State/Zip: Sacramento, CA 95834
Contact: Lisa Harmon
Phone: 916 993 4650

Applicant: Riverside County, Airports Division
Address: 4080 Lemon Street
City/State/Zip: Riverside CA, 92501
Phone: (951) 95509418

Signature of Lead Agency Representative: Angela Jamison Angela Jamison Date: 4/11/25

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

COUNTY OF RIVERSIDE AIRPORTS DIVISION

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Airport Traffic Control Tower Construction

at the Jacqueline Cochran Regional Airport

NOTICE IS HEREBY GIVEN that the County of Riverside intends to adopt a Mitigated Negative Declaration (MND) to construct an Air Traffic Control Tower (ATCT) at the Jacqueline Cochran Regional Airport (TRM). The MND was approved for public review by the County of Riverside Airports Manager.

1. **PROJECT:** Air Traffic Control Tower (ATCT) Construction at the Jacqueline Cochran Regional Airport

2. **APPLICANT/AGENT:** Angela Jamison, Director of Airports
County of Riverside, TLMA-Airports Division
4080 Lemon Street, 14th Floor
Riverside, CA 92501
Tel. (951) 955-9418
Email: ajamison@rivco.org

Comments and recommendations on the adequacy of the environmental document may be filed at the aforementioned address during the public review period established for the project.

3. **LOCATION:** The proposed project will be constructed in an undisturbed, previously graded area east of Runway 17/35 at the Jacqueline Cochran Regional Airport (TRM), which is located at 56-850 Higgins Drive, Thermal, CA 92274. The 448-square-foot tower will be constructed entirely within airport property boundaries on County Assessor's Parcel No. 759-100-013.

4. **PROJECT DESCRIPTION:** The Jacqueline Cochran Regional Airport (TRM) is a public-use airport that is owned and operated by Riverside County and included in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). The FAA determined that the Airport is eligible for the Federal Control Tower Program in 2022. The County proposed to construct a 448-square-foot Air Traffic Control Tower (ATCT) to enhance safety by improving communication among aircraft to reduce the risk of accidents, incursions, and other hazards. The proposed project will not increase airport capacity or alter the aircraft fleet mix.

Riverside County and the FAA conducted a tower siting to identify an appropriate ATCT location. The County will construct the ATCT on a previously graded and disturbed area located east of the runway. The facility will include a secure interior access road, a parking area for tower staff (average of 3 staff members daily), a back-up generator, fence, and lighting. The ATCT will be served by existing utilities (sewer, electricity, communications, and water). The project will not increase airport capacity or affect the airport fleet mix.

5. **ENVIRONMENTAL DOCUMENT:** The MND can be reviewed at the following locations:

- County of Riverside Division of Airports website at: www.rcjcra.com
- A hard copy is available for review throughout the public review period at the Coachella Branch Library, 1500 6th Street, Coachella, CA 92236. The library is open Wednesday and Thursday from 11 AM to 7 PM and Tuesday, Friday, and Saturday from 10 AM to 6 PM (Telephone: (760) 398-5148)

6. **REVIEW PERIOD:** April 18, 2025, through May 19, 2025.

The MND will be available for review starting on **Friday, April 18, 2025,** and ending on **Monday, May 19, 2025, at 5 PM**. Written comments on the MND should be sent to **Angela Jamison, Director of Airports,** by email or as written comments addressed to the address identified in Item 2 above. Comments must be received by May 19, 2025, at 5 pm.

After the close of the public comment and review period for the MND established by this notice, the project will be addressed during a public hearing before the Riverside County Board of Supervisors. Notice of the date, time, and place for such public hearing will be published as provided by law.

Please note that pursuant to Public Resource Code 21177, Government Code Section 65009, and other applicable law, a challenge to the proposed action described above in court, may be limited to raising only those issues or objections that were raised during the public comment period or public hearing or in written correspondence delivered to the Riverside County Airports Department within the review period.

7. **CONTACT FOR MORE INFORMATION:** Angela Jamison, Director of Airports, County of Riverside, Aviation Division, (951) 955-9418 or ajamison@rivco.org.