

USG PLASTER CITY QUARRY EXPANSION AND WELL NO. 3 PROJECT

CUP APPLICATION 20-0016

INITIAL STUDY IS 22-0021

FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT



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CHAPTER 1: INTRODUCTION

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CHAPTER 1: INTRODUCTION

1.1 OVERVIEW OF THE PROJECT AND ENVIRONMENTAL REVIEW PROCESS

This final subsequent environmental impact report (SEIR) has been prepared by Imperial County (County), the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], Section 21000 et seq.; California Code of Regulations [CCR] Title 14 Section 15000 et seq. [CEQA Guidelines]) pursuant to 14 CCR Section 15162, to evaluate the potentially significant environmental effects associated with the proposed USG Plaster City Quarry Expansion and Well No. 3 Project (proposed project).

The proposed project consists of approval of a Conditional Use Permit from the County for the development of a new production well, Well No. 3, and an associated pipeline to provide water to the United States Gypsum (USG) Plaster City Quarry (Quarry).

Additional land use entitlements from the County are not needed for mining and reclamation activities under the Quarry expansion. However, because Well No. 3 and the associated pipeline would provide water to support Quarry operations, this SEIR evaluates potential environmental impacts associated with mining and reclamation activities under the Quarry expansion, for full disclosure and to provide the appropriate CEQA compliance analysis and mitigation for responsible and trustee agencies.

This SEIR also evaluates potential environmental impacts associated with the Viking Ranch restoration and Old Kane Springs Road preservation actions, as proposed in the Habitat Mitigation and Monitoring Plan (see Draft SEIR Appendix D-4). USG identified the approximately 207-acre Viking Ranch site for restoration and the 121-acre Old Kane Spring Road site for preservation to provide compensatory mitigation for the impacts to 139 acres of aquatic resources at the Quarry. Although the Viking Ranch restoration and Old Kane Spring Road preservation will not require entitlements from Imperial County, this SEIR evaluates the environmental impacts of these actions for full disclosure and to provide the appropriate CEQA compliance analysis and mitigation for responsible and trustee agencies, including San Diego County, from which a Major Grading Permit will be requested.

A complete description of the proposed project is provided in Chapter 2, “Project Description,” of the Draft SEIR, which is available on the Imperial County Planning and Development Services Department website at: <https://www.icpds.com/planning/environmental-impact-reports/draft-eirs>. The Draft SEIR was circulated for public review and comment between April 18, 2023, and June 2, 2023 (State Clearinghouse Number 2001121133).

1.2 FINAL EIR REQUIREMENTS

This Final SEIR provides responses to comments received on the Draft SEIR. Section 15132 of the CEQA Guidelines requires that the Final SEIR consist of:

- The Draft SEIR or a revision of the draft;
- Comments and recommendations received on the Draft SEIR either verbatim or in summary;
- A list of persons, organizations, and public agencies commenting on the Draft SEIR;

- The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the Lead Agency.

This Final SEIR has been prepared to provide responses to comments received on the Draft SEIR and is to be used in conjunction with, rather than in place of, the Draft SEIR. Therefore, the information in this Final SEIR, which incorporates the Draft SEIR including its appendices, fulfills state and County CEQA requirements for a complete EIR.

Chapter 3, “Draft SEIR Errata,” of this Final SEIR provides revisions for clarification or amplification of information in the record. In no instances do the errata provide substantial new information or indicate a new impact or increase in the severity of an impact identified in the Draft SEIR.

1.3 USE OF THE EIR IN THE DECISION-MAKING PROCESS

The SEIR is an informational document designed to inform the public of the significant environmental effects of a project, identify possible ways to minimize or mitigate the significant effects, and describe reasonable alternatives to the project.

The County will use the SEIR, together with economic, social, and technical information, to decide whether to approve the discretionary entitlements being requested. The County has made this Final SEIR available prior to hearings on proposed project approval or denial to provide an opportunity for agency and public review of the complete SEIR before decisions are made. In addition, the County provided responses to comments to each of the agencies and members of the public commenting on the Draft SEIR a minimum of 10 days before the first County Planning Commission hearing to consider certification of the Final SEIR.

The County reviews proposed mining use permits, reclamation plans, and financial assurance estimates before considering their approval. The proposed project would be regulated by the County in accordance with the *Imperial County Surface Mining and Reclamation Ordinance* and the California Surface Mining and Reclamation Act (PRC Section 2710 et seq.).

The SEIR (consisting of this Final SEIR and the Draft SEIR which is incorporated by reference) reviews the environmental consequences of the proposed project, as described in Chapter 4, “Environmental Analysis,” of the Draft SEIR. The County will use the SEIR, along with other information, in its consideration of the conditional use permit application.

Before rendering decisions on the discretionary actions, the County must certify that:

- The SEIR has been completed in compliance with CEQA,
- The SEIR was presented to the decision-making body of the Lead Agency,
- The information in the SEIR was reviewed and considered before approving the project, and
- The SEIR reflects the Lead Agency’s independent judgment and analysis.

Should the County approve the proposed project, a statement of findings would be adopted for each significant environmental impact of the proposed project, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

- Changes or alterations have been required in, or incorporated into, the project to avoid or substantially lessen the significant environmental effects as identified in the Final SEIR;
- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency; and/or
- Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final SEIR.

The Lead Agency must adopt, in conjunction with the findings, a program for reporting or monitoring the changes that it has either required in the project or made a condition of approval to avoid or substantially lessen impacts (CEQA Guidelines Section 15091[d]). These measures must be fully enforceable through conditions of approval, agreements, or other measures in a program referred to as the Mitigation Monitoring and Reporting Program (MMRP), which shall be prepared in advance of a public hearing on the proposed project.

1.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The analysis determined that no environmental impacts would remain significant after implementation of all feasible mitigation. Thus, the County will not be required to adopt a statement of overriding considerations to approve the proposed project.

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CHAPTER 2: CEQA PUBLIC REVIEW PROCESS

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CHAPTER 2: CEQA PUBLIC REVIEW PROCESS

2.1 PURPOSE OF THE PUBLIC REVIEW

The California Environmental Quality Act (CEQA) Guidelines Section 15201 states:

Public participation is an essential part of the CEQA process. Each public agency should include provisions in its CEQA procedures for wide public involvement, formal and informal, consistent with its existing activities and procedures, in order to receive and evaluate public reactions to environmental issues related to the agency's activities. Such procedures should include, whenever possible, making environmental information available in electronic format on the Internet, on a web site maintained or utilized by the public agency.

Imperial County (County) has invited public input during the Subsequent Environmental Impact Report (SEIR) preparation process, including providing opportunities to review and comment during the scoping process and during Draft SEIR circulation, as discussed further in Section 2.2, below.

CEQA (California Public Resources Code [PRC] Section 21082.2(b)) explains that “[s]tatements in an environmental impact report and comments concerning an environmental impact report shall not be determinative of whether the project may have a significant effect on the environment.” According to CEQA, it is the responsibility of the lead agency decision makers to “determine whether a project may have a significant effect on the environment based on substantial evidence in the record.” Substantial evidence is defined as facts, fact-related reasonable assumptions, and expert opinion. “Substantial evidence” does not include arguments, speculation, unsubstantiated opinion or narrative, clearly erroneous evidence, or socioeconomic impacts not related to the physical environment (PRC Sections 21080(e), 21082.2(a), 21082.2(c), and CEQA Guidelines Section 15384).

2.2 PUBLIC REVIEW PERIOD AND NOTIFICATIONS

In accordance with both the specific requirements and the intent of CEQA, the environmental review process for the proposed project has included substantial opportunities for public and agency review and comment on the environmental evaluations. The public review process for the proposed project SEIR has included the following opportunities:

- July 18, 2022, to August 22, 2022: SEIR public scoping and Notice of Preparation of SEIR review period
- August 11, 2022: Public scoping meeting for SEIR
- April 18, 2022, to June 2, 2022: 45-day Draft SEIR public review period
- November 16, 2023: Planning Commission hearing on the Draft SEIR

This Final SEIR or notices of its availability have been provided to commenting agencies, organizations, and individuals, and made available via the County website at: <https://www.icpds.com/planning/environmental-impact-reports/draft-eirs> or electronic form via USB prior to proposed project hearings before County decision makers. The County provided responses to comments to each of the agencies commenting on the Draft

SEIR a minimum of 10 days before the County Planning Commission hearing to consider certification of the Final SEIR.

2.3 SUMMARY OF PUBLIC INPUT AND APPROACH TO RESPONSES

Comments were received from four public agencies, one private organization, and one individual. Each comment set (i.e., letter or e-mail) is included in Appendix A, “Comments on the Draft SEIR,” of this Final SEIR. A list of the agencies, organization and individual who submitted comments is provided in Table 4-1, “Comment Letters,” in Chapter 4, “Response to Comments,” of this Final SEIR.

Comments addressed a range of issues, including the content and analysis of the Draft SEIR. Comments addressing the adequacy of the SEIR or issues relevant to the environmental review included the following topics:

- Biological resources,
- Cultural Resources,
- Geology and soils,
- Hydrology and water quality,
- Utilities, and
- Project Alternatives

These comments were responded to with the level of detail appropriate to the comment and issue. In some cases, the County decided that it was appropriate to revise information in the Draft SEIR to correct, clarify, or amplify information. These revisions are presented as errata in Chapter 3, “Draft SEIR Errata,” of this Final SEIR.

Some issues raised in the comments did not speak to the adequacy of the Draft SEIR or did not otherwise address environmental issues. These comments are included in the administrative record by virtue of their submittal to the County and will be considered by County decision makers. However, the Final SEIR need not, and does not, respond in detail to non-environmental issues raised in comments. Responses to these issues in this Final SEIR are limited to identifying that the comment does not raise an environmental issue and noting that decision makers will consider the issue separate from the environmental review process.

CHAPTER 3: DRAFT SEIR ERRATA

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CHAPTER 3: DRAFT SEIR ERRATA

3.1 OVERVIEW

In reviewing and responding to comments on the Draft SEIR, Imperial County (County) determined that revisions to portions of the Draft SEIR text were warranted to correct, clarify, or amplify certain information. CEQA Guidelines Section 15088 provides that where the response to comments makes important changes in the information contained in the text of the Draft SEIR, the lead agency should either revise the text in the body of the EIR or include marginal notes showing that the information is revised in the response to comments.

Section 3.2, “Errata,” of this Final SEIR provides revisions to the Draft SEIR as deemed necessary based on consideration of issues raised in comments on the Draft SEIR. Revisions to the Draft SEIR text are shown as *errata*, consisting of an excerpt of the Draft SEIR text with changes represented with added text shown in underline (example) and deleted text show in strikethrough (~~example~~).

None of the changes provided in Section 3.2 of this Final SEIR contain significant new information. The inclusion of this information in the Final SEIR does not deprive the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect. The Final SEIR does not identify any new significant impacts or substantial increases in the severity of any environmental effects identified in the Draft SEIR. Therefore, recirculation of the Draft SEIR is not required (see CEQA Guidelines Section 15088.5).

Appendix B, “Mitigation Monitoring and Reporting Program,” provides a Mitigation Monitoring and Reporting Program (MMRP) containing the final version of each impact statement and mitigation measure as provided in the SEIR.

3.2 ERRATA

This section contains errata to the Draft SEIR; each is preceded by a brief explanation of the purpose of the change to the Draft SEIR text.

3.2.1 Errata to Draft SEIR Table of Contents p. ix

Explanation

Revisions have been made to the Draft SEIR Table of Contents page ix to correct a minor typographical error and to reflect the addition of two technical reports and one set of figures to the Draft SEIR as Appendices D-5 through D-7, provided in Appendix C, “Draft SEIR Appendices Errata,” of this Final SEIR.

ERRATA**VOLUME II: APPENDICES** *(provided under separate cover)***Appendix A: Initial Study and NOC/NOP**

- A-1: Initial Study
- A-2: NOC/NOP
- A-3: NOP and Scoping Meeting Comments

Appendix B: Application Materials

- B-1: Imperial County Conditional Use Permit #08-0003
- B-2: Application Letter

Appendix C: Air Quality Analysis

- C-1: Air Quality Modeling Analysis
- C-2: SEIS Air Emissions Estimates
- C-3: Estimated Air Quality Emissions—Viking Ranch

Appendix D: Biological Resources Reports

- D-1: SEIS Biological Resources Technical Report
- D-2: 2016 Jurisdictional Delineation
- D-3: Biological Opinion
- D-4: Draft Habitat Mitigation and Monitoring Plan
- D-5: Approved Jurisdictional Determination
- D-6: Old Kane Springs Road Jurisdictional Delineation
- D-7: Peninsular Bighorn Sheep Data Maps

END OF ERRATA**3.2.2 Errata to Draft SEIR Executive Summary p. ES-5*****Explanation***

Revisions have been made to Draft SEIR Executive Summary page ES-5 to clarify the full title of the Porter-Cologne Water Quality Control Act. Draft SEIR page ES-5, first paragraph, was revised as follows.

ERRATA**Project Objectives**

The proposed project includes the following objectives:

- 1) Secure permits and approvals to continue and fully develop quarrying gypsum reserves;

- 2) Maximize the recovery of known gypsum reserves needed for the Plant to fulfill its estimated operational design life;
- 3) Meet market demands for gypsum products;
- 4) Develop and maintain a replacement Quarry water supply designed to meet dust suppression requirements;
- 5) Concurrently reclaim Quarry site for post-mining uses as Open Space;
- 6) Secure permits and approvals to develop a water source to support the mining of gypsum reserves at the Quarry; and
- 7) Provide compensatory mitigation for potential impacts to waters of the state as a result of project implementation in compliance with State of California Fish & Game Code Section 1600 and the Porter-Cologne Water Quality Control Act (Porter Cologne Act).

END OF ERRATA

3.2.3 Errata to Draft SEIR Executive Summary, p. ES-7

Explanation

Revisions have been made to Draft SEIR Executive Summary to clarify that the project alternatives were also evaluated in the 2019 SEIS. Draft SEIR page ES-7, first paragraph, was revised follows.

ERRATA

Summary of Alternatives

The alternatives evaluation considered several potential alternatives. Some were eliminated as they were determined to either not have the potential to feasibly achieve the basic project objectives and/or reduce significant project impacts. The following alternatives, which were evaluated in the 2019 SEIS, were selected and analyzed/compared to the project and are evaluated in the SEIR:

END OF ERRATA

3.2.4 Errata to Draft SEIR Executive Summary Table, p. ES-23

In response to comments, several mitigation measures have been revised to address comments made on the Draft SEIR. Tracked changed revisions to the mitigation measures can be found throughout Chapter 3. In addition, Appendix B provides a clean version of the currently proposed text for mitigation measures. The Errata to the Executive Summary is limited to two revisions that were made to add missing information and to fix a typographical error.

Explanation

Revisions have been made to the Draft SEIR Executive Summary Table to add missing text. Draft SEIR page ES-23 was revised as follows.

ERRATA

Impact 4.2-4: The Project Would Not Interfere Substantially with Native Wildlife Movement or Impede Nursery Site Use	PS	Implement the following existing mitigation measures from the 2019 SEIS: Mitigation Measure 3.4-8: (See full text under Impact 4.2-2) Mitigation Measure 3.4-12: (See full text under Impact 4.2-2)	<u>LTS</u>
Impact 4.2-5: The Project Would Not Conflict with Any Local Policies or Ordinances Protecting Biological Resources or with Any Adopted Habitat Conservation Plan or Natural Community Conservation Plan	PS	Implement the following existing mitigation measures from the 2008 EIR/EIS: Mitigation Measure 3.5-2: USG comply with the Flat-tailed Horned Lizard Rangewide Management Strategy, as revised, Standard Mitigation Measures when constructing Quarry Well #3 and the Quarry pipelines. Implement the following existing mitigation measures from the 2019 SEIS: Mitigation Measure 3.4-8: (See full text under Impact 4.2-2)	<u>LTS</u>

END OF ERRATA**3.2.5 Errata to Draft SEIR Executive Summary Table, p. ES-28**

In response to comments, several mitigation measures have been revised to address comments made on the Draft SEIR. Tracked changed revisions to the mitigation measures can be found throughout Chapter 3. In addition, Appendix B, “Mitigation Monitoring and Reporting Program,” provides a clean version of the currently proposed text for mitigation measures. The Errata to the Executive Summary is limited to two revisions that were made to add missing information and to fix a typographical error.

Explanation

A revision has been made to the Draft SEIR Executive Summary Table to correct a typographical error. Draft SEIR page ES-28 was revised as follows.

ERRATA

Impact 4.6-4: The Project Could Release Pollutants in the Event of Inundation from Flood, Tsunami, or Seiche	LTS	None required.	LTS
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END OF ERRATA

3.2.6 Errata to Draft SEIR Chapter 1, “Introduction,” p. 1-1

Explanation

A revision has been made to Draft SEIR Chapter 1, “Introduction,” to correct a typographical error. Draft SEIR page 1-1, first paragraph, was revised as follows.

ERRATA

This draft subsequent environmental impact report (SEIR) has been prepared by Imperial County (County), the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], Section 21000 et seq.; California Code of Regulations [CCR] Title 14 Section 15000 et seq. [CEQA Guidelines]) pursuant to 14 CCR Section 15162, to evaluate the potentially significant environmental effects associated with United States Gypsum Company’s (“USG” or “the applicant”) request for a Conditional Use Permit (CUP) to develop Well No. 3 and an associated pipeline to support mining operations at the Plaster City Quarry (Quarry). In addition, this SEIR evaluates mining operations at the Quarry under the 2008 Quarry Expansion and restoration and preservation of two off-site properties (Viking Ranch restoration site and Old Kane Springs Road preservation site). Together these components make up the proposed project. A detailed description of the proposed project can be found in Chapter 2, “Project Description.”

END OF ERRATA

3.2.7 Errata to Draft SEIR Chapter 1, “Introduction,” p. 1-1

Explanation

Revisions have been made to Draft SEIR Chapter 1, “Introduction,” to clarify that the aquatic resources identified on the project site are not Waters of the U.S. subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE).

ERRATA

In addition to the 2008 EIR/EIS, analysis of the USG Expansion/Modernization Project was completed under the National Environmental Policy Act (NEPA) as part of the process of obtaining the federal approvals required for the Quarry expansion. The NEPA process resulted in the completion of a Draft Supplemental EIR (SEIS) in June 2019 and a Final SEIS in November 2019 for the USG Expansion/Modernization Project. The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of aquatic resources ~~waters of the United States~~ at the Quarry by restoring, enhancing, and preserving aquatic resources at a property where aquatic functions are similar to the impacted functions. In response, USG proposes to mitigate impacts at a 1.92:1 mitigation-top-impact ratio, for a total of 267.3 acres of rehabilitation, enhancement, and preservation of aquatic resources. The proposed compensatory mitigation consists of the restoration and enhancement of an approximately 207-acre area at the Viking Ranch restoration site and the preservation of approximately 121 acres at the Old Kane Springs Road preservation site.

END OF ERRATA

3.2.8 Errata to Draft SEIR Chapter 1, “Introduction,” p. 1-6

Explanation

Revisions have been made to Draft SEIR Chapter 1, “Introduction,” to clarify the list of potential responsible and trustee agencies for the proposed project. Draft SEIR page 1-6, last paragraph, was revised as follows.

ERRATA

A number of agencies may have a particular interest in the project. These agencies include those listed below:

Federal Agencies

- ~~United States Corps of Engineers (404 Permit)~~ None

State Agencies

- California Department of Fish and Wildlife (Lake and Streambed Alteration Agreement)
- California Department of Parks and Recreation (Encroachment Permit)
- ~~Colorado River Regional Water Quality Control Board (401 Certification)~~

Regional and Local Agencies

- County of San Diego (Major Grading Permit)
- Colorado River Regional Water Quality Control Board (Construction General Permit Notice of Intent [NOI], Industrial General Permit NOI, Waste Discharge Requirements)

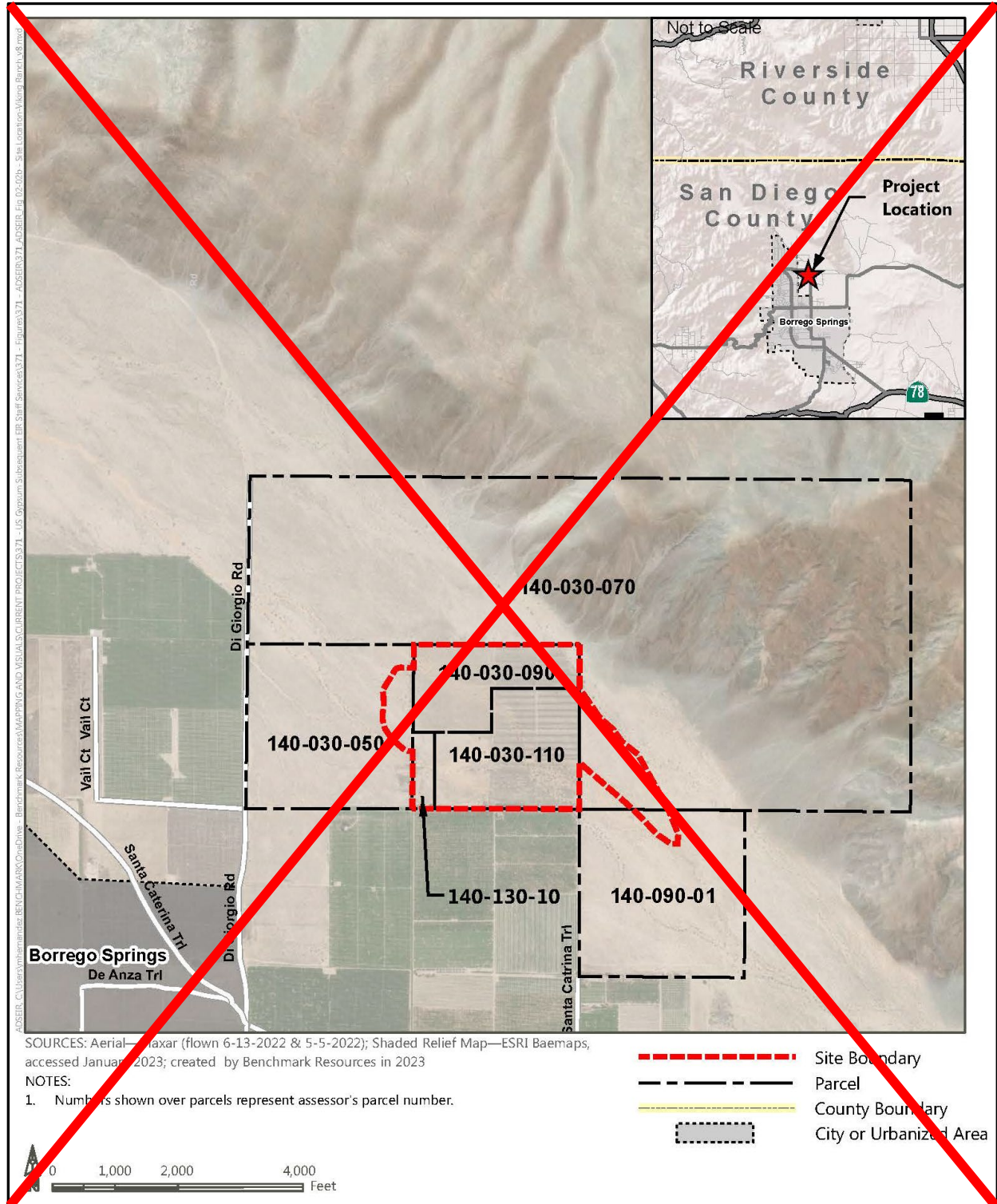
END OF ERRATA

3.2.9 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-7

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” Figure 2-2b to update all APNs within the Viking Ranch Restoration Site to follow San Diego County’s APN numbering conventions.

ERRATA

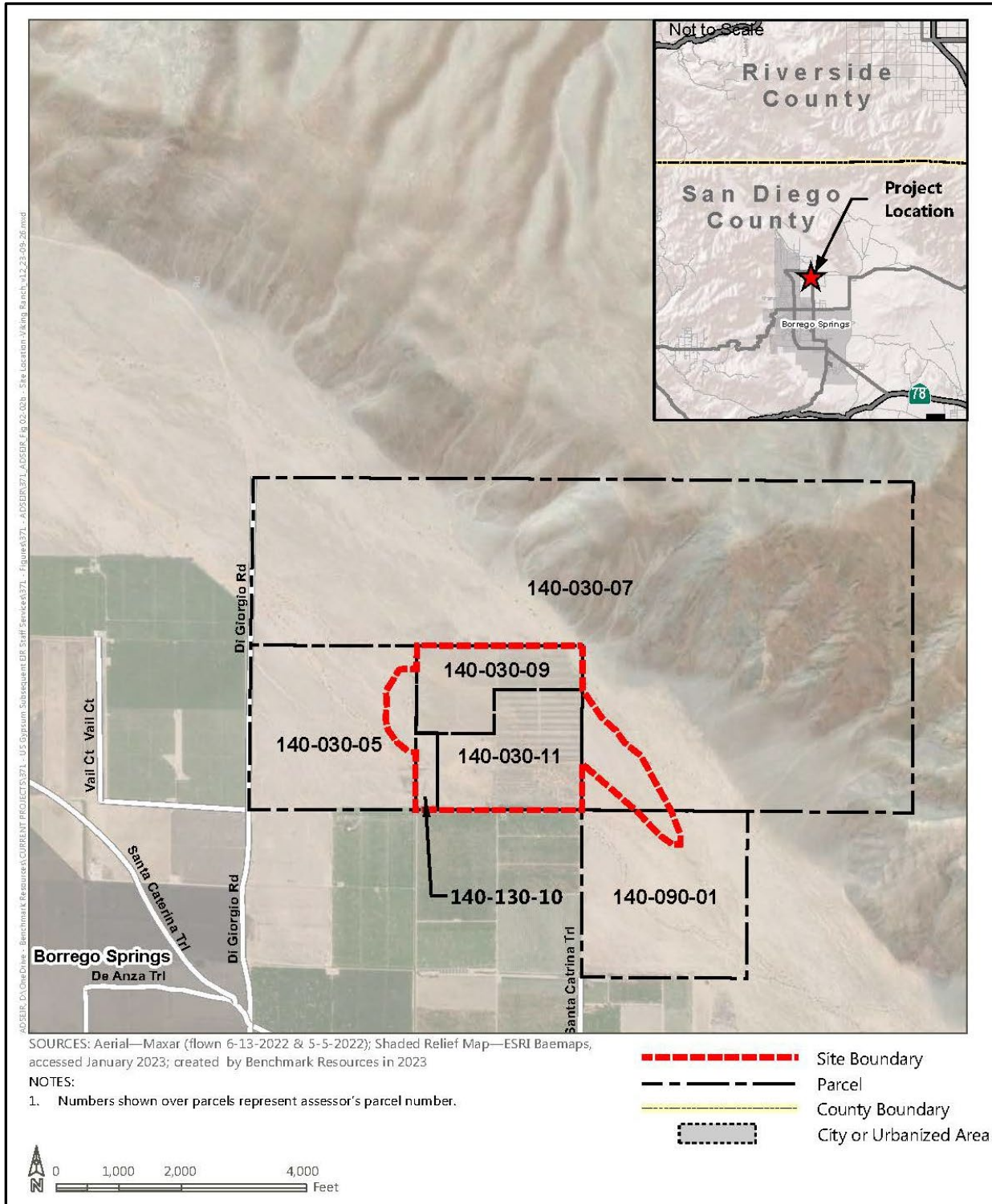


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Draft SEIR Figure 2-2b
Site Location—Viking Ranch Restoration Site

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SOURCE: Benchmark Resources, 2023

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Final SEIR Errata Figure 2-2b
 Site Location—Viking Ranch Restoration Site

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END OF ERRATA

3.2.10 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-11 and 2-12

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” to correct an incorrect assessor’s parcel number (APN), to update all San Diego County APNs to reflect the County’s numbering conventions, and to add missing information. Draft SEIR page 2-11, third paragraph and page 2-12, Table 2-1, were revised as follows.

ERRATA

2.5.1 Project Location and Access

The USG Plaster City Quarry holdings consists of 2,048 acres and is in the northwestern portion of Imperial County adjacent to the Imperial County/San Diego County line (see Figure 2-1 and Figure 2-2a). Well No. 3 would be located east of the existing Quarry on a USG-owned parcel (Assessor’s Parcel Number [APN] 033-020-009). The proposed pipeline would be approximately 3.5 miles in length and would be developed within an existing right-of-way over an additional 12.7 acres (30 foot wide by 3.5 miles) of land, most of which (7.25 acres) is managed by the BLM. A portion of the right-of-way (3.75 acres) is located within the Anza-Borrego Desert State Park. The proposed pipeline would be developed within the existing narrow-gauge railroad right-of-way that is already disturbed by an existing unpaved access road. The approximately 207-acre Viking Ranch restoration site (see Figure 2-2b) is located 26 miles northwest of the USG Quarry in San Diego County (APNs 140-0390-01-00, 140-030-05-00, -07-00, -09-00, -10-00, and -11-00). The 121-acre Old Kane Springs Road preservation site (see Figure 2-2c) is located 7 miles northwest of the USG Quarry in San Diego County (APN 253-150-34-00).

The Quarry, well site, and pipeline alignment are accessed via West Evan Hewes Highway. Viking Ranch is accessed on an unpaved easement that proceeds east from the northern extension of De Gregorio Road in Borrego Springs, California. The Old Kane Springs Road preservation site is accessed via the unpaved Old Kane Springs Road off Highway 78 or Split Mountain Road in Ocotillo Wells, California.

2.5.2 Assessor Parcel Numbers

The project site’s assessor parcels are listed in Table 2-1, “Assessor’s Parcel Numbers.”

**TABLE 2-1
 ASSESSOR’S PARCEL NUMBERS**

Assessor’s Parcel Numbers	Ownership	Acres (Approximate) ¹	Zoning
IMPERIAL COUNTY			
Well No. 3 Site			
033-020-009	USG	159.9	S-2
Pipeline Alignment			
033-010-016	State	17.0	STATE
033-010-017	BLM	12.6	BLM

Assessor's Parcel Numbers	Ownership	Acres (Approximate) ¹	Zoning
033-010-025	BLM	18.1	BLM
033-060-008	USG	388.6	S-2
033-060-010	USG	80.3	S-2
033-060-012	BLM	1.2	BLM
USG Plaster City Quarry			
033-060-009	USG	40.0	S-2
033-070-010	USG	80.0	S-2
033-070-004	USG	37.2	S-2
033-070-005	USG	159.0	S-2
033-070-008	USG	69.0	S-2
033-070-010	USG	80.0	S-2
033-070-011	USG	108.7	S-2
033-070-017	USG	32.6	S-2
033-070-023	USG	11.4	S-2
033-080-005	USG	37.9	BLM
033-090-011	USG	10.4	S-2
033-090-012	USG	70.0	S-2
033-090-013	USG	37.6	BLM
033-090-014	USG	42.2	BLM
033-090-015	USG	122.0	BLM/S-2
Subtotal		2,048	
SAN DIEGO COUNTY			
Viking Ranch Restoration Site			
140-030-01-00140-090-01	State Park	4.8	n/a ³
140-030-05-00	Anza-Borrego Foundation	12.3	8
140-030-07-00	State Park	26.5	n/a ³
140-030-09-00	Borrego Water District	62.5	n/a ³
140-030-10-00	Private	9.8	8
140-030-11-00	Borrego Water District	87.5	n/a ³
Subtotal		207²	
Old Kane Springs Road Preservation Site			
253-150-34-00	Private	121	8
TOTAL:		2,376	

Source: Imperial County 2022b

Notes: 1—Portion of parcel within project area; 2—does not add due to independent rounding; 3—parcels are federal or state land and not subject to County zoning

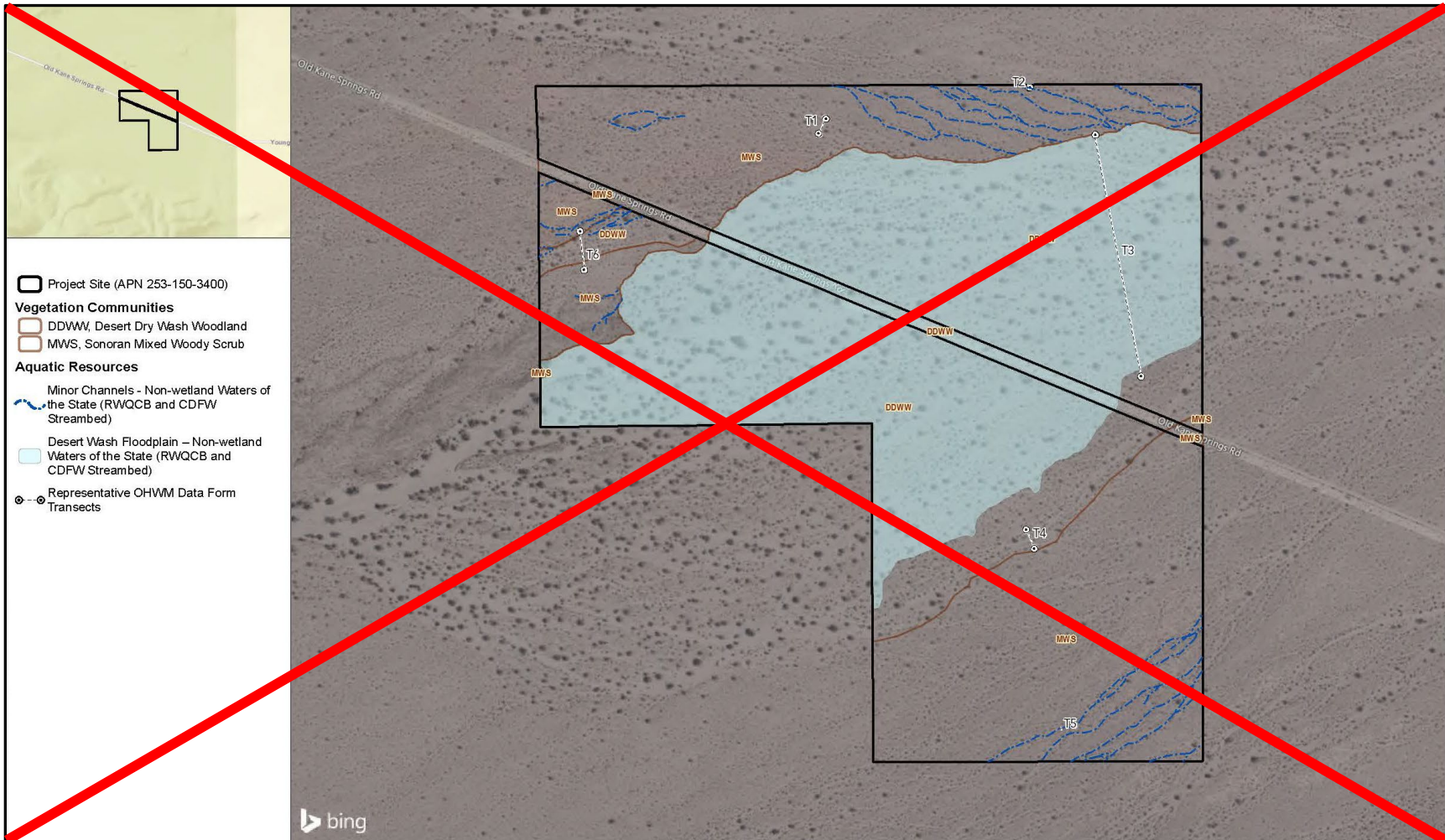
END OF ERRATA

3.2.11 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-15

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” to replace Figure 2-4 with a clearer image. Draft SEIR page 2-15, Figure 2-4, was revised as follows.

ERRATA

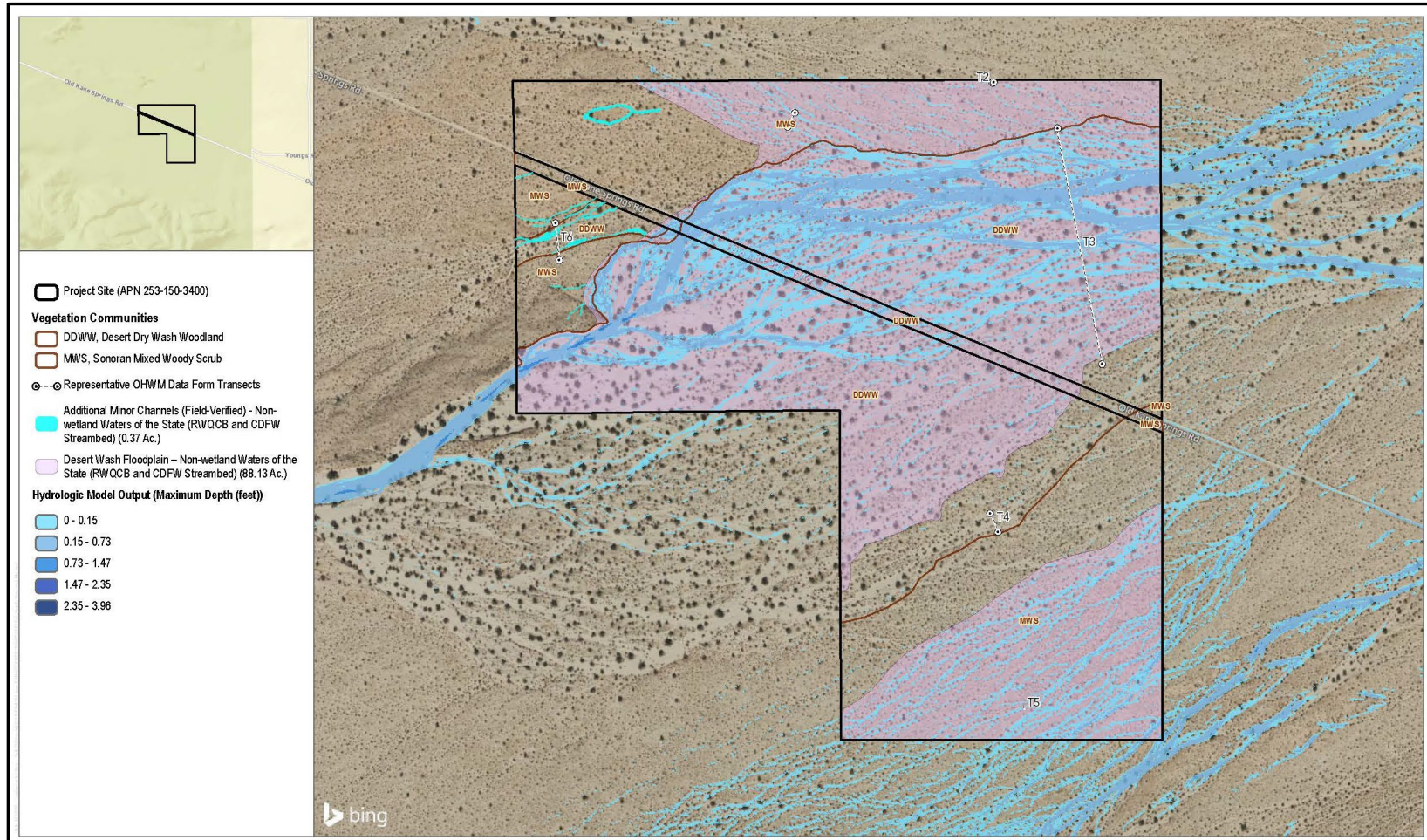


SOURCE: Dudek, 2021; Aerial-Bing Mapping Services, 2020

NOTE: Image has been modified by Benchmark Resources and is not printed to scale.

Draft SEIR Figure 2-4
Old Kane Springs Road Preservation Site

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SOURCE: Dudek, 2023; Aerial-Bing Mapping Services, 2020

NOTE: Image has been modified by Benchmark Resources and is not printed to scale.

**Final SEIR Errata Figure 2-4
 Old Kane Springs Road Preservation Site**

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END OF ERRATA

3.2.12 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-24

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” to add a reference to the associated figure. Draft SEIR page 2-25, third paragraph, was revised as follows.

ERRATA

Viking Ranch Restoration

The Viking Ranch parcels were primarily former orchard land located north of Borrego Springs and within the Coyote Creek Wash (see Figure 2-1). However, parcel 140-030-10-00 and the southwestern portion of parcel 140-030-11-00 are undeveloped and were not historically in agriculture. The mitigation site is located approximately 26 miles from the USG Quarry. Viking Ranch was used for orchard production until the site was purchased by the Borrego Water District in 2017. Previous agricultural land modifications were constructed that diverted hydrology of Coyote Creek around the agricultural field. These topographic modifications included excavation of ditches and construction of berms to protect the orchard from flooding. The restoration program will remove these diversion features to re-establish braided, unconstrained flow across the site, consistent with the existing Coyote Creek floodplain. The restoration program is described in the Draft Habitat Mitigation and Monitoring Plan for the United States Gypsum Company Plaster City Expansion/Modernization Project (HMMP) (see Appendix D-4) and is shown in Figure 2-6.

END OF ERRATA

3.2.13 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-26

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” to clarify that the two oil-filled plastic containers once identified on the project site are no longer present. Draft SEIR p. 2-25, first paragraph, was revised as follows.

ERRATA

A Preliminary Environmental Site Assessment Report (ESA) (Dudek 2018, cited in Dudek 2022) was conducted on the site that included the collection of 10 soil samples that were analyzed for organochlorine pesticides. No organochlorine pesticides were detected at or above the above reporting limits in any of the 10 samples analyzed. The ESA includes the following recommendations to address potential hazards and hazardous materials concerns on the site:

- Two oil filled plastic containers were observed on the site and have since been ~~should be~~ removed and properly disposed of in accordance with applicable local, state, and federal guidelines.
- Stained soil was observed on the site near a cement platform located in the southwest corner of the site. The stained soil should be removed and disposed of in accordance with applicable local, state, and federal guidelines.

- A water well was located on the site. If the owner of the site plans to use the well in the future, the well should be capped with a lockable lid. If no future use of the well is planned, the turbine discharge head and impeller shaft should be removed, and the well should be abandoned in accordance with local, state, and federal guidelines. Alternatively, the well may be converted to a monitoring well.

Surface water was observed flowing on the site from the adjacent property to the south. The source of the surface water should be identified. The surface water should then be prevented from entering the site or rerouted off of the site. Surface water from unknown sources has the potential to carry contamination onto the site.

END OF ERRATA

3.2.14 Errata to Draft SEIR Chapter 2, “Project Description,” p. 2-28

Explanation

Revisions have been made to Draft SEIR Chapter 2, “Project Description,” to add a description of the proposed actions related to the Old Kane Springs Road preservation site. Draft SEIR page 2-28, sixth and seventh paragraphs, were added as follows.

ERRATA

Old Kane Springs Road Preservation

The project proposes the preservation of existing non-wetland waters desert wash, braided channels, fluvial process, and associated vegetation and wildlife within the 121-acre Old Kane Springs Road preservation site. The preservation site is a privately owned parcel located approximately 3 miles southwest of Ocotillo Wells and 10 miles northwest of the Quarry project. The parcel is bisected by Old Kane Springs Road and an associated overhead power transmission line supported by wooden poles. The property is situated within an unnamed desert and all of the property is subject to flow during episodic rainfall events. Fluvial features are present in all areas of the property except for the maintained unpaved roadway. However, fluvial drainage patterns are not interrupted by the road, suggesting that during flood events, the road does not pose an impediment to flow. At least 61 acres of the preservation site are jurisdictional non-wetland waters of the State. The vegetation communities consist of Sonoran mixed woody scrub and desert dry wash woodland with little non-native species. The property is zoned for low density residential development (one unit/40 acres) and therefore the property is under threat of development. The preservation site boundaries will be surveyed, posted with signage indicating the area is a natural open space preserve and that trespassing is not allowed. A fence is not proposed because the area is surrounded by public open space lands on all sides with restricted access. A locked gate will be installed across access roads into the site to restrict vehicular access to the preservation site. The preservation site will be managed by a qualified long-term (in-perpetuity) natural lands manager. The identification of the long-term manager would be subject to regulatory agency approval.

Preservation Mechanism

Both the Viking Ranch restoration site and Old Kane Springs Road Preservation site will be preserved in-place via recordation of a permanent conservation easement, deed restriction, or other approved protective

mechanism over the entire restoration site and preservation site, which will promote long-term viability of the sites' waters of the State and surrounding habitat by conducting long-term management. The conservation easement shall prohibit all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the natural functions and values of the preservation site. Utility lines, sewer lines, drainage lines, access roads, and other passive and/or active recreation areas shall not be allowed in the sites where these easements/uses do not currently exist. For instance, as shown on Draft SEIR Figure 2-4, "Old Kane Springs Road Preservation Site," a utility easement and contiguous access road bisect the Old Kane Springs Road preservation site and would remain after preservation. Freestanding gates and signage would be installed at the site access points within this existing easement.

END OF ERRATA

3.2.15 Errata to Draft SEIR Chapter 2, "Project Description," p. 2-31

Explanation

Revisions have been made to Draft SEIR Chapter 2, "Project Description," to clarify that a major grading permit will be required from San Diego County for the Viking Ranch Restoration Site and to add the California Department of Parks and Recreation as an agency whose approval may be required for the project. Draft SEIR page 2-31, first and second paragraphs, were revised as follows.

ERRATA

This SEIR also evaluates potential environmental impacts associated with the Viking Ranch restoration and Old Kane Springs Road preservation actions, as proposed in the Habitat Mitigation and Monitoring Plan (Dudek 2022). Although these project components do not require entitlements from Imperial County, this SEIR evaluates the environmental impacts of these actions for full disclosure and to provide the appropriate CEQA review for responsible agencies, which will include major grading permits issued by San Diego County for Viking Ranch.

2.7.2 Other Agencies Whose Approval May Be Required

In addition to Imperial County approval, other permits and approvals would be required before implementation of the project could proceed. The other agencies whose approval may be required include:

- County of San Diego (Major Grading Permit)
- California Department of Fish and Wildlife (Lake and Streambed Alteration Agreement)
- Colorado River Regional Water Quality Control Board (Construction General Permit Notice of Intent [NOI], Industrial General Permit NOI, Waste Discharge Requirements)
- California Department of Parks and Recreation (Encroachment Permit)

END OF ERRATA

3.2.16 Errata to Draft SEIR Chapter 3, “Terminology, Approach, and Assumptions,” p. 3-5***Explanation***

Revisions have been made to Draft SEIR Chapter 3, “Terminology, Approach, and Assumptions,” to clarify that the aquatic resources identified on the project site are not Waters of the U.S. subject to the jurisdiction of the USACE. Draft SEIR page 3-5, last paragraph, was revised as follows.

ERRATA

The requested CUP would replace expired CUP 635-83, and development of Well No 3 and associated pipeline would be essentially unchanged from that previously proposed and analyzed in the 2008 EIR/EIS. However, the current proposal includes additional project components which were not part of the original 2008 Quarry expansion. The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of ~~waters of the United States (WoUS)~~ aquatic resources at the Quarry by restoring, enhancing, and preserving aquatic resources at a property where aquatic functions are similar to the impacted functions. In response, USG proposes to mitigate impacts at a 1.92:1 mitigation-to-impact ratio, for a total of 267.3 acres of rehabilitation, enhancement, and preservation of aquatic resources. The proposed compensatory mitigation consists of the restoration and enhancement of an approximately 207-acre area at the Viking Ranch restoration site and the preservation of approximately 121 acres at the Old Kane Springs Road preservation site. The sites are shown on Figures 2-1, “Regional Location,” 2-2b, “Site Location—Quarry, Well No. 3, and Pipeline,” and 2-2c, “Site Location—Viking Ranch Restoration Site.” These activities could result in one or more significant effects not discussed in the previous EIR. Thus, the County has determined that an SEIR is required for this project. This SEIR is subsequent to the 2008 EIR/EIS.

END OF ERRATA**3.2.17 Errata to Draft SEIR Chapter 3, “Terminology, Approach, and Assumptions,” p. 3-9*****Explanation***

Revisions have been made to Draft SEIR Chapter 3, “Terminology, Approach, and Assumptions,” to clarify that some previously adopted mitigation measures referenced in the Draft SEIR have already been partially or fully implemented. Draft SEIR page 3-9, first paragraph, was revised as follows.

ERRATA**3.5 MITIGATION MEASURES**

In most cases, implementation of recommended mitigation measures would either result in complete avoidance of impacts or reduce impacts to less than significant. However, impacts that cannot be reduced to a less-than-significant level after application of feasible mitigation measures and alternatives are considered significant and unavoidable. As a condition of project approval, the applicant for the proposed project would be required to implement all the feasible mitigation measures identified in this EIR and adopted by the County.

In accordance with PRC Section 21081.6(a), the County would adopt a mitigation monitoring and reporting program (MMRP) at the time it certifies the EIR. The purpose of the MMRP is to ensure that the applicant

will comply with the adopted mitigation measures when the project is implemented. The MMRP would identify each of the mitigation measures and describe the party responsible for monitoring, the time frame for implementation, and the program for monitoring compliance. The proposed project was originally approved in 2008 and has been partially implemented. As such, some of the mitigation measures contained in the 2008 EIR/EIS and identified in this Draft SEIR as existing mitigation measures, have already been fully implemented and need not be implemented again. The current status of each mitigation measure will be clearly denoted in the MMRP.

END OF ERRATA

3.2.18 Errata to Draft SEIR Section 4.1, “Air Quality,” p. 4.1-21

Explanation

Revisions have been made to Draft SEIR Section 4.1, “Air Quality,” to clarify the nature of truck trips to/from the Old Kane Springs Road preservation site. Draft SEIR page 4.1-21, third paragraph, was revised as follows.

ERRATA

Old Kane Springs Road Preservation Site

Emissions associated with preservation of the Old Kane Springs Preservation Site would be limited to ~~regular maintenance~~ infrequent truck trips for periodic site monitoring and would be negligible. Thus, this project component would not hinder implementation of the SDAPCD air quality plans and would have no potential to cause unplanned growth.

END OF ERRATA

3.2.19 Errata to Draft SEIR Section 4.1, “Air Quality,” p. 4.1-24

Explanation

Revisions have been made to Draft SEIR Section 4.1, “Air Quality,” to clarify that Mitigation Measure 4.1-1a applies only to the Viking Ranch Restoration Site. Draft SEIR page 4.1-24, Mitigation Measure 4.1-1a, was revised as follows.

ERRATA

Mitigation Measure 4.1-1a: *The following standard mitigation measures for fugitive PM₁₀ control shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:*

- a. *All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.*

- b. *All on site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.*
- c. *All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.*
- d. *The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.*
- e. *All track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.*
- f. *Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at point of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.*
- g. *The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.*

END OF ERRATA

3.2.20 Errata to Draft SEIR Section 4.1, “Air Quality,” p. 4.1-25

Explanation

Revisions have been made to Draft SEIR Section 4.1, “Air Quality,” to clarify that Mitigation Measure 4.1-1b applies only to the Viking Ranch Restoration Site. Draft SEIR page 4.1-25, Mitigation Measure 4.1-1b, was revised as follows.

ERRATA

Mitigation Measure 4.1-1b: *The following standard mitigation measures for construction combustion equipment shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:*

- a. *Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.*
- b. *Minimize idling time either by shuttling equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.*
- c. *Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.*

- d. *Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).*

END OF ERRATA

3.2.21 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-1

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to add reference to the Approved Jurisdictional Determination for the Quarry issued by the USACE and the updated Jurisdictional Delineation for the Old Kane Springs Road preservation site. Draft SEIR page 4.2-1, third paragraph, was revised as follows.

ERRATA

The information in this section is based on the following biological technical studies which were previously prepared to support the 2008 EIR/EIS and 2019 SEIS, as well as a habitat mitigation and monitoring plan prepared for the offsite mitigation sites:

- *Biological Resources Technical Report: United States Gypsum Company Expansion and Modernization Project* (Aspen Environmental Group 2019) (Appendix D-1, “SEIS Biological Resources Technical Report”)
- *Jurisdictional Delineation for United States Gypsum Company Plaster City Expansion/Modernization Project* (Hernandez Environmental Services 2016) (Appendix D-2, “2016 Jurisdictional Delineation”)
- *Section 7 Biological Opinion for the United States Gypsum Company Expansion/Modernization Project, Imperial County, California* (United States Fish and Wildlife Service 2019) (Appendix D-3, “Biological Opinion”)
- *Draft Habitat Mitigation and Monitoring Plan for the United States Gypsum Company Plaster City Expansion/Modernization Project, Ocotillo Wells, California* (Dudek 2021) (Appendix D-4, “Draft Habitat Mitigation and Monitoring Plan”)
- *Approved Jurisdictional Determination, issued by the USACE on February 8, 2021* (USACE 2021) (Appendix D-5, “Approved Jurisdictional Determination”)
- *Initial Jurisdictional Aquatic Resources Delineation Findings: Old Kane Springs Road* (Dudek 2022) (Appendix D-6, “Old Kane Springs Rd Jurisdictional Delineation”)

END OF ERRATA

3.2.22 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-16

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to insert additional data and figures on PBS provided to Imperial County by CDFW via email on August 17 and August 24, 2023 (see Comment Letters 4b and 4c, respectively in Chapter 4, “Response to Comments,” of this Final SEIR). See

also Draft SEIR Appendix D-7, provided in Appendix C, “Draft SEIR Appendices Errata,” of this Final SEIR. The following new text has been added after the sixth paragraph of Draft SEIR page 4.2-16.

ERRATA

According to CDFW, based on GPS data collected between 2015 and 2022, PBS do not use the active mining area in the north half of the Quarry but do utilize the currently undisturbed habitat within the proposed mine expansion area to the south. While the gypsum formations within the southern quarry boundary do not appear to be used much by PBS, clusters of location data surrounding the margins of the formations indicate that these areas do meet PBS needs (PCEs) particularly during the lamb-rearing and summer seasons (refer to close-up maps by season provided in Appendix D-7). Clusters of PBS data surrounding the gypsum formations and within the wash below the formations are most notable during the summer months (June – August). The drainages wrap around the formations and provide ephemeral water sources, and in times of drought provide forage opportunities since plants grow more readily in drainages and washes compared to the steep, rocky slopes above the formations. The washes do not make up “core PBS habitat” based on radio-collar data; however, at certain times of the year, the washes and drainages provide critical resources for PBS and are therefore just as important to survival as more frequently used areas. Furthermore, in practice, the gypsum formations next to the washes provide shade, shelter, and escape terrain regardless that it does not meet the strict definition of “escape terrain” previously described in this Draft SEIR. There are no permanent water sources within the Fish Creek Mountains (FCM), yet despite this fact, radio-collared data collected from 2015 through May 2022 had not shown any movement of FCM ewes out of the area. However, in July 2022, one radio-collared ewe did move into the Coyote Mountains (south of the FCM) for a few days before returning to the FCMs. Due to the lack of permanent water sources in the FCM, small drainages that can collect and store water even for short periods of time and sustain plant growth are vital.

Radio-collared ewes do utilize the project area during the lamb-rearing season, and it is important to emphasize that the points on the map do not represent all movement data of radio-collared ewes since GPS data are only collected a few times per day, and the data only represent a small portion of the total ewe population and thus far no representation of ram use. Because there is radio-collared data within the project area during the lamb-rearing season, it is considered lamb-rearing habitat even if it doesn’t meet the definition described in the USFWS Recovery Plan. A study conducted for CDFW by a graduate student (Kendall Hines), titled “Post-partum habitat use for Peninsular bighorn sheep (*Ovis canadensis nelsoni*) in Southern California, demonstrated that 3 of the 4 ewe groups studied moved closer to alluvial fan habitat during the post-partum period and that 2 of 4 ewe groups moved to lower elevation habitat. While the study was not conducted in the FCM, data indicate that ewes in the FCM also rely on low elevation habitat near alluvial fans during the lambing season.

Appendix D-7 provides multiple CDFW figures that display PBS radio-collar location data in the project area between 2015 and 2021.

END OF ERRATA

3.2.23 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-27

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to clarify the regulatory setting for drainages identified within the proposed pipeline alignment. Draft SEIR page 4.2-27, third paragraph, was revised as follows.

ERRATA

According to the 2019 SEIS, there are no jurisdictional wetlands present within the proposed pipeline alignment. However, there are a few drainage courses along the alignment that would likely meet criteria as state jurisdictional ephemeral stream channels, subject to permitting under Section ~~16013~~1602 of the Fish and Game Code, and ~~possibly~~ as waters of the US State subject to permitting under the Porter-Cologne Act Section 404 of the Federal Clean Water Act (Imperial County 2019).

END OF ERRATA

3.2.24 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-30

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to clarify the regulatory setting for aquatic resources identified on the project site. Draft SEIR page 4.2-30, sixth paragraph, was revised as follows.

ERRATA

~~Pursuant to the federal Clean Water Act, ACOE and RWQCB, Porter-Cologne Act, RWQCB jurisdictional areas include those supporting all three wetlands criteria consistent with and as identified described in the USACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the ACOE but can also include waters of the state that may be regulated, pursuant to the state Porter Cologne Act.~~

END OF ERRATA

3.2.25 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-30

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to replace references to Waters of the U.S. with Waters of the State. Draft SEIR page 4.2-30, last paragraph, was revised as follows.

ERRATA

- ~~ACOE and RWQCB: “Wetland” and “non-wetland waters.” Wetland waters of the State United States and non-wetland waters of the State United States are subject to regulation by ACOE and RWQCB, pursuant to the Clean Water Act. Within the mitigation site, ACOE waters of the~~

~~United States, and RWQCB waters of the United States overlap, and therefore are combined under one term: “non-wetland waters.”~~

END OF ERRATA

3.2.26 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-32

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to correct an incorrect acreage total. Draft SEIR page 4.2-3, Table 4.2-3, was revised as follows.

ERRATA

**Table 4.2-3
Vegetation Communities within the Old Kane Springs Road Preservation Site Vegetation**

Vegetation Class	Vegetation Type	Total (Acres)
Scrub and Chaparral	Sonoran Mixed Woody Scrub ¹	590.55
Riparian and Bottomland Habitat	Desert Dry Wash Woodland ¹	60.08
Total²		119.63

Source: Oberbauer et al. 2008, cited by Dudek 2021

Notes:

1. Considered special status by the County (2010)
2. Totals may not sum due to rounding.

END OF ERRATA

3.2.27 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-33 and 4.2-34

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to update the discussion of aquatic jurisdictional resources on the Old Kane Springs Road Preservation Site according to the updated Jurisdictional Aquatic Resources Delineation (Dudek 2022) and to remove mention of the USACE from Table 4.2-4. Draft SEIR page 4.2-34, Table 4.2-4, was revised as follows.

ERRATA

Aquatic Jurisdictional Resources

A jurisdictional wetland delineation was conducted for the Old Kane Springs Road site to determine the presence and extent of jurisdictional aquatic features on the project site (Dudek 2021; see Appendix E of Appendix D-4). This delineation was updated by Dudek in 2022 (see Appendix D-6). During the jurisdictional delineation survey, the site was walked by Dudek biologists and evaluated for evidence of fluvial indicators such as drainage swales, mud cracks, drift, wracking, cut banks, and sediment transportation and sorting. The extent of potential jurisdictional aquatic resources was determined by mapping the areas with fluvial characteristics and topography showing evidence of consistent flow patterns and hydrologic connectivity (Dudek 2024²).

Since no hydrophytic vegetation and/or associated wetlands were present on the Old Kane Springs Road Viking Ranch site, streambed and non-wetland waters mapping was the focus of the delineation. These features, hereafter referred to simply as “non-wetland waters,” were delineated from bank to bank, using the top of the bank as the boundaries of the channel (Dudek 2024~~2~~).

Non-wetland Waters of the State

Overall, the site landscape drains water in an easterly direction, mainly through a large alluvial fan/wash consisting of numerous braided low-flow channels within the desert dry wash woodland vegetation community. This wash was mapped from bank to bank to include all low-flow channels within its banks as one large non-wetland water. Additionally, several smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. Additionally, a few smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub outside of larger floodplains were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. All aquatic features on the Old Kane Springs Road Viking Ranch site deemed to be potentially jurisdictional by Dudek biologists are shown on Figure 2-4.

In general, nearly all the field-mapped non-wetland water and low-flow channel boundaries (mapped based on evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks) fell within the maximum flow areas generated through the hydrologic model. The northern and southernmost portions of the site, outside of the central wash, showed more inconsistent and less-pronounced fluvial and OHWM indicators in the field; hydrologic modeling was used to refine the extent of non-wetland water boundaries within the site. Figure 2-4 displays the boundaries of hydrologically modeled and field-verified non-wetland waters on the site and likely corresponds to accurate surface flow areas across the site during a significant runoff event.

Non-wetland waters on site are ephemeral, meaning they only flow during storm events. ~~These features were mapped because they had evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks. These features are classified as non-wetland waters and are likely regulated by RWQCB and CDFW as waters of the state (Dudek 2022~~4~~).~~

Swales

Several potential swale features without well-defined banks are may present on site; these include areas of occasional surface sheet flow with slight topographic depressions and occasional, but often inconsistent, fluvial indicators that may or may not be subject to regulation by any of the agencies. These features were not mapped under the scope of this delineation but typically fell within the main floodplains of the mapped extent of non-wetland waters. ~~may be considered jurisdictional upon agency review; they can be added to the map using aerial signatures at a later date if needed.~~

Results of the jurisdictional delineation are summarized in Table 4.2-4, “Jurisdictional Resources within the Old Kane Springs Road Preservation Site,” and on Figure 2-4.5, “Plaster City Quarry Plan.” There are approximately ~~88,560.99~~ acres of ~~RWQCB jurisdictional~~ non-wetland waters present ~~both inside and outside of alluvial fan/wash and outside of alluvial fan wash.~~

Table 4.2-4
Jurisdictional Resources within the Old Kane Springs Road Preservation Site

Type	Jurisdiction	Acres/Linear Feet
Non-Wetland Waters of the State (Within Alluvial Fan/Wash)	CDFW and RWQB	59,7688.5/13,950
Non-Wetland Waters of the State (Outside of Alluvial Fan/Wash)	CDFW and RWQB	1.23
Total Potential Jurisdictional Aquatic Resources		<u>88.5/13,950</u>
ACOE/RWQB Non-Wetland Waters and CDFW Streambeds¹		<u>60.99</u>

Source: Dudek 2022+ (Appendix D-6)

Notes:

1. Totals may not sum due to rounding

END OF ERRATA

3.2.28 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-42

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to note that Mitigation Measure 3.5-1d has been partially implemented by the project applicant. Draft SEIR page 4.2-42, third paragraph, was revised as follows.

ERRATA

Impacts to Wildlife Species

The 2008 EIR/EIS found that Quarry expansion and well/pipeline development could impact multiple special-status wildlife species including migratory birds, peninsular bighorn sheep, and the barefoot banded gecko. The 2008 EIR/EIS includes the following mitigation measures to reduce potential impacts from Quarry expansion to the special-status wildlife species: Note that since publication of the 2008 EIR/EIS, consultation with the USFWS under Section 7 of the federal Endangered Species Act has been completed resulting in issuance of a Biological Opinion (see Draft SEIR Appendix D-3) from the USFWS. This measure is shown here for reference only. Section 7 consultation with the USFWS need not be reinitiated as part of the proposed project.

END OF ERRATA

3.2.29 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-42 and -4.2-43

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to delete unrelated text erroneously included and update references to the California Department of Fish and Wildlife (formerly the California Department of Fish and Game) in Mitigation Measure 3.5-1e. Draft SEIR page 4.2-42, last

paragraph, and page 4.2-43, first paragraph, were revised as follows. Mitigation Measure 3.5-2 is included under DSEIR Impact 4.2-5.

ERRATA

Mitigation Measure 3.5-1e: *Barefoot banded gecko: Suitable habitat occurs throughout much of the Quarry area. Prior to expanding existing quarries or developing new quarries, focused barefoot banded gecko surveys shall be conducted to determine whether the species is present or absent from any proposed new disturbance areas. Surveys would be carried out in cooperation with the ~~CDFG~~CDFW and field biologists would be required to hold Memoranda of Understanding with the ~~CDFG~~CDFW to search for this species. If the species is present, then consultation with ~~CDFG~~CDFW under Section 2081 of CESA to “take” barefoot banded gecko must be completed prior to land disturbance.*

~~Regarding the development of Well No. 3 and the association pipeline, the 2008 EIR/EIS found that, with the exception of the flat-tailed horned lizard, impacts to all other special-status wildlife species were found to be less than significant; the flat-tailed horned lizard was observed basking on the rails of the narrow-gauge line. The BLM and other cooperating agencies have implemented a Flat-tailed Horned Lizard Rangewide Management Strategy (2003 Revision) that would minimize adverse impacts and mitigate for residual impacts throughout the flat-tailed horned lizard’s geographic range. The 2008 EIR/EIS includes the following mitigation measure to address potential impacts to the Flat-tailed Horned Lizard:~~

Mitigation Measure 3.5-2: *USG will comply with the Flat-tailed Horned Lizard Rangewide Management Strategy, as revised, Standard Mitigation Measures when constructing Quarry Well #3 and the Quarry pipelines.*

END OF ERRATA

3.2.30 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-44

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to clarify how to implement Mitigation Measure 3.5-1f. Draft SEIR page 4.2-44, first paragraph, was revised as follows.

ERRATA

Mitigation Measure 3.5-1f: *Agency contacts for impacts to streambeds: Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the ~~CDFG and the US Army Corps of Engineers~~ California Department of Fish and Wildlife (CDFW) to determine whether CDFW holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act, respectively.*

END OF ERRATA

3.2.31 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-45**Explanation**

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to define “WEAP” as “Worker Education Awareness Program” in Mitigation Measure 3.4-7. Draft SEIR page 4.2-45, second paragraph, was revised as follows.

ERRATA

Mitigation Measure 3.4-7: Worker Education Awareness Program (WEAP). Prior to project approval, USG will develop a WEAP, to be implemented upon final approval by BLM and USFWS. The WEAP will be available in English and Spanish. The WEAP will be presented to all workers on the project site throughout the life of the project. Multiple sessions of the presentation may be given to accommodate training all workers. Wallet-sized cards summarizing the information will be provided to all construction, operations, and maintenance personnel. The WEAP will be approved by the BLM, USFWS, and CDFW, and will include the following: (1) Descriptions of special-status wildlife of the region, including PBS, and including photos and how to identify adult and sub-adult male and female PBS; (2) The biology and status of special-status species of the area, including PBS; (3) A summary of the avoidance and minimization measures and other conservation measures; (4) An explanation of the PBS observation log (see PBS-2), including instruction on correctly filing data; (5) An explanation of the flagging or other marking that designates authorized work areas; and (6) Actions and reporting procedures to be used if any wildlife, including PBS is encountered.

END OF ERRATA**3.2.32 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-47****Explanation**

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to add further PBS avoidance and minimization measures to Mitigation Measure 3.4-12, consistent with Conservation Measure 11 of the Biological Opinion issued by the USFWS for the project (see Draft SEIR Appendix D-3). See Response 4b-4. Draft SEIR page 4.2-47, fourth paragraph, was revised as follows.

ERRATA

Mitigation Measure 3.4-12: PBS Avoidance and Minimization. USG will implement the following measures throughout the life of the project.

- New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the Wildlife Agencies.
- Blasting will be minimized during the lambing season (January 1 through June 30) within the Plaster City Quarry Phases 6Bp, 7Bp, 8, and 9 by building up a stockpile of material during the other months.

- *The Designated Biologist or Biological Monitor will be on-site during any Quarry expansion activities or other new ground-disturbing activities and will walk the perimeter of the Quarry expansion area and view surrounding habitat with binoculars, stopping work if PBS are within a 0.25-mile radius of the activity.*
- *If a PBS enters an active work area, all heavy equipment operations will be halted until it leaves. Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify USFWS and BLM.*
- *Fencing installed anywhere within the Quarry area will be standard temporary construction fencing, silt fencing, or chain-link fence at least 7 feet tall. Any proposed permanent fencing design will be submitted for BLM and USFWS review and approval to confirm that the fence design is not likely to pose a threat to PBS.*
- *When mobile or stationary equipment at the quarry is replaced, upgraded, or relocated, any feasible opportunities to reduce noise levels will be implemented (e.g., quieter designs for new equipment will be used if feasible).*
- *Quarrying procedures such as loading and unloading rock will be modified wherever practicable to minimize noise (e.g., by unloading rock into the crusher bin while it is partially full).*
- *In consultation with BLM, CDFW, and USFWS, USG may construct and maintain a supplemental water source to ensure water availability to Peninsular bighorn sheep in the Fish Creek Mountains ewe group during summer drought.*

END OF ERRATA

3.2.33 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-49

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to add reference to the Approved Jurisdictional Determination for the Quarry issued by the USACE on February 8, 2021. The Approved Jurisdictional Determination has been added to the Draft SEIR as Appendix D-5 and is provided in this FEIR as Appendix C, “Draft SEIR Appendices Errata.” Draft SEIR page 4.2-49, first paragraph, was revised as follows.

ERRATA

The Jurisdictional Delineation identified a total 325.79 acres of unnamed streambeds within the Quarry area and found that the expansion of quarrying activities would result in impacts to approximately 134.08 acres of CDFW, USACE, and RWQCB jurisdictional drainages. The Jurisdictional Delineation noted that Well No. 3 and the water supply pipeline would result in filling of all ephemeral streambeds and washes within the waterline/powerline area, and that these activities would result in impacts to 0.21 acres of CDFW, USACE, and RWQCB jurisdictional drainages. No wetland habitat was identified to occur at the Quarry, Well No. 3, or pipeline alignment. Little to no vegetation was observed to occur within any of the drainages evaluated. The Jurisdictional Delineation recommended avoidance and minimization measures to address potential impacts to wildlife, vegetation, and habitat that could occur during the disturbance of drainages during project construction. An Approved Jurisdictional Determination was issued for the project by the US Army Corps of Engineers (USACE) on February 8, 2021 (see Draft SEIR Appendix D-5). According to the

approved jurisdictional determination, the USACE determined that waters of the United States do not occur on the project site (USACE 2021). An Update on Groundwater Conditions memorandum conducted an analysis that indicates that current Quarry operations are not the cause of the recent decline in flows at San Felipe Creek. The memorandum notes that no changes have occurred in the local groundwater basin that alter the findings in the 2008 EIR/EIS.

END OF ERRATA

3.2.34 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-52

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to revise Mitigation Measure 3.4-8. Specifically, revisions related to nesting birds were made, as recommended by the CDFW (see Comment 4a-10) with some modifications proposed by the Applicant (see Comment 5b-3). These modifications were reviewed and approved by CDFW staff (see Comment 4d-1) and Imperial County and have been incorporated into this measure, as shown below.

Further revisions related to roosting bats were made to Mitigation Measure 3.4-8, as recommended by the CDFW (see Comment 4a-11) with some modifications proposed by the Applicant (see Comments 5b-4 and 5b-5). These modifications were reviewed by CDFW and Imperial County staff and were largely approved. However, the modification eliminating the compensatory mitigation for permanent impacts to roosting habitat was rejected by the CDFW (see Comment 4d-3). The County determined that CDFW’s rejection of the proposed modification was not substantiated (see Responses 5b-5 and 4d-3) and the modification as proposed by the Applicant has been incorporated into this measure, as shown below. The measure was also revised to acknowledge that while compensatory mitigation is not required under CEQA, such mitigation may be required as part of the regulatory permit process.

Finally, additional revisions related to lighting were also made to Mitigation Measure 3.4-8, as recommended by the CDFW (see Comment 4a-12) with some modifications proposed by the Applicant (see Comment 5b-6). These modifications were reviewed and approved by CDFW staff (see Comment 4d-1) and Imperial County and have been incorporated into this measure, as shown below.

Draft SEIR page 4.2-52, first paragraph, and Mitigation Measure 3.4-8 were revised as follows.

ERRATA

Mitigation Measures: *Implement the following existing mitigation measures (see Section 4.2.4 for the full text of each measure):*

- *2008 EIR/EIS:*
 - *MM 3.5-1d (Peninsular Bighorn Sheep)*
- *2019 SEIS:*
 - *MM 3.4-6 (Mining Activity Monitoring and Reporting)*
 - *MM 3.4-7 (Worker Education Awareness Program)*
 - ~~*MM 3.4-8 (Wildlife Impact Avoidance and Minimization Measures)*~~

Implement existing Mitigation Measure 3.4-8, as revised below:

Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures: USG will implement the following measures throughout the life of the project (e.g., Plant and Quarry operations).

- To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs. Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with the expansion of quarrying activities into previously undisturbed areas, the construction of Well No. 3 and associated pipeline, and restoration of Viking Ranch and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys for any of the activities specified above, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on the nature of the planned project activities, species-specific disturbance tolerance, location of the nest, and nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines if the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. A qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.
- The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys no more than seven days prior to initial site clearing for Quarry expansion or pipeline construction. To the extent feasible, special-status wildlife (e.g., reptiles) will be removed from “harm’s way” prior to site clearing. If an active bird nest, including active burrowing owl burrows are present, the biologist in consultation with CDFW will mark a suitable buffer area around the nest and project activities will not proceed within the buffer area until the nest is no longer active.
- For project activities in windblown sand habitats on pipeline routes, the Designated Biologist or Biological Monitor shall be present in each area of active surface disturbance throughout the workday. The Designated Biologist or Biological Monitor will survey work areas immediately prior to ground-disturbing activities and will examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85° F) for the presence of flat-tailed horned lizard or Colorado Desert fringe-toed lizard. In addition, all potential wildlife hazards (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of any wildlife, particularly including the flat-tailed horned lizard or Colorado Desert fringe-toed lizard, prior to backfilling.

- The Designated Biologist or Biological Monitor will be on-site during any Quarry expansion activities or other new ground-disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no Quarry expansion activities are conducted while PBS are within a 0.25-mile radius of the activity.
- Speed limits along all access roads will not exceed 15 miles per hour.
- Throughout the lifetime of the project, the project proponent shall avoid or limit the use of artificial light to the extent practicable during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all new lighting for the project is fully shielded, cast downward, reduced in intensity to the greatest extent practicable, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at <http://darksky.org/>). To the extent practicable, the project proponent shall use LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler. ~~Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.~~
- The boundaries of all areas to be newly disturbed (including Quarry expansion areas, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment will be confined to the flagged areas. The Biological Monitor will be on the site to ensure that no ground-disturbing activities occur outside the staked area during initial Quarry expansion or ground disturbance.
- Spoils will be stockpiled only within previously disturbed areas, or areas designated for future disturbance (including spoils areas designated in the PoO).
- No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight. Any uncovered pitfalls will be excavated to 3:1 slopes at the ends to provide wildlife escape ramps. Covered pitfalls will be covered completely to prevent access by small mammals or reptiles.
- To avoid wildlife entrapment (including birds) all pipes or other construction materials or supplies will be covered or capped in storage or laydown area, and at the end of each work day in construction, Quarrying and processing/handling areas. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently.
- No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the project site, on off-site project facilities and activities, or in support of any other project activities.
- Avoid wildlife attractants. All trash and food-related waste shall be placed in self-closing raven-proof containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife. Pooled rainwater or floodwater within quarries will be removed to avoid attracting wildlife to the active work areas.

- Any injured or dead wildlife encountered during project-related activities shall be reported to the Designated Biologist, Biological Monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, the Designated Biologist or Biological Monitor shall notify the BLM, USFWS, and/or CDFW, as appropriate, within 24 hours of the discovery.
- Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats: Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:
 - For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.
 - For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques.

- Implementation of this measure, combined with the other measures provided in this SEIR, will reduce impacts to special status bats to a less than significant level; however, additional mitigation measures may be required through the regulatory permit process.

END OF ERRATA

3.2.35 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-52

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to clarify that the project does not propose nor require the “take” of any species. Draft SEIR page 4.2-52, fifth paragraph, was revised as follows.

ERRATA

Peninsular Bighorn Sheep

PBS is federally listed as endangered, state listed as threatened, and designated as a “fully protected animal” by the California Fish and Game Code. PBS is recognized as genetically isolated from other populations located farther to the north and east. No “take” of this species is required or included as part of the proposed project.

END OF ERRATA

3.2.36 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-57

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to add a newly proposed mitigation measure, Mitigation Measure 4.2-2c, as recommended by the CDFW (see Comment 4a-8), with some modifications proposed by the Applicant (see Comment 5b-1). These modifications were approved by CDFW (see Response 4d-1) and Imperial County and have been incorporated into the measure, as shown below.

Revisions have also been made to this page of the Draft SEIR to revise Mitigation Measure 3.4-11 (see Response 4b-5).

Draft SEIR page 4.2-57, first paragraph, was revised as follows.

ERRATA

Mitigation Measures: *Implement the following existing mitigation measures (see Section 4.2.4 for the full text of each measure):*

- 2008 EIR/EIS:
 - MM 3.5-1d (Peninsular Bighorn Sheep)
- 2019 SEIS:
 - MM 3.4-5 (Interim Weed Management Plan)

- MM 3.4-6 (Mining Activity Monitoring and Reporting)
- MM 3.4-7 (Worker Education Awareness Program)
- MM 3.4-8 (Wildlife Impact Avoidance and Minimization Measures)
- MM 3.4-10 (Peninsular Bighorn Sheep Habitat Mitigation)
- ~~MM 3.4-11 (Peninsular Bighorn Sheep Monitoring and Reporting)~~
- MM 3.4-12 (Peninsular Bighorn Sheep Avoidance and Minimization Measures)

Implement the following revised mitigation measure:

Mitigation Measure 3.4-11: PBS Monitoring and Reporting. USG will support the CDFW PBS monitoring and reporting program within the federal action area by funding the purchase of radio collars and the capture of ten (10) PBS in the Fish Creek and Vallecito Mountains Ewe Group areas, to provide location monitoring data over a ten-year period. The funding amount will be \$157,115 (cost provided by CDFW), to be transferred to the CDFW program via a means agreed up by USG, BLM, and CDFW.

Implementation of this measure, combined with the other measures provided in this SEIR, will reduce impacts to PBS to a less than significant level; however, additional mitigation measures may be required through the regulatory permit process.

Implement the following newly proposed mitigation measures:

Mitigation Measure 4.2-2a: Minimize Temporary Use Areas: During pipeline construction the need for temporary use areas would be minimized by using the USG private parcels on either end of the alignment for staging and equipment and material storage. Materials would be transported to the project areas as needed for immediate use.

Mitigation Measure 4.2-2c: Assessment of Biological Resources: Prior to construction activities for Quarry Well No. 3, the associated pipeline, and Viking Ranch, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the construction footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code Section 3511), will be completed. Species to be addressed should include all “endangered, rare or threatened species” as defined in CEQA Guidelines Section 15380. The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

END OF ERRATA**3.2.37 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-61****Explanation**

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to revise Mitigation Measure 3.4-9 as recommended by the CDFW (see Comment 4a-9) with some modifications proposed by the Applicant (see Comment 5b-2). These modifications were reviewed and approved by CDFW staff (see Comment 4d-1) and Imperial County and have been incorporated into the measure, as shown below.

Draft SEIR page 4.2-61, fifth paragraph, was revised as follows.

ERRATA

Mitigation Measures: *Implement the following existing mitigation measure (see Section 4.2.4 for the full text of each measure):*

- 2008 EIR/EIS:
 - MM 3.5-1c (Migratory Birds)
 - MM 3.5-1d (Peninsular Bighorn Sheep)
- 2019 SEIS:
 - MM 3.4-6 (Mining Activity Monitoring and Reporting)
 - MM 3.4-7 (Worker Education Awareness Program)
 - MM 3.4-8 (Wildlife Impact Avoidance and Minimization Measures)
 - ~~MM 3.4-9 (Burrowing Owl)~~

Implement new Mitigation Measure 4.2-2a, see above.

Implement existing Mitigation Measure 3.4-9, as revised below:

Mitigation Measure 3.4-9: Burrowing Owl Avoidance: If an active burrowing owl burrow is observed within a work area at any time of year, the Designated Biologist or Biological Monitor, in coordination with BLM, will designate and flag an appropriate buffer area around the burrow where project activities will not be permitted. The buffer area will be based on the nature of project activity and burrowing owl activity (i.e., nesting vs. wintering). The Designated Biologist or Biological Monitor will continue to monitor the site until it is confirmed that the burrowing owl(s) is no longer present. If avoidance of quarrying or pipeline construction within the buffer area is infeasible, Burrowing Owls may be excluded from an active wintering season burrow in coordination with CDFW and in accordance with the CDFW’s Staff Report on Burrowing Owl Mitigation (March 2012), including provision of replacement burrows prior to the exclusion. Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with expansion of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of Viking Ranch over the lifetime of the project. The qualified biologist and

project proponent shall prepare a Burrowing Owl Plan that shall be submitted to CDFW for review and approval prior to commencing the activities specified above. The plan shall serve as a protocol of actions to address occupied habitat within future phases of quarry expansion, the proposed site for Well No. 3 and associated pipeline, and Viking Ranch. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the acres of burrowing owl habitat that will be impacted, details of site monitoring and reporting requirements, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been reevaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Burrowing Owl Plan shall identify adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The project proponent shall implement the Burrowing Owl Plan following CDFW review and approval.

Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the preconstruction surveys confirm occupied burrowing owl habitat, the project activities specified above shall be immediately halted until pre-defined avoidance and minimization measures contained in the Burrowing Owl Plan have been implemented.

Level of Significance After Mitigation: Less than significant.

END OF ERRATA

3.2.38 Errata to Draft SEIR Section 4.2, “Biological Resources,” p. 4.2-63

Explanation

Revisions have been made to Draft SEIR Section 4.2, “Biological Resources,” to add reference to the Approved Jurisdictional Determination for the Quarry issued by the USACE. This section was also revised to add a new mitigation measure, Mitigation Measure 4.2-3, as recommended by the CDFW (see Comment 4a-13). No modifications to this measure were proposed by the Applicant (see Comment 5b-7). Draft SEIR page 4.2-63, discussion of Impact 4.2-3, was revised as follows.

ERRATA

Quarry, Well No. 3 Site and Pipeline Alignment

The 2008 EIR/EIS determined that Quarry expansion activities would impact existing streambeds which could be under the jurisdiction of CDFWG through Sections 1601-3 of the California Fish and Game Code or the US Army Corps of Engineers through Section 404 of the Federal Clean Water Act. Mitigation Measure 3.4-13 was provided requiring USG to contact and consult with these agencies prior to disturbing streambeds within the Quarry expansion areas to determine jurisdiction and regulatory requirements.

However, since that time, the USACE issued an Approved Jurisdictional Determination on February 8, 2021 (see Draft SEIR Appendix D-5) confirming there are no waters of the United States subject to regulation under Section 404 of the federal Clean Water Act in the project area. However, the RWQCB maintains jurisdiction over the aquatic resources in the project area under the Porter-Cologne Act.”

The 2019 SEIS included an updated jurisdictional delineation for the project site which identified 139 acres of waters of the US within the expected disturbance area of the proposed Quarry expansion and well/pipeline development. The SEIS included mitigation to offset impacts by restoring, enhancing, and preserving aquatic resources at a property where aquatic functions are similar to the impacts functions. In response, USG proposes to mitigate impacts at a 1.92:1 mitigation-to-impact ratio, for a total of 267.3 acres of rehabilitation, enhancement, and preservation of aquatic resources. The proposed compensatory mitigation consists of the restoration and enhancement of the Viking Ranch site and the preservation of the Old Kane Springs site, as described and analyzed herein.

Implementation of this mitigation would fully mitigate the project’s impacts to protected wetlands within the project site and no further mitigation is required. The potential environmental effects of implementing this mitigation are addressed throughout this SEIR.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement the following existing mitigation measures (see Section 4.2.4 for the full text of each measure):*

- 2008 EIR/EIS:
 - MM 3.5-1f (Agency Contacts for Impacts to Streambeds)
- 2019 SEIS:
 - MM 3.4-13 (Future Quarry Phasing Notification and Review)

Implement the following new mitigation measure:

Mitigation Measure 4.2-3: Lake and Streambed Alteration Program: Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under Section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code Section 1602 resources associated with the Project.

Level of Significance After Mitigation: Less than significant.

END OF ERRATA

3.2.39 Errata to Draft SEIR Section 4.3, “Cultural Resources,” p. 4.3-17

Explanation

Revisions have been made to Draft SEIR Section 4.3, “Cultural Resources,” to correct an incorrect reference. Draft SEIR page 4.3-17, Mitigation Measure 4.3-2, was revised as follows.

ERRATA

Mitigation Measure 4.3-2: Inadvertent Discovery of Unmarked Burials. *If human remains are uncovered during project activities, the project operator shall immediately halt work within 50 feet of the find, contact the Imperial County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)4(e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c) and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, and designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, with the MDL regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.*

END OF ERRATA

3.2.40 Errata to Draft SEIR Section 4.4, “Geology, Soils, and Paleontological Resources,” p. 4.4-13

Explanation

Revisions have been made to Draft SEIR Section 4.4, “Geology, Soils, and Paleontological Resources,” to clarify implementation of Mitigation Measure 4.4-1. Draft SEIR page 4.4-13, Mitigation Measure 4.4-1, was revised as follows.

ERRATA

Mitigation Measure 4.4-1: Pre-construction pedestrian field surveys shall be conducted throughout the proposed areas of disturbance for the Well No. 3 site, the final pipeline alignment, and the Viking Ranch site to locate any surficial fossil localities and verify the underlying geologic units. For any areas where potential resources are identified in a preconstruction field survey and cannot be avoided by proposed construction activities, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared and implemented by a ~~BLM-permitted~~ qualified paleontologist and approved by ~~the BLM and~~ Imperial County.

END OF ERRATA

3.2.41 Errata to Draft SEIR Section 4.6, “Hydrology and Water Quality,” p. 4.6-9

Explanation

Revisions have been made to Draft SEIR Section 4.6, “Hydrology and Water Quality,” to correct a figure reference. Draft SEIR page 4.6-9, sixth paragraph, was revised as follows.

ERRATA***Floodplain***

The floodplain on the Viking Ranch site is shown on Figure 2-3, “Viking Ranch Restoration Site.” ~~Figure 2-4, “Old Kane Springs Road Preservation Site.”~~ As a result of ~~it’s~~ its former use as an orchard, the Viking Ranch site is hydrologically disconnected from the Coyote Creek floodplain. The flow characteristics of the site have been substantially altered from natural conditions and windrows of coarse organic materials (from ground up orchard trees) and onsite topographic modifications impede water flows (Dudek 2022~~4~~).

END OF ERRATA**3.2.42 Errata to Draft SEIR Section 4.6, “Hydrology and Water Quality,” p. 4.6-22*****Explanation***

Revisions have been made to Draft SEIR Section 4.6, “Hydrology and Water Quality,” to add reference to the Approved Jurisdictional Determination for the Quarry issued by the USACE. The Approved Jurisdictional Determination is provided as Appendix D-5 of the Draft SEIR which is included in Appendix C, “Draft SEIR Appendices Errata,” of this Final SEIR. Draft SEIR page 4.6-22, second paragraph, was revised as follows.

ERRATA

The Jurisdictional Delineation identified a total 325.79 acres of unnamed streambeds within Quarry area and found that the expansion of quarrying activities would result in impacts to approximately 134.08 acres of CDFW, USACE, and RWQCB jurisdictional drainages. The Jurisdictional Delineation noted that Well No. 3 and the water supply pipeline would result in filling of all ephemeral streambeds and washes within the waterline/powerline area, and that these activities would result in impacts to 0.21 acres of CDFW, USACE, and RWQCB jurisdictional drainages. No wetland habitat was identified to occur at the Quarry, Well No. 3, or pipeline alignment. Little to no vegetation was observed to occur within any of the drainages evaluated. The Jurisdictional Delineation recommended avoidance and minimization measures to address potential impacts to wildlife, vegetation, and habitat that could occur during the disturbance of drainages during project construction. An Approved Jurisdictional Determination was issued for the project by the US Army Corps of Engineers (USACE) on February 8, 2021 (see Appendix D-5). According to the Approved Jurisdictional Determination, the USACE determined that waters of the United States do not occur on the project site (USACE 2021).

END OF ERRATA**3.2.43 Errata to Draft SEIR Section 4.6, “Hydrology and Water Quality,” p. 4.6-24*****Explanation***

Revisions have been made to Draft SEIR Section 4.6, “Hydrology and Water Quality,” to replace incorrect text. Draft SEIR page 4.6-24, second and third paragraphs, was revised as follows.

ERRATA

Viking Ranch Restoration Site

The Hydrology Study (Dudek 2018) did not evaluate the impacts of the development of proposed Well No. 3 and associated pipeline, but noted that the 2008 EIR/EIS covered the potential impacts of these project components in detail, and further noted that the installation of the proposed water supply line to the Quarry would result in temporary construction related impacts to a number of ephemeral drainages, but these impacts would be less than significant as the anticipated impacts would not permanently modify the existing drainages.

During restoration activities on the site, erosion control and pollution prevention BMPs would be required as part of the SWPPP prepared for the site. These BMPs would likely include scheduling ground disturbing activities outside of the rainy season and stabilizing soils by seeding exposed soils and using straw mulch or mats. Additional BMPs are provided in the HMMP (Dudek 2021) prepared for the site including inspecting and repairing onsite equipment regularly to prevent leaks of hazardous substances. Implementation of BMPs would be overseen by the project biologist or a qualified SWPPP practitioner.

END OF ERRATA

3.2.44 Errata to Draft SEIR Section 4.6, “Hydrology and Water Quality,” p. 4.6-27 and 4.6-28

Explanation

Revisions have been made to Draft SEIR Section 4.6, “Hydrology and Water Quality,” to remove Mitigation Measure 4.6-1 which has already been implemented by the Applicant. See Response 5a-14. Draft SEIR page 4.6-27 was revised as follows.

ERRATA

To address the identified deficiencies in the existing berm design, Dudek (2018) recommended modifications including, at a minimum, a 50-foot-wide conveyance channel on the western side of the berm. To assist with the conveyance of surface flows around the berm, Dudek further recommended that the berm design include armoring of the westerly bank of the berm with rock riprap to decrease the likelihood and severity of erosion damage to the berm for flows generated by a 25-year design storm. The 25-year storm was selected because the berm is not intended to protect life, property, or civil improvements. In a larger storm event, it would be expected that the riprap armoring would fail, and the berm would suffer significant damage or failure. These recommendations would behave been incorporated into the final berm design by a qualified Civil Engineer and the berm has since been constructed as required by the 2019 EIS Mitigation Measure 4.6-1 below.

Downstream Waterways

As demonstrated above, the project is expected to result in the downstream reduction of surface flow and sediment loading to the Fish Creek Alluvial Fan. The potential reduction in accompanying groundwater recharge at the apex of the Fish Creek Alluvial Fan would likely be offset by increased recharge within the coarse alluvium of the Quarry watershed and is overall considered minimal with the project site contributing less than 1 percent of the total Ocotillo Lower Felipe HA land cover. As the perennial surface waters in the lower San Felipe River are not dependent on surface flows from Fish

Creek Wash, the project would have no impact on creek flows or the associated habitat for desert pupfish (see Section 4.2, “Biological Resources”).

In conclusion, the overall drainage patterns of the project site would remain unchanged with any runoff that does not evaporate or percolate into the coarse alluvium ultimately draining to the Fish Creek Alluvial Fan. Because drainage within the Easterly Drainage Area would be impounded, total volumes and peak flow rate would decrease thus no flooding or other adverse impacts would occur. With implementation of Mitigation Measure 3.3-7 as provided in the 2008 EIR/EIS and Mitigation Measure 4.6-1 as provided below, drainage within the Westerly Drainage Area would be directed northward to the Fish Creek Alluvial Fan consistent with existing conditions and no flooding or other adverse impacts would occur.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: Implement the following existing mitigation measures (see Section 4.6.4 for the full text of each measure):

- 2008 EIR/EIS
 - Mitigation Measure 3.3-7

Mitigation Measure: Implement the following new mitigation measure:

~~**Mitigation Measure 4.6-1:** The final design for the proposed berm along the westerly edge of the Quarry shall incorporate the recommendations provided in the Hydrologic and Water Quality Study prepared by Dudek dated April 2018 and appended to this SEIR. These recommendations include a 50-foot wide conveyance channel on the western side of the berm and armoring of the westerly bank of the berm with rock riprap.~~

Level of Significance After Mitigation: Less than significant.

END OF ERRATA

3.2.45 Errata to Draft SEIR Section 4.7, “Land Use and Planning,” p. 4.7-1

Explanation

Revisions have been made to Draft SEIR Section 4.7, “Land Use and Planning,” to clarify that some development does occur within the well site and associated pipeline alignment. Draft SEIR page 4.7-1, fifth paragraph, was revised as follows.

ERRATA

Well No. 3 and Associated Pipeline

The site of proposed Well No. 3 and associated pipeline alignment are located north and northeast of the Quarry and about six miles south of State Highway 78 in an area characterized by the 2008 EIR/EIS as flat desert open space. The well site and western segment of the pipeline alignment are located on private land owned by USG Corporation while the central and eastern segments of the pipeline alignment are on federal land managed by the BLM. A portion of the northwest segment of the proposed pipeline alignment crosses

the Anza Borrego Desert State Park. No development was present in 2008 with the exceptions of existing wells on the well site and an active railroad line and associated dirt access road within the pipeline alignment.

END OF ERRATA

3.2.46 Errata to Draft SEIR Section 4.7, “Land Use and Planning,” p. 4.7-2

Explanation

Revisions have been made to Draft SEIR Section 4.7, “Land Use and Planning,” to clarify that the well site and pipeline alignment have been previously disturbed through development of multiple wells and a railroad line and associated dirt access road. Draft SEIR page 4.7-2, second paragraph, was revised as follows.

ERRATA

Well No. 3 Site and Pipeline Alignment

The land use conditions on and surrounding the site of Well No. 3 and associated pipeline alignment remain essentially unchanged from those described in the 2008 EIR/EIS. Both the well site and pipeline alignment have been previously disturbed with wells present on the well site and a railroad line and dirt access road present within the pipeline alignment. ~~remain undeveloped with no structures or other improvements.~~ The nearest sensitive receptors are rural residences north and northwest of the well site and pipeline alignment.

END OF ERRATA

3.2.47 Errata to Draft SEIR Section 4.7, “Land Use and Planning,” p. 4.7-13

Explanation

Revisions have been made to Draft SEIR Section 4.7, “Land Use and Planning,” to correct a minor typographical error. Draft SEIR page 4.7-13, discussion of Impact 4.7-1, was revised as follows.

ERRATA

Impact 4.7-1: Physically Divide an Established Community

Overall land use patterns in the project area have not changed since completion of the 2008 EIR/EIS. There are no established communities adjacent to the Quarry or the proposed locations of Well No. 3 and the associated pipeline. Continuation of Quarry operations and construction of Well No. 3 and an underground pipeline would not create a physical barrier to movement or growth. Similarly, the proposed off-site mitigation sites are not within or near an established community. No development is proposed on either site. Therefore, the proposed project would have no potential to physically divide an established community.

END OF ERRATA**3.2.48 Errata to Draft SEIR Section 4.8, “Tribal Cultural Resources,” p. 4.8-5****Explanation**

Revisions have been made to Draft SEIR Section 4.8, “Tribal Cultural Resources,” to add the correct CEQA Guidelines Appendix G thresholds. Draft SEIR page 4.8-5, Section 4.8.3.1, was revised as follows.

ERRATA**CEQA Appendix G Significance Criteria**

~~Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to cultural resources if it would:~~

- ~~a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5;~~
- ~~b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;~~
- ~~c) Disturb any human remains, including those interred outside of dedicated cemeteries.~~

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to tribal cultural resources if it would:

- a) Cause a substantial adverse change in the significant of a tribal cultural resource, defined in Public Resources Code Section 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:
 - 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
 - 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 Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

END OF ERRATA**3.2.49 Errata to Draft SEIR Chapter 5, “Cumulative Impacts,” p. 5-16****Explanation**

Revisions have been made to Draft SEIR Chapter 5, “Cumulative Impacts,” to correct a typographical error. Draft SEIR page 5-16, fourth paragraph, was revised as follows.

ERRATA

5.3.5 Greenhouse Gas Emissions

Project Impacts

Project impacts pertaining to greenhouse gas emissions ~~geology, soils, and paleontological resources~~, as described in Section 4.54.4, are as follows:

END OF ERRATA

3.2.50 Errata to Draft SEIR Chapter 5, “Cumulative Impacts,” p. 5-17

Explanation

Revisions have been made to Draft SEIR Chapter 5, “Cumulative Impacts,” to correct a typographical error. Draft SEIR page 5-17, first paragraph, was revised as follows.

ERRATA

5.3.6 Hydrology and Water Quality

Project Impacts

Project impacts pertaining to hydrology and water quality ~~geology, soils, and paleontological resources~~, as described in Section 4.64.4, are as follows:

END OF ERRATA

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CHAPTER 4: RESPONSE TO COMMENTS

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CHAPTER 4: RESPONSE TO COMMENTS

4.1 INTRODUCTION

This chapter of the Final Subsequent Environmental Impact Report (Final SEIR) for the USG Plaster City Quarry Expansion and Well No. 3 Project (proposed project) provides specific responses to each issue raised in comments on the Draft SEIR. Comment letters are ordered as received from agencies, organizations, and individuals. Each comment letter has been assigned a number and the individual comments/issues within each letter are assigned sequential subnumbers (e.g., 1-1, 1-2). An index that lists each commenter and the number assigned to the comment letter is provided on the following pages.

The text of each comment/issue is reproduced using `courier new font` and is followed by the County's response numbered to correspond with each respective comment. All comment letters are also provided in the EIR original form in Appendix A, "Comments on the Draft SEIR," where the comment letters are numbered in the upper right corner of the first page to correspond to the numbering used in this chapter. Note that the reproduction of comments in this chapter is intended to reflect the text of the comment letters. Formatting; font emphases (e.g., underline, bold, all capital); and graphics, tables, and other attachments are not necessarily reflected in the reproduced text here and are noted in brackets in certain instances in this chapter. The County has reviewed all original comment letters on the SEIR with original formatting, font emphasis, graphics, tables, and other attachments. Reviewers interested in the content of a specific comment letter should see Appendix A for a reproduction of the original letter.

The County has provided a response to all comments received during public circulation of the Draft SEIR. In every instance, each comment was carefully considered for its contribution of information regarding environmental impacts and other issues relevant to the County's CEQA review of the project. In general, all comments concerning an environmental issue pertaining to analysis in the Draft SEIR receive a response that either (1) summarizes the information provided in the SEIR and directs the commenter to the chapter/section(s) of the SEIR providing that information or (2) provides additional clarifying information concerning the environmental issue raised by the commenter.

In some instances, information in comments was incorporated into the Final SEIR to amplify the impact analysis or mitigation measures, or to otherwise clarify the information presented. In none of these instances did the additional information incorporated into this Final SEIR result in identifying a new significant impact or an increase in the severity of a significant impact identified in the Draft SEIR. Thus, while these revisions amplify and clarify information based on certain comments, these revisions do not result in requiring the County to recirculate the SEIR for public review and comment before certification.

If the comment did not address an environmental issue (e.g., opposition or support of the project), a response is provided noting that this comment does not pertain to an environmental issue. All comments will be considered by County decision makers for the SEIR deliberations in approval or denial of the entitlements requested for the project.

4.2 COMMENT LETTERS

Table 4-1, “Comment Letters,” lists the comment letters and provides the numbering and order used to organize the comment letters received.

**Table 4-1
 Comment Letters**

Committer	Date	Comment Letter No.
AGENCIES		
Imperial County Executive Office	April 19, 2023	1
Imperial Irrigation District	May 22, 2023	2
California Department of Transportation	May 25, 2023	3
California Department of Fish and Wildlife	June 2, 2023	4a
California Department of Fish and Wildlife	August 17, 2023	4b
California Department of Fish and Wildlife	August 24, 2023	4c
California Department of Fish and Wildlife	August 31, 2023	4d
California Department of Fish and Wildlife	October 27, 2023	4e
ORGANIZATIONS		
US Gypsum	June 2, 2023	5a
US Gypsum	June 23, 2023	5b
INDIVIDUALS		
Edie Harmon	June 1, 2023	6a
Edie Harmon	June 4, 2023	6b

4.3 AGENCIES

Letter 1: Imperial County Executive Office; April 19, 2023

Comment 1-1

The County of Imperial Executive Office is commenting on USG Plaster City Quarry Expansion and Well No. 3 Project - CUP 20-0016 project. The Executive Office would like to inform the developer and the Imperial County Planning Department of conditions and responsibilities should the applicant seek a Conditional Use Permit (CUP). The conditions shall be placed on CUP 20-0016 and commence prior to the approval of an initial grading permit and subsequently continue throughout the permitting process. This includes, but not limited to:

- **Sales Tax Condition.** The permittee is required to have a Construction site Permit reflecting the project site address, allowing all eligible sales tax payments are allocated to the **County of Imperial, Jurisdictional Code 13998**. The permittee will provide the County of Imperial a copy of the CDTFA account number and sub-permit for its contractor and subcontractor (if any) related to the jobsite. Permittee shall provide in written verification to

the County Executive Office that the necessary sales and use tax permits have been obtained, prior to the issuance of any grading permits.

- Construction/Material Budget: Prior to a grading permit, the permittee will provide the County Executive Office a construction materials budget: an official construction materials budget or detailed budget outlining the construction and materials cost for the processing facility on permittee letterhead.

Response 1-1

The comment is noted. The County will ensure that a condition of approval requires compliance with sales tax and construction/material budget requirements.

Letter 2: Imperial Irrigation District; May 22, 2023

Comment 2-1

On April 11, 2023, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, the Notice of Availability of Draft Subsequent EIR for the USG Plaster City Quarry Expansion and Well No. 3 project; Conditional Use Permit No. 20-0016. The project consists of approval of a CUP from the County for the development of a new production well, Well No. 3, and an associated pipeline to provide water to the USG Quarry. The Draft SEIR evaluates potential environmental impacts associated with mining and reclamation activities under the Quarry expansion, for full disclosure and to provide the appropriate CEQA review for use by responsible agencies. The USG Plaster City Quarry consist of 2,048 acres located in the northwestern portion of Imperial County adjacent to the Imperial County/San Diego County line. Well No. 3 would be located east of the existing Quarry on a USG-owned parcel (APN 033-020-009). The proposed pipeline would be approximately 3.5 miles in length and would be developed within an existing right-of-way over an additional 12.7 acres (30-foot-wide by 3.5 miles long) of land, most of which (7.25 acres) is managed by the BLM. A portion of the right-of-way (3.75 acres) is located within the Anza-Borrego Desert State Park. The proposed pipeline would be developed within the existing narrow-gauge railroad right-of-way that is already disturbed by an existing unpaved access road.

Response 2-1

The comment is noted and accurately describes the proposed project.

Comment 2-2

IID has reviewed the Draft SEIR and found that the comments provided in the August 22, 2022 district letter (see attached letter) continue to apply.

Response 2-2

The comment is noted. The reader is referred to Responses 2-3 through 2-6 below.

Comment 2-3

1. To obtain electrical service for the proposed well pump #3, the applicant should be advised to contact Gabriel Ramirez, IID Service Planner, at (760) 339-9257 or e-mail Mr. Ramirez at gramirez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the district website <http://www.iid.com/home/showdocument?id=12923>), the applicant will be required to submit pump specifications: horse power, operating voltage, pump starter information; AutoCAD site plan, drawings, proposed power line that will serve the well pump, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing new electrical service to the project.
2. Electrical capacity is limited in the project area. A circuit study may be required. Any system improvements or mitigation identified in the circuit study to enable the provision of electrical service to the project shall be the financial responsibility of the applicant.

Response 2-3

The comment is noted. The County will require a condition of approval that requires the Applicant to obtain electrical service for Well Pump No. 3 and obtain applicable permits.

Comment 2-4

3. The proposed project is subject to IID's Interim Water Supply Policy. In order to obtain a water supply from IID for a non-agricultural project, the project proponent will be required to comply with all applicable IID policies and regulations and is required to enter into a water supply agreement. Such policies and regulations require, among other things, that all potential environmental and water

supply impacts of the Project, including potential impacts to the Salton Sea as a result of reduced drainage flow, be adequately assessed, appropriate mitigation developed if warranted, including any necessary approval conditions adopted by the relevant land use and permitting agencies.

4. IID has implemented a water supply apportionment program pursuant to IID's revised Equitable Distribution Plan, which the Project is subject to including any amending or superseding policy for the same or similar purposes, during all or any part of the term of said water supply agreement, IID shall have the right to apportion the Project's water as an industrial water user. For more information on how to obtain a water supply agreement, please visit IID's website at <https://www.iid.com/water/municipal-industrial-and-commercial-customers> or contact Justina Gamboa-Arce at (760) 339-9085 or jgamboaarce@iid.com.

Response 2-4

A new water supply from IID is not required for activities associated with the development of Well No. 3 and pipeline, mining and reclamation activities under the Quarry expansion, Viking Ranch restoration, or Old Kane Springs Road preservation. Quarry operations would be served by proposed Well No. 3 and the associated pipeline. The hydrologic effects of the proposed well, including potential changes to drainage volumes and patterns, are addressed in Draft SEIR Chapter 4.6, "Hydrology and Water Quality."

Comment 2-5

5. Although the proposed well #3 is not an issue because it is outside of the Lower Colorado River Accounting Surface area, nonetheless, the project is subject to an IID Encroachment Permit for a pump the applicant plans to place on the Westside Main Canal.
6. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at <https://www.iid.com/about-iid/departments-directory/real-estate>. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements. No foundations or buildings will be allowed within IID's right of way.

7. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.

Response 2-5

The comment is noted. Regarding the IID's Encroachment Permit for a pump the applicant plans to place it on the Westside Main Canal, that is a separate project outside the scope of this SEIR. The Applicant will be required to comply with CEQA and obtain applicable permits for the construction and operation of that pump. In addition, the County will require the Applicant to consult with IID before the installation of any facilities adjacent to IID's facilities.

Comment 2-6

8. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.

Response 2-6

The project includes installation of a power distribution line within the proposed water pipeline corridor to provide electrical service to Well No. 3. Potential impacts associated with installation and operation of this transmission line are evaluated throughout the Draft SEIR. All mitigation measures will be included in the project's Mitigation Monitoring Reporting Program and will be incorporated as conditions of approval. The Applicant will be required to monitor and report on its compliance and comply with each condition of approval.

Letter 3: California Department of Transportation; May 25, 2023

Comment 3-1

Caltrans has discretionary authority with respect to highways under its jurisdiction any may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway network. Additional information is provided online at: <http://www.dot.ca.gov/trafficops/permits/index.html>

Response 3-1

The comment is noted. The County will direct the Applicant to the above-referenced website to determine applicability of Caltrans Transportation Permits for the project.

Letter 4a: California Department of Fish and Wildlife; June 2, 2023

Comment 4a-1

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Id., § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any

species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

Response 4a-1

The comment is noted. The California Department of Fish and Wildlife (CDFW) is identified as a Responsible Agency and Trustee Agency for the proposed project in Draft SEIR Section 1.5, “Responsible and Trustee Agencies.” The project is not expected to result in “take” of any species protected under CESA.

Comment 4a-2

PROJECT DESCRIPTION SUMMARY

Proponent: United States Gypsum (USG)

Objective: The proposed Project consists of approval of a Conditional Use Permit from Imperial County for the development of a new production well, Well No. 3, and an associated pipeline to provide water to the USG Quarry. A Draft Final Environmental Impact Report/Environmental Impact Study was completed for the project in April 2006. On March 18, 2008, a Final Environmental Impact Report/Environmental Impact Study was certified by the Imperial County Board of Supervisors pursuant to the requirements of CEQA (SCH 2001121133). As such, the potential environmental impacts of the proposed quarry expansion and reclamation and development of Quarry Well No. 3 were previously evaluated in the 2008 Environmental Impact Report/Environmental Impact Study. Additional land use entitlements from Imperial County are not needed for mining and reclamation activities under the quarry expansion. However, because Well No. 3 would provide water to support quarry operations, this DSEIR evaluates potential environmental impacts associated with mining and reclamation activities under the quarry expansion. The DSEIR also evaluates potential environmental impacts associated with the restoration of the Viking Ranch site (207 acres) and preservation of the Old Kane Springs Road site (121 acres). USG identified these sites for preservation to provide compensatory mitigation for impacts to 139 acres of waters of the United States at the quarry.

The Project includes expansion of the quarry areas on a series of mining claims to the south and southeast of the existing quarries. The existing and proposed quarry would be located primarily on private lands, but also would include new disturbance within mining claims on public lands managed by the

Bureau of Land Management (BLM). The total acreage of USG's claims on public lands is 73.2 acres, and planned disturbance would be limited to 18.1 acres within them. The area proposed for continuing and future quarrying is on middle and lower slopes and a broad alluvial wash.

Well No. 3 would be located east of the existing quarry on a USG-owned parcel (APN 033-020-009) and would provide processing water via a 10-inch-diameter, approximately 3.5-mile-long underground pipeline that would be developed within the existing USG narrow-gauge railroad right-of-way. The pipeline would extend from Well No. 3 to the existing offload facility within the quarry processing area. In conjunction with the development of the pipeline, USG would install an electric supply line to serve the well pump. The power service line would be installed underground from the well head to the quarry gate, and power poles would be installed within the quarry site. The well would be approximately 6 inches in diameter and 565 feet in depth. The water would be used in the quarry for dust suppression on the haul roads and crushing equipment, for the watering of transplanted desert plant species during reclamation, and as a possible supply of potable water for use by employees.

The proposed pipeline would be constructed of high-density polyethylene pipe and would be installed at a depth of about 4 feet below the ground surface. The pipeline would be developed within the existing narrow-gauge railroad right-of-way that is already disturbed by an existing unpaved access road. A trench, approximately five feet wide and seven feet deep would be excavated between the railroad and access road for installation of the pipeline. Excavated soils would be temporarily stockpiled along the alignment and used as backfill. Import of fill material is not anticipated. Construction would occur within a 30-foot-wide area along the entire length of the pipeline alignment. Development of the pipeline would disturb approximately 12.7 acres (30 foot wide by 3.5 miles) of land, most of which is managed by the BLM. A portion of the right-of-way (3.75 acres) is located within the Anza-Borrego Desert State Park. All waterline/powerline construction areas would be restored to pre-project conditions following the completion of construction activities.

The proposed project also includes restoration and/or preservation of two proposed offsite mitigation sites (Viking Ranch restoration site and Old Kane Springs Road preservation site) in San Diego County for the purpose of mitigating

anticipated impacts to jurisdictional waters within the quarry expansion area. These project components were not evaluated in the 2008 Environmental Impact Report/Environmental Impact Study or the 2019 Supplemental Environmental Impact Study but are undergoing environmental review in the DSEIR.

The Viking Ranch parcels were primarily former orchard land located north of Borrego Springs and within the Coyote Creek Wash. However, parcel 140-030-10-00 and the southwestern portion of parcel 140-030-11-00 are undeveloped and were not historically in agriculture. The proposed mitigation site is located approximately 26 miles from the USG Quarry. Viking Ranch was used for orchard production until the site was purchased by the Borrego Water District in 2017. Previous agricultural land modifications were constructed that diverted hydrology of Coyote Creek around the agricultural field. These topographic modifications included excavation of ditches and construction of berms to protect the orchard from flooding. The restoration program proposes to remove these diversion features to re-establish braided, unconstrained flow across the site, consistent with the existing Coyote Creek floodplain. Proposed restoration activities at the Viking Ranch site would include tree stump removal, grading, excavations, and revegetation of the site. These activities are expected to require the use of backhoes, a trencher, grader, dozer, and dump truck, as well as supply and water trucks. The Old Kane Springs Road Preservation Site would be preserved in its existing conditions. No construction or development is proposed at this site.

Location: The Project's proposed USG Quarry Well No. 3 is located in Imperial County on USG-owned property APN 033-020-009. It is located within Section 16 of Township 13 South, Range 09 East SBM.

The Project's proposed pipeline alignment is located in Imperial County within USG owned property (APNs 033-020-009; 033-060-010 and -008); land owned by the U.S. Bureau of Land Management (BLM) (APNs 033-010-025 and -017; and 033-060-012); and Anza-Borrego Desert State Park (APN 033-010-016). The pipeline crosses Sections 16, 17, 18, and 19 of Township 13 South, Range 09 East SBM.

The Project's associated Viking Ranch restoration site is located in San Diego County and consists of approximately 150 acres of property owned by Borrego Water District (APNs 140-030-09-00 and -11-00); approximately 10 acres of privately owned property (APN 140-030-10-00); and approximately 47 acres of

lands adjacent to these parcels that would be restored or enhanced. The adjacent lands consist of approximately 13 acres of land owned by the Anza-Borrego Foundation (APN 140-030-05-00), approximately 3 acres of State Park-owned land to the north of the restoration site, and approximately 31 acres of State Park-owned lands to the east of the restoration site (APN 140-030-07-00). The restoration site is located in the southeast corner of Section 4 of Township 10 South, Range 06 East SBM.

The Project's associated 121-acre Old Kane Springs Road preservation site is located in San Diego County on privately owned property (APN 253-150-34-00). The mitigation site is located in Section 18 of Township 12 South, Range 08 East SBM.

Timeframe: The proposed project and its associated mining and reclamation activities are anticipated to disrupt portions of the Project site for at least 80 years.

Response 4a-2

The County approved a conditional use permit (CUP) for Well No. 3 and associated pipeline in 2008. However, the CUP expired because none of the activities authorized under the CUP commenced within the specified time period following approval. Therefore, USG has applied for a new CUP for Well No. 3 and the associated pipeline. No changes have been proposed to the description of Well No. 3 and associated pipeline as previously approved by the County and evaluated in the Final Environmental Impact Report certified by the County in 2008 (the 2008 FEIR).

The County approved the quarry expansion in 2008, and no further discretionary approvals are required from the County for the proposed mining and reclamation activities under the Quarry expansion. However, as noted in the Draft SEIR, approvals will be required from CDFW under the Fish and Game Code for certain aspects of the Quarry expansion. As such, CDFW was identified in the Draft SEIR as a responsible agency under CEQA.

The potential environmental impacts associated with mining and reclamation activities associated with the Quarry expansion were previously evaluated in the 2008 FEIR and in the Final Supplemental Environmental Impact Statement prepared for the project by BLM (the 2019 SEIS). No significant changes have been proposed relative to the mining and reclamation activities as described in those environmental documents. Consequently, with respect to the activities associated with Quarry expansion, the primary focus and intent of this SEIR is to (1) update the 2008 EIR by incorporating the information and mitigation measures that were developed as part of the 2019 SEIS, and (2) to evaluate whether there have been any changes in the circumstances surrounding the proposed Quarry activities, or any new information concerning these activities, that raise any new or substantially more severe impacts on the environment as compared to the analysis contained in the 2008 FEIR. (See CEQA Guidelines, Section 15162.) No such changes in circumstances or new information have been identified.

Comment 4a-3

COMMENTS AND RECOMMENDATIONS

CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). CDFW offers the comments and recommendations below to assist Imperial County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The DSEIR has not adequately identified and disclosed the Project's impacts (i.e., direct, indirect, and cumulative) on biological resources and whether those impacts are reduced to less than significant.

CDFW's comments and recommendations on the DSEIR are explained in greater detail below and summarized here. CDFW is concerned that the DSEIR does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW also concludes that the DSEIR lacks sufficient information to facilitate a meaningful review by CDFW, including both a complete and accurate assessment of biological resources on the Project site. CDFW recommends that additional information and analyses be added to a revised DSEIR, along with avoidance, minimization, and mitigation measures that avoid or reduce impacts to less than significant.

Response 4a-3

As explained below in Responses 4a-4 through 4a-13, the County believes that this SEIR adequately identifies and mitigates the project's potentially significant impacts. In addition, as explained by Responses 4a-4 through 4a-13, together with the errata section (Chapter 3, "Draft SEIR Errata"), this SEIR contains adequate information to facilitate a meaningful review by CDFW.

Comment 4a-4

Existing Environmental Setting

Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed Project. CDFW is concerned that the assessment of the existing environmental setting has not been adequately analyzed in the DSEIR. CDFW is concerned that without a complete and accurate description of the existing environmental setting, the DSEIR may provide an incomplete analysis of Project-related environmental impacts.

The DSEIR lacks a recent and complete assessment of biological resources within the Project site and surrounding area. A complete and accurate assessment of the environmental setting and Project-related impacts to biological resources is needed to both identify appropriate avoidance, minimization, and mitigation measures and demonstrate that these measures reduce Project impacts to less than significant.

Response 4a-4

The description of the environmental setting “shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives.” [CEQA Guidelines Section 15125(a).] In this case, the environmental setting for the project relative to biological resources was adequately described in Sections 2.5, “Environmental Setting,” and 4.2.1, “Regulatory Setting,” of the Draft SEIR. As discussed in Section 4.2.1.2, “Biological Resource Conditions at the Time of the 2008 EIR/EIS,” of the Draft SEIR, the environmental setting for the project was also described in the 2008 FEIR. [See Public Resources Code Section 21003(d) (Information developed in individual environmental impact reports are to be “incorporated into a data base which can be used to reduce delay and duplication in preparation of subsequent environmental impact reports”).]

The description of the environmental setting for the project contained in the Draft SEIR and the 2008 FEIR is sufficient to give the “public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts,” and allows those potential impacts “to be considered in the full environmental context” as required by CEQA. [CEQA Guidelines Section 15125(a) and (c).] Furthermore, on June 15, 2023, a senior biologist from Aspen Environmental Group visited the project site and determined that the site conditions remain consistent with those described in the Biological Resources Technical Report (BTR) provided as Appendix D-1 to the Draft SEIR. A copy of the memorandum dated August 7, 2023, from Aspen Environmental Group, summarizing the findings of the June 15, 2023, biologist site visit is provided as Appendix D, “Aspen Memorandum: Updated Site Conditions,” to the Final SEIR.

Additional information concerning the occurrence of Peninsular bighorn sheep (PBS) in the project area has also been provided by CDFW. This additional data was provided via email on August 17, 2023, and August 24, 2023, and are included in this Final SEIR as Letter 4b and Letter 4c, respectively. The data generally consists of GPS radio collar data collected in the project area between 2015 and 2022 showing the range and seasonal movement patterns of the local PBS population. This data is substantially the same as that provided previously by CDFW and used to support preparation of both the 2019 SEIS and this SEIR. The data and associated analysis are accepted and incorporated into the SEIR's description of the environmental setting. The reader is also referred to Response 4a-7, Responses 4b-1 through 4b-6, and Responses 4c-1 through 4c-3 for further discussion of the data and analysis provided by CDFW.

The Draft SEIR generally describes the physical environmental conditions as they existed at the time the notice of preparation was published. [See CEQA Guidelines Section 15125(a)(1) and Response 4a-6.] However, these conditions may change over time. Therefore, in light of the long-range timeframe for implementation of the project in this case, mitigation measures have been added and/or revised to require preparation of focused biological surveys prior to vegetation removal or ground-disturbing activities associated with specific components of the project. See Responses 4a-6 through 4a-11.

Comment 4a-5

Mitigation Measures

CEQA requires that a DSEIR include mitigation measures to avoid or reduce significant impacts. CDFW is concerned that the mitigation measures proposed in the DSEIR are not adequate to avoid or reduce impacts to biological resources to below a level of significance. To support Imperial County in ensuring that Project impacts to biological resources are reduced to less than significant, CDFW recommends adding mitigation measures for an assessment of biological resources, bats, and the CDFW Lake and Streambed Alteration Program, as well as revising the mitigation measures (or sub-measures) for burrowing owl (*Athene cunicularia*), nesting birds, and artificial nighttime lightning.

Response 4a-5

New and revised mitigation measures as recommended by CDFW, with some modifications, have been identified and incorporated into the Final SEIR, as provided in responses to comments 4a-6 through 4a-14 below. Incorporation of these new mitigation measures and revisions to existing mitigation measures further supports the Draft SEIR's conclusion that biological resources impacts are mitigated to less than significant levels.

Comment 4a-6

1) Assessment of Biological Resources

Page 3 of the Project's Biological Report indicates that biological surveys over the Project areas, including the quarry and proposed new pipeline, were conducted in October 2014, April and October of 2016, and March and April of 2017.

CDFW generally considers biological field assessments for wildlife to be valid for a one-year period. Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts, that special emphasis should be placed on environmental resources that are rare or unique to the region, and that significant environmental impacts of the proposed Project are adequately investigated and discussed. CDFW recommends that the DSEIR is revised to include the findings of a complete, recent inventory of rare, threatened, endangered, and other sensitive species located within the footprint of proposed Well #3 and its associated pipeline and within offsite areas with the potential to be affected, including California Species of

Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511). Based on findings from a recent biological inventory, CDFW recommends that the DSEIR is revised to include an analysis of direct, indirect, and cumulative impacts to biological resources and identification of appropriate avoidance, minimization, and mitigation measures.

Response 4a-6

Consistent with the CEQA Guidelines, the analysis and conclusions in the Draft SEIR are based on detailed knowledge of the regional setting. Special emphasis has been placed on regionally rare or unique environmental resources, and potentially significant impacts are adequately investigated and discussed.

No evidence has been presented to suggest that the environmental setting for the project has changed since the time the biological surveys referenced by the commentor were conducted. The Draft SEIR's discussion of the environmental setting for the project, which is based in part on these surveys, adequately describes the physical environmental conditions as they existed at the time the notice of preparation was published. [See CEQA Guidelines Section 15125(a)(1).] However, these conditions may change over time. Therefore, in light of the long-range timeframe for implementation of the project in this case, mitigation measures have been added and/or revised to require preparation of focused biological surveys prior to vegetation removal or ground-disturbing activities associated with specific components of the project. See also Responses 4a-7 through 4a-13).

As noted in Section 4.2.1.3, "Biological Resource Conditions at Present," of the Draft SEIR, the discussion of biological resources conditions at the Quarry Well No. 3 site and associated pipeline alignment are based on the Biological Resources Technical Report (BRTR) prepared by Aspen Environmental Group in 2019 (Draft SEIR Appendix D-1), the Jurisdictional Delineation prepared by Hernandez in 2016 (Draft SEIR Appendix D-2), and the Biological Opinion issued by USFWS in 2019 (Draft SEIR Appendix D-3). These materials update information contained in the 2008 Final EIR concerning the regional setting for these components of the project. Furthermore, on June 15, 2023, a senior biologist from Aspen Environmental Group visited the project site and determined that the site conditions remain consistent with those described in the BRTR provided as Appendix D-1 to the Draft SEIR. A copy of the letter dated August 7, 2023, from Aspen Environmental Group summarizing the findings of the June 15, 2023, biologist site visit is provided as Appendix D to the Final SEIR.

The discussion of biological resource conditions at the off-site mitigation sites is based on the Habitat Mitigation and Monitoring Plan (HMMP) prepared by Dudek in 2021 (Draft SEIR Appendix D-4). However, the proposed project does not propose any physical alterations or other changes with respect to the Old Kane Springs Road site. In addition, the proposed restoration of the Viking Ranch site would be subject to the San Diego County Resources Protection Ordinance (see San Diego County, Tit. 8, Div. 6, Chap. 6) and the Habitat Mitigation and Monitoring Plan (HMMP; Draft SEIR Appendix D-4), which prescribe approved measures to protect biological resources.

Comment 4a-7

The Project occurs in and adjacent to U.S. Fish and Wildlife Service (USFWS) critical habitat for Peninsular bighorn sheep (*Ovis canadensis*) and has the potential to impact this species both directly and indirectly. For example, Peninsular bighorn sheep rely on groundwater-dependent vegetation, especially during the dry summer months. Development of Well No. 3 may impact Peninsular bighorn sheep through drawdown of groundwater that results in fewer sources of forage plants. CDFW recommends that Imperial County seek current data on Peninsular bighorn sheep occurrence in the Project area in consultation with CDFW wildlife biologists (contact Jacob Skaggs at Jacob.Skaggs@Wildlife.ca.gov for more information) to ensure that data are recent and that direct and indirect impacts to this species from Project activities have been adequately analyzed in the CEQA document. CDFW recommends that the results of this consultation be included in a revised DSEIR.

Response 4a-7

The following excerpt from the Recovery Plan for bighorn sheep in the Peninsular Ranges (USFWS 2000), which is cited in the Biological Resources Technical Report and Biological Opinion (Appendices D-1 and D-3 to the Draft SEIR), supports a conclusion that any drawdown of water resulting from the development of Well No. 3 would not have a significant impact on Peninsular bighorn sheep (PBS):

In the Peninsular Ranges, bighorn sheep use a wide variety of plant species as their food source. Turner (1973) recorded the use of at least 43 species, with browse being the food category most frequently consumed (Turner 1976, Scott 1986). Cunningham and Ohmart (1986) determined that the bighorn sheep diet in Carrizo Canyon (at the south end of the U.S. Peninsular Ranges) consisted of 57 percent shrubs, 32 percent forbs, 8 percent cacti, and 2 percent grasses. Scott (1986) and Turner (1976) reported similar diet compositions at the north end of the range. Plant species eaten by bighorn sheep in the Peninsular Ranges were also reported by Jorgensen and Turner (1973) and Weaver et al. (1968). Diet composition varied among seasons (Cunningham and Ohmart 1986, Scott 1986), presumably because of variability in forage availability, selection of specific plant species during different times of the year (Scott 1986), and seasonal movements of bighorn sheep. In Arizona, bighorn sheep also used a wide variety of forage species throughout the year to cope with the changing desert environment (Miller and Gaud 1989).

Three native vegetation communities were mapped within the Well No. 3 project area including Creosote Bush – White Bursage Scrub, Creosote Bush Scrub, and Smoke Tree Woodland. These communities are typically of low species diversity and plant forms consist of annual grasses and herbs, sub-shrubs, and perennial shrubs. Annual grasses and herbs, and sub-shrubs are typically shallow rooted species that are not dependent

upon groundwater for growth, reproduction and/or seed germination and plant establishment.

Some perennial desert shrubs such as mesquite (*Prosopis* sp.) are dependent upon groundwater resources in the desert as an adaptation to limited surface water resources. However, mesquite is not present within the Well No. 3 project area nor in the vicinity of the well site. The three perennial shrubs found within the vicinity of Well No. 3 are creosote (*Larrea tridentata*), Ocotillo (*Fouquieria splendens*), and smoke tree (*Psoralea argophylla*). In contrast to mesquite, these shrubs have adopted different survival strategies that do not rely on groundwater resources. Typically, these species form a wide root system within the top 36 inches of the soil profile. The strategy relies on capturing as much surface moisture as possible during rain events. Water is conserved through leaf structure and waxy leaf coatings that reduce water loss through the leaf stomata and reduced photosynthetic activity during high water stress periods.

Any drawdown of groundwater located hundreds of feet below the ground surface will not affect native desert plant communities within the Well No. 3 project area because none of the species present at the site directly access deep groundwater and are not dependent upon this water source. Furthermore, groundwater drawdown would have no effect on infiltration rates of the soil within the project area because infiltration is determined by soil texture, organic content, and other physical and chemical soil properties. Therefore, there are no periodicity issues related to potential changes to standing water and surface water availability to plant and wildlife species after a rainfall event. Lastly, an analysis of the potential groundwater drawdown by operation of Well No. 3 found that drawdown within 1 mile of the well would be on the order of 0.11 feet, or about 1.3 inches (Bookman-Edmonston, 2002). This negligible drawdown will have no effect on PBS forage within the vicinity of Well #3.

Well No. 3 and associated pipeline alignment are not within PBS critical habitat (Draft SEIR Figure 4.2-3, page 4.2-17).

The County contacted CDFW Biologist Jacob Skaggs to obtain the data referenced by the commentor. This additional data was provided via email on August 17, 2023, and August 24, 2023, which are included in this Final SEIR as Letter 4b and Letter 4c, respectively. The data generally consists of GPS radio collar data collected in the project area between 2015 and 2022 showing the range and seasonal movement patterns of the local PBS population. This data is substantially the same as that provided previously by CDFW and used to support preparation of both the 2019 SEIS and this SEIR. The data are accepted and incorporated into the SEIR's description of the environmental setting (see Chapter 3, "Draft SEIR Errata," Section 3.2.22). The reader is also referred to Response 4a-4, Responses 4b-1 through 4b-6, and Responses 4c-1 through 4c-4 for further discussion of the data and analysis provided by CDFW.

Comment 4a-8

Additionally, because quarry expansion activities will impact different areas of undisturbed habitat over an 80-year period, CDFW recommends that additional surveys for rare, threatened, endangered, and other sensitive species

are conducted over undisturbed areas proposed for quarry expansion prior to ground disturbance or vegetation removal activities.

CDFW recommends that Imperial County add in a revised DSEIR the following mitigation measure:

Mitigation Measure BIO-[A]: Assessment of Biological Resources

Prior to adoption of the CEQA document and Project construction activities, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

Response 4a-8

The County accepts the commentor's recommendation that additional surveys for rare, threatened, endangered, and other sensitive species be conducted over undisturbed areas proposed for quarry expansion prior to ground disturbance or vegetation removal activities. Because the physical conditions within an area can change over time, and in light of the long-range timeframe for implementation of the project in this case, mitigation measures have been added and/or revised to require preparation of focused biological surveys prior to vegetation removal or ground-disturbing activities associated with specific components of the project.

The additional and revised mitigation measures are discussed in Responses 4a-6 through 4a-14 and are listed in Chapter 3, “Draft EIR Errata.” Where an additional or revised mitigation measure differs from the language proposed by the commentor, an explanation for the modification is provided in Chapter 3. Incorporation of these new and revised mitigation measures amplifies the Draft SEIR’s conclusion that potential biological resources impacts are mitigated to less than significant.

See Chapter 3, “Draft SEIR Errata,” Section 3.2.36. Proposed Mitigation Measure BIO-[A] has been added to the Draft SEIR as Mitigation Measure 4.2-2c as shown below:

The potential PBS direct habitat impacts would be minimized, offset, or reduced over time through implementation of the following measures (see Section 4.2.4, “Project Impacts and Mitigation Measures,” for the full text of each measure):

- 2008 EIR/EIS:
 - MM 3.5-1d (*Peninsular Bighorn Sheep*)
- 2019 SEIS:
 - MM 3.4-5 (*Interim Weed Management Plan*)
 - MM 3.4-10 (*Peninsular Bighorn Sheep Habitat Mitigation*)

Implement the following new mitigation measure:

Mitigation Measure 4.2-2c: Assessment of Biological Resources: Prior to construction activities for Quarry Well No. 3, the associated pipeline, and the Viking Ranch Restoration Site, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the construction footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code Section 3511), will be completed. Species to be addressed should include all “endangered, rare or threatened species” as defined in CEQA Guidelines Section 15380. The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

Level of Significance After Mitigation: Less than significant.

Comment 4a-9

2) Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a California Species of Special Concern. Take of individual burrowing owls and their nests is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.). Take is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

Page 33 of the Project's Biological Resources Technical Report dated March 2019 (Biological Report) indicates that suitable burrowing owl nesting and foraging habitat is present throughout the project area, and this species is considered to have moderate potential to nest in the Project area. The Biological Report also states that a single burrowing owl was observed during surveys for the project area in October 2014, and that subsequent surveys of the Project area conducted during the breeding season did not detect any burrowing owls.

Importantly, because the Project's quarrying activities will occur over an 80-year period and undisturbed areas will be impacted at different times, CDFW recommends that focused and pre-construction burrowing owl surveys are completed each time the Project conducts ground disturbance and vegetation removal activities in a new undisturbed area.

Although the DSEIR includes Mitigation Measure 3.4-9 for burrowing owl, CDFW considers the measure to be inadequate in scope and timing to appropriately avoid, minimize, and mitigation impacts to burrowing owl. CDFW recommends that Imperial County revise Mitigation Measure 3.4-9 in a revised DSEIR, with additions in **bold** and removals in ~~strikethrough~~:

Mitigation Measure 3.4-9: Burrowing Owl Avoidance

Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with all Project components (expansion of quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the lifetime of the Project. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.

Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If the

~~preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities. Burrowing Owl Avoidance. If an active burrowing owl burrow is observed within a work area at any time of year, the Designated Biologist or Biological Monitor, in coordination with BLM, will designate and flag an appropriate buffer area around the burrow where project activities will not be permitted. The buffer area will be based on the nature of project activity and burrowing owl activity (i.e., nesting vs. wintering). The Designated Biologist or Biological Monitor will continue to monitor the site until it is confirmed that the burrowing owl(s) is no longer present. If avoidance of quarrying or pipeline construction within the buffer area is infeasible, Burrowing Owls may be excluded from an active wintering season burrow in coordination with CDFW and in accordance with the CDFW's Staff Report on Burrowing Owl Mitigation (March 2012), including provision of replacement burrows prior to the exclusion.~~

Response 4a-9

See Response 4a-8. Mitigation Measure 3.4-9 on Draft SEIR page 4.2-47 has been revised as shown below. Where these revisions differ from the language proposed by the commentor, an explanation for the modification is provided in Chapter 3, "Draft SEIR Errata,". See Chapter 3, Section 3.2.37 for the final version of Mitigation Measure 3.4-9.

~~Mitigation Measure 3.4-9: Burrowing Owl Avoidance; If an active burrowing owl burrow is observed within a work area at any time of year, the Designated Biologist or Biological Monitor, in coordination with BLM, will designate and flag an appropriate buffer area around the burrow where project activities will not be permitted. The buffer area will be based on the nature of project activity and burrowing owl activity (i.e., nesting vs. wintering). The Designated Biologist or Biological Monitor will continue to monitor the site until it is confirmed that the burrowing owl(s) is no longer present. If avoidance of quarrying or pipeline construction within the buffer area is infeasible, Burrowing Owls may be excluded from an active wintering season burrow in coordination with CDFW and in accordance with the CDFW's Staff Report on Burrowing Owl Mitigation (March 2012), including provision of replacement burrows prior to the exclusion.~~ Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with expansion of quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch over the lifetime of the project. If resident or nesting burrowing owls are detected during the focused surveys, the qualified biologist and project

proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW for review and approval prior to commencing the activities specified above. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been reevaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Burrowing Owl Plan shall identify adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The project proponent shall implement the Burrowing Owl Plan following CDFW review and approval.

Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the preconstruction surveys confirm occupied burrowing owl habitat, the project activities specified above shall be immediately halted until pre-defined avoidance and minimization measures contained in the Burrowing Owl Plan have been implemented.

Comment 4a-10

3) Nesting Birds

It is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

Page 4.2-26 indicates that suitable foraging and nesting habitat for protected bird species, as well as “stopover” habitat for migratory songbirds, is found throughout the Project area. Although the DSEIR includes a sub-measure in Mitigation Measure 3.4-8 for migratory birds, CDFW considers the measure to be insufficient in scope and timing to reduce impacts to a level less than significant. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site and surrounding area be avoided **any time birds are nesting on-site.**

Importantly, because the Project’s quarrying activities will occur over an 80-year period and undisturbed areas will be impacted at different times, CDFW recommends that pre-construction nesting bird surveys are completed each time the Project conducts ground disturbance and vegetation removal activities in a new undisturbed area.

CDFW recommends Imperial County revise the following sub-measure in Mitigation Measure 3.4-8, with additions in **bold** and removals in strikethrough:

Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

[...]

~~To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs.~~
Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with all Project components (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a

qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.

[...]

Response 4a-10

See Response 4a-8 and Response 5b-3. Mitigation Measure 3.4-8 on Draft SEIR page 4.2-52 has been revised as shown below. Where these revisions differ from the language proposed by the commentor, an explanation for the modification and the final version of the measure is provided in Chapter 3, “Draft SEIR Errata,” Section 3.2.34.

Mitigation Measure 3.4-8: *Wildlife Impact Avoidance and Minimization Measures: USG will implement the following measures throughout the life of the project (e.g., Plant and Quarry operations).*

- To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs. Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch and over the lifetime of the project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys for any of the activities specified above, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on the nature of the planned project activities, species-specific disturbance tolerance, location of the nest, and nest and buffer monitoring results.

Established buffers shall remain on-site until a qualified biologist determines if the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the project has been completed. A qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.

[...]

Comment 4a-11

4) Special-Status Bats

Page 4.2-24 of the DSEIR indicates that several special-status bats have at least a moderate potential to forage over the Project area, including the following California Species of Special Concern: California leaf-nosed bat (*Macrotus californicus*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). The DSEIR further indicates that the gypsum cliffs in the quarry expansion areas and other cliffs and outcrops immediately adjacent to the quarry provide suitable roosting habitat for most of these species. Project activities associated with the expansion of mining operations may impact bat roosts and result in injury or mortality to bats. Also, any artificial nighttime lightning associated with the Project may also negatively impact bats, and details on lighting plans and lightning specifications and appropriate avoidance, minimization, and mitigation measures are needed (see section below on Artificial Nighttime Lighting).

Page 4.2-59 of the EIR states that potential impacts to bats would be avoided or minimized through Mitigation Measure 3.4-8 (Wildlife Impact Avoidance and Minimization Measures). However, it is unclear which sub-measure in Mitigation Measure 3.4-8 would apply to bats. CDFW recommends focused surveys for the special-status species of bats discussed above are conducted prior to quarry expansion activities to inform appropriate avoidance, minimization, and mitigation measures. CDFW recommends that Imperial County add the following mitigation measure to a revised DSEIR:

Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats

Prior to the initiation of Project activities within suitable bat roosting habitat, Imperial County shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.

If active hibernacula or maternity roosts are identified in the work area or 500 feet extending from the work area during preconstruction surveys, for maternity roosts, quarry expansion activities into undisturbed habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.

A minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If

avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.

Response 4a-11

See Responses 4a-8, 5b-4, and 5b-5. Proposed Mitigation Measure BIO-[B], as shown below, was added as a provision to existing Mitigation Measure 3.4-8 on Draft SEIR page 4.2-52. Where these revisions differ from the language proposed by the commentor, an explanation for the modification and the final version of the measure is provided in Chapter 3, "Draft SEIR Errata," Section 3.2.34.

- Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats: Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:
 - For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet

- ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.
- For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques.

Comment 4a-12

5) Artificial Nighttime Lighting

Page ES-18 of the DSEIR includes Mitigation Measure 3.4-8 that indicates the Project will “avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.” However, the DSEIR lacks a discussion of the lighting plans and lighting specifications that will be used across all Project components including quarry expansion activities, Well #3 and associated pipeline construction, and proposed mitigation sites. CDFW recommends that the DSEIR is revised to include a discussion of lightning [sic] plans and lightning [sic] specifications proposed to be used across all the Project’s components to allow CDFW to conduct a meaningful review and provide expertise on activities that have the potential to adversely affect fish and wildlife resources.

Additionally, because the Project is located within and adjacent to open-space areas that support Fully Protected Peninsular bighorn sheep (*Ovis canadensis*), several special-status species of bats, migratory birds that fly at night, and other nocturnal and crepuscular wildlife, CDFW recommends the DSEIR is revised to include an analysis of the direct, indirect, and cumulative impacts of artificial

nighttime lighting expected to adversely affect biological resources surrounding the Project site. In general, available research indicates that artificial nighttime lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; the detection of resources and natural predators; and navigation¹. Further, many of the effects of artificial nighttime lighting on population- or ecosystem-level processes are still poorly understood suggesting that a precautionary approach should be taken when determining appropriate avoidance and minimization measures concerning artificial nighttime lighting.

Regarding impacts on bats, including the California Species of Special Concern discussed in the previous section, while artificial nighttime lighting can benefit some opportunistic bat species by providing a foraging resource where insect prey is attracted to lights,² numerous studies have shown that direct lighting on roost structures can have profound negative effects on bats roosting in those structures. For example, the complete abandonment (or significant reduction of the bat population) at human-made structures used by roosting bats following the installation of bright artificial lighting has been documented on multiple occasions (e.g., Boldogh et al. 2007; Rydell et al. 2017). Downs et al. (2003) found that the intensity of the artificial light near the roost affected the bats' behavior during emergence more than the color of the light, while Rydell et al. (2017) found that the loss of bat colonies at structures that were newly illuminated was most apparent when light was applied in such a manner that there was no dark corridor for the bats to exit and return to the roost.

Adverse effects from the illumination of a roost structure by artificial lights extend beyond simply having the potential to discourage further use of that structure by bats. For example, Boldogh et al. (2007) found that not only did bright artificial lighting at roosts delay the

¹ Gatson, K. J., Bennie, J., Davies, T., Hopkins, J. *The ecological impacts of nighttime light pollution: a mechanistic appraisal*. *Biological Reviews*, 88.4 (2013): 912-927.

² It should be noted that because many insects congregate around artificial light sources and die from exhaustion, long-term reductions of insect populations from light pollution is expected to have significant adverse effects for predators of insects such as bats (Hölker et al. 2010).

start of the emergence and/or prolong the duration of bats' emergence from that structure, but also juveniles at roost structures that were illuminated were significantly smaller than juveniles at roost structures that were not illuminated by bright artificial lights. The smaller body masses of juveniles at illuminated sites may be attributed to the delayed emergences at those sites, which not only reduces the total foraging time available for lactating female bats (and later, juveniles learning to hunt) each night, but also causes those bats to miss the peak insect abundance that occurs at dusk, reducing their foraging efficiency. These findings suggest that even if a maternity colony chooses to remain at a newly illuminated roost site, juvenile survivorship is negatively affected, and therefore the reproductive success of those colonies could be severely compromised.

Rydell et al. (2017) and Voigt et al. (2018) note that maintaining darkness at maternity roosts is particularly important because at these types of roosts, aggregations of bats are present consistently over a long period of time, individual bats emerge from predictable locations, and juvenile bats are learning how to fly. Illumination of a maternity roost renders the colony more vulnerable to opportunistic predators such as raptors and owls, and predator-avoidance behaviors such as delayed emergence times reduce their foraging opportunities, thereby lowering juvenile survivorship. Suitable maternity roost sites are a limited resource, and if an alternate roost site is not available, extirpation of the entire colony could occur as a result of artificial lighting. Various studies (e.g., Boldogh et al. 2007; Rydell et al. 2017; Voigt et al. 2018) have concluded that because bright artificial lighting at roost structures has significant negative effects on bats, including the potential for the extirpation of an entire maternity colony, the addition of lighting near an established roost should be considered during the environmental impact review process.

To support Imperial County in avoiding, minimizing, and mitigating the impacts of artificial nighttime lighting on biological resources, CDFW recommends that Imperial County revise the following sub-measure of Mitigation Measure 3.4-8 in a revised DSEIR as follows, with additions in **bold** and removals in strikethrough:

Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

[...]

~~Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.~~
Throughout the lifetime of the Project, the Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all lighting for the Project is fully shielded, cast downward, reduced in intensity to the greatest extent, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at <http://darksky.org/>). Imperial County shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.

[...]

Response 4a-12

The 2008 DEIR (Impact 3.7-1 on page 3.7-22) describes the project's proposed lighting at the quarry site and the anticipated lighting changes that would occur with project implementation. According to the 2008 DEIR, no new buildings or operational changes are proposed, and no new lighting sources would be added to the quarry site. Thus, there would be a marginal increase in lighting and the impact was determined to be less than significant. Furthermore, the 2019 SEIS (Section 3.4.4.1 on page 3.4-6) acknowledges that nighttime lighting would have a minor and temporary effect on wildlife movement and addresses this impact through implementation of Mitigation Measure 3.4-8, "Wildlife Impact Avoidance and Minimization Measures." This measure is included in the Draft SEIR and contains the following requirement: "Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky."

The Draft SEIR and previous environmental documents adequately describe the project's proposed lighting, acknowledge the potential associated impacts, and provide mitigation measures to avoid or minimize the identified impacts. However, to more fully address these potential impacts, the commenter's proposed revisions to Draft SEIR Mitigation Measure 3.4-8 have been incorporated into the Draft SEIR.

See Chapter 3, "Draft SEIR Errata," Section 3.2.34. Mitigation Measure 3.4-8 has been revised as follows:

- [...]

- *Speed limits along all access roads will not exceed 15 miles per hour.*
- *Throughout the lifetime of the project, the project proponent shall avoid or limit the use of artificial light to the extent practicable during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all new lighting for the project is fully shielded, cast downward, reduced in intensity to the greatest extent practicable, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at <http://darksky.org/>). To the extent practicable, the project proponent shall use LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling for lighting that contains toxic compounds with a qualified recycler. Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.*
- *[...]*

Comment 4a-13

6) CDFW's Lake and Streambed Alteration Program

Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit debris, waste, or other materials that could pass into any river, stream, or lake. Note that "any river, stream, or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

Page 4.6-22 of the DSEIR indicates that the Project's Jurisdictional Delineation "identified a total 325.79 acres of unnamed streambeds within Quarry area and found that the expansion of quarrying activities would result in impacts to approximately 134.08 acres of CDFW, USACE, and RWQCB jurisdictional drainages." The DSEIR also indicates that "Well No. 3 and the water supply pipeline would result in filling of all ephemeral streambeds and washes within the waterline/powerline area, and that these activities would result in impacts to 0.21 acres of CDFW, USACE, and RWQCB jurisdictional drainages." Regarding the Restoration of Viking Ranch, Figure 2-6 of the DSEIR shows that restoration plans will involve removal and creation of

berms, backfill of diversion ditches, installation of a grade structure, grading of ephemeral channels, and recontouring of areas of the floodplain within the Viking Ranch Project boundary.

The DSEIR includes Mitigation Measure 3.5-1f: “Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the CDFG and the US Army Corps of Engineers to determine whether either agency holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act, respectively.”

In addition to this measure and to address requirements under CDFW’s Lake and Streambed Alteration Program, CDFW recommends that Imperial County add the following mitigation measure to a revised DSEIR:

Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program

Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.

Response 4a-13

The comment is noted. Mitigation Measure BIO-[C] as proposed by the commentor has been accepted and added to the Draft SEIR as Mitigation Measure 4.2-3. See Chapter 3, “Draft SEIR Errata,” Section 3.2.38. Incorporation of this measure further supports the Draft SEIR’s conclusion that biological resources impacts are mitigated to a less than significant level.

There are no drainages subject to the jurisdiction of the USACE (i.e., “waters of the United States”) within the project area. Specifically, on June 22, 2020, the Navigable Waters Protection Rule went into effect thereby redefining the definition of waters of the United States to exclude “ephemeral features” as waters of the United States. As such, “ephemeral features” were no longer regulated as waters of the United States under the Clean Water Act, meaning that a USACE permit would no longer be required to discharge fill material into “ephemeral features.”

USG filed a formal request with the USACE for an Approved Jurisdictional Determination (AJD) on November 10, 2020. On February 8, 2021, the USACE issued an AJD confirming that waters of the United

States are now absent from the project area. The AJD has been incorporated into the SEIR as Draft SEIR Appendix D-5 (see Chapter 3, “Draft SEIR Errata,” Sections 3.2.21, 3.2.33, 3.2.38, 3.2.42) and a copy of the AJD is attached to this Final SEIR as Appendix C, “Draft SEIR Appendices Errata.”

See Chapter 3, “Draft SEIR Errata,” Section 3.2.38. Impact 4.2-3 has been revised and a new mitigation measure, Mitigation Measure 4.2-3, has been added as follows:

Mitigation Measures: *Implement the following existing mitigation measures (see Section 4.2.4 for the full text of each measure):*

- 2008 EIR/EIS:
 - MM 3.5-1f (Agency Contacts for Impacts to Streambeds)
- 2019 SEIS:
 - MM 3.4-13 (Future Quarry Phasing Notification and Review)

Implement the following new mitigation measure:

Mitigation Measure 4.2-3: Lake and Streambed Alteration Program: Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under Section 1602 of the Fish and Game Code is not required for the project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code Section 1602 resources associated with the project.

Level of Significance After Mitigation: Less than significant.

Comment 4a-14

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB [sic] field survey form can be filled out and submitted online at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

Response 4a-14

According to Section III, “Methods,” of the 2019 Biological Resources Technical Report (BRTR) prepared by Aspen Environmental and provided as Appendix D-1 to the Draft SEIR, following plant and wildlife field surveys a CNDDDB form was completed for all occurrences separated by more than 0.25 miles.

Comment 4a-15

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

Response 4a-15

The comment is noted. The applicable fee will be paid at the appropriate time.

Comment 4a-16

CONCLUSIONS

CDFW appreciates the opportunity to comment on the DSEIR to assist Imperial County in identifying and mitigating Project impacts to biological resources. CDFW concludes that the DSEIR does not adequately identify or mitigate the Project’s significant, or potentially significant, impacts to biological resources. CDFW also concludes that the DSEIR lacks sufficient information for a meaningful review of impacts to biological resources, including a complete and accurate assessment of biological resources on the Project site. The CEQA Guidelines (§ 15088.5) indicate that recirculation is required when insufficient information in the DSEIR precludes a meaningful review. CDFW recommends that a revised DSEIR including a recent and complete assessment of impacts to biological resources (inclusive of recent data on Peninsular bighorn sheep), as well as lightning [sic] plans and design specifications, be recirculated for public comment. CDWF also recommends that revised and additional mitigation measures as described in this letter be added to a revised DSEIR to avoid or reduce significant impacts.

Response 4a-16

This comment summarizes previous comments from this letter. The reader is referred to Responses 4a-3 through 4a-14.

The Draft SEIR provides ample information to facilitate meaningful review of the potential environmental impacts of the project. Furthermore, CDFW has provided a thorough, substantial, and obviously meaningful 23-page review of the DSEIR, including numerous meaningful recommendations, based entirely on information provided by the DSEIR. Indeed, mitigation measures have been added and/or revised substantially as recommended by CDFW (See Responses 4a-6 through 4a-14).

Recirculation of a revised Draft SEIR is not required or warranted in this case. CEQA only requires recirculation of an EIR prior to certification when significant new information is added to the EIR after the Draft SEIR has been circulated for public review. Significant new information includes the identification of new significant impacts or a substantial increase in the severity of a previously identified significant impact. It could also include analysis of an alternative or mitigation measure considerably different from others previously analyzed. Recirculation is not required when new information added to the EIR merely clarifies or amplifies information already in the EIR or makes insignificant modifications to the EIR. (State CEQA Guidelines Section 15088.5(a) and (b)).

Comment 4a-17

ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

The comment is an attachment to Letter 4a and is provided in its entirety as Appendix E, “California Department of Fish and Wildlife Mitigation Monitoring and Reporting Program,” to this Final SEIR.

Response 4a-17

The commenter provides a mitigation monitoring and reporting program for the new and revised mitigation measures proposed by CDFW in Comment Letter 4a. The reader is referred to Responses 4a-3 through 4a-14 and Chapter 3, “Draft EIR Errata,” for the final version of each mitigation measure referenced in the comment. A complete Mitigation Monitoring and Reporting Program for the proposed project is provided as Appendix B to this Final SEIR and will be presented to the decisionmakers for review and approval prior to taking action on the proposed project.

Letter 4b: California Department of Fish and Wildlife; August 17, 2023

Aspen Environmental prepared a technical memorandum in response to CDFW’s communications with Imperial County recommending additional mitigation to address the proposed project’s potential impacts to PBS. This memorandum, provided as Appendix F “Aspen Memorandum: PBS Impacts and Mitigation,” to this Final SEIR, was used in the preparation of the following responses to comments.

Comment 4b-1

Please find attached updated maps showing Peninsular bighorn sheep (PBS) use in the Project area for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). Below are CDFW’s additional comments for the Imperial County for the

Project, including updated analysis based on data in the attached maps and recommendation on how to avoid and reduce significant impacts to PBS.

Response 4b-1

The comment is noted. See Response 4b-2 through 4b-6 on the following pages.

Comment 4b-2

Based on GPS data collected between 2015 and 2022, PBS do not use the active mining area in the north half of the quarry but do utilize the currently undisturbed habitat within the proposed mine expansion area to the south. While the gypsum formations within the southern quarry boundary do not appear to be used much by PBS, clusters of location data surrounding the margins of the formations indicate that these areas do meet PBS needs (PCEs) particularly during the lamb-rearing and summer seasons (refer to close-up maps by season). Clusters of PBS data surrounding the gypsum formations and within the wash below the formations are most notable during the summer months (June – August). The drainages wrap around the formations and provide ephemeral water sources, and in times of drought provide forage opportunities since plants grow more readily in drainages and washes compared to the steep, rocky slopes above the formations. The washes do not make up “core PBS habitat” based on radio-collar data; however, at certain times of the year, the washes and drainages provide critical resources for PBS and are therefore just as important to survival as more frequently used areas. Furthermore, in practice, the gypsum formations next to the washes provide shade, shelter, and escape terrain regardless that it does not meet the strict definition of “escape terrain” described in the SEIR. There are no permanent water sources within the Fish Creek Mountains (FCM), yet despite this fact, radio-collared data collected from 2015 through May 2022 had not shown any movement of FCM ewes out of the area. However, in July 2022, one radio-collared ewe did move into the Coyote Mountains (south of the FCM) for a few days before returning to the FCMs. Due to the lack of permanent water sources in the FCM, small drainages that can collect and store water even for short periods of time and sustain plant growth are vital.

Radio-collared ewes do utilize the project area during the lamb-rearing season, and it is important to emphasize that the points on the map do NOT represent ALL movement data of radio-collared ewes since GPS data are only collected a few times per day, and the data only represent a small portion of the total ewe population and thus far no representation of ram use. Because

there is radio-collared data within the project area during the lamb-rearing season, it is considered lamb-rearing habitat even if it doesn't meet the definition described in the USFWS Recovery Plan. A study conducted for CDFW by a graduate student (Kendall Hines), titled "Post-partum habitat use for Peninsular bighorn sheep (*Ovis canadensis nelsoni*) in Southern California, demonstrated that 3 of the 4 ewe groups studied moved closer to alluvial fan habitat during the post-partum period and that 2 of 4 ewe groups moved to lower elevation habitat. While the study was not conducted in the FCM, data indicate that ewes in the FCM also rely low elevation habitat near alluvial fans during the lambing season.

Response 4b-2

The comment summarizes GPS radio collar data collected by CDFW in the project area between 2015 and 2022 showing the range and seasonal movement patterns of the local PBS population. According to the commenter, the data indicate that PBS do not utilize the northern portion of the site that is actively mined but do utilize the undisturbed southern portion of the quarry proposed for mine expansion, particularly during lamb-rearing season (January through May) and the summer months (June through August). The washes and drainages in this area of the quarry provide ephemeral water sources and, in times of drought, forage opportunities. In addition, the adjacent gypsum formations provide shade, shelter, and escape terrain. Therefore, while the project site may not be considered "core PBS habitat" or "escape terrain" as described in the Draft SEIR (see Draft SEIR Section 4.2, "Biological Resources," pages 4.2-12 through -15 and pages 4.2-53 and -54), it is the opinion of CDFW that the proposed quarry expansion areas in the southern portion of the site do provide critical resources for PBS important to survival, particularly in the summer months and during times of drought.

While the data provided is more recent, it is substantially the same as that previously provided by CDFW and used to support preparation of the 2019 BRTR, 2019 SEIS, and this SEIR. The data is accepted and incorporated into this SEIR as part of the environmental setting.

Comment 4b-3

Mitigation Measure 3.4-12 states that "New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the Wildlife Agencies. Does the above paragraph mean that only "NEW" mining activities will not occur during the lambing season, but if new ground-disturbing activities were to start in December, that they could continue to work during the lambing season?"

Response 4b-3

To clarify the intent of Mitigation Measure 3.4-12, the requirement applies to disturbances in previously undisturbed areas (i.e., the establishment phase of quarry expansion areas).

Comment 4b-4

CDFW recommends that no mining activities occur in the southern section of the quarry boundary during the lambing season or minimally not to occur during the peak of lamb-rearing season (February - April).

Response 4b-4

Based on the new, more recent data provided by CDFW in Comment 4b-2, CDFW recommends that mining activities in the southern portion of the quarry (i.e., the quarry expansion areas) occur outside of peak lambing season. However, Draft SEIR Mitigation Measure 3.4-12 already addresses the potential for PBS disturbance during lambing season by prohibiting new ground-disturbing activities within designated critical habitat during the lambing season. The measure further requires a biological monitor to be on-site during any new ground-disturbances and for work to stop if PBS are observed within a 0.25-mile radius of the activity. In addition, if a PBS enters an active work area all heavy equipment operations must be halted until it leaves.

Conservation Measure 11 provided in the project's Biological Opinion issued by USFWS (see Draft SEIR Appendix D-3) provided further avoidance and minimization measures that were not included in the 2019 SEIS and were inadvertently left out of Draft SEIR Mitigation Measure 3.4-12 (PBS Avoidance and Minimization). These measures include minimizing blasting during the lambing season, reducing noise levels from mobile or stationary equipment and quarrying activities such as loading and unloading rock, and potentially providing a supplemental water source to ensure water availability to PBS during summer drought. These existing requirements have been added to Draft SEIR Mitigation Measure 3.4-12, consistent with Biological Opinion Conservation Measure 11. See Chapter 3, "Draft SEIR Errata," Section 3.2.32. Mitigation Measure 3.4-12 has been revised as follows:

Mitigation Measure 3.4-12: PBS Avoidance and Minimization. USG will implement the following measures throughout the life of the project.

- *New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the Wildlife Agencies.*
- *Blasting will be minimized during the lambing season (January 1 through June 30) within the Plaster City Quarry Phases 6Bp, 7Bp, 8, and 9 by building up a stockpile of material during the other months.*
- *The Designated Biologist or Biological Monitor will be on-site during any Quarry expansion activities or other new ground-disturbing activities and will walk the perimeter of the Quarry expansion area and view surrounding habitat with binoculars, stopping work if PBS are within a 0.25-mile radius of the activity.*

- *If a PBS enters an active work area, all heavy equipment operations will be halted until it leaves. Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify USFWS and BLM.*
- *Fencing installed anywhere within the Quarry area will be standard temporary construction fencing, silt fencing, or chain-link fence at least 7 feet tall. Any proposed permanent fencing design will be submitted for BLM and USFWS review and approval to confirm that the fence design is not likely to pose a threat to PBS.*
- *When mobile or stationary equipment at the quarry is replaced, upgraded, or relocated, any feasible opportunities to reduce noise levels will be implemented (e.g., quieter designs for new equipment will be used if feasible).*
- *Quarrying procedures such as loading and unloading rock will be modified wherever practicable to minimize noise (e.g., by unloading rock into the crusher bin while it is partially full).*

In consultation with BLM, CDFW, and USFWS, USG may construct and maintain a supplemental water source to ensure water availability to Peninsular bighorn sheep in the Fish Creek Mountains ewe group during summer drought. As shown in Chapter 3, “Draft SEIR Errata,” Section 3.2.28, the Draft SEIR has been revised to note that formal consultation with the USFWS under Section 7 of the FESA for PBS has been completed as required by Mitigation Measure 3.5-1d, and a Biological Opinion (BO) was issued for the project by USFWS (see Draft SEIR Appendix D-3). The USFWS concluded in its BO that project implementation, including the provisions of Mitigation Measure 3.4-12 described above, would not jeopardize the continued existence of PBS. This “no jeopardy” opinion was based on the USFWS’s conclusions that (1) PBS almost exclusively use the hillsides and slopes outside of the quarry and would thus be avoided by project activities; (2) that the presence of PBS in proximity to mine operations ongoing since 1921 indicate that the sheep acclimate to human presence and noise and the existing distribution of sheep around the quarry will be unaffected by quarry expansion; (3) project effects on PBS reproduction would be avoided or minimized by required mitigation; and (4) ample critical habitat is available to PBS in the surrounding mountains. These conclusions are supported by existing scientific literature which indicates that the Nelson’s bighorn sheep (a different population of the same species as PBS) will acclimate to mining activities.

Based on the above discussion, proposed mining activities are not expected to cause PBS to alter its local distribution. Given that the more recent data provided by CDFW is substantially the same as that previously provided, no evidence has been provided to challenge this conclusion and no new potential impacts have been identified that would require further mitigation beyond that already required for the project. Therefore, CDFW’s recommendation that mining activities be prohibited in the southern section of the project site during the lambing season has not been incorporated into the SEIR.

The Applicant will be required to continue coordination with CDFW after completion of the CEQA process to obtain necessary project permitting. Thus, while not required as a part of this SEIR to address any impact under CEQA, CDFW may still require this additional mitigation as a condition of any permits issued for the project.

Comment 4b-5

Regardless, the mining expansion will result in loss of habitat for the ewes in this area. The magnitude of this loss will not be known without the continuation of radio-collar monitoring activities. Mitigation measure 3.5-1d, requires USFWS to provide a Biological Opinion about “whether the proposed project is “likely or not likely to jeopardize” the continued existence of the species, or result in the adverse modification of critical habitat; (2) provide an incidental take statement that authorizes the project; and (3) identifies mandatory reasonable and prudent measures to minimize incidental take, along with terms and conditions that implement them”. However, in order to make this assessment, USFWS will rely on data collected by CDFW; and therefore, mitigation funds should be made available to CDFW for on-going radio-collaring activities and field monitoring studies within the FCM.

Radio-collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s are not being met due to the reasons listed above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG. However, we do not think a guzzler is currently warranted without first careful study and consideration since artificial water sources can often result in increased predation. So far we have had no documented cases of mountain lion predation in the FCM. Currently, there are 3 satellite-collars in the FCM that are scheduled to stop functioning before the end of the year. Once these collars stop functioning we will no longer be able to track the effects of future mining activity upon PBS. Therefore, CDFW recommends that funds be provided to CDFW for maintaining radio-collars on PBS over the life of the mining project. By August 24, 2023, CDFW will provide more specific recommendations on maintaining radio collars on PBS over the life of the mining project.

Response 4b-5

CDFW recommends that additional funding be provided by the applicant to continue radio collar monitoring to determine the effects of the proposed mining expansion. However, Draft SEIR Mitigation Measure 3.4-11 (see page 4.2-47) already requires the Applicant to fund radio collaring and monitoring of PBS over a 10-

year period to identify any potential divergence of local PBS behavior from previous studies of other populations around mines. Further, Mitigation Measure 3.4-13 (see Draft SEIR page 4.2-48) requires BLM, USFWS, and CDFW review of PBS monitoring data prior to new mining activities in the expansion areas nearest the highest PBS occurrences. As discussed in Response 4b-4, the commenter fails to identify a new potential impact that would require further mitigation beyond that already required for the project. Therefore, CDFW's recommendation that the Applicant fund radio collaring and monitoring of PBS for the life of the proposed quarry, rather than the ten years already required, has not been incorporated into the SEIR.

The Applicant will be required to continue coordination with CDFW after completion of the CEQA process to obtain necessary project permitting. Thus, while not required as a part of this SEIR to address any impact under CEQA, CDFW may still require this additional mitigation as a condition of any permits issued for the project. Mitigation Measure 3.4-11 has been revised to reflect the potential for further mitigation to be implemented as part of the regulatory permit process. See Chapter 3, "Draft SEIR Errata," Section 3.2.36 for the final version of this mitigation measure. Draft SEIR page 4.2-57, first paragraph was revised as follows:

Mitigation Measures: *Implement the following existing mitigation measures (see Section 4.2.4 for the full text of each measure):*

- 2008 EIR/EIS:
 - MM 3.5-1d (Peninsular Bighorn Sheep)
- 2019 SEIS:
 - MM 3.4-6 (Mining Activity Monitoring and Reporting)
 - MM 3.4-7 (Worker Education Awareness Program)
 - MM 3.4-8 (Wildlife Impact Avoidance and Minimization Measures)
 - ~~MM 3.4-11 (Peninsular Bighorn Sheep Monitoring and Reporting)~~
 - MM 3.4-12 (Peninsular Bighorn Sheep Avoidance and Minimization Measures)

Implement existing mitigation measure 3.4-11, as revised below:

Mitigation Measure 3.4-11: *PBS Monitoring and Reporting. USG will support the CDFW PBS monitoring and reporting program within the federal action area by funding the purchase of radio collars and the capture of ten (10) PBS in the Fish Creek and Vallecito Mountains Ewe Group areas, to provide location monitoring data over a ten-year period. The funding amount will be \$157,115 (cost provided by CDFW), to be transferred to the CDFW program via a means agreed up by USG, BLM, and CDFW.*

Implementation of this measure, combined with the other measures provided in this SEIR, will reduce impacts to PBS to a less than significant level; however, additional mitigation measures may be required through the regulatory permit process.

Comment 4b-6

CDFW is available for a meeting to discuss these comments and recommendations with Imperial County. Please let us know if you have any questions.

Response 4b-6

The comment is noted. The County provided CDFW with an additional opportunity to review and provide further comment on an administrative draft version of this Final SEIR. See Comment Letters 4d and 4e.

Letter 4c: California Department of Fish and Wildlife; August 24, 2023

Aspen Environmental prepared a technical memorandum in response to CDFW's communications with Imperial County recommending additional mitigation to address the proposed project's potential impacts to PBS. This memorandum, provided as Appendix F, "Aspen Memorandum: PBS Impacts and Mitigation," to this Final SEIR, was used in the preparation of the following responses to comments.

Comment 4c-1

Below are the California Department of Fish and Wildlife's (CDFW) additional comments and recommendations for the County of Imperial on the Draft Subsequent Environmental Impact Report for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). This email follows up on previous biological expertise provided to the County of Imperial by CDFW in a comment letter dated June 2, 2023 (attached) and an email (further below) dated August 17, 2023.

Response 4c-1

The comment is noted. See Comments 4c-2 through 4c-4 and Letters 4a and 4b.

Comment 4c-2

Peninsular bighorn sheep (PBS) from the Vallecito Mountains (VM) also utilize the Fish Creek Mountains (FCM) on a seasonal basis within the West Side of the FCM. See the attached map that shows the breakdown of use in the FCM by both the FCM ewe group and the VM ewe group. To maintain a representative sample of collars within the FCM and VM populations, CDFW recommends that funds be provided to CDFW for maintaining a combination of GPS and Very High Frequency (VHF) collars on ten (10) PBS in the FCM and ten (10) PBS in the VM for the life of the mining project. See the table below for estimated costs for the work over a 10-year period:

This estimate includes 3 helicopter surveys and 3 captures over a 10-year period. Captures are for both the VM and FCM and surveys for just the FCM.

	Cost/unit	No. of units	10-year Study Cost	Comments
3-day Helicopter capture in Fish Creke and Vallecito Mtns.	\$69,291.00	3	\$207,873	Three 3-day captures on years 1, 4, and 7
20 Satellite Collars/capture (3-day capture)	\$51,205	3	\$153,615	Satellite collar life estimated at 3 years
1-day helicopter survey in Fish Creek Mountains	\$40,791.00	3	\$122,373	3 surveys at years 2, 6, and 10
ES Capture planning & implementation @ 88 hours/capture	\$6,176.48	3	\$18,529	Includes capture plan, capture prep, and managing capture
ES Survey planning & implementation @ 20 hours/survey	\$1,403.75	3	\$4,211	Includes survey plan, survey prep, and managing survey
ES GIS mapping & Analysis @ 10 hours/month	\$701.87	120	\$84,225	No. of units: 12 months/year at 10 years
All costs total			\$590,826	
Collar, capture and surveys only total			\$483,861	

Additionally, regarding Mitigation Measure 3.4-11 (PBS Monitoring and Reporting), this measure is the same as found in the 2019 Draft Supplemental Environmental Impact Statement. However, the monitoring measure presented in the 2019 (and 2023) document is different from the monitoring proposal CDFW discussed and provided to the U.S. Fish and Wildlife Service and the Bureau of Land Management. CDFW recommends that this measure is revised to indicate that funding will be provided for the purchase of radio-collars and capture of ten (10) PBS in the Fish Creek Mountains and ten (10) PBS in the Vallecito Mountains, not ten total in both areas.

Response 4c-2

CDFW recommends revisions to Draft SEIR Mitigation Measure 3.4-11 to require the Applicant to fund capturing, radio-collaring, and monitoring of ten additional sheep for the duration of project activities.

See Response 4b-5 regarding the provision of PBS monitoring for the duration of project activities. This additional mitigation is not required to address any new impacts under CEQA and was not added to this SEIR.

See also Response 4b-4. The more recent PBS monitoring data and associated analysis provided by CDFW are substantially the same as that previously provided and used to support preparation of the 2019

BRTR, 2019 SEIS, and this SEIR. No new or substantially more severe impact related to PBS has been identified that would require further mitigation beyond that already required for the project. Therefore, CDFW's recommendation that the Applicant provide funding for the capture, radio collaring, and monitoring of an additional ten PBS (for a total of 20) has not been incorporated into the SEIR.

The Applicant will be required to continue coordination with CDFW after completion of the CEQA process to obtain necessary project permitting. Thus, while not required as a part of this SEIR to address any impact under CEQA, CDFW may still require this additional mitigation as a condition of any permits issued for the project. See Chapter 3, "Draft SEIR Errata," Section 3.2.36.

Comment 4c-3

Additionally, monitoring under 3.4-11 should be for the life of the project with evaluation of collar numbers, capture hours, and funding allocation made every 10 years.

Response 4c-3

See Responses 4b-4 and 4b-5. CDFW's recommendation that the Applicant fund radio collaring and monitoring of PBS for the life of the proposed quarry, rather than the ten years already required, has not been incorporated into the SEIR.

Comment 4c-4

Again, CDFW is available for a meeting with the County of Imperial to answer any questions regarding these comments and recommendations.

Response 4c-4

The comment is noted. The County provided CDFW with an additional opportunity to review and provide further comment on an administrative draft version of this Final SEIR. See Comment Letters 4d and 4e.

Letter 4d: California Department of Fish and Wildlife; August 31, 2023

Aspen Environmental prepared a technical memorandum in response to CDFW's communications with Imperial County recommending additional mitigation to address the proposed project's potential impacts to PBS. This memorandum, provided as Appendix F, "Aspen Memorandum: PBS Impacts and Mitigation," to this Final SEIR, was used in the preparation of the following responses to comments.

Comment 4d-1

Thank you for incorporating most of CDFW's comments and recommendations into the DSEIR for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). CDFW has the following additional comments and recommendations based on the proposed edits to mitigation measures in the DSEIR that were submitted to CDFW on August 25, 2023.

Response 4d-1

The comment indicates that the Applicant's proposed modifications (see Letter 5b) to mitigation measures proposed by CDFW (see Letter 4a) have been accepted with two exceptions as noted in Comments 4d-2 and 4d-3 below. See Responses 4d-2 and 4d-3.

Comment 4d-2

For Mitigation Measure 3.4-9: Burrowing Owl Avoidance If the preconstruction surveys confirm occupied burrowing owl habitat, CDFW recommends the County of Imperial and Project applicant coordinate with CDFW to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW prior to commencing Project activities. Appropriate avoidance, minimization, and mitigation measures should be determined on a case-by-case basis in coordination with CDFW and can vary depending on the circumstances such as location of burrow and distance from Project activities, type of project activities nearby, time of year, status of young, and other factors.

Response 4d-2

The commenter reiterates CDFW's previous comment regarding Mitigation Measure 3.4-9 (see Comment 4a-9). The commenter again recommends that the County and Applicant coordinate with CDFW to conduct an impact assessment and develop avoidance and minimization measures in the event preconstruction surveys confirm occupied burrowing owl habitat within the footprint of the proposed activities. The comment indicates that the CDFW rejects the Applicant's proposed modification to Mitigation Measure 3.4-9 related to conducting an impact assessment (see Comment 5b-2).

The County has determined that the final version of Mitigation Measure 3.4-9, as shown in Chapter 3, "Draft SEIR Errata," Section 3.2.37, provides greater clarity and stronger performance standards than that proposed by CDFW to better avoid and minimize potential impacts to individual Burrowing owls detected on the project site through pre-construction surveys. The final measure is consistent with the intent of both the CDFW's and the Applicant's comments and will adequately address the project's potential impacts to Burrowing owl.

Comment 4d-3

For Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures CDFW continues to recommend that Imperial County compensate at no less than 2:1 for permanent impacts to roosting habitat for special-status bat species. If the Project results in a permanent loss of roosting habitat for special-status bat species, this action is appropriately compensated through the perpetuity conservation of other roosting habitat for special-status bat species.

Response 4d-3

The commenter reiterates CDFW's previous comment regarding Mitigation Measure 3.4-8 (see Comment 4a-11) and again recommends that the County compensate for permanent impacts to roosting habitat for special-status bat species at a ratio of no less than 2:1. The comment indicates that CDFW rejects the Applicant's proposed modification to Mitigation Measure 3.4-8 (see Comment 5b-5).

As discussed further in Comment and Response 5b-5, the County has determined that the proposed compensation for permanent impacts to roosting habitat is not necessary, as there is abundant suitable habitat on public lands throughout the surrounding area.

See Chapter 3, "Draft SEIR Errata," Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Letter 4e: California Department of Fish and Wildlife; October 27, 2023

Aspen Environmental prepared a technical memorandum in response to CDFW's communications with Imperial County recommending additional mitigation to address the proposed project's potential impacts to PBS. This memorandum, provided as Appendix F, "Aspen Memorandum: PBS Impacts and Mitigation," to this Final SEIR, was used in the preparation of the following responses to comments.

Comment 4e-1

The California Department of Fish and Wildlife (CDFW) submitted comments and recommendations to the County of Imperial (County) on the draft Subsequent Environmental Impact Report (SEIR) for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH# 2001121133) in a letter dated June 2, 2023, and in emails submitted on August 17, 2023, and August 24, 2023. On October 20, 2023, CDFW received a copy of the Admin Final SEIR that included responses to CDFW comments and recommendations and revisions to the SEIR. Thank you for incorporating many of CDFW's recommendations into the SEIR and for providing CDFW the opportunity to provide additional comments, which are included below.

Response 4e-1

The comment is noted. CDFW's previous letter and emails are provided in this Final SEIR as Letters 4a through 4d.

Comment 4e-2

Funding to maintain collars on 20 Peninsular bighorn sheep (*Ovis canadensis*) over the lifetime of the Project Regarding CDFW's recommendation in its August 24, 2023, email that funds are provided to CDFW for maintaining a total of 20 GPS and Very High Frequency (VHF) collars on Peninsular bighorn sheep (PBS; Fully Protected Species) in the Fish Creek Mountains (FCM) and Vallecito Mountains (VM), the County did not incorporate this

recommendation into the SEIR indicating “the commenter fails to identify a new potential impact that would require further mitigation beyond that already required for the project.” The Project’s potential impacts to PBS are discussed in CDFW’s August 17, 2023, email, where it was indicated that “the mining expansion will result in loss of habitat for the ewes in this area. The magnitude of this loss will not be known without the continuation of radio-collar monitoring activities. [...] Radio-collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s [(Primary Constituent Elements)] are not being met due to the reasons listed above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG.” In its August 24, 2023, email, CDFW indicates that a total of 20 collars are needed to “maintain a representative sample of collars with the FCM and VM populations.”

CDFW also recommended in its email dated August 24, 2023, that funding is provided for monitoring of PBS over the lifetime of the Project. The County did not incorporate this recommendation stating that “the commenter fails to identify a new potential impact that would require further mitigation beyond that already required for the project.” As CDFW has discussed in its comments and recommendations, the Project’s potential impacts to PBS are protracted over the 80-year timeframe of mining expansion activities, and PBS monitoring using collars over the life of the mining project is necessary to determine the extent of these potential impacts and inform appropriate avoidance, minimization, and mitigation measures. In its August 17, 2023, email, CDFW describes PBS use of the currently undisturbed habitat within the proposed mine expansion area in the southern portion of the Project area and discusses why these areas are important for PBS and their life-cycle needs. CDFW further states that “radio collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s are not being met due to the reasons listed

above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG. [...] Currently, there are 3 satellite-collars in the FCM that are scheduled to stop functioning before the end of the year. Once these collars stop functioning we will no longer be able to track the effects of future mining activity upon PBS.” CDFW reiterates that PBS is a Fully Protected species that may not be taken or possessed at any time, and the County is required to demonstrate that the Project is avoiding the take of PBS over its 80-year timeframe. CDFW recommends that the County and Project proponent assess the Project’s long-term potential impacts to PBS through maintaining a total of 20 GPS and VHF collars on FCM and VM populations over the lifetime of the Project.

To avoid or reduce impacts to below a level of significance, CDFW recommends that the County revise Mitigation Measure 3.4-11 of the Draft SEIR with the following additions in **bold** and removals in ~~strikethrough~~:

Mitigation Measure 3.4-11: PBS Monitoring and Reporting. USG will support the CDFW PBS monitoring and reporting program within the federal action area by **providing** funding to maintain ~~the purchase of a combination of~~ radio **and VHF** collars ~~and the capture of on~~ ten (10) PBS in the Fish Creek **and ten (10) PBS in the** Vallecito Mountains Ewe Group areas, ~~to provide location monitoring data over for the life of the mining Project a ten year period.~~ The funding amount will be \$157,115 (cost provided by CDFW), to be transferred to the CDFW program via a means agreed up by USG, BLM, and CDFW. **Evaluation of collar numbers, capture hours, and funding allocation shall be made every 10 years throughout the life of the Project in coordination with CDFW.**

Response 4e-2

See Responses 4b-4, 4b-5, 4c-2, and 4c-3. CDFW’s recommended mitigation requiring funding for a total of 20 PBS radio collars and associated monitoring for the life of the proposed project has not been incorporated into the project as part of this Final SEIR. However, Mitigation Measure 3.4-11 has been revised to acknowledge that additional mitigation may be required for the project as part of the regulatory permit process. Mitigation Measure 3.4-11 represents the minimum mitigation required to reduce impacts to PBS under CEQA to a level that is less than significant and additional mitigation is not required as part of this SEIR. See Chapter 3, “Draft SEIR Errata,” Section 3.2.36 for the final version of Mitigation Measure 3.4-11.

Comment 4e-3

Pursuant to the CEQA Guidelines, section 15097(f), CDFW has prepared a draft mitigation monitoring and reporting program (MMRP)

for revised Mitigation Measures 3.4-11 and Mitigation Measure BIO-[B].

Response 4e-3

The commenter provides a mitigation monitoring and reporting program for the new and revised mitigation measures proposed by CDFW in Comment Letter 4e. The reader is referred to Responses 4e-2 and 4e-4 and Chapter 3, “Draft SEIR Errata,” for the final version of each mitigation measure referenced in the comment. A complete Mitigation Monitoring and Reporting Program for the proposed project is provided as Appendix B, “Mitigation Monitoring and Reporting Program,” to this Final SEIR and will be presented to the decisionmakers for review and approval prior to taking action on the proposed project.

Comment 4e-4

Compensatory mitigation for impacts to roosting habitat for special-status bats

In its June 2, 2023, letter, CDFW recommends that the County add a new Mitigation Measure BIO-[B] for Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats. CDFW appreciates that the County adopted a modified version of Mitigation Measure BIO-[B]. However, the modified version of the measure excludes the sentence “Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.” In its response submitted to CDFW on October 20, 2023, the County stated that “proposed compensation is not necessary, as there is abundant suitable habitat on public lands throughout the surrounding area.” In Comment 5b-5, the County further indicates that the “potential loss of rock crevices on the site would not significantly affect roost site availability in the Fish Creek Mountains or the surrounding region. The Project site is adjacent to the Fish Creek Mountains Wilderness managed by the BLM, comprising more than 21,000 acres, and Anza Borrego Desert State Park, comprising more than 600,000 acres. [...] Both the Fish Creek Wilderness and Anza Borrego Desert State Park permanently protect extensive areas of rugged desert mountain landscapes where rock crevices suitable for bat roosting are abundant. Roosting crevice availability does not appear to limit local special status bat populations.”

CDFW notes that the presence of surrounding protected areas that may include roosting habitat for special-status bat species does not compensate for the Project’s potential permanent impacts to roosting habitat for special-status bat species. The EIR must identify potentially feasible mitigation measures that avoid or reduce each significant impact. CDFW has identified potentially feasible mitigation measures to substantially lessen the significant impact (CEQA Guidelines §§ 15086, subd. (d), 15204,

subd. (f)). CDFW believes that if roosting habitat for special-status bat species is permanently impacted by the Project, the appropriate potentially feasible mitigation measure to substantially lessen the significant impact is the in-perpetuity conservation of roosting habitat suitable for the special-status bat species that were negatively impacted. CDFW recommends that the Mitigation Measure BIO-[B] included in the County's October 20, 2023, response is further revised to include the following addition in **bold**:

Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats:

Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:

- For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.

- For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. **Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.**

Response 4e-4

See Responses 4a-11 and 4d-3. CDFW's recommended compensatory mitigation for permanent impacts to special-status bat roosting habitat has not been incorporated into the project as part of this Final SEIR. However, Mitigation Measure 3.4-8 has been revised to acknowledge that additional mitigation may be required for the project as part of the regulatory permit process. Mitigation Measure 3.4-8 represents the minimum mitigation required to reduce impacts to special-status bat habitat under CEQA to a level that is less than significant and additional mitigation is not required as part of this SEIR. See Chapter 3, "Draft SEIR Errata," Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Comment 4e-5

CDFW appreciates the opportunity to comment on the DSEIR to assist Imperial County in identifying and mitigating Project impacts to biological resources. CDFW concludes that the draft SEIR does not adequately mitigate the Project's significant, or potentially significant, impacts to biological resources. To avoid or reduce impacts to below a level of significance, CDFW recommends that revised mitigation measures as described in this letter be added to a revised draft SEIR.

CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts. Questions regarding this letter or further coordination should be directed to Jacob Skaggs, Senior Environmental Scientist (Specialist), at jacob.skaggs@wildlife.ca.gov.

Response 4e-5

See Responses 4e-2, 4e-3, and 4e-4.

Comment 4e-6

ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

The comment is an attachment to Letter 4e and is provided in its entirety as Appendix I, "California Department of Fish and Wildlife Mitigation Monitoring and Reporting Program," to this Final SEIR.

Response 4e-6

See Response 4e-3.

4.4 ORGANIZATIONS

Letter 5a: US Gypsum; June 2, 2023

Comment 5a-1

United States Gypsum Company ("USG") respectfully submits the following comments on the above-referenced Draft Subsequent Environmental Impact Report ("DSEIR").

I. Project Description and Scope of the DSEIR

The project that is the subject of the DSEIR (the "Project") includes the following:

- The development of a new production well (Well No. 3) and associated pipeline to provide water to USG's Plaster City Quarry ("Quarry"); and
- Restoration of the Viking Ranch site, and preservation of the Old Kane Spring Road site, as described in the Habitat Mitigation and Monitoring Plan that was developed in connection with the 2019 Supplemental Environmental Impact Statement (the "2019 SEIS").

Response 5a-1

The comment is noted.

Comment 5a-2

In addition, the DSEIR states that it "evaluates" the potential environmental impacts associated with mining and reclamation activities associated with the Quarry expansion ("Quarry Activities"). It should be made clear, however, that these impacts were previously evaluated in the EIR/EIS that was certified by the Imperial County Board of Supervisors (the "Board") in 2008 for the USG Expansion/Modernization Project (the "2008 EIR") and in the 2019 SEIS, and that no significant changes have been proposed relative to the Quarry Activities as described in those documents. Consequently, with respect to the Quarry Activities, the primary focus and intent of the DSEIR is to (1) update the 2008 EIR by incorporating the information and mitigation measures that were developed as part of the 2019 SEIS, and (2) to evaluate whether there have been any changes in the circumstances surrounding the Quarry Activities, or any new information concerning the Quarry Activities, that raise any new or substantially more severe impacts on the environment as compared to the analysis contained in the 2008 EIR.

Response 5a-2

The comment is noted.

Comment 5a-3

II. Project Alternatives

The DSEIR identifies and evaluates five alternatives to the Project. With the exception of the "no project" alternative (Alternative 1), each of these alternatives (Alternatives 2 through 5) involve reductions in the "footprint" of mining activities at the Quarry. The DSEIR concludes that Alternative 5, which represents the greatest overall reduction in the footprint of mining activities, is the "environmentally superior alternative." (DSEIR, p. 6-29.)

Response 5a-3

The comment is noted.

Comment 5a-4

Discussion of Alternatives 2 through 5 (the "Quarry Alternatives") in the DSEIR was arguably unnecessary because (1) the impacts associated with proposed Quarry Activities were previously evaluated in the 2008 EIR and were determined by the

County to be mitigated to a level of insignificance,³ and (2) the DSEIR does not identify any new or substantially more severe impacts associated with Quarry Activities due to any changed circumstances or new information.

Response 5a-4

CEQA Guidelines Section 15126.6(c) states, “the DSEIR must evaluate a range of reasonable alternatives to the project...which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” This section further states that, “there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.”

The Draft SEIR (see Section 6.3.2, “Significant and Unavoidable Impacts of the Proposed Project”) determined that no new or more severe significant and unavoidable impacts would occur with project implementation. As shown in Draft SEIR Table ES-1, each of the project’s identified impacts, including those associated with quarry activities and the other proposed project components, would be mitigated below a level of significance. In the absence of significant effects to be avoided or substantially lessened, the County considered numerous potential alternatives which would meet most of the project’s stated objectives and could further lessen the project’s impacts determined to be potentially significant but mitigable to a less than significant level.

Consistent with CEQA Guidelines Section 15126.6(c), the Draft SEIR provides a description of the County’s process of selecting a reasonable range of alternatives to the proposed project including a discussion of those alternatives that were considered by the County but were ultimately rejected as infeasible. This process included consideration of numerous alternatives including alternative locations for the off-site mitigation sites. However, these were all deemed infeasible and were not further evaluated in the Draft SEIR. The Draft SEIR provides a “range of reasonable alternatives” consistent with CEQA Guidelines requirements.

Comment 5a-5

In any event, the Quarry Alternatives discussed in the DSEIR must be considered in context and must be evaluated in relation to the objectives of the Project, as discussed below.

A. Source and Previous Consideration of Quarry Alternatives

The Quarry Alternatives presented in the DSEIR were derived from, and are identical to, alternatives that were evaluated in the 2019 SEIS prepared by the United States Bureau of Land Management (“BLM”). At the time the 2019 SEIS was prepared, USG had been working with the United States Army Corps of Engineers (“USACE”) on an application for a Section 404 Individual Permit to address impacts to waters of the United States associated

³ See Findings of Fact and Statement of Overriding Considerations for the United States Gypsum Companies Expansion/Modernization Project adopted by the Board in 2008.

with the Quarry expansion. The alternatives presented in the 2019 SEIS included a range of alternatives that were developed in coordination with USACE to evaluate potential modifications to Quarry operations to reduce impacts to waters of the United States as required by the Section 404(b)(1) Guidelines (40 CFR 230 et seq.).

The Section 404(b)(1) Guidelines suggest a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines then require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 CFR Part 230.10(d)).

Under the Section 404(b)(1) Guidelines (40 CFR 230 et seq.), an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge can be authorized. The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into waters of the United States if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 CFR Part 230(a)). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of the overall project purpose (40 CFR Part 230(a)(2)). The thrust of the Guidelines is that the proposed project achieves the overall project purpose while avoiding impacts to the aquatic environment to the maximum extent practicable.

From 2018 through 2019, USG worked collaboratively with the USACE in the preparation of an alternatives analysis in which a reasonable range of on-site and off-site alternatives were identified, and a list of criteria was developed to screen each alternative for practicability. On-site project alternatives were screened for practicability based on achieving the overall project purpose, logistics, and environmental criteria. The logistics criteria consisted of the evaluation of a balanced, multifaceted mining approach and exposure of mining personnel to human health and safety risks due to the creation of geological hazards such as catastrophic flooding. The on-site alternatives that were selected and ultimately evaluated in the 2019 SEIS

(i.e., the Quarry Alternatives) considered various mining footprint reconfigurations in an attempt to minimize impacts to waters of the United States in addition to exploring additional mining methods that would minimize surface area disturbances.

The overall Project purpose, which was determined by defining the basic Project purpose in a manner that more specifically describes USG's goals for the Project, served as the basis for the USACE's Section 404(b)(1) alternatives analysis. USACE, USG, and the United States Environmental Protection Agency (EPA) coordinated extensively in the development of an overall project purpose that met the needs of USG while adhering to the guidance prescribed by the EPA.

The overall Project purpose as agreed to by all parties on June 13, 2018, is:

To maintain a reliable supply of gypsum ore to existing processing facilities in order to produce gypsum-related agricultural products and residential and commercial building products including, but not limited to, wallboard, cement, industrial and building plasters, stucco, soil amendments and conditioners, and gypsum byproducts, at levels consistent with current and projected demand in the southwestern United States.

In light of this overall Project purpose, a preliminary practicability determination was developed in consultation with USACE staff. That determination, which is summarized in Exhibit 1 and incorporated herein by this reference, concluded that USG's proposed Project was the least environmentally damaging practicable alternative.

On June 22, 2020, the Navigable Waters Protection Rule went into effect thereby redefining the definition of waters of the United States to exclude "ephemeral features" as waters of the United States. Consequently, upon confirmation that waters of the United States were now absent from the Project area, USG withdrew its application for a Section 404 Individual Permit. However, in its Record of Decision issued in January 2020 ("ROD"), the BLM selected the Project over the Quarry Alternatives based on information contained in the 2019 SEIS and other factors, including "BLM's purpose and need, the highest and best use of public lands, public comments and stakeholder interests, economic and technical information, and applicable law and policy." (ROD, p. 6.)

Response 5a-5

The comment is noted.

Comment 5a-6

B. The Quarry Alternatives Would Not Achieve Any Project Objectives and Need Not Be Further Considered

The DSEIR identifies the following objectives for the Project:

- 1) Secure permits and approvals to continue and fully develop quarrying gypsum reserves;
- 2) Maximize the recovery of known gypsum reserves needed for the Plant to fulfill its estimated operational design life;
- 3) Meet market demands for gypsum products;
- 4) Develop and maintain a replacement Quarry water supply designed to meet dust suppression requirements;
- 5) Concurrently reclaim Quarry site for post-mining uses as Open Space;
- 6) Secure permits and approvals to develop a water source to support the mining of gypsum reserves at the Quarry; and
- 7) Provide compensatory mitigation for potential impacts to waters of the state as a result of project implementation in compliance with State of California Fish & Game Code Section 1600 and the Porter Cologne Act. (DSEIR, p. 2-11.)

The Quarry Alternatives are not relevant to Project objective numbers 4 through 7.

Response 5a-6

The commenter states that the project alternatives evaluated in the Draft SEIR would not achieve any of the project objectives and further states that the selected project alternatives are not relevant to Project Objectives 4 through 7. CEQA Guidelines Section 15126.6(a) states that “[a]n EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project.” Each of the project alternatives evaluated in the Draft SEIR (see Draft SEIR Chapter 6, “Alternatives”) would include development of Well No. 3 and the associated pipeline as well as restoration/preservation of the off-site mitigation sites identical to the proposed project. Therefore, each of the selected alternatives would achieve Objectives 4 through 7, which represents a majority of the project objectives.

The selected project alternatives would not achieve Objective 2 and would not fully achieve Objectives 1 and 3 as they would each limit full development of the gypsum deposit in order to avoid disturbance of the onsite aquatic resources. However, per CEQA Guidelines Section 15126.6(b), the alternatives discussion should focus on avoiding or lessening identified impacts "...even if these alternatives would impede to some degree the attainment of the project objectives..."

Comment 5a-7

Moreover, none of the Quarry Alternatives would achieve Project objective numbers 1, 2 or 3. Specifically, none of the Quarry Alternatives would "fully develop" quarrying gypsum reserves, "maximize" the recovery of known gypsum reserves needed for the Plant to fulfill its estimated operational design life, or "meet market demands" for gypsum products.

According to the Imperial County General Plan, the Fish Creek Mountains gypsum deposit associated with the Quarry constitutes the largest reserves of this mineral in California and represents a significant source of gypsum in the region and on the west coast (Sharpe and Cork 1995). More than 31.2 million tons of gypsum has been extracted from this deposit; of that, 30.1 million tons have been extracted by USG since 1945 (Resource Design Technology Inc. 2006). Since 1984, an average of one million tons of gypsum is produced by USG's Plaster City Plant (the "Plant") each year. This is the sole active gypsum quarry in the County, and the largest gypsum quarry in the United States. The Quarry accounts for 52 percent of statewide gypsum production, and the expected life of the remaining deposit exceeds 80 years under the proposed mining plan (Resource Design Technology Inc. 2006).

Gypsum demand depends principally on the strength of the construction industry, particularly in the United States, where the majority of gypsum consumed is used for building plasters, the manufacture of Portland cement, and wallboard products (USGS 2018). Gypsum can also be mined and milled to produce plastic fillers and fire retardants that require high-purity gypsum and calcium sulfate. Expanding technology has developed applications for gypsum in plastics, paper, paint, coatings, rubber, and adhesives, as well as pharmaceuticals, food, and other uses. USG's gypsum at the Quarry offers improved performance as it is exceptionally pure, and the deposit contains high brightness/whiteness rock with strong chemical stability. High-purity gypsum is especially important in applications supporting the Portland cement industry where impurities can have an adverse effect on cement hydration and overall material strength. High-purity gypsum is also required in agricultural

applications where water-soluble products such as USG's Ben Franklin® Brand Aquacal™ Gypsum require extremely high-purity material to provide an ultrafine natural source of calcium and sulfur that helps promote plant growth in crops, lawns, and gardens in an environmentally safe and non-toxic manner.

Historically, USG has met industry demands by increasing gypsum rock recovery and production during times of economic growth. Population growth in the southwestern United States is anticipated to continue at a rapid rate in the first part of the 21st century. New housing must be constructed, and existing older housing stock must be rehabilitated, to meet projected needs. Over a 50-year period beginning after the Second World War, California added approximately 500,000 housing units each year. As the southwest region of the United States continues to grow, that growth requires the development of additional housing and support services in the form of new commercial, office, and industrial development. This development is anticipated to require additional building materials at an increasing rate. USG has studied these growth trends and has anticipated a need to increase production at its Quarry and associated Plant to supply the projected demand for wallboard and related products and to continue providing gypsum to the agriculture industry and cement manufacturers.

Located in western Imperial County, the Quarry and Plant are optimally situated to mine and process this important mineral and supply California and the southwestern region of the United States with its products, mainly wallboard products and cement rock. All other west coast gypsum production plants rely on less pure, waterborne rock shipments from Mexico. The Quarry is located close to major interstate and intrastate highways, which makes it suitable for consumers who choose to purchase raw gypsum directly from the Quarry. Access to the Quarry is via State Route 78 from both San Diego and Imperial counties. The site is also accessible to Southern California and Arizona via State Route 86 to Interstate 10 and Interstate 8. The Plant, located 26 miles southeast of the Quarry, is also located less than 15 miles from the United States/Mexico border and the northern Baja Mexico metropolitan area accessible via highway and railroad.

Each of the Quarry Alternatives would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands, and therefore fail to meet the overall purpose of the Project. For this reason, and

based on the rationale contained in Exhibit 1, the Quarry Alternatives need not be further considered in the Final Subsequent Environmental Impact Report for the Project ("FSEIR") and should be rejected by the County and responsible agencies because they fail to achieve any of the stated objectives of the Project.

Response 5a-7

See Response 5a-6. The selected project alternatives would achieve a majority of the project's stated objectives (Objectives 4 through 7). The alternatives would also be partially consistent with Objectives 1 through 3 as they would each allow for continued recovery of gypsum from the quarry. While the project would impede achievement of these alternatives to a degree, they were developed to reduce impacts to aquatic resources within the quarry and are consistent with CEQA Guidelines Section 15126.6(b).

Comment 5a-8

III. There Are No "Waters of the United States" Within the Project Area

The DSEIR is replete with reference to "waters of the United States" within the Project area. However, as noted above, on June 22, 2020, the Navigable Waters Protection Rule went into effect thereby redefining the definition of waters of the United States to exclude "ephemeral features" as waters of the United States. As such, "ephemeral features" were no longer regulated as waters of the United States under the Clean Water Act, meaning that a USACE permit would no longer be required to discharge fill material into "ephemeral features."⁴

USG filed a formal request with the USACE for an Approved Jurisdictional Determination on November 10, 2020. On February 8, 2021, the USACE issued an Approved Jurisdictional Determination ("AJD") confirming that waters of the United States were now absent from the Project area. A copy of the AJD is attached hereto as Exhibit 2.

In light of the AJD, the FSEIR should correct the many references to "waters of the United States" and related permitting requirements (e.g., Section 404 permit) in the DSEIR, as needed. Some (but not necessarily all) of these references, along with our suggested edits, are included in the Table of Errata attached hereto as Exhibit 4.

⁴ See also *Sackett v. Environmental Protection Agency*, 598 U.S. (No. 21-454, decided May 25, 2023) (To establish jurisdiction under the Clean Water Act, it must be shown that a wetland has "a continuous surface connection with" a relatively permanent body of water connected to traditional interstate navigable waters).

Response 5a-8

This comment has been addressed throughout the Final SEIR. The reader is referred to Chapter 3, "Draft SEIR Errata," for each occurrence and associated text revision.

Comment 5a-9

IV. Mitigation Measures

The DSEIR identifies three categories of mitigation measures, including:

- Mitigation measures from the 2008 EIR;
- Mitigation measures from the 2019 SEIS, which have been incorporated into the DSEIR; and
- Newly proposed mitigation measures, which generally apply to the proposed quarry well and associated pipeline and/or the restoration/preservation of the Viking Ranch and the Old Kane Spring Road sites.

USG is fully committed to, and is bonded for, compliance with all of the measures identified in the 2008 EIR and the 2019 SEIS and has either complied with or is in the process of complying with each of these measures at this time.

USG's comments on specific mitigation measures are set forth below. Where revisions to mitigation measures have been proposed, we request that the revisions be made to the mitigation measures wherever they appear throughout the document.

Response 5a-9

The reader is referred to Responses 5a-10 through 5a-17 on the following pages.

Comment 5a-10

A. Mitigation Measures 4.1-1a and 4.1-1b

These newly proposed mitigation measures were identified in the DSEIR for the specific purpose of addressing the potential impacts on air quality (Impact 4-1-2) as a result of activities associated with the Viking Ranch restoration. (See DSEIR, pp. 4.1-23 through 4.1-25.) However, by their terms, the mitigation measures would apply "throughout project construction activities . . .," which could be interpreted to mean that these measures also apply to Quarry Activities and other components of the overall Project. Consequently, these measures should be revised to

clarify that they are intended to apply only to the Viking Ranch restoration. Specifically, for both measures, the phrase "throughout project construction activities" should be changed to "throughout construction activities associated with Viking Ranch restoration."

Response 5a-10

See Chapter 3, "Draft SEIR Errata," Section 3.2.19. Draft SEIR page 4.1-24, Mitigation Measure 4.1-1a, has been revised as follows:

Mitigation Measure 4.1-1a: *The following standard mitigation measures for fugitive PM₁₀ control shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:*

- a. *All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.*
- b. *All on site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.*
- c. *All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.*
- d. *The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.*
- e. *All track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.*
- f. *Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at point of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.*
- g. *The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.*

See Chapter 3, "Draft SEIR Errata," Section 3.2.19. Draft SEIR page 4.1-24, Mitigation Measure 4.1-1a, has been revised as follows:

Mitigation Measure 4.1-1b: *The following standard mitigation measures for construction combustion equipment shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:*

- a. *Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.*
- b. *Minimize idling time either by shuttling equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.*
- c. *Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.*
- d. *Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).*

Comment 5a-11

B. Mitigation Measure 3.5-1f

Mitigation measure 3.5-1f, which is from the 2008 EIR, is intended to address potential impacts on State or Federally Protected Wetlands (Impact 4.2-3). This measure requires that USG contact the California Department of Fish and Wildlife ("CDFW") and the USACE to determine whether either agency holds jurisdiction over the Quarry wash.

In accordance with mitigation measure 3.5-1f, USG contacted the USACE in 2020. As noted above, the USACE responded on February 8, 2021, by issuing the AJD, which confirmed that no waters of the United States are present within the Project area. Therefore, while coordination with CDFW is still required, no additional coordination with USACE is necessary. Accordingly, mitigation measure 3.5-1f should be revised as follows:

Mitigation Measure 3.5-1f: *Agency contacts for impacts to streambeds: Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the ~~CDFG and the US Army Corps of Engineers~~ California Department of Fish and Wildlife (CDFW) to determine whether ~~either—agency~~ CDFW holds jurisdiction over the wash through ~~Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act,~~ respectively.*

Response 5a-11

See Chapter 3, "Draft SEIR Errata," Section 3.2.30. Draft SEIR page 4.2-44, first paragraph, has been revised as follows:

Mitigation Measure 3.5-1f: *Agency contacts for impacts to streambeds: Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the ~~CDFG and the US Army Corps of Engineers~~ California Department of Fish and Wildlife (CDFW) to determine whether ~~either agency~~ CDFW holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act, respectively.*

Comment 5a-12

C. Mitigation Measure 3.5-1d

Mitigation measure 3.5-1d, which is from the 2008 EIR, is intended to address potential effects on Peninsular bighorn sheep. USG has already complied with this measure by consulting with the USFWS under Section 7 of the Federal Endangered Species Act and successfully obtaining a Biological Opinion from the USFWS.

For clarity, the FSEIR should acknowledge that this measure has been implemented and that "re-initiation" of Section 7 consultation is not required for any component of the Project.

Response 5a-12

See Chapter 3, "Draft SEIR Errata," Section 3.2.17. Draft SEIR page 3-9, first paragraph, has been revised as follows:

3.5 MITIGATION MEASURES

In most cases, implementation of recommended mitigation measures would either result in complete avoidance of impacts or reduce impacts to less than significant. However, impacts that cannot be reduced to a less-than-significant level after application of feasible mitigation measures and alternatives are considered significant and unavoidable. As a condition of project approval, the applicant for the proposed project would be required to implement all the feasible mitigation measures identified in this EIR and adopted by the County.

In accordance with PRC Section 21081.6(a), the County would adopt a mitigation monitoring and reporting program (MMRP) at the time it certifies the EIR. The purpose of the MMRP is to ensure that the applicant will comply with the adopted mitigation measures when the project is implemented. The MMRP would identify each of the mitigation measures and describe the party responsible for monitoring, the time frame for implementation, and the program for monitoring compliance. The proposed project was originally approved in 2008 and has been partially implemented. As such, some of the mitigation measures contained in the 2008 EIR/EIS and identified in this Draft SEIR as existing mitigation measures, have already been fully implemented and need not be implemented again. The current status of each mitigation measure will be clearly denoted in the MMRP.

Comment 5a-13

D. Mitigation Measure 4.4-1

Mitigation measure 4.4-1 is a newly proposed mitigation measure that is intended to address the potential impacts of the proposed well, well pipeline, and Viking Ranch restoration on paleontological resources (Impact 4.4-1). The measure requires that pedestrian field surveys be conducted and to locate any surficial fossil localities and verify the underlying geologic units, and requires that a Paleontological Resources Monitoring and Mitigation Plan ("PRMMP") be prepared and implemented for any areas where "potential resources cannot be avoided by proposed construction activities."

We request that this measure be revised to make it clear that a PRMMP is required only for resources that are (1) identified in the field survey, and (2) cannot be avoided by proposed construction activities. Furthermore, since this measure will apply to areas that are not subject to BLM jurisdiction (i.e., the mitigation sites), the references to BLM are inapposite and unnecessary. More specifically, we propose the following revisions:

Mitigation Measure 4.4-1: Preconstruction pedestrian field surveys shall be conducted throughout the proposed areas of disturbance for the Well No. 3 site, the final pipeline alignment, and the Viking Ranch site to locate any surficial fossil localities and verify the underlying geologic units. For any areas where potential resources are identified in a preconstruction field survey and cannot be avoided by proposed construction activities, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared and implemented by a ~~BLM permitted~~ qualified paleontologist and approved by ~~the BLM and Imperial County~~.

Response 5a-13

See Chapter 3, "Draft SEIR Errata," Section 3.2.40. Draft SEIR page 4.4-13, Mitigation Measure 4.4-1, has been revised as follows:

Mitigation Measure 4.4-1: Pre-construction pedestrian field surveys shall be conducted throughout the proposed areas of disturbance for the Well No. 3 site, the final pipeline alignment, and the Viking Ranch site to locate any surficial fossil localities and verify the underlying geologic units. For any areas where potential resources are identified in a preconstruction field survey and

cannot be avoided by proposed construction activities, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared and implemented by a ~~BLM-permitted-qualified~~ paleontologist and approved by ~~the BLM and Imperial County~~.

Comment 5a-14

E. Mitigation Measure 4.6-1

Mitigation measure 4.6-1 is intended to address the potential impacts on hydrology and water quality (Impact 4.6-3). The DSEIR identifies mitigation measure 4.6-1 as a "newly proposed" mitigation measure. (See DSEIR, pp. ES-27 and 4.6-28.) However, this mitigation measure was identified in the 2019 EIS and compliance with this measure has already been achieved. Revisions to the DSEIR should be made in the FSEIR as needed to clarify the source and purpose of mitigation measure 4.6-1.

Response 5a-14

The 2019 SEIS describes the proposed construction of a berm along the westerly side of the quarry based on the recommendations of the 2004 Hydrology Study (Bonadiman & Associates, Inc.). Draft SEIR Mitigation Measure 4.6-1 requires this design to be updated to be consistent with the further recommendations of the updated 2018 Hydrology Study (Dudek) including armoring of the westerly bank with rock riprap. According to the project applicant, the proposed berm has already been constructed, consistent with both the 2004 Bonadiman study and the 2018 Dudek study and Mitigation Measure 4.6-1 need not be implemented again. Therefore, Mitigation Measure 4.6-1 is unnecessary and has been removed from the Draft SEIR.

See Chapter 3, "Draft SEIR Errata," Section 3.2.44. Draft SEIR page 4.6-27, fourth full paragraph, has been revised as follows:

To address the identified deficiencies in the existing berm design, Dudek (2018) recommended modifications including, at a minimum, a 50-foot-wide conveyance channel on the western side of the berm. To assist with the conveyance of surface flows around the berm, Dudek further recommended that the berm design include armoring of the westerly bank of the berm with rock riprap to decrease the likelihood and severity of erosion damage to the berm for flows generated by a 25-year design storm. The 25-year storm was selected because the berm is not intended to protect life, property, or civil improvements. In a larger storm event, it would be expected that the riprap armoring would fail, and the berm would suffer significant damage or failure. These recommendations ~~would be~~ have been incorporated into the final berm design ~~by a qualified Civil Engineer and the berm has since been constructed~~ as required by ~~the 2019EIS Mitigation Measure 4.6-1 below~~.

See Chapter 3, "Draft SEIR Errata," Section 3.2.44. Draft SEIR page 4.6-28 and Mitigation Measure 4.6-1 have been revised as follows:

In conclusion, the overall drainage patterns of the project site would remain unchanged with any runoff that does not evaporate or percolate into the coarse alluvium ultimately draining to the Fish Creek Alluvial Fan. Because drainage within the Easterly Drainage Area would be impounded, total volumes and peak flow rate would

decrease thus no flooding or other adverse impacts would occur. With implementation of Mitigation Measure 3.3-7 as provided in the 2008 EIR/EIS and ~~Mitigation Measure 4.6-1 as provided below~~, drainage within the Westerly Drainage Area would be directed northward to the Fish Creek Alluvial Fan consistent with existing conditions and no flooding or other adverse impacts would occur.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: Implement the following existing mitigation measures (see Section 4.6.4 for the full text of each measure):

- 2008 EIR/EIS
 - Mitigation Measure 3.3-7

Mitigation Measure: ~~Implement the following new mitigation measure:~~

~~**Mitigation Measure 4.6-1:** The final design for the proposed berm along the westerly edge of the Quarry shall incorporate the recommendations provided in the Hydrologic and Water Quality Study prepared by Dudek dated April 2018 and appended to this SEIR. These recommendations include a 50-foot wide conveyance channel on the western side of the berm and armoring of the westerly bank of the berm with rock riprap.~~

Level of Significance After Mitigation: Less than significant.

Comment 5a-15

F. Mitigation Measure 4.3-2

Mitigation measure 4.3-2 is a newly proposed mitigation measure that is intended to address the potential impacts associated with the inadvertent discovery of human remains. However, the citation to the applicable CEQA Guideline is incorrect. Specifically, the reference to CEQA Guidelines Section 15064.4(e)(1) should be changed to Section 15064.5(e).

Response 5a-15

See Chapter 3, “Draft SEIR Errata,” Section 3.2.39. Mitigation Measure 4.3-2 on Draft SEIR page 4.3-17 has been revised as follows:

Mitigation Measure 4.3-2: *Inadvertent Discovery of Unmarked Burials. If human remains are uncovered during project activities, the project operator shall immediately halt work within 50 feet of the find, contact the Imperial County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section ~~15064.4(e)(1)~~15064.5(e). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c) and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, and*

designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, with the MDL regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.

Comment 5a-16

V. OLD Kane Spring Road Site

The DSEIR, at pages 4.2-33 through 4.2-34, discusses the aquatic jurisdictional resources that are present at the Old Kane Spring Road site. This discussion, which is based on an initial jurisdictional aquatic resources delineation prepared by Dudek in 2021 (see Appendix E of Appendix D-4), concludes, among other things, that there are approximately 60.99 acres of RWQCB-jurisdictional non-wetland waters present on the site.

An updated jurisdictional aquatic resources delineation for the Old Kane Spring Road Site was prepared by Dudek in April 2022 (the "2022 JARD"). The 2022 JARD concludes, among other things, that there are approximately 88.5 acres of RWQCB-jurisdictional non-wetland water present on the site. A copy of the 2022 JARD is attached hereto as Exhibit 3.

The DSEIR's discussion of aquatic jurisdictional resources present at the Old Kane Spring Road site, including Table 4.2-4, should be updated based on the information in the 2022 JARD. In addition, Figure 2-4 on page 2-17 of the DSEIR (Old Kane Spring Road Preservation Site) should be replaced with Figure 4 from the 2022 JARD.

Response 5a-16

See Chapter 3, "Draft SEIR Errata," Section 3.2.11. Draft SEIR Figure 2-4 has been updated consistent with the 2022 Jurisdictional Aquatic Resources Delineation (Dudek). The 2022 delineation has been incorporated into the SEIR as Draft SEIR Appendix D-6 (see Chapter 3, Sections 3.2.1, 3.2.21 and 3.2.27) and is provided in this Final SEIR in Appendix C, "Draft SEIR Appendices Errata." Draft SEIR pages 4.2-33 and 4.2-34 have been revised as follows:

Aquatic Jurisdictional Resources

A jurisdictional wetland delineation was conducted for the Old Kane Springs Road site to determine the presence and extent of jurisdictional aquatic features on the project site (Dudek 2021; see Appendix E of Appendix D-4). This delineation was updated by Dudek in 2022 (see Appendix D-6). During the jurisdictional delineation survey, the site was walked by Dudek biologists and evaluated for evidence of fluvial indicators such as drainage swales, mud cracks, drift, wracking, cut banks, and sediment transportation and sorting. The extent of potential jurisdictional aquatic resources was determined by mapping the areas with fluvial characteristics and topography showing evidence of consistent flow patterns and hydrologic connectivity (Dudek 2021).

Since no hydrophytic vegetation and/or associated wetlands were present on the Old Kane Springs Road Viking Ranch site, streambed and non-wetland waters mapping was the focus of the delineation. These features, hereafter referred to simply as “non-wetland waters,” were delineated from bank to bank, using the top of the bank as the boundaries of the channel (Dudek 2021).

Non-wetland Waters of the State

Overall, the site landscape drains water in an easterly direction, mainly through a large alluvial fan/wash consisting of numerous braided low-flow channels within the desert dry wash woodland vegetation community. This wash was mapped from bank to bank to include all low-flow channels within its banks as one large non-wetland water. Additionally, several smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. Additionally, a few smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub outside of larger floodplains were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. All aquatic features on the Old Kane Springs Road Viking Ranch site deemed to be potentially jurisdictional by Dudek biologists are shown on Figure 2-4.

In general, nearly all the field-mapped non-wetland water and low-flow channel boundaries (mapped based on evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks) fell within the maximum flow areas generated through the hydrologic model. The northern and southernmost portions of the site, outside of the central wash, showed more inconsistent and less-pronounced fluvial and OHWM indicators in the field; hydrologic modeling was used to refine the extent of non-wetland water boundaries within the site. Figure 2-4 displays the boundaries of hydrologically modeled and field-verified non-wetland waters on the site and likely corresponds to accurate surface flow areas across the site during a significant runoff event.

Non-wetland waters on site are ephemeral, meaning they only flow during storm events. ~~These features were mapped because they had evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks. These features are classified as non-wetland waters and are likely regulated by RWQCB and CDFW as waters of the state (Dudek 20224).~~

Swales

Several potential swale features without well-defined banks are ~~may~~ present on site; these include areas of occasional surface sheet flow with slight topographic depressions and occasional, but often inconsistent, fluvial indicators that may or may not be subject to regulation by any of the agencies. These features were not mapped under the scope of this delineation but typically fell within the main floodplains of the mapped extent of non-wetland waters. ~~may be considered jurisdictional upon agency review; they can be added to the map using aerial signatures at a later date if needed.~~

Results of the jurisdictional delineation are summarized in Table 4.2-4, “Jurisdictional Resources within the Old Kane Springs Road Preservation Site,” and on Figure 2-4.5, “Plaster City Quarry Plan.” There are approximately 88.560.99 acres of ~~RWQCB jurisdictional~~ non-wetland waters present ~~both inside and outside of alluvial fan/wash and outside of alluvial fan wash.~~

**Table 4.2-4
 Jurisdictional Resources within the Old Kane Springs Road Preservation Site**

Type	Jurisdiction	Acres/Linear Feet
Non-Wetland Waters of the State (Within Alluvial Fan/Wash)	CDFW and RWQB	<u>59,768.5/13,950</u>
Non-Wetland Waters of the State (Outside of Alluvial Fan/Wash)	CDFW and RWQB	1.23
Total Potential Jurisdictional Aquatic Resources		<u>88.5/13,950</u>
ACOE/RWQB Non-Wetland Waters and CDFW Streambeds¹		<u>60.99</u>

Source: Dudek 2022+ (Appendix D-6)

Notes:

1. Totals may not sum due to rounding

Comment 5a-17

VI. Specific Comments and Errata

USG's additional comments and proposed revisions to specific provisions of the DSEIR are listed in the Table of Errata attached hereto as Exhibit 4 and are incorporated herein by this reference.

Response 5a-17

See Chapter 3, “Draft SEIR Errata.” The suggested revisions provided in Exhibit 4 of the comment letter are accepted as proposed and have been made in the SEIR.

Comment 5a-18

EXHIBIT 1 - PROJECT ALTERNATIVES - PRELIMINARY PRACTICALITY DETERMINATION

The comment is an attachment to Letter 5 and is provided in its entirety as Appendix G to this Final SEIR.

Response 5a-18

The comment is noted. The Preliminary Practicality Determination is provided as Appendix G, “Alternative Preliminary Practicality Determination,” to this Final SEIR.

Comment 5a-19

EXHIBIT 2 - APPROVED JURISDICTIONAL DETERMINATION

The comment is an attachment to Letter 5 and is provided in its entirety in Appendix C, “Draft SEIR Appendices Errata,” to this Final SEIR (Appendix D-5, “Approved Jurisdictional Determination,” of the Draft SEIR).

Response 5a-19

The comment is noted. The approved jurisdictional determination (AJD) for the project was incorporated into the SEIR as Draft SEIR Appendix D-5 (see Chapter 3, “Draft SEIR Errata,” Sections 3.2.21, 3.2.33, 3.2.38, and 3.2.42) and is also provided in Appendix C to this Final SEIR. See Responses 4a-13 and 5a-8.

Comment 5a-20

EXHIBIT 3 – 2022 JURISDICTIONAL AQUATIC RESOURCES DELINEATION FOR THE OLD KANE SPRING ROAD SITE

The comment is an attachment to Letter 5 and is provided in its entirety in Appendix C, “Draft SEIR Appendices Errata,” to this Final SEIR (Appendix D-6, “Old Kane Springs Road Jurisdictional Delineation,” of the Draft SEIR).

Response 5a-20

The updated jurisdictional wetland delineation for the Old Kane Springs Road preservation site (Dudek 2022) was incorporated into the SEIR as Appendix D-6 (see Response 5a-16) and is provided in its entirety as Final SEIR Appendix C, “Draft SEIR Appendices Errata.” See Chapter 3, “Draft SEIR Errata.”

Comment 5a-21

EXHIBIT 4 – SPECIFIC COMMENTS AND ERRATA

The comment is an attachment to Letter 5 and is provided in its entirety as Appendix H, “Errata Table,” to this Final SEIR.

Response 5a-21

See Response 5a-17. See also Chapter 3, “Draft SEIR Errata.” The proposed revisions provided in Exhibit 4 of the comment letter are accepted and have been made in the SEIR. This includes revisions to Draft SEIR Figure 2-2b.

Letter 5b: US Gypsum; June 23, 2023

Comment 5b-1

Mitigation Measure Proposed by CDFW with Edits Proposed by USG (proposed deletions shown in strike-out and additions shown underlined)	Explanation for Proposed Edits
Mitigation Measure BIO-[A]: Assessment of Biological Resources Prior to adoption of the CEQA document and Project construction activities for <u>Quarry Well No. 3, the associated pipeline, and Viking</u>	The CEQA document (i.e., the SEIR) will be certified prior to approval and construction of the well and pipeline. Therefore, there is no need to require prior “adoption” of the CEQA document.

<p>Ranch, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project construction footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (“endangered, rare or threatened species” as defined in CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive</p>	<p>The scope of this proposed measure should be limited to the Quarry Well, the associated pipeline, and Viking Ranch. Construction activities associated with the Quarry, which were previously evaluated under CEQA and NEPA and approved by the County and BLM, will be subject to other equivalent mitigation measures. See also proposed new Mitigation Measure Bio-[B]: Wildlife Translocation Plan below.</p> <p>The “species to be addressed” should be more precisely defined as indicated.</p> <p>Further consultation with USFWS is unnecessary. USG has already consulted the USFWS under Section 7 of the Federal Endangered Species Act and obtained a Biological Opinion from the USFWS.</p>
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<p>taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.</p>	
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Response 5b-1

The commenter proposes several modifications to Mitigation Measure BIO-[A], which was proposed by CDFW (see Comment 4a-8) and added to the SEIR as Mitigation Measure 4.2-2c. These modifications were reviewed and approved by CDFW (see Comment 4d-1) and Imperial County and have been incorporated into the SEIR as proposed. See Chapter 3, “Draft SEIR Errata,” Section 3.2.36 for the final version of Mitigation Measure 4.2-2c.

Comment 5b-2

<p><i>Mitigation Measure 3.4-9: Burrowing Owl Avoidance</i></p> <p>Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with all Project components (expansion of quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the life of the Project. If burrowing owls are detected during the focused surveys, the</p> <p>The qualified biologist and Project proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project <u>the activities specified above.</u> <u>The plan shall</u></p>	<p>Consistent with the comment from CDFW, this measure would require that a focused burrowing owl survey be conducted prior to vegetation removal and ground breaking activities. However, instead of requiring the preparation of a Burrowing Owl Plan upon <i>detection</i> of an individual burrowing owl specimen during the preconstruction survey, as suggested by the CDFW, this measure, as revised, would require the preparation of a Burrowing Owl Plan <i>prior</i> to vegetation removal or ground-disturbing activities. The Burrowing Owl Plan would serve as a standard pre-construction operations manual for the treatment of new quarry phases and other project construction. Among other things, the Burrowing Owl Plan would establish pre-defined survey methods and</p>
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<p><u>serve as a protocol of actions to address occupied habitat within future phases of quarry expansion, the proposed site for Well #3 and associated pipeline, and Viking Ranch.</u> The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring <u>and reporting requirements,</u> and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding <u>The Burrowing Owl Plan shall identify adjacent or nearby suitable habitat available to owls along with proposed relocation actions.</u> The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.</p> <p>Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of</p>	<p>translocation protocols to avoid or minimize potential impacts.</p> <p>Note: USG has or will obtain all necessary approvals from the USFWS and will comply with all applicable federal statutes and regulations, including NEPA. For this reason, there is no need to require coordination with BLM or approval by USFWS in this CEQA mitigation measure.</p>
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<p>Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the preconstruction surveys confirm occupied burrowing owl habitat, <u>the Project activities specified above shall be immediately halted until pre-defined avoidance and minimization measures contained in the Burrowing Owl Plan have been implemented.</u> The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities.</p>	
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Response 5b-2

The commenter proposes several modifications to the revisions to Mitigation Measure 3.4-9 that were proposed by CDFW (see Comment 4a-9). These modifications were reviewed and approved by CDFW with some exceptions (see Comments 4d-1 and 4d-2). As discussed in Response 4d-2, Imperial County has approved these modifications and they have been incorporated into the SEIR as proposed. See Chapter 3, “Draft SEIR Errata,” Section 3.2.37 for the final version of Mitigation Measure 3.4-9.

Comment 5b-3

<p><i>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</i></p> <p>[...]</p> <p><u>To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g.,</u></p>	<p>The first sentence (which CDFW proposes to be stricken) should be retained. The requirement</p>
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<p><u>clearing spoils stockpile areas</u> will be conducted outside the <u>nesting season (January 1 through August 31)</u> to avoid potential <u>take of nesting birds or eggs</u>. Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with all Project components (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys <u>for any of the activities specified above</u>, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on <u>the nature of the planned Project activities, species-specific disturbance tolerance, location</u></p>	<p>that certain activities be conducted outside the nesting season is part of the existing mitigation measure and is already a requirement of the BLM approval.</p> <p>The activities to which this measure would apply should be specified with more precision as indicated.</p> <p>Additional criteria for determining the size of the buffer should be included as</p>
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<p>of the nest, and nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.</p> <p>[...]</p>	<p>indicated.</p>
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Response 5b-3

The commenter proposes multiple modifications to the revisions to Mitigation Measure 3.4-8 that were proposed by CDFW (see Comment 4a-10). These modifications were reviewed and approved by CDFW (see Comment 4d-1) and Imperial County and have been incorporated into the SEIR as proposed. See Chapter 3, “Draft SEIR Errata,” Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Comment 5b-4

<p><i>Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats</i></p> <p>Prior to the initiation of Project activities <u>quarrying activities into previously undisturbed areas,</u> <u>construction of Well #3 and associated pipeline, and restoration of Viking Ranch within suitable special-status bat roosting habitat, Imperial County the applicant</u> shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity <u>special-status bat species</u> roost sites. Two spring surveys (April</p>	<p>The activities to which this measure would apply should be specified with more precision as indicated.</p> <p>This measure should be limited to special-</p>
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<p>through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of <u>special-status</u> bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.</p> <p>If active hibernacula or maternity roosts of <u>special-status bat species</u> are identified in the work area or 500 feet extending from the work area during preconstruction surveys, <u>the following requirements will apply:</u></p> <p>2. for 1. For special-status bat species maternity roosts, quarry expansion activities into undisturbed <u>and occupied</u> habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.</p> <p>2. A For special-status bat hibernacula,</p>	<p>status bats (not common bats).</p> <p>Identify the conditions for maternity vs. hibernacula more clearly, as indicated.</p>
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minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein.

[...]

Response 5b-4

The commenter proposes several modifications to Mitigation Measure BIO-[B], which was proposed by CDFW (see Comment 4a-11) and added to the SEIR as a provision of existing Mitigation Measure 3.4-8 (see Response 4a-11). These modifications were reviewed and approved by CDFW (see Comment 4d-1) and Imperial County and have been incorporated into the SEIR as proposed. See Chapter 3, "Draft SEIR Errata," Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Comment 5b-5

[...]

Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of

The project area may provide suitable roosting sites (i.e., rock crevices) for special-status bat species. However, the potential loss of rock crevices on the site would not significantly affect roost site availability in the Fish Creek Mountains or the surrounding region. The Project site is adjacent to the Fish Creek Mountains Wilderness managed by the BLM, comprising more than 21,000 acres, and Anza Borrego Desert State Park, comprising more than 600,000 acres. Both are shown on Figure 1 of the Biological Resources Technical Report.

Both the Fish Creek Wilderness and Anza Borrego Desert State Park permanently protect extensive areas of rugged desert mountain landscapes where rock crevices suitable for bat roosting are abundant. Roosting crevice availability does not appear to limit local special-

<p>any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.</p>	<p>status bat populations.</p>
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Response 5b-5

The commenter proposes a modification to Mitigation Measure BIO-[B], which was proposed by CDFW (see Comment 4a-11) and added to the SEIR as a provision of existing Mitigation Measure 3.4-8 (see Response 4a-11). This modification would eliminate the proposed requirement to compensate at no less than 2:1 for permanent impacts to roosting habitat. CDFW reviewed and rejected this proposed modification (see Comment 4d-3). However, Imperial County has determined that, consistent with this comment, the proposed compensation is not necessary, as there is abundant suitable habitat on public lands throughout the surrounding area (see also Response 4d-3). This modification was made in the SEIR as proposed. See Chapter 3, “Draft SEIR Errata,” Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Comment 5b-6

<p><i>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</i></p> <p>[...]</p> <p>Throughout the lifetime of the Project, the Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light <u>to the extent practicable</u> during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all <u>new</u> lighting for the Project is fully shielded, cast downward, reduced in</p>	<p>This measure should apply only to any new lighting. Existing lighting is part of baseline conditions.</p>
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<p>intensity to the greatest extent <u>practicable</u>, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). Imperial County shall ensure use of <u>To the extent practicable, the Project proponent shall use LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.</u></p> <p>[...]</p>	<p>The phrase “greatest extent” should to be qualified based on what is “practicable.” Without this qualifier, “greatest extent” could be interpreted to mean no lighting at all, which is infeasible. Mitigation measures will be imposed by the County as conditions of approval.</p>
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Response 5b-6

The commenter proposes several modifications to the revisions to Mitigation Measure 3.4-8 that were proposed by CDFW (see Comment 4a-12). These modifications were reviewed and approved by CDFW (see Comment 4d-1) and Imperial County and have been incorporated into the SEIR as proposed. See Chapter 3, “Draft SEIR Errata,” Section 3.2.34 for the final version of Mitigation Measure 3.4-8.

Comment 5b-7

<p><i>Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program</i></p> <p>Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement,</p>	<p>No changes proposed.</p>
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authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.	
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Response 5b-7

The comment is noted.

4.5 INDIVIDUALS

Letter 6a: Edie Harmon; June 1, 2023

Comment 6a-1

Diana,

Thank you for taking time to speak on the phone twice today. Per our conversation, I would like to request an extension of the comment deadline from the end of June 2 to Sunday night or Monday morning June 5t, 2023. I am very discouraged because my computer keeps deleting things I am writing for an attachment to an email or text in the email itself and then shutting down the computer. I have no clues as to the cause or cure, but I would like to try to get something in writing completed. I have medical appointment in San Diego tomorrow, June 2 and would not be able to get home to send an email before 5 PM. Ongoing research in the Jacumba Wilderness along the border wall will require an approximate 9 mile, 9 hour walk to the border in Skull Valley on Saturday and a 14 hour, approximately 15 mile walk to the border in Davies Valley starting between 2 - 3 AM by moonlight on Monday morning before the day gets too hot. That would leave me Sunday to try to get something to you in writing before you start your work day Monday morning.

Response 6a-1

The comment is noted. The County extended the comment deadline as requested by the commenter. A second letter was submitted by the commenter and is provided in this document as Letter 7.

Comment 6a-2

In August 2022 I submitted hundreds of pages of text and photos to CBP in response to their proposed remediation/reclamation for just a 14 mile segment of border wall construction from Mt. Signal area west to the west side of Pinto Wash in Davies Valley in the Jacumba Wilderness. Much of what I learned and observed from the impacts of very heavy local downpours and the hurricane of 2022 seem to have confirmed many of the concerns and

predictions about reclamation and remediation proposals. Failures I have seen are actually much worse than anything I could have predicted. I have not visited the locations of specific areas mentioned in the USG Well No 3 DSEIR, but I must admit that I am not optimistic about mitigation success as identified in the table in the DSEIR ES and in text throughout the document. Why? Because I have photo-documented what I see as the design and construction failures by the Army Corps of Engineers and the contractor from Montana. I believe that they grossly underestimated the power of moving water in Imperial County, whether from a local downpour or from a hurricane that was far less damaging than the Hurricanes in 1976 and 1977 in SW Imperial County. There is a spectacular example of geology in action just a little more than 2 miles from my home where a once beautiful canyon has had many canyon wall collapses since my first photos of March 2022, with material falling to the ground as I was getting ready to take a photo. From the September 2022 hurricane, there are photos of water flowing across the border to the south, with water 6-8 feet deep in [sic] Pinto Wash in Davies Valley, The water flowing back to the north and into the US in Pinto Wash to east of wilderness was 10-15 feet deep according to Border Patrol and the vegetative debris was piled up against the border wall along the west facing slope to the same depth. The wash on the north experienced scouring of sand in the wash and I could look out of the wash at eye-level because erosion was shoulder deep. Several times local downpours created large and fairly deep temporary lakes.

Response 6a-2

The comment is noted. Observations of the design and construction of other projects in the region are not applicable to the proposed project or the adequacy of the Draft SEIR. Reclamation of the project site would occur in accordance with an approved reclamation plan which provides methods and standards for successful reclamation of the site to an end use of open space. These methods include slope stabilization, rehabilitation of onsite drainages to pre-mining conditions, implementation of erosion and sediment control measures, salvage and replacement of existing topsoil, revegetation, and ongoing monitoring and maintenance to ensure plant success. The project does not propose any changes to current mining operations or the approved reclamation plan.

Comment 6a-3

The DSEIR repeatedly references the 2018 Dudek groundwater study, but I could find no information in the 2023 DSEIR about the rainfall events of January 2021 and August and September 2022 and other 2022 dates that I cannot remember. Did those rainfall events result in wash and slope geology changes or any significant flood erosion. There were videos of the floodwater

flowing from the Jacumba Mountains and into Salton Sea. I found no discussion of specific flood and erosion events from 2021 and 2022 and even early 2023.

Response 6a-3

As described in Draft SEIR Section 4.6, “Hydrology and Water Quality,” the hydrology of the project region is “dominated by brief but high intensity rainfall events” that may “result in channel forming flash floods with high scouring energy” with runoff often redirecting flood flows, creating new channels, and developing “a system of braided channels within the alluvial basin.” Rainfall events such as those that occurred in 2021 and 2022 are consistent with regional climate patterns and do not represent a significant change in existing conditions that might necessitate an update of the 2018 groundwater study (Dudek; Draft SEIR Appendix G-1).

Comment 6a-4

DSEIR p. 4.6-3 states that the average annual rainfall is 4-5 inches. Average is meaningless because rainfall is highly variable near the mountains. The rainfall in Ocotillo is very different from rainfall where I live several miles to the SE, but closer to the mountains and therefore more subject to the mountain rainfall shadow effect. Where was rainfall data monitored in relation to any of the specific sites mentioned in the DSEIR.

Response 6a-4

Draft SEIR page 4.6-1, Section 4.6.1.1, “Regional Setting,” states that average annual rainfall in the nearby City of El Centro is three inches. Page 4.6-3, second paragraph states that the average annual rainfall in the 322,686-acre Ocotillo Lower Felipe hydrologic area, which encompasses the project site, is approximately 4.5 inches. Site-specific rainfall monitoring was not conducted for the proposed project. The annual average rainfall data for the project area is provided as one part of a larger description of the region’s overall climate which acknowledges the varied topography, hydrology, and weather patterns in the region.

Comment 6a-5

FIG 4.6-2 indicates that the site was flown over 5-5-2022, or several months before the heaviest rain events in SW Imperial County, including the hurricane of 9/2022. This suggests to me that the Floodplain map is very likely to be outdated and that there may have been some serious changes to drainages and places of heaviest or deepest stream flow. That is certainly what I saw near the international border during the past year's rain events..

Response 6a-5

The reader refers to Draft SEIR Figure 4.6-2, “Existing Floodplain.” This figure was generated based on Federal Emergency Management Agency (FEMA) flood zone data. Flood zone data is maintained by FEMA and is updated periodically but not annually or in response to individual storm events. Draft SEIR Figure 4.6-2 reflects the available data and existing conditions on and near the project site at the time the Notice of Preparation (NOP) of the Draft SEIR was published in accordance with CEQA requirements (CEQA Guidelines Section 15125).

Comment 6a-6

Because the well is not in the same basin as the residential communities of the Ocotillo Nomirage Community Area, I do not see well interference or adverse impacts from the Well No 3 UNLESS this is followed by a request to increase groundwater export from the existing USG wells near the community of Ocotillo. Does increased quarry output mean increased factory output that would lead to a request to increase export of potable groundwater from wells in the Ocotillo area?

Response 6a-6

The quarry output and the plant production relative to the Ocotillo well field were analyzed in the 2008 EIR/EIS and subsequent 2019 SEIS. This project proposes no change to the production volumes or water consumption estimates previously analyzed and approved.

Letter 6b: Edie Harmon; June 4, 2023

Comment 6b-1

My apologies. This is being prepared following the disappearance of several earlier efforts to submit comments. For mysterious reasons my computer is having problems with the Word Perfect 2021 program I have been using for years, and even stranger computer shut-downs while I was working on my comments.

Thank you for being willing to accept these late submitted comments. I have not visited the various sites of project components because I have a low clearance Honda Fit and assume that access to the area would require a different vehicle. Thus, these comments and questions will be general in nature and not USG project well or restoration sites [sic] specific.

Response 6b-1

The comment is noted.

Comment 6b-2

1. These comments will be limited because I will assume that comments on biological resources including the endangered

Peninsular Bighorn Sheep (PBS) will be addressed by PBS experts at CDFW, USFWS, and BLM. Thus I do not plan to submit additional comments on PBS,

Response 6b-2

The comment is noted.

Comment 6b-3

2. These comments are related to hydrology, flooding, and changes in geological or surface features in response to issues of heavy local downpours and the most recent hurricane of September 2023. I was living in Imperial County during the hurricane of September 1976 and in Ocotillo during the August 1977 hurricane and several serious flood events in the Ocotillo, Nomirage and Yuha area in SW Imperial County. I recall that the flood waters coming from the Jacumba Mountains destroyed the 2 westbound lanes of I-8, the railroad tracks and bridge to the west of [sic] Ocotillo and much of the central party of Ocotillo. Even through [sic] there were periods of standing water there was no measurable increase in static water levels in wells monitored by USGS in response to any hurricane or local downpour and flash flooding events. There have been many times when Hwy 98 was closed to all but local traffic because standing water was so deep and the road was filled with sand and rocks that were carried to the E and NE from the Jacumba Mountains where rains were heavier cknowledge [sic] history of severe rain events and resulting flooding

Response 6b-3

The comment is noted.

Comment 6b-4

3. In August 2022 I submitted hundreds of pages of text and photos to CBP in response to their proposed remediation/reclamation for just a 14 mile El Centro 1 segment of border wall construction from Mt. Signal area going west to the west side of Pinto Wash in Davies Valley in the Jacumba Wilderness. Much of what I learned and observed from the impacts of very heavy local downpours and the hurricane of 2022 seem to have confirmed many of the concerns and predictions about reclamation and remediation proposals. Failures related to unexpected rainfall and its consequences that I have seen and photographed are actually

much worse than anything I could have predicted. The DSEIR dated April 2023, approximately 8 months AFTER the local downpour of Aug. 8, 2022 that caused serious erosion damage along the CBP border wall in Skull Valley and left a stranding [sic] lake, one of many that I visited in 2022.

Photo of local downpour on 8/8/22 was taken from my property. There was no rain where I live. Four days later, there was standing water that appeared to have been as much as 4 - 6 feet deep near the large dune on the west side of Skull Valley in the Jacumba Wilderness [sic] that had received water from the downpour seen above right.



4. I have not visited the locations of specific areas mentioned in the USG Well No 3 DSEIR, but I must admit that I am not optimistic about mitigation success as identified in the table in the DSEIR ES and in text throughout the document. Why? Because I have photo-documented what I see as the design and construction failures by the Army Corps of Engineers (ACOE) and the contractor from Montana. I believe that they grossly underestimated the power of moving water in Imperial County, whether from a local downpour or from a hurricane that was far less damaging than the Hurricanes in 1976 and 1977 in SW Imperial County. Revegetation and/or reseeding become increasingly problematic once there has been significant disturbance or removal of topsoil and upper layers of soil near Mt. Signal.

Response 6b-4

See Response 6-2. The commenters observations of drainage patterns and historical rain events in the project area are noted for the decisionmakers. The reader is referred to Draft SEIR Section 4.6.1.1, "Regional Setting," which in part describes the climate and rainfall patterns of the Colorado Desert. This section acknowledges that the project area experiences a wide range of rainfall levels based on season

and topography and that in the months of August and September the project area often experiences severe thunderstorms with monsoon conditions potentially resulting in “severe flash flooding, washing out roads, scouring washes and uprooting vegetation.”

Reclamation of the project site would occur in accordance with an approved Reclamation Plan, which provides methods and standards for successful reclamation of the site to an end use of open space. These methods include slope stabilization, rehabilitation of onsite drainages to pre-mining conditions, implementation of erosion and sediment control measures, salvaging and replacing existing topsoil, revegetation, and ongoing monitoring and maintenance to ensure plant success. The project does not propose any changes to current mining operations or the approved reclamation plan.

Comment 6b-5

5. DSEIR Fig. 2-3 and Fig. 2-6 Viking Ranch Restoration site use an outdated [sic] aerial image from 2018 and probably should be updated following the hurricane of September 2022 as flood waters passed through this property and based on video images made of flood waters flowing from mountains toward Salton Sea. If this property was unimpacted by flood waters since the 2018 image, this information should be clarified. Figures in the Dudek 2018 appendix for these sites suggest that there may well be changes to sizes and locations of some stream channels. It was nice to be able to enlarge figures in the Appendices, even if they are outdated.

Response 6b-5

Draft SEIR Figures 2-3 and 2-6 show the general drainage patterns on the Viking Ranch Restoration Site for informational purposes. Recent minor changes to the location or size of stream channels due to storm events would have no meaningful effect on the proposed restoration plan for the site. Regardless of the location or size of onsite stream channels, the project would restore those stream channels to achieve a more natural drainage pattern that connects to surrounding off-site drainages.

Comment 6b-6

6. Have there been flood or drainage changes that affect the quarry and potentially details of the 2008 Reclamation Plan approval? If so, should the 2003 Reclamation plan recorded as 2008-018432 be modified or updated? The approved 2003 reclamation plan is now 20 years old. (See DSEIR p. 2-20.) DSEIR p. 2-23 states that [sic] there have been, no changes to the 2003 Reclamation Plan.

Response 6b-6

Once approved, a reclamation plan need not be updated if no substantial changes are proposed (i.e., changes which would substantially affect completion of reclamation or change the proposed end use). The project does not propose any changes to current mining operations or the approved reclamation plan. As a

substantial deviation from the approved reclamation plan is not proposed as part of the project, no updates to the reclamation plan are necessary.

Comment 6b-7

7. The "Confidential Cultural Resources Report for the Us Gypsum Company Expansion/modernization Project Supplemental EIS Imperial County, California" Prepared by Pacific Legacy, Inc., 900 Modoc Street, Berkeley, California 94707, Project No. 3215-01, June 2018 had each page identified as "confidential", so I chose not to read it. This report probably should not have been included in the documents distributed for public review.

Response 6b-7

Draft SEIR Appendix E, "Cultural Resources Report," was redacted prior to publication to exclude all confidential information such as the location of cultural resources identified in the report. The reader should not be discouraged from viewing this or any other portion of the Draft SEIR.

Comment 6b-8

8. DSEIR p. 2-24. What are the plans if well #3 fails to meet the projected production output anticipated? There can be no guarantees about the water quality or productivity in terms of gpm or gpd from any well that has not yet been drilled. That is why well drillers with whom I have spoken require payment for drilling and completing construction of a new well prior to finishing the work. They get paid whether or not the well can produce any given quantity of water or even water at all. To drill and complete a well of 6 inches in diameter and 565 feet deep will not be inexpensive. P. 2-25 fails to give the diameter of the water pipeline.

Response 6b-8

If proposed Well No. 3 fails to meet projected production levels the quarry would continue to rely on its existing supply source. Water is currently hauled by rail to the quarry from the plant. The proposed well diameter is 10 inches as stated on page 2-24 of Draft SEIR Chapter 2, "Project Description."

Comment 6b-9

9. Site restoration of the two sites sounds interesting even if I am skeptical. I would be interested in a site visit prior to and during of following completion of the restoration work. Have professionals for the work been selected yet?

Response 6b-9

The comment is noted. The County has arranged for the commenter to visit the quarry on November 10, 2023, to tour the revegetation areas as requested.

Comment 6b-10

10. Has there been evidence of revegetation success at the quarry site, or is there just reliance on the old 2003 reclamation Plan? I am aware of many revegetation failures on BLM lands in SW Imperial County⁷ [sic], and special failure of revegetation where sand and gravel operations have been completed. Can there be any revegetation success without supplemental water being added at this quarry site? Might it be possible for tours of the revegetation sites before, during or after for interested members of the public?

Response 6b-10

The project's approved 2003 reclamation plan has extensive revegetation requirements and guidelines (see reclamation plan Attachment D, "Revegetation Plot Plan"). A review of annual inspection reports for the quarry between 2021 and 2023 indicates that revegetation testing and reclamation is being implemented concurrent with mining and in accordance with the approved reclamation plan. The County has arranged for the commenter to visit the quarry on November 10, 2023, to tour the revegetation areas as requested.

Comment 6b-11

Section 4.6 Hydrology and water quality and Appendix G, G-1 and G-2

11. Dudek 2018 Hydrology and Water Quality Study is now five years old.

Response 6b-11

The reader is referred to Response 6-3.

Comment 6b-12

12. DSEIR p. 4.6-1 states that most of rain that falls in December through March, However, my experience is that the heaviest rainfalls, local downpours and hurricanes seem to come in August-September and can cause serious flash floods with extremely significant flash flood caused erosion of slopes and washes. It is the rains in the mountains in SW Imperial County that may be more relevant to the USG projects than the rainfall in El Centro to the east. Rainfall is very local in SW Imperial County except during hurricanes. What has been the annual rainfall at

various locations for the different components of this USG project since the USG project was first proposed?

Response 6b-12

The commenters observations about rainfall patterns in the project region are noted. Onsite precipitation monitoring was not conducted in support of the proposed project. Annual rainfall estimates provided in the Draft SEIR were derived from available government data. Although most rainfall occurs in the months of December through March, page 4.6-1 of the DSEIR acknowledges that the months of “August and September can experience severe thunderstorms associated with monsoon conditions...” This section of the Draft SEIR also acknowledges that rainfall levels can vary significantly by elevation and topography stating that, “[a]t the Anza Borrego State Park headquarters, located in a canyon along the east side of the Peninsular Range, rainfall can average as high as six to seven inches per year.” The hydrology analyses used to support preparation of the Draft SEIR are based on the best available data on the climate and hydrologic patterns of the project region.

Comment 6b-13

13. DSEIR p. 4.6-3 states that the average annual rainfall is 4-5 inches. “Average” is meaningless because rainfall is highly variable near the mountains. The rainfall in Ocotillo is very different from rainfall where I live several miles to the SE of Ocotillo, but closer to the mountains. Therefore this area is more subject to the mountain rainfall shadow effect. Where was rainfall data monitored in relation to any of the specific sites mentioned in the DSEIR? Here there have been numerous flash flood events bringing moving water from the mountains and leaving standing water in low areas flooding the state Hwy 98 at numerous locations.

Response 6b-13

The reader is referred to Responses 6a-4 and 6b-12.

Comment 6b-14

14. DSEIR 4.6-3 describes how flash flooding can cause changes to braided channels or changing aspects of existing stream channels. Has this happened during nor [sic] as a result of the Hurricane of 2022? If so, should maps be revised to reflect these changes? Where and what is the current condition of channels through which the flood waters of the 2022 hurricane as they flowed toward the Salton Sea? A map would be educational if nothing else. Did flood waters from the hurricane adversely impact desert pupfish habitat? If so how?

Response 6b-14

The reader is referred to Responses 6a-3 and 6a-5 regarding heavy rainfall that occurred in 2022 and suggested updates to related hydrology figures.

As described in Draft SEIR Section 4.6.1, “Environmental Setting,” flashfloods and resulting flood flows are a natural part of the climate and hydrologic patterns of the project region. Any potential effects to desert pupfish from flood conditions in 2022 are not associated with the proposed project and need not be addressed in the Draft SEIR. The reader is referred to Draft SEIR Section 4.6, “Hydrology and Water Quality,” (see Impact 4.2-2) for a discussion of potential effects on desert pupfish habitat.

Comment 6b-15

15. Is the soil in the area of the project more porous than the soils of the Ocotillo-Coyote Wells Groundwater Basin? I recall Dr. John Izbicki of USGS Water Resources in San Diego reminding me that it would take a long period of standing water to be able to percolate down through 100 feet of dry soil to reach the water table if there is to be any significant recharge. His way of explaining to me why even with flooding and standing water there has been no measurable recharge from the hurricanes of 1976 and 1977 and subsequent heavy rainfall events in the Ocotillo area and its surrounding mountains. Or another way of saying that use and outflow including evapotranspiration exceed any recharge. He said this basin has fossil groundwater with the last significant recharge at the end of the last Ice Age. With declining water levels, when the water is gone, the water is gone.

Response 6b-15

The commenter’s discussion of groundwater recharge in the Ocotillo-Coyote Wells Groundwater Basin is noted. The porosity of project site soils was not measured as part of the groundwater analysis. According to the 2018 Hydrology Study (Dudek; p. 8), in relation to the project site, groundwater recharge is greatest at the apex of the Fish Creek Alluvial Fan where surface flow from the quarry enters the Fish Creek Wash (Houston 2002, cited in Dudek 2018).

Comment 6b-16

16. DSEIR FIG 4.6-2 indicates that the site was flown over 5-5-2022, or several months before the heaviest rain events in SW Imperial County, including the hurricane of 9/2022. This suggests to me that the Floodplain map is very likely to be outdated and that there may have been some serious changes to drainages and places of heaviest or deepest stream flow. That is certainly what I saw near the international border during the past year's rain events. See photos on last page.

Response 6b-16

The reader is referred to Responses 7-5 and 7-14.

Comment 6b-17

17. "According to Dudek (2021), historical aerial imagery and topographic maps show that Coyote Creek meandered across the site creating braided channels through the unconfined basin area. Coyote Creek is within the Borrego Springs Sub-basin 18100203, which lies within the same sub-basin as the proposed Quarry expansion. The area receives water from direct precipitation that flows from Coyote Creek, the surrounding ..." (DSEIR 4.6-9) This suggests that the map of channels should be updated following the flows from Hurricane of Sept. 2022.

Response 6b-17

The reader is referred to Responses 7-5 and 7-14.

Comment 6b-18

18. All groundwater studies cited in the DSEIR appear to be outdated, with the most recent being 2018. Since that time there have been several significant flood events which should have triggered at least a modest update of the Dudek and Bonadiman 2018 hydrology studies and/or mention of such events in the 4/2023 USG DSEIR. See DSEIR p. 4.6-19. There was no explanation for why the hydrology studies were not updated for the April 2023 DSEIR and/or whether changes would in any way change some of the restoration proposals or information relevant to the desert pupfish habitat and survival.

Response 6b-18

The reader is referred to Response 6a-3 regarding the age and adequacy of the 2018 Hydrology Study (Dudek; Draft SEIR Appendix G-1) and Response 6b-14 for a discussion of desert pupfish habitat.

Comment 6b-19

19. DSEIR p. 4.6-22 states as follows: "**New Information** A Jurisdictional Delineation (Hernandez Environmental Services 2016), Hydrologic and Water Quality Study (Hydrology Study) (Dudek 2018), and Update on Groundwater Conditions Memorandum (Todd Groundwater 2018) were completed as part of the 2019 SEIS." Let me remind you that the DSEIR was dated April 2023. This is at least 7 months after the September hurricane where videos showed

flood waters raging down and entering lands and drainages just west of Salton Sea. This is June 2023 so SEIS of 2019 is about four years out of date related to flash flooding and the impacts of the 2022 hurricane event. This information should be updated once again. Why was it not updated? Perhaps I missed an update in 2023 related to the 2022 hurricane, but I could not find it in documents for the DSEIR of April 2023.

Response 6b-19

The Draft SEIR acknowledges that the project area at times experiences severe rainfall events and resulting washouts and erosion such as that which occurred in 2022. These natural events are considered part of the overall climate of the region when modeling and analyzing the hydrology of the project area. Furthermore, the proposed project would be implemented over an 80-year period during which time the local surface conditions and drainage patterns of the project area are anticipated to continue to change in response to environmental conditions. These individual storm events do not affect the analysis, conclusions, or recommendations contained in the project's hydrology studies.

The reader is referred to Response 6b-14 for a discussion of project impacts on desert pupfish habitat.

Comment 6b-20

20. Because well #3 is not in the same basin as the residential communities of the Ocotillo Nomirage [sic] Community Area, I do not see well interference or adverse impacts from the Well No 3 UNLESS approval of the CUP for well No 3 is followed by a request to increase groundwater export from the existing USG wells near the community of Ocotillo to support increased factory operations at Plaster City. Does increased quarry output mean increased factory output that would lead to a request to increase export of potable groundwater from wells in the Ocotillo area?

Response 6b-20

The reader is referred to Response 6a-2.

Comment 6b-21

21. There is a spectacular example of geology in action just a little more than 2 miles from my home where a once beautiful canyon has had many canyon wall collapses since my first photos of March 2022, with material falling to the ground as I was getting ready to take a photo. From the September 9, 2022 hurricane, there are photos of water flowing across the border to the south, with water 6-8 feet deep in [sic] Pinto Wash in Davies Valley, The water

flowing back to the north and into the US in Pinto Wash to east of wilderness was 10-15 feet deep according to Border Patrol and the vegetative debris was piles up against the border wall along the west facing slope to the same depth Pinto wash flowing north on the north side of the border experienced scouring of sand in the wash and I could look out of the wash at eye-level because erosion was shoulder deep. Scouring of Pinto Wash north of border barrier and concrete paved road showing the impact of the 2022 hurricane. In places, the flowing water undercut the concrete road creating a drop of almost 3 feet. Photos below are from June 3, 2023. Dark material in foreground is where grading equipment and dozers tried to grind the plant debris into sand north of the concrete road. Just to show the power of moving water.



Response 6b-21

The comment is noted for the decisionmakers. See Responses 6a-2 and 6b-4.

Comment 6b-22

22. Several times local downpours created large and fairly deep temporary lakes. The USG 2023 DSEIR repeatedly references the 2018 Dudek groundwater study, but I could find no information in the 2023 USG DSEIR about the

rainfall events of January 2021 and August and September 2022 and other 2022 dates that I cannot remember. Did those rainfall events result in wash and slope geology changes or any significant flood erosion in the vicinity of the USG project components areas? There were videos of the floodwater flowing from the Jacumba Mountains and into Salton Sea. I found no discussion of specific flood and erosion events from 2021 and 2022 and even early 20223 [sic] in the April 2023 DSEIR.

Response 6b-22

The reader is referred to Response 6a-3.

CHAPTER 5: LIST OF PREPARERS

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CHAPTER 5: LIST OF PREPARERS

5.1 LEAD AGENCY STAFF

Imperial County

Planning and Development Services Department
801 Main Street
El Centro, CA 92243

- Michael Abraham, Assistant Planning and Development Services Director
- Diana Robinson, Planning Division Manager

5.2 CONSULTANTS AND OTHER INDIVIDUALS INVOLVED IN THE PREPARATION OF THE EIR

5.2.1 EIR Consultant

Benchmark Resources

2515 East Bidwell Street
Folsom, CA 95630

- Bruce Steubing, Principal and Project Director
- Andrew Heinemann, State Licensed Geologist
- Monika Krupa, Senior Planner
- Kristin Faoro, Senior Planner
- Mark Hernandez, Graphics Production
- Katharina McKillip, Document Production Manager

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CHAPTER 6: REFERENCE AND RESOURCES

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CHAPTER 6: REFERENCES AND RESOURCES

References quoted from the Draft SEIR can be found in Chapter 9, “References and Resources,” of the Draft SEIR. The following references and resources pertain to the Final SEIR only.

Chapter 1, “Introduction”

No references.

Chapter 2, “CEQA Review”

No references.

Chapter 3, “Draft EIR Errata”

No references.

Chapter 4, “Response to Comments”

County of Imperial. 2021. *Notice of Completion of Inspection and Surface Mining Inspection Report* for the Plaster City Quarry, CA Mine ID Number 91-13-0005.

_____. 2022. *Notice of Completion of Inspection and Surface Mining Inspection Report* for the Plaster City Quarry, CA Mine ID Number 91-13-0005.

_____. 2023. *Notice of Completion of Inspection and Surface Mining Inspection Report* for the Plaster City Quarry, CA Mine ID Number 91-13-0005.

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CHAPTER 7: ACRONYMS AND GLOSSARY

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CHAPTER 7: ACRONYMS AND GLOSSARY

ACHP	Advisory Council on Historic Preservation
ACOE	Army Corps of Engineers
AB	assembly bill
AF/yr	acre-feet per year
AF	acre-feet
APE	area of potential effect
APN	Assessor Parcel Number
ARB	air resources board
ATCM	Airborne Toxic Control Measure
BACT	best available control technology
BAU	business as usual
bgs	below ground surface
BLM	Bureau of Land Management
BMPs	best management practices
BO	biological opinion
CAAQS	California ambient air quality standards
CAFÉ	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act of 1988
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (former)
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQ	White House Council on Environmental Quality

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH ₄	methane
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ E	carbon dioxide equivalent
County	Imperial County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CRR	cultural resources report
CUP	conditional use permit
CWA	Clean Water Act
DEIR	draft environmental impact report
DO	dissolved oxygen
DOC	California Department of Conservation
DPW	Imperial County Department of Public Works
DWR	California Department of Water Resources
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act of 2007
EMFAC	Emission Factor Model
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
ESA	environmental site assessment

°F	Fahrenheit
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	flood insurance rate map
FMP	flood management plan
ft/s	feet per second
FTHL	flat-tailed horned lizard
GHG	greenhouse gases
GIS	geographic information system
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
gpd	gallons per day
gpm	gallons per minute
GVWR	Gross Vehicle Weight Rating
GWP	global warming potential
H ₂ O	water vapor
HA	hydrologic area
HCP	Habitat Conservation Plan
HDPE	high-density polyethylene pipe
HEC-RAS	Hydrologic Engineering Centers River Analysis System
HFCs	Hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Plan
hp	horsepower
HRA	health risk assessment
HA	hydrologic unit
ICAPCD	Imperial County Air Pollution Control District
in/sec	inches per second
IPaC	Information for Planning and Conservation
IS/MND	Initial Study/Mitigated Negative Declaration
IPCC	Intergovernmental Panel on Climate Change

Lb/day	Pounds per day
LCFS	Low Carbon Fuel Standard
LDAMDV	light duty auto – medium duty vehicle
Ldn	day-night noise level (also DNL)
Leq	equivalent noise level
LEV	low-emission vehicle
LUP	linear utility project
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Levels
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
mL/hr	milliliters per hour
MMRP	mitigation monitoring and reporting plan
MMT	million metric tons
MMTCO ₂ E	million metric tons of CO ₂ E
mph	miles per hour
MRZs	Mineral Resource Zones
msl	mean sea level
MT	million tons
MTC	Metropolitan Transportation Commission
MW	megawatts
N	Nitrate
NAAQS	national ambient air quality standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	National Academy of Sciences
NCDC	National Climatic Data Center
ND	negative declaration
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NF ₃	nitrogen trifluoride
NHTSA	Department of Transportation's National Highway Traffic Safety Administration

NOI	Notice of Intent
NRHP	National Register of Historic Places
N ₂ O	nitrous oxide
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NOA	notice of availability
NOAA	National Oceanic and Atmospheric Administration
NOC	notice of completion
NO	nitric oxide
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
O ₃	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Imperial County Office of Emergency Services
OHWM	ordinary high water mark
ONRW	Outstanding National Resource Waters
OPR	Governor's Office of Planning and Research
OSHA	U.S. Department of Labor Occupational Safety and Health Administration
PBS	Peninsular bighorn sheep
PFCs	perfluorocarbons
PFYC	Potential Fossil Yield Classification
PG&E	Pacific Gas and Electric Company
PM ₁₀	respirable particulate matter
PM _{2.5}	particulate matter
ppm	parts per million
PRC	Public Resources Code
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
PSD	prevention of significant deterioration
PV	photovoltaic

QSP	qualified SWPPP practitioner
RAQS	Regional Air Quality Strategy
ROG	reactive organic gases
ROW	right of way
RPO	Resource Protection Ordinance
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCS	sustainable communities strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SEIR	subsequent environmental impact report
SEIS	Subsequent environmental impact statement
SF ₆	hexafluoride
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMO	surface mining ordinance
SMP	surface mining permit
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SR	State Route
SSAB	Salton Sea Air Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCR	tribal cultural resources
TDS	total dissolved solids
TMDL	total maximum daily load
tpy	tons per year

VOC	volatile organic compounds
UBC	Uniform Building Code of 1997
USBR	U.S. Bureau of Reclamation
USDA	United States Department of Agriculture
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USG	United States Gypsum
USGS	U.S. Geological Survey
VDECS	Verified Diesel Emission Control Strategies
WEAP	worker education awareness program
WDR	Waste Discharge Requirement
WMMA	West Mesa Management Area
WSA	Water Supply Assessment
yr	year

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APPENDICES

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APPENDIX A: COMMENTS ON THE DRAFT SEIR

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COUNTY EXECUTIVE OFFICE

Miguel Figueroa
County Executive Officer
miguelfigueroa@co.imperial.ca.us
www.co.imperial.ca.us



County Administration Center
940 Main Street, Suite 208
El Centro, CA 92243
Tel: 442-265-1001
Fax: 442-265-1010

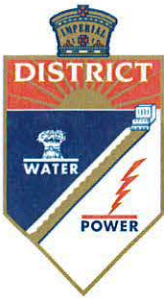
April 19, 2023

TO: Diana Robinson, Planning and Development Services Department
FROM: Rosa Lopez-Solis, Executive Office 
SUBJECT: Comments – USG Plaster City Quarry Expansion and Well No. 3 Project – CUP 20-0016

The County of Imperial Executive Office is commenting on USG Plaster City Quarry Expansion and Well No. 3 Project – CUP 20-0016 project. The Executive Office would like to inform the developer and the Imperial County Planning Department of conditions and responsibilities should the applicant seek a Conditional Use Permit (CUP). The conditions shall be placed on CUP 20-0016 and commence prior to the approval of an initial grading permit and subsequently continue throughout the permitting process. This includes, but not limited to:

- Sales Tax Condition. The permittee is required to have a Construction Site Permit reflecting the project site address, allowing all eligible sales tax payments are allocated to the **County of Imperial, Jurisdictional Code 13998**. The permittee will provide the County of Imperial a copy of the CDTFA account number and sub-permit for its contractor and subcontractors (if any) related to the jobsite. Permittee shall provide in written verification to the County Executive Office that the necessary sales and use tax permits have been obtained, prior to the issuance of any grading permits.
- Construction/Material Budget: Prior to a grading permit, the permittee will provide the County Executive Office a construction materials budget: an official construction materials budget or detailed budget outlining the construction and materials cost for the processing facility on permittee letterhead.

Should there be any concerns and/or questions, do not hesitate to contact me.



IID

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May 22, 2023

Ms. Diana Robinson
Planning Division Manager
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: NOA of a Draft SEIR for the USG Plaster City Quarry Expansion and Well No. 3 Project;
CUP 20-0016

Dear Ms. Robinson:

On April 11, 2023, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, the Notice of Availability of Draft Subsequent EIR for the USG Plaster City Quarry Expansion and Well No. 3 project; Conditional Use Permit No. 20-0016. The project consists of approval of a CUP from the County for the development of a new production well, Well No. 3, and an associated pipeline to provide water to the USG Quarry. The Draft SEIR evaluates potential environmental impacts associated with mining and reclamation activities under the Quarry expansion, for full disclosure and to provide the appropriate CEQA review for use by responsible agencies. The USG Plaster City Quarry consist of 2,048 acres located in the northwestern portion of Imperial County adjacent to the Imperial County/San Diego County line. Well No. 3 would be located east of the existing Quarry on a USG-owned parcel (APN 033-020-009). The proposed pipeline would be approximately 3.5 miles in length and would be developed within an existing right-of-way over an additional 12.7 acres (30-foot-wide by 3.5 miles long) of land, most of which (7.25 acres) is managed by the BLM. A portion of the right-of-way (3.75 acres) is located within the Anza-Borrego Desert State Park. The proposed pipeline would be developed within the existing narrow-gauge railroad right-of-way that is already disturbed by an existing unpaved access road.

2-1

IID has reviewed the Draft SEIR and found that the comments provided in the August 22, 2022 district letter (see attached letter) continue to apply.

2-2

Should you have any questions, please do not hesitate to contact me at 760-482-3609 or at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,

Donald Vargas
Compliance Administrator II

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Jamie Asbury – Manager, Energy Dept.
Matthew H Smelser – Deputy Mgr. Energy Dept.
Geoffrey Holbrook – General Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes. – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.



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August 22, 2022

Mr. Jim Minnick
Director
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

SUBJECT: NOP of a Draft SEIR For USG Plaster City Quarry Expansion and Well No. 3 Project; CUP20-0016

Dear Mr. Minnick:

On July 15, 2022, the Imperial Irrigation District received from the Notice of Preparation of a Draft Supplement Environmental Impact Report for the USG Plaster City Quarry expansion and well no. 3 project. The USG Plaster City Quarry consists of 2,048 acres located in the northwestern portion of Imperial County adjacent to the Imperial County/San Diego County line. Well No. 3 would be located east of the existing Quarry. The proposed pipeline would be approximately 3.5 miles in length and would be developed within an existing right-of-way over an additional 12.7 acres (30-foot-wide by 3.5 miles) of land, most of which (7.25 acres) is managed by the BLM. A portion of the ROW (3.75 acres) is located within the Anza-Borrego Desert State Park.

The IID has reviewed the application and has the following comments:

1. To obtain electrical service for the proposed well pump #3, the applicant should be advised to contact Gabriel Ramirez, IID Service Planner, at (760) 339-9257 or e-mail Mr. Ramirez at gramirez@iid.com to initiate the customer service application process. In addition to submitting a formal application (available for download at the district website <http://www.iid.com/home/showdocument?id=12923>), the applicant will be required to submit pump specifications: horse power, operating voltage, pump starter information; AutoCAD site plan, drawings, proposed power line rights of way and access road to operate and maintain proposed underground power line that will serve the well pump, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing new electrical service to the project.
2. Electrical capacity is limited in the project area. A circuit study may be required. Any system improvements or mitigation identified in the circuit study to enable the provision of electrical service to the project shall be the financial responsibility of the applicant.
3. The proposed project is subject to IID's Interim Water Supply Policy. In order to obtain a water supply from IID for a non-agricultural project, the project proponent will be required to comply with all applicable IID policies and regulations and is required to enter into a

2-3

2-4

water supply agreement. Such policies and regulations require, among other things, that all potential environmental and water supply impacts of the Project, including potential impacts to the Salton Sea as a result of reduced drainage flow, be adequately assessed, appropriate mitigation developed if warranted, including any necessary approval conditions adopted by the relevant land use and permitting agencies.

2-4 Cont.

4. IID has implemented a water supply apportionment program pursuant to IID's revised Equitable Distribution Plan, which the Project is subject to including any amending or superseding policy for the same or similar purposes, during all or any part of the term of said water supply agreement, IID shall have the right to apportion the Project's water as an industrial water user. For more information on how to obtain a water supply agreement, please visit IID's website at <https://www.iid.com/water/municipal-industrial-and-commercial-customers> or contact Justina Gamboa-Arce at (760) 339-9085 or jgamboarce@iid.com.

5. Although the proposed well #3 is not an issue because it is outside of the Lower Colorado River Accounting Surface area, nonetheless, the project is subject to an IID Encroachment Permit for a pump the applicant plans to place on the Westside Main Canal.

6. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at <https://www.iid.com/about-iid/department-directory/real-estate>. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements. No foundations or buildings will be allowed within IID's right of way.

2-5

7. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities

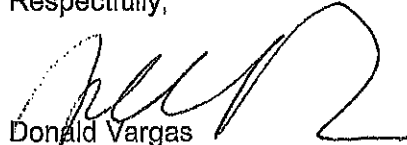
8. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.

2-6

Jim Minnick
August 22, 2022
Page 3

Should you have any questions, please do not hesitate to contact me at 760-482-3609 or at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,



Donald Vargas
Compliance Administrator II

Enrique B. Martinez – General Manager
Mike Pacheco – Manager, Water Dept.
Jamie Asbury – Manager, Energy Dept.
Constance Bergmark – Deputy Mgr. Energy Dept., Energy Business, Regulatory & Transactions Admin.
Geoffrey Holbrook – Interim General Counsel
Michael P. Kemp – Superintendent, Regulatory & Environmental Compliance
Laura Cervantes – Supervisor, Real Estate
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

California Department of Transportation



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May 25, 2023

11-IMP-78

PM 1.6

USG Plaster City Quarry Expansion and Well No. 3 Project
Draft SEIR/SCH #20011121133

Ms. Diana Robinson
Planning Division Manager
Imperial County Planning and Development Services
801 Main Street
El Centro, CA 92243

Dear Ms. Robinson:

Thank you for including the California Department of Transportation (Caltrans) in the review for the Draft Subsequent Environmental Impact Report (SEIR) of USG Plaster City Quarry Expansion and Well No. 3 Project (SCH #20011121133) located near State Route 78 (SR-78) in Imperial County. The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with Caltrans' mission and state planning priorities. Caltrans has the following comments:

Hauling

Caltrans has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway network.

Additional information is provided online at:

<http://www.dot.ca.gov/trafficops/permits/index.html>

3-1

If you have any questions, please contact Mark McCumsey at (619) 985-4957 or by email at mark.mccumsey@dot.ca.gov.

Sincerely,

Rogelio Sanchez for

MAURICE EATON
Branch Chief
Local Development Review



State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 Inland Desert Region
 3602 Inland Empire Boulevard, Suite C-220
 Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
 CHARLTON H. BONHAM, Director



June 2, 2023
 Sent via email

Diana Robinson
 Planning Division Manager
 Imperial County Planning and Development Services Department
 801 Main Street
 El Centro, CA 92243

USG Plaster City Quarry Expansion and Well No. 3 Project (PROJECT)
 Draft Subsequent Environmental Impact Report (DSEIR)
 SCH# 2001121133

Dear Diana Robinson:

The California Department of Fish and Wildlife (CDFW) received a Draft Subsequent Environmental Impact Report (DSEIR) from the Imperial County Planning and Development Services Department (Imperial County) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA guidelines¹.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

4a-1

¹CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

4a-1
Cont.

PROJECT DESCRIPTION SUMMARY

Proponent: United States Gypsum (USG)

Objective: The proposed Project consists of approval of a Conditional Use Permit from Imperial County for the development of a new production well, Well No. 3, and an associated pipeline to provide water to the USG Quarry. A Draft Final Environmental Impact Report/Environmental Impact Study was completed for the project in April 2006. On March 18, 2008, a Final Environmental Impact Report/Environmental Impact Study was certified by the Imperial County Board of Supervisors pursuant to the requirements of CEQA (SCH 2001121133). As such, the potential environmental impacts of the proposed quarry expansion and reclamation and development of Quarry Well No. 3 were previously evaluated in the 2008 Environmental Impact Report/Environmental Impact Study. Additional land use entitlements from Imperial County are not needed for mining and reclamation activities under the quarry expansion. However, because Well No. 3 would provide water to support quarry operations, this DSEIR evaluates potential environmental impacts associated with mining and reclamation activities under the quarry expansion. The DSEIR also evaluates potential environmental impacts associated with the restoration of the Viking Ranch site (207 acres) and preservation of the Old Kane Springs Road site (121 acres). USG identified these sites for preservation to provide compensatory mitigation for impacts to 139 acres of waters of the United States at the quarry.

4a-2

The Project includes expansion of the quarry areas on a series of mining claims to the south and southeast of the existing quarries. The existing and proposed quarry would be located primarily on private lands, but also would include new disturbance within mining claims on public lands managed by the Bureau of Land Management (BLM). The total acreage of USG's claims on public lands is 73.2 acres, and planned disturbance would be limited to 18.1 acres within them. The area proposed for continuing and future quarrying is on middle and lower slopes and a broad alluvial wash.

Well No. 3 would be located east of the existing quarry on a USG-owned parcel (APN 033-020-009) and would provide processing water via a 10-inch-diameter,

approximately 3.5-mile-long underground pipeline that would be developed within the existing USG narrow-gauge railroad right-of-way. The pipeline would extend from Well No. 3 to the existing offload facility within the quarry processing area. In conjunction with the development of the pipeline, USG would install an electric supply line to serve the well pump. The power service line would be installed underground from the well head to the quarry gate, and power poles would be installed within the quarry site. The well would be approximately 6 inches in diameter and 565 feet in depth. The water would be used in the quarry for dust suppression on the haul roads and crushing equipment, for the watering of transplanted desert plant species during reclamation, and as a possible supply of potable water for use by employees.

The proposed pipeline would be constructed of high-density polyethylene pipe and would be installed at a depth of about 4 feet below the ground surface. The pipeline would be developed within the existing narrow-gauge railroad right-of-way that is already disturbed by an existing unpaved access road. A trench, approximately five feet wide and seven feet deep would be excavated between the railroad and access road for installation of the pipeline. Excavated soils would be temporarily stockpiled along the alignment and used as backfill. Import of fill material is not anticipated. Construction would occur within a 30-foot-wide area along the entire length of the pipeline alignment. Development of the pipeline would disturb approximately 12.7 acres (30 foot wide by 3.5 miles) of land, most of which is managed by the BLM. A portion of the right-of-way (3.75 acres) is located within the Anza-Borrego Desert State Park. All waterline/powerline construction areas would be restored to pre-project conditions following the completion of construction activities.

The proposed project also includes restoration and/or preservation of two proposed off-site mitigation sites (Viking Ranch restoration site and Old Kane Springs Road preservation site) in San Diego County for the purpose of mitigating anticipated impacts to jurisdictional waters within the quarry expansion area. These project components were not evaluated in the 2008 Environmental Impact Report/Environmental Impact Study or the 2019 Supplemental Environmental Impact Study but are undergoing environmental review in the DSEIR.

The Viking Ranch parcels were primarily former orchard land located north of Borrego Springs and within the Coyote Creek Wash. However, parcel 140-030-10-00 and the southwestern portion of parcel 140-030-11-00 are undeveloped and were not historically in agriculture. The proposed mitigation site is located approximately 26 miles from the USG Quarry. Viking Ranch was used for orchard production until the site was purchased by the Borrego Water District in 2017. Previous agricultural land modifications were constructed that diverted hydrology of Coyote Creek around the agricultural field. These topographic modifications included excavation of ditches and construction of berms to protect the orchard from flooding. The restoration program proposes to remove these diversion features to re-establish braided, unconstrained flow

across the site, consistent with the existing Coyote Creek floodplain. Proposed restoration activities at the Viking Ranch site would include tree stump removal, grading, excavations, and revegetation of the site. These activities are expected to require the use of backhoes, a trencher, grader, dozer, and dump truck, as well as supply and water trucks. The Old Kane Springs Road Preservation Site would be preserved in its existing conditions. No construction or development is proposed at this site.

Location: The Project's proposed USG Quarry Well No. 3 is located in Imperial County on USG-owned property APN 033-020-009. It is located within Section 16 of Township 13 South, Range 09 East SBM.

The Project's proposed pipeline alignment is located in Imperial County within USG-owned property (APNs 033-020-009; 033-060-010 and -008); land owned by the U.S. Bureau of Land Management (BLM) (APNs 033-010-025 and -017; and 033-060-012); and Anza-Borrego Desert State Park (APN 033-010-016). The pipeline crosses Sections 16, 17, 18, and 19 of Township 13 South, Range 09 East SBM.

The Project's associated Viking Ranch restoration site is located in San Diego County and consists of approximately 150 acres of property owned by Borrego Water District (APNs 140-030-09-00 and -11-00); approximately 10 acres of privately owned property (APN 140-030-10-00); and approximately 47 acres of lands adjacent to these parcels that would be restored or enhanced. The adjacent lands consist of approximately 13 acres of land owned by the Anza-Borrego Foundation (APN 140-030-05-00), approximately 3 acres of State Park-owned land to the north of the restoration site, and approximately 31 acres of State Park-owned lands to the east of the restoration site (APN 140-030-07-00). The restoration site is located in the southeast corner of Section 4 of Township 10 South, Range 06 East SBM.

The Project's associated 121-acre Old Kane Springs Road preservation site is located in San Diego County on privately owned property (APN 253-150-34-00). The mitigation site is located in Section 18 of Township 12 South, Range 08 East SBM.

Timeframe: The proposed project and its associated mining and reclamation activities are anticipated to disrupt portions of the Project site for at least 80 years.

COMMENTS AND RECOMMENDATIONS

CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). CDFW offers the comments and recommendations below to assist Imperial County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The DSEIR has not adequately identified and

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disclosed the Project's impacts (i.e., direct, indirect, and cumulative) on biological resources and whether those impacts are reduced to less than significant.

CDFW's comments and recommendations on the DSEIR are explained in greater detail below and summarized here. CDFW is concerned that the DSEIR does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW also concludes that the DSEIR lacks sufficient information to facilitate a meaningful review by CDFW, including both a complete and accurate assessment of biological resources on the Project site. CDFW recommends that additional information and analyses be added to a revised DSEIR, along with avoidance, minimization, and mitigation measures that avoid or reduce impacts to less than significant.

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Existing Environmental Setting

Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed Project. CDFW is concerned that the assessment of the existing environmental setting has not been adequately analyzed in the DSEIR. CDFW is concerned that without a complete and accurate description of the existing environmental setting, the DSEIR may provide an incomplete analysis of Project-related environmental impacts.

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The DSEIR lacks a recent and complete assessment of biological resources within the Project site and surrounding area. A complete and accurate assessment of the environmental setting and Project-related impacts to biological resources is needed to both identify appropriate avoidance, minimization, and mitigation measures and demonstrate that these measures reduce Project impacts to less than significant.

Mitigation Measures

CEQA requires that a DSEIR include mitigation measures to avoid or reduce significant impacts. CDFW is concerned that the mitigation measures proposed in the DSEIR are not adequate to avoid or reduce impacts to biological resources to below a level of significance. To support Imperial County in ensuring that Project impacts to biological resources are reduced to less than significant, CDFW recommends adding mitigation measures for an assessment of biological resources, bats, and the CDFW Lake and Streambed Alteration Program, as well as revising the mitigation measures (or sub-measures) for burrowing owl (*Athene cunicularia*), nesting birds, and artificial nighttime lightning.

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1) Assessment of Biological Resources

Page 3 of the Project's Biological Report indicates that biological surveys over the Project areas, including the quarry and proposed new pipeline, were conducted in October 2014, April and October of 2016, and March and April of 2017.

CDFW generally considers biological field assessments for wildlife to be valid for a one-year period. Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts, that special emphasis should be placed on environmental resources that are rare or unique to the region, and that significant environmental impacts of the proposed Project are adequately investigated and discussed. CDFW recommends that the DSEIR is revised to include the findings of a complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the footprint of proposed Well #3 and its associated pipeline and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511). Based on findings from a recent biological inventory, CDFW recommends that the DSEIR is revised to include an analysis of direct, indirect, and cumulative impacts to biological resources and identification of appropriate avoidance, minimization, and mitigation measures.

The Project occurs in and adjacent to U.S. Fish and Wildlife Service (USFWS) critical habitat for Peninsular bighorn sheep (*Ovis canadensis*) and has the potential to impact this species both directly and indirectly. For example, Peninsular bighorn sheep rely on groundwater-dependent vegetation, especially during the dry summer months. Development of Well No. 3 may impact Peninsular bighorn sheep through drawdown of groundwater that results in fewer sources of forage plants. CDFW recommends that Imperial County seek current data on Peninsular bighorn sheep occurrence in the Project area in consultation with CDFW wildlife biologists (contact Jacob Skaggs at Jacob.Skaggs@Wildlife.ca.gov for more information) to ensure that data are recent and that direct and indirect impacts to this species from Project activities have been adequately analyzed in the CEQA document. CDFW recommends that the results of this consultation be included in a revised DSEIR.

Additionally, because quarry expansion activities will impact different areas of undisturbed habitat over an 80-year period, CDFW recommends that additional surveys for rare, threatened, endangered, and other sensitive species are conducted over undisturbed areas proposed for quarry expansion prior to ground disturbance or vegetation removal activities.

CDFW recommends that Imperial County add in a revised DSEIR the following mitigation measure:

Mitigation Measure BIO-[A]: Assessment of Biological Resources

Prior to adoption of the CEQA document and Project construction activities, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

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2) *Burrowing Owl*

Burrowing owl (*Athene cunicularia*) is a California Species of Special Concern. Take of individual burrowing owls and their nests is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.). Take is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

Page 33 of the Project's Biological Resources Technical Report dated March 2019 (Biological Report) indicates that suitable burrowing owl nesting and foraging habitat is present throughout the project area, and this species is considered to have moderate potential to nest in the Project area. The Biological Report also states that a single burrowing owl was observed during surveys for the project area in October 2014, and that subsequent surveys of the Project area conducted during the breeding season did not detect any burrowing owls.

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Importantly, because the Project's quarrying activities will occur over an 80-year period and undisturbed areas will be impacted at different times, CDFW recommends that focused and pre-construction burrowing owl surveys are completed each time the Project conducts ground disturbance and vegetation removal activities in a new undisturbed area.

Although the DSEIR includes Mitigation Measure 3.4-9 for burrowing owl, CDFW considers the measure to be inadequate in scope and timing to appropriately avoid, minimize, and mitigation impacts to burrowing owl. CDFW recommends that Imperial County revise Mitigation Measure 3.4-9 in a revised DSEIR, with additions in **bold** and removals in ~~strikethrough~~:

Mitigation Measure 3.4-9: Burrowing Owl Avoidance

Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with all Project components (expansion of quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the lifetime of the Project. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.

Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If

the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities. ~~Burrowing Owl Avoidance. If an active burrowing owl burrow is observed within a work area at any time of year, the Designated Biologist or Biological Monitor, in coordination with BLM, will designate and flag an appropriate buffer area around the burrow where project activities will not be permitted. The buffer area will be based on the nature of project activity and burrowing owl activity (i.e., nesting vs. wintering). The Designated Biologist or Biological Monitor will continue to monitor the site until it is confirmed that the burrowing owl(s) is no longer present. If avoidance of quarrying or pipeline construction within the buffer area is infeasible, Burrowing Owls may be excluded from an active wintering season burrow in coordination with CDFW and in accordance with the CDFW's Staff Report on Burrowing Owl Mitigation (March 2012), including provision of replacement burrows prior to the exclusion.~~

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3) Nesting Birds

It is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

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Page 4.2-26 indicates that suitable foraging and nesting habitat for protected bird species, as well as "stopover" habitat for migratory songbirds, is found throughout the Project area. Although the DSEIR includes a sub-measure in Mitigation Measure 3.4-8 for migratory birds, CDFW considers the measure to be insufficient in scope and timing to reduce impacts to a level less than significant. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site and surrounding area be avoided **any time birds are nesting on-site.**

Importantly, because the Project's quarrying activities will occur over an 80-year period and undisturbed areas will be impacted at different times, CDFW recommends that pre-construction nesting bird surveys are completed each time the Project conducts ground disturbance and vegetation removal activities in a new undisturbed area.

CDFW recommends Imperial County revise the following sub-measure in Mitigation Measure 3.4-8, with additions in **bold** and removals in ~~strikethrough~~:

Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

[...]

~~To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs.~~ **Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with all Project components (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.**

[...]

4) Special-Status Bats

Page 4.2-24 of the DSEIR indicates that several special-status bats have at least a moderate potential to forage over the Project area, including the following California Species of Special Concern: California leaf-nosed bat (*Macrotus californicus*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). The DSEIR further indicates that the

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gypsum cliffs in the quarry expansion areas and other cliffs and outcrops immediately adjacent to the quarry provide suitable roosting habitat for most of these species. Project activities associated with the expansion of mining operations may impact bat roosts and result in injury or mortality to bats. Also, any artificial nighttime lighting associated with the Project may also negatively impact bats, and details on lighting plans and lightning specifications and appropriate avoidance, minimization, and mitigation measures are needed (see section below on Artificial Nighttime Lighting).

Page 4.2-59 of the EIR states that potential impacts to bats would be avoided or minimized through Mitigation Measure 3.4-8 (Wildlife Impact Avoidance and Minimization Measures). However, it is unclear which sub-measure in Mitigation Measure 3.4-8 would apply to bats. CDFW recommends focused surveys for the special-status species of bats discussed above are conducted prior to quarry expansion activities to inform appropriate avoidance, minimization, and mitigation measures. CDFW recommends that Imperial County add the following mitigation measure to a revised DSEIR:

Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats

Prior to the initiation of Project activities within suitable bat roosting habitat, Imperial County shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.

If active hibernacula or maternity roosts are identified in the work area or 500 feet extending from the work area during preconstruction surveys, for maternity roosts, quarry expansion activities into undisturbed habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.

A minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.

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5) Artificial Nighttime Lighting

Page ES-18 of the DSEIR includes Mitigation Measure 3.4-8 that indicates the Project will “avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.” However, the DSEIR lacks a discussion of the lighting plans and lighting specifications that will be used across all Project components including quarry expansion activities, Well #3 and associated pipeline construction, and proposed mitigation sites. CDFW recommends that the DSEIR is revised to include a discussion of lightning plans and lightning specifications proposed to be used across all the Project’s components to allow CDFW to conduct a meaningful review and provide expertise on activities that have the potential to adversely affect fish and wildlife resources.

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Additionally, because the Project is located within and adjacent to open-space areas that support Fully Protected Peninsular bighorn sheep (*Ovis canadensis*), several special-status species of bats, migratory birds that fly at night, and other nocturnal and crepuscular wildlife, CDFW recommends the DSEIR is revised to include an analysis of the direct, indirect, and cumulative impacts of artificial nighttime lighting expected to adversely affect biological resources surrounding the Project site. In general, available research indicates that artificial nighttime lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; the detection of resources and natural

predators; and navigation². Further, many of the effects of artificial nighttime lighting on population- or ecosystem-level processes are still poorly understood suggesting that a precautionary approach should be taken when determining appropriate avoidance and minimization measures concerning artificial nighttime lighting.

Regarding impacts on bats, including the California Species of Special Concern discussed in the previous section, while artificial nighttime lighting can benefit some opportunistic bat species by providing a foraging resource where insect prey is attracted to lights,³ numerous studies have shown that direct lighting on roost structures can have profound negative effects on bats roosting in those structures. For example, the complete abandonment (or significant reduction of the bat population) at human-made structures used by roosting bats following the installation of bright artificial lighting has been documented on multiple occasions (e.g., Boldogh et al. 2007; Rydell et al. 2017). Downs et al. (2003) found that the intensity of the artificial light near the roost affected the bats' behavior during emergence more than the color of the light, while Rydell et al. (2017) found that the loss of bat colonies at structures that were newly illuminated was most apparent when light was applied in such a manner that there was no dark corridor for the bats to exit and return to the roost.

Adverse effects from the illumination of a roost structure by artificial lights extend beyond simply having the potential to discourage further use of that structure by bats. For example, Boldogh et al. (2007) found that not only did bright artificial lighting at roosts delay the start of the emergence and/or prolong the duration of bats' emergence from that structure, but also juveniles at roost structures that were illuminated were significantly smaller than juveniles at roost structures that were not illuminated by bright artificial lights. The smaller body masses of juveniles at illuminated sites may be attributed to the delayed emergences at those sites, which not only reduces the total foraging time available for lactating female bats (and later, juveniles learning to hunt) each night, but also causes those bats to miss the peak insect abundance that occurs at dusk, reducing their foraging efficiency. These findings suggest that even if a maternity colony chooses to remain at a newly illuminated roost site, juvenile survivorship is negatively affected, and therefore the reproductive success of those colonies could be severely compromised.

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² Gatson, K. J., Bennie, J., Davies, T., Hopkins, J. *The ecological impacts of nighttime light pollution: a mechanistic appraisal*. *Biological Reviews*, 88.4 (2013): 912-927.

³ It should be noted that because many insects congregate around artificial light sources and die from exhaustion, long-term reductions of insect populations from light pollution is expected to have significant adverse effects for predators of insects such as bats (Hölker et al. 2010).

Rydell et al. (2017) and Voigt et al. (2018) note that maintaining darkness at maternity roosts is particularly important because at these types of roosts, aggregations of bats are present consistently over a long period of time, individual bats emerge from predictable locations, and juvenile bats are learning how to fly. Illumination of a maternity roost renders the colony more vulnerable to opportunistic predators such as raptors and owls, and predator-avoidance behaviors such as delayed emergence times reduce their foraging opportunities, thereby lowering juvenile survivorship. Suitable maternity roost sites are a limited resource, and if an alternate roost site is not available, extirpation of the entire colony could occur as a result of artificial lighting. Various studies (e.g., Boldogh et al. 2007; Rydell et al. 2017; Voigt et al. 2018) have concluded that because bright artificial lighting at roost structures has significant negative effects on bats, including the potential for the extirpation of an entire maternity colony, the addition of lighting near an established roost should be considered during the environmental impact review process.

To support Imperial County in avoiding, minimizing, and mitigating the impacts of artificial nighttime lighting on biological resources, CDFW recommends that Imperial County revise the following sub-measure of Mitigation Measure 3.4-8 in a revised DSEIR as follows, with additions in **bold** and removals in ~~strikethrough~~:

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Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

[...]

~~Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.~~ **Throughout the lifetime of the Project, the Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all lighting for the Project is fully shielded, cast downward, reduced in intensity to the greatest extent, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at <http://darksky.org/>). Imperial County shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.**

[...]

6) CDFW's Lake and Streambed Alteration Program

Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or

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obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit debris, waste, or other materials that could pass into any river, stream, or lake. Note that "any river, stream, or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

Page 4.6-22 of the DSEIR indicates that the Project's Jurisdictional Delineation "identified a total 325.79 acres of unnamed streambeds within Quarry area and found that the expansion of quarrying activities would result in impacts to approximately 134.08 acres of CDFW, USACE, and RWQCB jurisdictional drainages." The DSEIR also indicates that "Well No. 3 and the water supply pipeline would result in filling of all ephemeral streambeds and washes within the waterline/powerline area, and that these activities would result in impacts to 0.21 acres of CDFW, USACE, and RWQCB jurisdictional drainages." Regarding the Restoration of Viking Ranch, Figure 2-6 of the DSEIR shows that restoration plans will involve removal and creation of berms, backfill of diversion ditches, installation of a grade structure, grading of ephemeral channels, and recontouring of areas of the floodplain within the Viking Ranch Project boundary.

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The DSEIR includes Mitigation Measure 3.5-1f: "Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the CDFW and the US Army Corps of Engineers to determine whether either agency holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act, respectively."

In addition to this measure and to address requirements under CDFW's Lake and Streambed Alteration Program, CDFW recommends that Imperial County add the following mitigation measure to a revised DSEIR:

Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program

Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make

4a-12

subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be filled out and submitted online at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

4a-12 Cont.

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

4a-13

CONCLUSIONS

CDFW appreciates the opportunity to comment on the DSEIR to assist Imperial County in identifying and mitigating Project impacts to biological resources. CDFW concludes that the DSEIR does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW also concludes that the DSEIR lacks sufficient information for a meaningful review of impacts to biological resources, including a complete and accurate assessment of biological resources on the Project site. The CEQA Guidelines (§ 15088.5) indicate that recirculation is required when insufficient information in the DSEIR precludes a meaningful review. CDFW recommends that a revised DSEIR including a recent and complete assessment of impacts to biological resources (inclusive of recent data on Peninsular bighorn sheep), as well as lightning plans and design specifications, be recirculated for public comment. CDWF also recommends that revised and additional mitigation measures as described in this letter be added to a revised DSEIR to avoid or reduce significant impacts.

4a-14

CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts. Questions regarding this letter or further coordination should be directed to Jacob Skaggs, Environmental Scientist, at jacob.skaggs@wildlife.ca.gov.

Diana Robinson, Planning Division Manager
Imperial County Planning and Development Services Department
June 2, 2023
Page 17

Sincerely,

DocuSigned by:

84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

Attachment 1: MMRP for CDFW-Proposed Mitigation Measures

ec:

Heather Brashear, Senior Environmental Scientist (Supervisor), CDFW
Heather.Brashear@Wildlife.ca.gov

Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

Rollie White, U.S. Fish and Wildlife Service
rollie_white@fws.gov

Vincent James, U.S. Fish and Wildlife Service
vincent_james@fws.gov

REFERENCES

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ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Mitigation Measures	Timing and Methods	Responsible Parties
<p>Mitigation Measure BIO-[A]: Assessment of Biological Resources</p> <p>Prior to adoption of the CEQA document and Project construction activities, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.</p>	<p>Timing: Prior to adoption of the CEQA document and Project construction activities</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>
<p>Mitigation Measure 3.4-9: Burrowing Owl Avoidance</p> <p>Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with all Project components (expansion of quarrying activities</p>	<p>Timing: Prior to the start of Project-related activities for focused surveys. No less than 14 days prior to the start of Project-related activities and within 24</p>	<p>Implementation: Project proponent</p> <p>Monitoring and Reporting: Imperial County</p>

<p>into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the lifetime of the Project. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.</p> <p>Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the <i>Staff Report on Burrowing Owl Mitigation</i> (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the <i>Staff Report on Burrowing Owl Mitigation</i>. If the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance,</p>	<p>hours prior to ground disturbance for preconstruction surveys.</p> <p>Methods: See Mitigation Measure</p>	
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<p>minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities.</p>		
<p>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</p> <p>[...]</p> <p>Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with all Project components (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.</p> <p>[...]</p>	<p>Timing: No more than 3 days prior to vegetation removal or ground-disturbing activities for all phases of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>

<p>Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats</p> <p>Prior to the initiation of Project activities within suitable bat roosting habitat, Imperial County shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.</p> <p>If active hibernacula or maternity roosts are identified in the work area or 500 feet extending from the work area during preconstruction surveys, for maternity roosts, quarry expansion activities into undisturbed habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.</p> <p>A minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise.</p>	<p>Timing: Prior to grading or vegetation removal activities</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>
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<p>Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.</p>		
<p>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</p> <p>[...]</p> <p>Throughout the lifetime of the Project, the Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all lighting for the Project is fully shielded, cast downward, reduced in intensity to the greatest extent, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). Imperial County shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.</p> <p>[...]</p>	<p>Timing: Throughout the lifetime of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project proponent and Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>

<p>Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program</p> <p>Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.</p>	<p>Timing: Prior to construction and issuance of any grading permit</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Sponsor</p> <p>Monitoring and Reporting: Imperial County</p>
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Kristin Faoro

From: Skaggs, Jacob@Wildlife <Jacob.Skaggs@Wildlife.ca.gov>
Sent: Thursday, August 17, 2023 4:34 PM
To: Bruce Steubing; Diana Robinson
Cc: Brashear, Heather@Wildlife; Michael Abraham; Kristin Faoro; Justin Wood; Carrazco, Luis; John Bowsher (jbowsher@usg.com); John M. Bowman (JBowman@elkinskalt.com); Tricia Wotipka; msweesy@dudek.com; Stephen Lilburn (stephen@lilburncorp.com); Botta, Randy@Wildlife; Colby, Janene@Wildlife
Subject: RE: USG Plaster City Quarry Expansion and Well No. 3 Draft Subsequent Environmental Impact Report Follow-Up
Attachments: Lambing season Mine site.jpg; PBS Data FCM 2015-2022.jpg; PBS Data FCM Close-up 2015-2022.jpg; Prelambing season_Mine site.jpg; Summer mine site.jpg

Good afternoon, Bruce and Diana:

Please find attached updated maps showing Peninsular bighorn sheep (PBS) use in the Project area for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). Below are CDFW's additional comments for the Imperial County for the Project, including updated analysis based on data in the attached maps and recommendation on how to avoid and reduce significant impacts to PBS. 4b-1

Based on GPS data collected between 2015 and 2022, PBS do not use the active mining area in the north half of the quarry but do utilize the currently undisturbed habitat within the proposed mine expansion area to the south. While the gypsum formations within the southern quarry boundary do not appear to be used much by PBS, clusters of location data surrounding the margins of the formations indicate that these areas do meet PBS needs (PCEs) particularly during the lamb-rearing and summer seasons (refer to close-up maps by season). Clusters of PBS data surrounding the gypsum formations and within the wash below the formations are most notable during the summer months (June – August). The drainages wrap around the formations and provide ephemeral water sources, and in times of drought provide forage opportunities since plants grow more readily in drainages and washes compared to the steep, rocky slopes above the formations. The washes do not make up “core PBS habitat” based on radio-collar data; however, at certain times of the year, the washes and drainages provide critical resources for PBS and are therefore just as important to survival as more frequently used areas. Furthermore, in practice, the gypsum formations next to the washes provide shade, shelter, and escape terrain regardless that it does not meet the strict definition of “escape terrain” described in the SEIR. There are no permanent water sources within the Fish Creek Mountains (FCM), yet despite this fact, radio-collared data collected from 2015 through May 2022 had not shown any movement of FCM ewes out of the area. However, in July 2022, one radio-collared ewe did move into the Coyote Mountains (south of the FCM) for a few days before returning to the FCMs. Due to the lack of permanent water sources in the FCM, small drainages that can collect and store water even for short periods of time and sustain plant growth are vital. 4b-2

Radio-collared ewes do utilize the project area during the lamb-rearing season, and it is important to emphasize that the points on the map do NOT represent ALL movement data of radio-collared ewes since GPS data are only collected a few times per day, and the data only represent a small portion of the total ewe population and thus far no representation of ram use. Because there is radio-collared data within the project area during the lamb-rearing season, it is considered lamb-rearing habitat even if it doesn't meet the definition described in the USFWS Recovery Plan. A study conducted for CDFW by a graduate student (Kendall Hines), titled “Post-partum habitat use for Peninsular bighorn sheep (*Ovis canadensis nelsoni*) in Southern California, demonstrated that 3 of the 4 ewe groups studied moved closer to alluvial fan habitat during the post-partum period and that 2 of 4 ewe groups moved to lower elevation habitat. While the study was not conducted in the FCM, data indicate that ewes in the FCM also rely low elevation habitat near alluvial fans during the lambing season. Mitigation Measure 3.4-12 states that “New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the Wildlife Agencies. Does the above paragraph mean that only “NEW” 4b-3

mining activities will not occur during the lambing season, but if new ground-disturbing activities were to start in December, that they could continue to work during the lambing season? CDFW recommends that no mining activities occur in the southern section of the quarry boundary during the lambing season or minimally not to occur during the peak of lamb-rearing season (February – April). Regardless, the mining expansion will result in loss of habitat for the ewes in this area. The magnitude of this loss will not be known without the continuation of radio-collar monitoring activities. Mitigation measure 3.5-1d, requires USFWS to provide a Biological Opinion about “*whether the proposed project is “likely or not likely to jeopardize” the continued existence of the species, or result in the adverse modification of critical habitat; (2) provide an incidental take statement that authorizes the project; and (3) identifies mandatory reasonable and prudent measures to minimize incidental take, along with terms and conditions that implement them*”. However, in order to make this assessment, USFWS will rely on data collected by CDFW; and therefore, mitigation funds should be made available to CDFW for on-going radio-collaring activities and field monitoring studies within the FCM.

4b-3
Cont.

4b-4

4b-5

Radio-collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s are not being met due to the reasons listed above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG. However, we do not think a guzzler is currently warranted without first careful study and consideration since artificial water sources can often result in increased predation. So far we have had no documented cases of mountain lion predation in the FCM. Currently, there are 3 satellite-collars in the FCM that are scheduled to stop functioning before the end of the year. Once these collars stop functioning we will no longer be able to track the effects of future mining activity upon PBS. Therefore, CDFW recommends that funds be provided to CDFW for maintaining radio-collars on PBS over the life of the mining project. By August 24, 2023, CDFW will provide more specific recommendations on maintaining radio collars on PBS over the life of the mining project.

CDFW is available for a meeting to discuss these comments and recommendations with Imperial County. Please let us know if you have any questions.

4b-6

Thanks,

Jacob

Jacob Skaggs
Environmental Scientist
California Department of Fish and Wildlife
3602 Inland Empire Blvd, Ste C-220
Ontario, CA 91764
(760) 218-0320

From: Bruce Steubing <bsteubing@benchmarkresources.com>
Sent: Tuesday, July 11, 2023 4:40 PM
To: Skaggs, Jacob@Wildlife <Jacob.Skaggs@Wildlife.ca.gov>
Cc: Brashear, Heather@Wildlife <Heather.Brashear@Wildlife.ca.gov>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Diana Robinson <DianaRobinson@co.imperial.ca.us>; Kristin Faoro <kfaoro@benchmarkresources.com>
Subject: USG Plaster City Quarry Expansion and Well No. 3 Draft Subsequent Environmental Impact Report Follow-Up

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

From: [Kristin Faoro](#)
To: [Kristin Faoro](#)
Subject: FW: Additional Comments and Recommendations on USG Plaster City Quarry Expansion and Well No. 3 DSEIR (SCH 2001121133)
Date: Friday, September 1, 2023 9:15:47 PM

From: Skaggs, Jacob@Wildlife <Jacob.Skaggs@Wildlife.ca.gov>
Sent: Thursday, August 24, 2023 4:07 PM
To: Bruce Steubing <bsteubing@benchmarkresources.com>; Diana Robinson <DianaRobinson@co.imperial.ca.us>
Cc: Brashear, Heather@Wildlife <Heather.Brashear@Wildlife.ca.gov>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Kristin Faoro <kfaoro@benchmarkresources.com>; Justin Wood <jwood@aspeneq.com>; Carrazco, Luis <L.Carrazco@usg.com>; John Bowsher <jbowsher@usg.com> <jbowsher@usg.com>; John M. Bowman <JBowman@elkinskalt.com> <JBowman@elkinskalt.com>; Tricia Wotipka <Twotipka@dudek.com>; meweesy@dudek.com; Stephen Lilburn <stephen@lilburncorp.com> <stephen@lilburncorp.com>; Botta, Randy@Wildlife <Randy.Botta@wildlife.ca.gov>; Colby, Janene@Wildlife <Janene.Colby@wildlife.ca.gov>
Subject: RE: Additional Comments and Recommendations on USG Plaster City Quarry Expansion and Well No. 3 DSEIR (SCH 2001121133)

Good afternoon, Bruce and Diana:

Below are the California Department of Fish and Wildlife's (CDFW) additional comments and recommendations for the County of Imperial on the Draft Subsequent Environmental Impact Report for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). This email follows up on previous biological expertise provided to the County of Imperial by CDFW in a comment letter dated June 2, 2023 (attached) and an email (further below) dated August 17, 2023.

Peninsular bighorn sheep (PBS) from the Vallecito Mountains (VM) also utilize the Fish Creek Mountains (FCM) on a seasonal basis within the West Side of the FCM. See the attached map that shows the breakdown of use in the FCM by both the FCM ewe group and the VM ewe group. To maintain a representative sample of collars within the FCM and VM populations, CDFW recommends that funds be provided to CDFW for maintaining a combination of GPS and Very High Frequency (VHF) collars on ten (10) PBS in the FCM and ten (10) PBS in the VM for the life of the mining project. See the table below for estimated costs for the work over a 10-year period:

This estimate includes 3 helicopter surveys and 3 captures over a 10-year period. Captures are for both the VM and FCM and surveys for just the FCM.

	Cost/unit	No. of units	10-year Study Cost	Comments
3-day Helicopter capture in Fish Creek and Vallecito Mtns.	\$69,291.00	3	\$207,873	Three 3-day captures on years 1, 4, and 7
20 Satellite Collars/capture (3-day capture)	\$51,205	3	\$153,615	Satellite collar life estimated at 3 years
1-day helicopter survey in Fish Creek Mountains	\$40,791.00	3	\$122,373	3 surveys at years 2, 6, and 10
ES Capture planning & implementation @ 88 hours/capture	\$6,176.48	3	\$18,529	Includes capture plan, capture prep, and managing capture
ES Survey planning & implementation @ 20 hours/survey	\$1,403.75	3	\$4,211	Includes survey plan, survey prep, and managing survey
ES GIS mapping & Analysis @ 10 hours/month	\$701.87	120	\$84,225	No. of units: 12 months/year at 10 years
All costs total			\$590,826	
Collar, capture and surveys only total			\$483,861	

Additionally, regarding Mitigation Measure 3.4-11 (PBS Monitoring and Reporting), this measure is the same as found in the 2019 Draft Supplemental Environmental Impact Statement. However, the monitoring measure presented in the 2019 (and 2023) document is different from the monitoring proposal CDFW discussed and provided to the U.S. Fish and Wildlife Service and the Bureau of Land Management. CDFW recommends that this measure is revised to indicate that funding will be provided for the purchase of radio-collars and capture of ten (10) PBS in the Fish Creek Mountains and ten (10) PBS in the Vallecito Mountains, not ten total in both areas. Additionally, monitoring under 3.4-11 should be for the life of the project with evaluation of collar numbers, capture hours, and funding allocation made every 10 years.

Again, CDFW is available for a meeting with the County of Imperial to answer any questions regarding these comments and recommendations.

Sincerely,

Jacob

Jacob Skaggs
 Environmental Scientist
 California Department of Fish and Wildlife
 3602 Inland Empire Blvd, Ste C-220
 Ontario, CA 91764
 (760) 218-0320

From: Skaggs, Jacob@Wildlife
Sent: Thursday, August 17, 2023 4:34 PM
To: Bruce Steubing <bsteubing@benchmarkresources.com>; Diana Robinson <DianaRobinson@co.imperial.ca.us>

4c-1

4c-2

4c-3

4c-4

From: Skaggs, Jacob@Wildlife <Jacob.Skaggs@Wildlife.ca.gov>

Sent: Thursday, August 31, 2023 9:25 AM

To: Bruce Steubing <bsteubing@benchmarkresources.com>; Diana Robinson <DianaRobinson@co.imperial.ca.us>

Cc: Brashear, Heather@Wildlife <Heather.Brashear@Wildlife.ca.gov>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Kristin Faoro <kfaoro@benchmarkresources.com>; Justin Wood <jwood@aspeneg.com>; Carrazco, Luis <LCarrazco@usg.com>; John Bowsher (jbowsher@usg.com) <jbowsher@usg.com>; John M. Bowman (JBowman@elkinskalt.com) <JBowman@elkinskalt.com>; Tricia Wotipka <Twotipka@dudek.com>; msweesy@dudek.com; Stephen Lilburn (stephen@lilburncorp.com) <stephen@lilburncorp.com>; Botta, Randy@Wildlife <Randy.Botta@wildlife.ca.gov>; Colby, Janene@Wildlife <Janene.Colby@wildlife.ca.gov>

Subject: RE: Additional Comments and Recommendations on USG Plaster City Quarry Expansion and Well No. 3 DSEIR (SCH 2001121133)

Good morning, Bruce and Diana:

Thank you for incorporating most of CDFW's comments and recommendations into the DSEIR for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH 2001121133). CDFW has the following additional comments and recommendations based on the proposed edits to mitigation measures in the DSEIR that were submitted to CDFW on August 25, 2023.

4d-1

For Mitigation Measure 3.4-9: Burrowing Owl Avoidance

If the preconstruction surveys confirm occupied burrowing owl habitat, CDFW recommends the County of Imperial and Project applicant coordinate with CDFW to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW prior to commencing Project activities. Appropriate avoidance, minimization, and mitigation measures should be determined on a case-by-case basis in coordination with CDFW and can vary depending on the circumstances such as location of burrow and distance from Project activities, type of project activities nearby, time of year, status of young, and other factors.

4d-2

For Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

CDFW continues to recommend that Imperial County compensate at no less than 2:1 for permanent impacts to roosting habitat for special-status bat species. If the Project results in a permanent loss of roosting habitat for special-status bat species, this action is appropriately compensated through the perpetuity conservation of other roosting habitat for special-status bat species.

4d-3

Please let us know if you have any questions.

Jacob

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State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 Inland Deserts Region
 3602 Inland Empire Boulevard, Suite C-220
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GAVIN NEWSOM, Governor
 CHARLTON H. BONHAM, Director



October 27, 2023
 Sent via email

Diana Robinson
 Planning Division Manager
 Imperial County Planning and Development Services Department
 801 Main Street
 El Centro, CA 92243

USG Plaster City Quarry Expansion and Well No. 3 Project (PROJECT)
 Draft Subsequent Environmental Impact Report (DSEIR)
 SCH# 2001121133

Dear Diana Robinson:

The California Department of Fish and Wildlife (CDFW) submitted comments and recommendations to the County of Imperial (County) on the draft Subsequent Environmental Impact Report (SEIR) for the USG Plaster City Quarry Expansion and Well No. 3 Project (SCH# 2001121133) in a letter dated June 2, 2023, and in emails submitted on August 17, 2023, and August 24, 2023. On October 20, 2023, CDFW received a copy of the Admin Final SEIR that included responses to CDFW comments and recommendations and revisions to the SEIR. Thank you for incorporating many of CDFW’s recommendations into the SEIR and for providing CDFW the opportunity to provide additional comments, which are included below.

4e-1

Funding to maintain collars on 20 Peninsular bighorn sheep (*Ovis canadensis*) over the lifetime of the Project

Regarding CDFW’s recommendation in its August 24, 2023, email that funds are provided to CDFW for maintaining a total of 20 GPS and Very High Frequency (VHF) collars on Peninsular bighorn sheep (PBS; Fully Protected Species) in the Fish Creek Mountains (FCM) and Vallecito Mountains (VM), the County did not incorporate this recommendation into the SEIR indicating “the commenter fails to identify a new potential impact that would require further mitigation beyond that already required for the project.” The Project’s potential impacts to PBS are discussed in CDFW’s August 17, 2023, email, where it was indicated that “the mining expansion will result in loss of habitat for the ewes in this area. The magnitude of this loss will not be known without the continuation of radio-collar monitoring activities. [...] Radio-collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s [(Primary Constituent

4e-2

Elements)] are not being met due to the reasons listed above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG.” In its August 24, 2023, email, CDFW indicates that a total of 20 collars are needed to “maintain a representative sample of collars with the FCM and VM populations.”

CDFW also recommended in its email dated August 24, 2023, that funding is provided for monitoring of PBS over the lifetime of the Project. The County did not incorporate this recommendation stating that “the commenter fails to identify a new potential impact that would require further mitigation beyond that already required for the project.” As CDFW has discussed in its comments and recommendations, the Project’s potential impacts to PBS are protracted over the 80-year timeframe of mining expansion activities, and PBS monitoring using collars over the life of the mining project is necessary to determine the extent of these potential impacts and inform appropriate avoidance, minimization, and mitigation measures. In its August 17, 2023, email, CDFW describes PBS use of the currently undisturbed habitat within the proposed mine expansion area in the southern portion of the Project area and discusses why these areas are important for PBS and their life-cycle needs. CDFW further states that “radio collars on PBS will need to be maintained in the FCM in order to assess how mining expansion may affect PBS, particularly with regards to water needs (both from the mining site removal of drainages and washes that provide ephemeral water and foraging opportunities, particularly during the spring and summer months) and the possibility of draw-down of the aquifer from the canyon associated with the well site. If data indicates that PCE’s are not being met due to the reasons listed above, funds should be set aside for the possibility of adding an artificial water source (guzzler system) that is built and maintained by USG. [...] Currently, there are 3 satellite-collars in the FCM that are scheduled to stop functioning before the end of the year. Once these collars stop functioning we will no longer be able to track the effects of future mining activity upon PBS.” CDFW reiterates that PBS is a Fully Protected species that may not be taken or possessed at any time, and the County is required to demonstrate that the Project is avoiding the take of PBS over its 80-year timeframe. CDFW recommends that the County and Project proponent assess the Project’s long-term potential impacts to PBS through maintaining a total of 20 GPS and VHF collars on FCM and VM populations over the lifetime of the Project.

To avoid or reduce impacts to below a level of significance, CDFW recommends that the County revise Mitigation Measure 3.4-11 of the Draft SEIR with the following additions in **bold** and removals in ~~strikethrough~~:

Mitigation Measure 3.4-11: PBS Monitoring and Reporting. USG will support the CDFW PBS monitoring and reporting program within the federal action area by **providing** funding to maintain ~~the purchase of a combination of~~ **radio and VHF** collars ~~and the capture of~~ **on ten (10) PBS in the Fish Creek and ten (10) PBS in the** Vallecito Mountains Ewe Group areas, ~~to provide location monitoring data over~~ **for the life of the**

~~mining Project a ten-year period. The funding amount will be \$157,115 (cost provided by CDFW), to be transferred to the CDFW program via a means agreed up by USG, BLM, and CDFW. Evaluation of collar numbers, capture hours, and funding allocation shall be made every 10 years throughout the life of the Project in coordination with CDFW.~~

4e-2
Cont.

Pursuant to the CEQA Guidelines, section 15097(f), CDFW has prepared a draft mitigation monitoring and reporting program (MMRP) for revised Mitigation Measures 3.4-11 and Mitigation Measure BIO-[B].

4e-3

Compensatory mitigation for impacts to roosting habitat for special-status bats

In its June 2, 2023, letter, CDFW recommends that the County add a new Mitigation Measure BIO-[B] for Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats. CDFW appreciates that the County adopted a modified version of Mitigation Measure BIO-[B]. However, the modified version of the measure excludes the sentence “Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.” In its response submitted to CDFW on October 20, 2023, the County stated that “proposed compensation is not necessary, as there is abundant suitable habitat on public lands throughout the surrounding area.” In Comment 5b-5, the County further indicates that the “potential loss of rock crevices on the site would not significantly affect roost site availability in the Fish Creek Mountains or the surrounding region. The Project site is adjacent to the Fish Creek Mountains Wilderness managed by the BLM, comprising more than 21,000 acres, and Anza Borrego Desert State Park, comprising more than 600,000 acres. [...] Both the Fish Creek Wilderness and Anza Borrego Desert State Park permanently protect extensive areas of rugged desert mountain landscapes where rock crevices suitable for bat roosting are abundant. Roosting crevice availability does not appear to limit local special status bat populations.”

4e-4

CDFW notes that the presence of surrounding protected areas that may include roosting habitat for special-status bat species does not compensate for the Project’s potential permanent impacts to roosting habitat for special-status bat species. The EIR must identify potentially feasible mitigation measures that avoid or reduce each significant impact. CDFW has identified potentially feasible mitigation measures to substantially lessen the significant impact (CEQA Guidelines §§ 15086, subd. (d), 15204, subd. (f)). CDFW believes that if roosting habitat for special-status bat species is permanently impacted by the Project, the appropriate potentially feasible mitigation measure to substantially lessen the significant impact is the in-perpetuity conservation of roosting habitat suitable for the special-status bat species that were negatively impacted. CDFW recommends that the Mitigation Measure BIO-[B] included in the County’s October 20, 2023, response is further revised to include the following addition in **bold**:

Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats:

Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:

- For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.
- For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. **Imperial County**

shall compensate no less than 2:1 for permanent impacts to roosting habitat.

4e-4
Cont.

CDFW appreciates the opportunity to comment on the DSEIR to assist Imperial County in identifying and mitigating Project impacts to biological resources. CDFW concludes that the draft SEIR does not adequately mitigate the Project's significant, or potentially significant, impacts to biological resources. To avoid or reduce impacts to below a level of significance, CDFW recommends that revised mitigation measures as described in this letter be added to a revised draft SEIR.

4e-5

CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts. Questions regarding this letter or further coordination should be directed to Jacob Skaggs, Senior Environmental Scientist (Specialist), at jacob.skaggs@wildlife.ca.gov.

Sincerely,

DocuSigned by:

84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

Attachment 1: MMRP for CDFW-Proposed Mitigation Measures

ec:

Heather Brashear, Senior Environmental Scientist (Supervisor), CDFW
Heather.Brashear@Wildlife.ca.gov

Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

4e-8

Mitigation Measures	Timing and Methods	Responsible Parties
<p>Mitigation Measure 3.4-11: PBS Monitoring and Reporting.</p> <p>USG will support the CDFW PBS monitoring and reporting program within the federal action area by providing funding to maintain a combination of radio and VHF collars on ten (10) PBS in the Fish Creek and ten (10) PBS in the Vallecito Mountains Ewe Group areas for the life of the mining Project. Evaluation of collar numbers, capture hours, and funding allocation shall be made every 10 years throughout the life of the Project in coordination with CDFW.</p>	<p>Timing: Throughout the life of the Project.</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Proponent and County of Imperial</p> <p>Monitoring and Reporting: County of Imperial</p>
<p>Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats</p> <p>Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be</p>	<p>Timing: Prior to initiation of quarrying activities into previously undisturbed areas throughout the life of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Proponent and County of Imperial</p> <p>Monitoring and Reporting: County of Imperial</p>

<p>used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:</p> <ul style="list-style-type: none">• For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.• For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.		
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RECEIVED

JUN 05 2023

IMPERIAL COUNTY
PLANNING DEVELOPMENT SERVICES

June 2, 2023

VIA E-MAIL AND U.S. MAIL

Diana Robinson
Planning Division Manager
Imperial County Planning and Development
Services Department
801 Main St.
El Centro, CA 92243
E-Mail: Diana.Robinson@co.imperial.ca.us

Re: Comments on Draft Subsequent Environmental Impact Report for the
USG Plaster City Quarry Expansion and Well No. 3 Project
(SCH No. 2001121133)

Dear Ms. Robinson:

United States Gypsum Company ("USG") respectfully submits the following comments on the above-referenced Draft Subsequent Environmental Impact Report ("DSEIR").

I. Project Description and Scope of the DSEIR

The project that is the subject of the DSEIR (the "Project") includes the following:

- The development of a new production well (Well No. 3) and associated pipeline to provide water to USG's Plaster City Quarry ("Quarry"); and
- Restoration of the Viking Ranch site, and preservation of the Old Kane Spring Road site, as described in the Habitat Mitigation and Monitoring Plan that was developed in connection with the 2019 Supplemental Environmental Impact Statement (the "2019 SEIS").

In addition, the DSEIR states that it "evaluates" the potential environmental impacts associated with mining and reclamation activities associated with the Quarry expansion

5a-1

5a-2

(“Quarry Activities”). It should be made clear, however, that these impacts were previously evaluated in the EIR/EIS that was certified by the Imperial County Board of Supervisors (the “Board”) in 2008 for the USG Expansion/Modernization Project (the “2008 EIR”) and in the 2019 SEIS, and that no significant changes have been proposed relative to the Quarry Activities as described in those documents. Consequently, with respect to the Quarry Activities, the primary focus and intent of the DSEIR is to (1) update the 2008 EIR by incorporating the information and mitigation measures that were developed as part of the 2019 SEIS, and (2) to evaluate whether there have been any changes in the circumstances surrounding the Quarry Activities, or any new information concerning the Quarry Activities, that raise any new or substantially more severe impacts on the environment as compared to the analysis contained in the 2008 EIR.

5a-2
Cont.

II. Project Alternatives

The DSEIR identifies and evaluates five alternatives to the Project. With the exception of the “no project” alternative (Alternative 1), each of these alternatives (Alternatives 2 through 5) involve reductions in the “footprint” of mining activities at the Quarry. The DSEIR concludes that Alternative 5, which represents the greatest overall reduction in the footprint of mining activities, is the “environmentally superior alternative.” (DSEIR, p. 6-29.)

5a-3

Discussion of Alternatives 2 through 5 (the “Quarry Alternatives”) in the DSEIR was arguably unnecessary because (1) the impacts associated with proposed Quarry Activities were previously evaluated in the 2008 EIR and were determined by the County to be mitigated to a level of insignificance,¹ and (2) the DSEIR does not identify any new or substantially more severe impacts associated with Quarry Activities due to any changed circumstances or new information.

5a-4

In any event, the Quarry Alternatives discussed in the DSEIR must be considered in context and must be evaluated in relation to the objectives of the Project, as discussed below.

A. Source and Previous Consideration of Quarry Alternatives

5a-5

The Quarry Alternatives presented in the DSEIR were derived from, and are identical to, alternatives that were evaluated in the 2019 SEIS prepared by the United States Bureau of Land Management (“BLM”). At the time the 2019 SEIS was prepared, USG had been working with the United States Army Corps of Engineers (“USACE”) on an application for a Section

¹ See Findings of Fact and Statement of Overriding Considerations for the United States Gypsum Companies Expansion/Modernization Project adopted by the Board in 2008.

404 Individual Permit to address impacts to waters of the United States associated with the Quarry expansion. The alternatives presented in the 2019 SEIS included a range of alternatives that were developed in coordination with USACE to evaluate potential modifications to Quarry operations to reduce impacts to waters of the United States as required by the Section 404(b)(1) Guidelines (40 CFR 230 *et seq.*).

The Section 404(b)(1) Guidelines suggest a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines then require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 CFR Part 230.10(d)).

Under the Section 404(b)(1) Guidelines (40 CFR 230 *et seq.*), an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge can be authorized. The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into waters of the United States if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 CFR Part 230(a)). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of the overall project purpose (40 CFR Part 230(a)(2)). The thrust of the Guidelines is that the proposed project achieves the overall project purpose while avoiding impacts to the aquatic environment to the maximum extent practicable.

From 2018 through 2019, USG worked collaboratively with the USACE in the preparation of an alternatives analysis in which a reasonable range of on-site and off-site alternatives were identified, and a list of criteria was developed to screen each alternative for practicability. On-site project alternatives were screened for practicability based on achieving the overall project purpose, logistics, and environmental criteria. The logistics criteria consisted of the evaluation of a balanced, multifaceted mining approach and exposure of mining personnel to human health and safety risks due to the creation of geological hazards such as catastrophic flooding. The on-site alternatives that were selected and ultimately evaluated in the 2019 SEIS (*i.e.*, the Quarry Alternatives) considered various mining footprint reconfigurations in an attempt to minimize impacts to waters of the United States in addition to exploring additional mining methods that would minimize surface area disturbances.

5a-5
Cont.

The overall Project purpose, which was determined by defining the basic Project purpose in a manner that more specifically describes USG's goals for the Project, served as the basis for the USACE's Section 404(b)(1) alternatives analysis. USACE, USG, and the United States Environmental Protection Agency (EPA) coordinated extensively in the development of an overall project purpose that met the needs of USG while adhering to the guidance prescribed by the EPA.

The overall Project purpose as agreed to by all parties on June 13, 2018, is:

To maintain a reliable supply of gypsum ore to existing processing facilities in order to produce gypsum-related agricultural products and residential and commercial building products including, but not limited to, wallboard, cement, industrial and building plasters, stucco, soil amendments and conditioners, and gypsum by-products, at levels consistent with current and projected demand in the southwestern United States.

In light of this overall Project purpose, a preliminary practicability determination was developed in consultation with USACE staff. That determination, which is summarized in Exhibit 1 and incorporated herein by this reference, concluded that USG's proposed Project was the least environmentally damaging practicable alternative.

On June 22, 2020, the Navigable Waters Protection Rule went into effect thereby redefining the definition of waters of the United States to exclude "ephemeral features" as waters of the United States. Consequently, upon confirmation that waters of the United States were now absent from the Project area, USG withdrew its application for a Section 404 Individual Permit. However, in its Record of Decision issued in January 2020 ("ROD"), the BLM selected the Project over the Quarry Alternatives based on information contained in the 2019 SEIS and other factors, including "BLM's purpose and need, the highest and best use of public lands, public comments and stakeholder interests, economic and technical information, and applicable law and policy." (ROD, p. 6.)

B. The Quarry Alternatives Would Not Achieve Any Project Objectives and Need Not Be Further Considered

The DSEIR identifies the following objectives for the Project:

- 1) Secure permits and approvals to continue and fully develop quarrying gypsum reserves;

- 2) Maximize the recovery of known gypsum reserves needed for the Plant to fulfill its estimated operational design life;
- 3) Meet market demands for gypsum products;
- 4) Develop and maintain a replacement Quarry water supply designed to meet dust suppression requirements;
- 5) Concurrently reclaim Quarry site for post-mining uses as Open Space;
- 6) Secure permits and approvals to develop a water source to support the mining of gypsum reserves at the Quarry; and
- 7) Provide compensatory mitigation for potential impacts to waters of the state as a result of project implementation in compliance with State of California Fish & Game Code Section 1600 and the Porter Cologne Act. (DSEIR, p. 2-11.)

5a-6
Cont.

The Quarry Alternatives are not relevant to Project objective numbers 4 through 7. Moreover, none of the Quarry Alternatives would achieve Project objective numbers 1, 2 or 3. Specifically, none of the Quarry Alternatives would “fully develop” quarrying gypsum reserves, “maximize” the recovery of known gypsum reserves needed for the Plant to fulfill its estimated operational design life, or “meet market demands” for gypsum products.

According to the Imperial County General Plan, the Fish Creek Mountains gypsum deposit associated with the Quarry constitutes the largest reserves of this mineral in California and represents a significant source of gypsum in the region and on the west coast (Sharpe and Cork 1995). More than 31.2 million tons of gypsum has been extracted from this deposit; of that, 30.1 million tons have been extracted by USG since 1945 (Resource Design Technology Inc. 2006). Since 1984, an average of one million tons of gypsum is produced by USG’s Plaster City Plant (the “Plant”) each year. This is the sole active gypsum quarry in the County, and the largest gypsum quarry in the United States. The Quarry accounts for 52 percent of statewide gypsum production, and the expected life of the remaining deposit exceeds 80 years under the proposed mining plan (Resource Design Technology Inc. 2006).

5a-7

Gypsum demand depends principally on the strength of the construction industry, particularly in the United States, where the majority of gypsum consumed is used for building

plasters, the manufacture of Portland cement, and wallboard products (USGS 2018). Gypsum can also be mined and milled to produce plastic fillers and fire retardants that require high-purity gypsum and calcium sulfate. Expanding technology has developed applications for gypsum in plastics, paper, paint, coatings, rubber, and adhesives, as well as pharmaceuticals, food, and other uses. USG's gypsum at the Quarry offers improved performance as it is exceptionally pure, and the deposit contains high brightness/whiteness rock with strong chemical stability. High-purity gypsum is especially important in applications supporting the Portland cement industry where impurities can have an adverse effect on cement hydration and overall material strength. High-purity gypsum is also required in agricultural applications where water-soluble products such as USG's Ben Franklin® Brand Aquacal™ Gypsum require extremely high-purity material to provide an ultrafine natural source of calcium and sulfur that helps promote plant growth in crops, lawns, and gardens in an environmentally safe and non-toxic manner.

Historically, USG has met industry demands by increasing gypsum rock recovery and production during times of economic growth. Population growth in the southwestern United States is anticipated to continue at a rapid rate in the first part of the 21st century. New housing must be constructed, and existing older housing stock must be rehabilitated, to meet projected needs. Over a 50-year period beginning after the Second World War, California added approximately 500,000 housing units each year. As the southwest region of the United States continues to grow, that growth requires the development of additional housing and support services in the form of new commercial, office, and industrial development. This development is anticipated to require additional building materials at an increasing rate. USG has studied these growth trends and has anticipated a need to increase production at its Quarry and associated Plant to supply the projected demand for wallboard and related products and to continue providing gypsum to the agriculture industry and cement manufacturers.

Located in western Imperial County, the Quarry and Plant are optimally situated to mine and process this important mineral and supply California and the southwestern region of the United States with its products, mainly wallboard products and cement rock. All other west coast gypsum production plants rely on less pure, waterborne rock shipments from Mexico. The Quarry is located close to major interstate and intrastate highways, which makes it suitable for consumers who choose to purchase raw gypsum directly from the Quarry. Access to the Quarry is via State Route 78 from both San Diego and Imperial counties. The site is also accessible to Southern California and Arizona via State Route 86 to Interstate 10 and Interstate 8. The Plant, located 26 miles southeast of the Quarry, is also located less than 15 miles from the United States/Mexico border and the northern Baja Mexico metropolitan area accessible via highway and railroad.

5a-7
Cont.

Each of the Quarry Alternatives would adversely affect USG’s ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands, and therefore fail to meet the overall purpose of the Project. For this reason, and based on the rationale contained in Exhibit 1, the Quarry Alternatives need not be further considered in the Final Subsequent Environmental Impact Report for the Project (“FSEIR”) and should be rejected by the County and responsible agencies because they fail to achieve any of the stated objectives of the Project.

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Con.

III. There Are No “Waters of the United States” Within the Project Area

The DSEIR is replete with reference to “waters of the United States” within the Project area. However, as noted above, on June 22, 2020, the Navigable Waters Protection Rule went into effect thereby redefining the definition of waters of the United States to exclude “ephemeral features” as waters of the United States. As such, “ephemeral features” were no longer regulated as waters of the United States under the Clean Water Act, meaning that a USACE permit would no longer be required to discharge fill material into “ephemeral features.”²

5a-8

USG filed a formal request with the USACE for an Approved Jurisdictional Determination on November 10, 2020. On February 8, 2021, the USACE issued an Approved Jurisdictional Determination (“AJD”) confirming that waters of the United States were now absent from the Project area. A copy of the AJD is attached hereto as Exhibit 2.

In light of the AJD, the FSEIR should correct the many references to “waters of the United States” and related permitting requirements (e.g., Section 404 permit) in the DSEIR, as needed. Some (but not necessarily all) of these references, along with our suggested edits, are included in the Table of Errata attached hereto as Exhibit 4.

IV. Mitigation Measures

The DSEIR identifies three categories of mitigation measures, including:

- Mitigation measures from the 2008 EIR;

5a-9

² See also *Sackett v. Environmental Protection Agency*, 598 U.S. ____ (No. 21–454, decided May 25, 2023) (To establish jurisdiction under the Clean Water Act, it must be shown that a wetland has “a continuous surface connection with” a relatively permanent body of water connected to traditional interstate navigable waters).

- Mitigation measures from the 2019 SEIS, which have been incorporated into the DSEIR; and
- Newly proposed mitigation measures, which generally apply to the proposed quarry well and associated pipeline and/or the restoration/preservation of the Viking Ranch and the Old Kane Spring Road sites.

USG is fully committed to, and is bonded for, compliance with all of the measures identified in the 2008 EIR and the 2019 SEIS and has either complied with or is in the process of complying with each of these measures at this time.

USG's comments on specific mitigation measures are set forth below. Where revisions to mitigation measures have been proposed, we request that the revisions be made to the mitigation measures wherever they appear throughout the document.

A. Mitigation Measures 4.1-1a and 4.1-1b

These newly proposed mitigation measures were identified in the DSEIR for the specific purpose of addressing the potential impacts on air quality (Impact 4-1-2) as a result of activities associated with the Viking Ranch restoration. (See DSEIR, pp. 4.1-23 through 4.1-25.) However, by their terms, the mitigation measures would apply "throughout project construction activities ..., " which could be interpreted to mean that these measures also apply to Quarry Activities and other components of the overall Project. Consequently, these measures should be revised to clarify that they are intended to apply only to the Viking Ranch restoration. Specifically, for both measures, the phrase "throughout project construction activities" should be changed to "throughout construction activities associated with Viking Ranch restoration."

B. Mitigation Measure 3.5-1f

Mitigation measure 3.5-1f, which is from the 2008 EIR, is intended to address potential impacts on State or Federally Protected Wetlands (Impact 4.2-3). This measure requires that USG contact the California Department of Fish and Wildlife ("CDFW") and the USACE to determine whether either agency holds jurisdiction over the Quarry wash.

In accordance with mitigation measure 3.5-1f, USG contacted the USACE in 2020. As noted above, the USACE responded on February 8, 2021, by issuing the AJD, which confirmed that no waters of the United States are present within the Project area. Therefore, while

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5a-10

5a-11

coordination with CDFW is still required, no additional coordination with USACE is necessary. Accordingly, mitigation measure 3.5-1f should be revised as follows:

Mitigation Measure 3.5-1f: Agency contacts for impacts to streambeds: Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the ~~CDFG and the US Army Corps of Engineers~~ California Department of Fish and Wildlife (CDFW) to determine whether ~~either agency~~ CDFW holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code ~~or Section 404 of the Federal Clean Water Act, respectively.~~

5a-11
Cont.

C. Mitigation Measure 3.5-1d

Mitigation measure 3.5-1d, which is from the 2008 EIR, is intended to address potential effects on Peninsular bighorn sheep. USG has already complied with this measure by consulting with the USFWS under Section 7 of the Federal Endangered Species Act and successfully obtaining a Biological Opinion from the USFWS.

5a-12

For clarity, the FSEIR should acknowledge that this measure has been implemented and that “re-initiation” of Section 7 consultation is not required for any component of the Project.

D. Mitigation Measure 4.4-1

Mitigation measure 4.4-1 is a newly proposed mitigation measure that is intended to address the potential impacts of the proposed well, well pipeline, and Viking Ranch restoration on paleontological resources (Impact 4.4-1). The measure requires that pedestrian field surveys be conducted and to locate any surficial fossil localities and verify the underlying geologic units, and requires that a Paleontological Resources Monitoring and Mitigation Plan (“PRMMP”) be prepared and implemented for any areas where “potential resources cannot be avoided by proposed construction activities.”

5a-13

We request that this measure be revised to make it clear that a PRMMP is required only for resources that are (1) identified in the field survey, and (2) cannot be avoided by proposed construction activities. Furthermore, since this measure will apply to areas that are not subject to BLM jurisdiction (*i.e.*, the mitigation sites), the references to BLM are inapposite and unnecessary. More specifically, we propose the following revisions:

Mitigation Measure 4.4-1: *Preconstruction pedestrian field surveys shall be conducted throughout the proposed areas of disturbance for the Well No. 3 site, the final pipeline alignment, and the Viking Ranch site to locate any surficial fossil localities and verify the underlying geologic units. For any areas where potential resources are identified in a preconstruction field survey and cannot be avoided by proposed construction activities, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared and implemented by a ~~BLM-permitted~~ qualified paleontologist and approved by the BLM and Imperial County.*

5a-13
Cont.

E. Mitigation Measure 4.6-1

Mitigation measure 4.6-1 is intended to address the potential impacts on hydrology and water quality (Impact 4.6-3). The DSEIR identifies mitigation measure 4.6-1 as a “newly proposed” mitigation measure. (See DSEIR, pp. ES-27 and 4.6-28.) However, this mitigation measure was identified in the 2019 EIS and compliance with this measure has already been achieved. Revisions to the DSEIR should be made in the FSEIR as needed to clarify the source and purpose of mitigation measure 4.6-1.

5a-14

F. Mitigation Measure 4.3-2

Mitigation measure 4.3-2 is a newly proposed mitigation measure that is intended to address the potential impacts associated with the inadvertent discovery of human remains. However, the citation to the applicable CEQA Guideline is incorrect. Specifically, the reference to CEQA Guidelines Section 15064.4(e)(1) should be changed to Section 15064.5(e).

5a-15

V. Old Kane Spring Road Site

The DSEIR, at pages 4.2-33 through 4.2-34, discusses the aquatic jurisdictional resources that are present at the Old Kane Spring Road site. This discussion, which is based on an initial jurisdictional aquatic resources delineation prepared by Dudek in 2021 (see Appendix E of Appendix D-4), concludes, among other things, that there are approximately 60.99 acres of RWQCB-jurisdictional non-wetland waters present on the site.

5a-16

An updated jurisdictional aquatic resources delineation for the Old Kane Spring Road Site was prepared by Dudek in April 2022 (the “2022 JARD”). The 2022 JARD concludes,

among other things, that there are approximately 88.5 acres of RWQCB-jurisdictional non-wetland water present on the site. A copy of the 2022 JARD is attached hereto as Exhibit 3.

The DSEIR's discussion of aquatic jurisdictional resources present at the Old Kane Spring Road site, including Table 4.2-4, should be updated based on the information in the 2022 JARD. In addition, Figure 2-4 on page 2-17 of the DSEIR (Old Kane Spring Road Preservation Site) should be replaced with Figure 4 from the 2022 JARD.

5a-16
Cont.

VI. Specific Comments and Errata

USG's additional comments and proposed revisions to specific provisions of the DSEIR are listed in the Table of Errata attached hereto as Exhibit 4 and are incorporated herein by this reference.

5a-17

VII. Conclusion

USG appreciates this opportunity to comment on the DSEIR and looks forward to working with the County, other public agencies, and members of the public in the upcoming permitting process.

Sincerely,



Luis Carrazco,
Plant Manager

EXHIBIT 1

PROJECT ALTERNATIVES
PRELIMINARY PRACTICALITY DETERMINATION

5a-18
All Exhibit 1

Alternative 2: Lower Quarry Watershed Reduced Mining Footprint

Under Alternative 2, Phase 10 would not be mined to its full capacity while Phase 10P would be eliminated entirely. Phase 5 would continue to be mined at full capacity. Approximately 5.4 million tons less gypsum would be mined than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce the projected mine life by 2.81 years compared with the proposed project. Under this alternative, permanent impacts to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed project to 117.62 acres, resulting in a 16.01-acre decrease in impacts to waters of the United States. The need for a flood protection berm along the west perimeter of Phase 10P would be eliminated. Eliminating Phase 10P would eliminate its direct impacts on the arroyo wash and would avoid the downstream impacts on Fish Creek.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 2 is constructible and would not present substantial logistical issues. It can be implemented without exposing mining personnel to human health and safety risks while following a balanced mining approach. However, it fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 5.4 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 2 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 3: Lower Quarry Watershed Reduced Mining Footprint

Alternative 3 proposes to reconfigure the mining footprint along the western boundaries of Phases 4 and 5 where Annex Mill Site No. 4 encroaches into the ephemeral wash to reduce impacts to waters of the United States. The mining boundaries of Phases 4 and 5 were selected for reconfiguration because of their close proximity to existing administrative/office facilities, where blasting is not ideal on account of the noise, and the depth of overburden needing to be stripped in order to access and extract the gypsum ore. Approximately 11.87 million tons less ore would be mined under this alternative than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 6.18 years compared to the proposed project. Under this alternative, permanent impacts

to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed project to 125.43 acres, resulting in an 8.20-acre reduction.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 3 is constructible and would not present substantial logistical issues. However, it fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 11.87 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 3 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 4: Middle Quarry Watershed Phase Elimination

Under Alternative 4, Phases 2P, 3P (North) and 3P (South) would be eliminated from the proposed mining plan, resulting in a reduction in impacts to waters of the United States from 133.63 acres under the proposed Project to 126.78 acres. This equates to a 6.85-acre reduction in impacts compared to the proposed Project. Approximately 2.33 million tons less gypsum would be mined under this alternative than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 1.21 years compared with the proposed project. While there would be a reduction in impacts to waters of the United States under this alternative, the removal of these three phases would realign the proposed stormwater berm such that it would be nearly perpendicular to flow in the main channel along three significant sections where the phases are proposed for removal (from approximately 300 to 1,300 feet long). The shift in berm orientation along these three sections would likely lead to increased scouring potential and would require additional engineering to prevent failure (e.g., berm would need to be anchored to a wider berm footing set deeper in the channel).

Based on the evaluation of logistics and constructability criteria and environmental impacts, while Alternative 4 is constructible it suffers from logistical issues in that eliminating phases from the middle watershed will disrupt the balanced mining approach and sequencing critical to cost and time efficient gypsum ore extraction. Additionally, from an environmental impacts perspective, impacts to waters of the United States are equal to or greater than the proposed project because the waters proposed for preservation under this alternative would incur greater indirect impacts due to a severing of hydrology. Further, Alternative 4 fails to meet the overall Project purpose, because the loss of 2.33 million tons of gypsum would adversely affect USG's ability to reliably supply gypsum products at levels consistent with current and projected demand. Therefore, Alternative 4 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 5: Upper Quarry Watershed Reduced Mining Footprint

Alternative 5 represents a reduced project alternative focusing exclusively on Phases 7 and 8 in the upper Quarry watershed. Under Alternative 5, the mining boundaries of Phases 7 and 8 would be reconfigured to reduce impacts to waters of the United States. Initially, the elimination of mining Phases 9, 8, 7, and 6 was considered but was determined to be infeasible for the following reasons: (1) Phases 8 and 9 are at the southernmost terminus of the upper Quarry watershed where the channels are deeply incised and a substantive reduction in impacts to waters of the United States is not anticipated, and (2) the potential elimination of either Phase 6 or 7 was considered but, similar to issues in the middle Quarry watershed, the elimination of either of these phases would result in an increase in indirect effects to waters of the United States and a loss of functions and services resulting from the isolation and fragmentation of these resources.

Under Alternative 5, the mining boundaries of Phases 7 and 8 would be moved east into the proposed quarry operations and would align parallel with the existing drainage. Impacts to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed Project to 122.35 acres, resulting in an 11.28-acre reduction in impacts to waters of the United States. The overall mining footprint would also be reduced by 34 acres, thereby decreasing potential mining beneath the valley alluvium where gypsum ore has determined to be most prevalent. Approximately 13.04 million tons less gypsum would be mined under this alternative than under the Proposed Action. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 6.79 years compared to the proposed project.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 5 is constructible and would not present substantial logistical issues. Further, this alternative would incur the greatest reduction in impacts to waters of the United States compared to the proposed project. However, despite reporting lesser environmental impacts, Alternative 5 fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 13.04 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 5 was not selected to be the Least Environmentally Damaging Practicable Alternative.

EXHIBIT 2

APPROVED JURISDICTIONAL DETERMINATION

[See Attached]



5a-19
All Exhibit 2



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
5900 LA PLACE COURT
CARLSBAD, CALIFORNIA 92008

February 8, 2021

SUBJECT: Approved Jurisdictional Determination

Luis Carrazco
United States Gypsum
3810 West Evan Hewes Highway
Imperial, California 92251

Dear Mr. Carrazco:

I am responding to your request (File No. SPL-2014-00216-SAS) received November 17, 2020, for an approved jurisdictional determination (AJD) for the U.S. Gypsum Company Plaster City Quarry Expansion project site (lat 38.00388°N, long -116.07249 °W) located near the town of Ocotillo Wells, Imperial County, California

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether or not the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on available information, I have determined that waters of the United States do not occur on the review area identified in the enclosed delineation map titled "United States Gypsum Quarry Expansion Aquatic Resource Delineation". The basis for our determination can be found in the enclosed Approved Jurisdictional Determination (JD) form.

This letter includes an approved jurisdictional determination for the U.S. Gypsum Company Plaster City Quarry Expansion project site. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPDPDO
450 Golden Gate Ave.
San Francisco, CA 94102

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **April 8, 2021**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact me at (760) 602-4834 or via e-mail at Kyle.J.Dahl@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Kyle J. Dahl
Chief
San Diego and Imperial Counties Section

Enclosure(s)

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: United States Gypsum Company, Luis Carrazco	File Number: SPL-2014-00216-SAS	Date: FEBRUARY 8, 2021
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Attached is:	See Section below
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<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Kyle Dahl
U.S. Army Corps of Engineers
Los Angeles District

Phone: (760) 602-4834
Email: Kyle.J.Dahl@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.
San Francisco, CA 94102
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

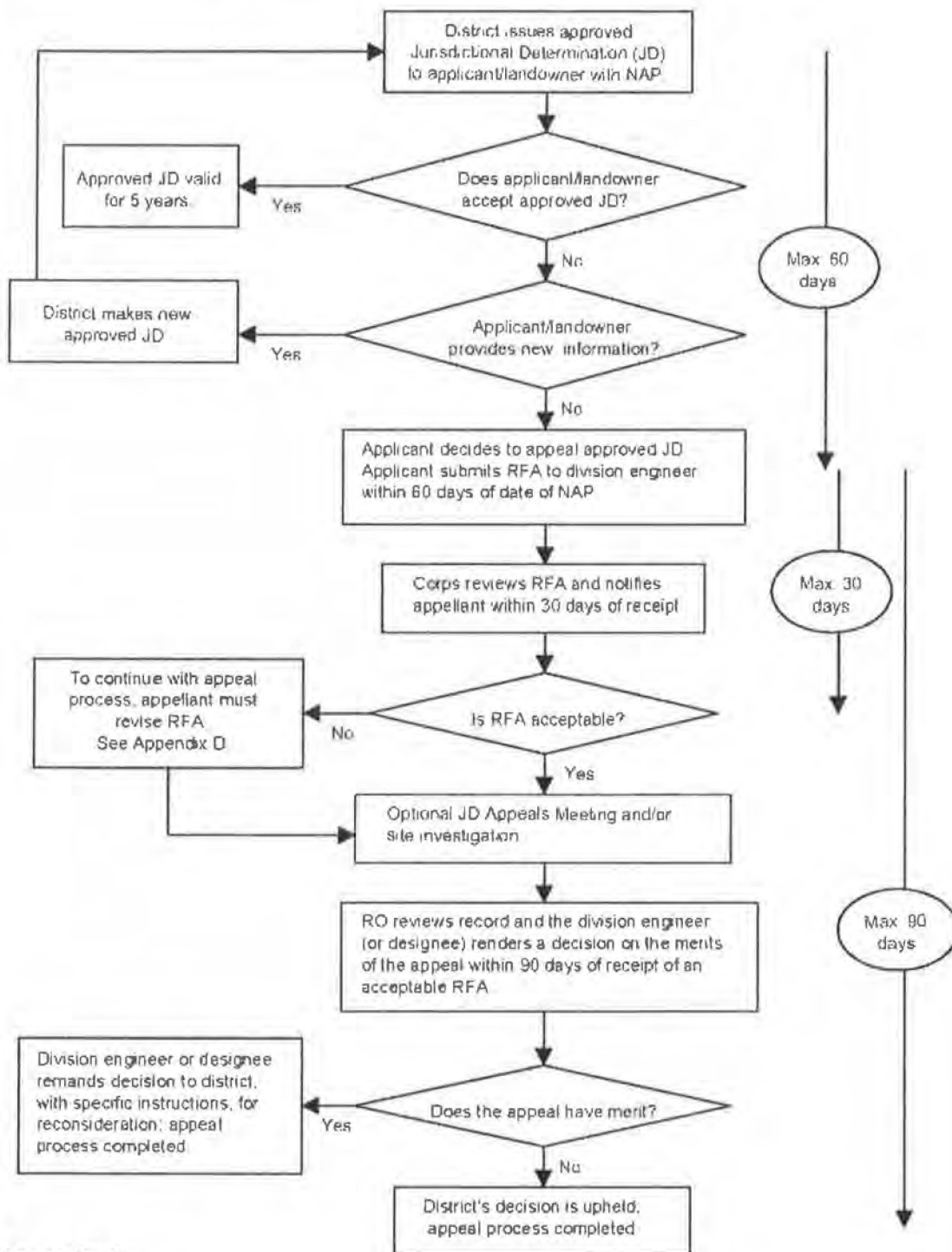
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date: _____

Telephone number: _____

Administrative Appeal Process for Approved Jurisdictional Determinations



§ 331.5 Criteria.

(a) *Criteria for appeal*—(1) *Submission of RFA*. The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal*. The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable*. An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superceded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.

United States Gypsum Quarry Expansion Aquatic Resource Delineation

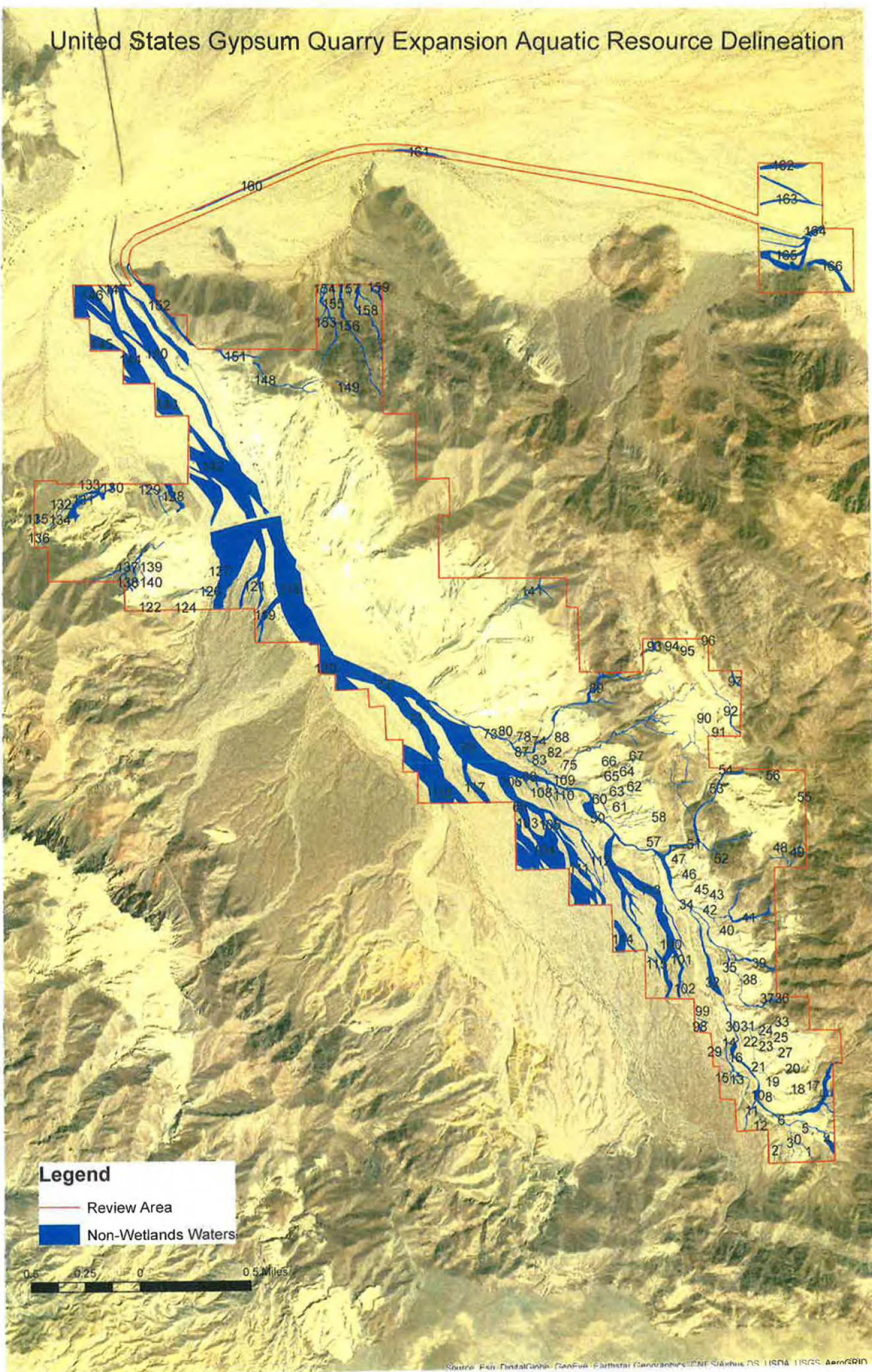


EXHIBIT 3

2022 JURISDICTIONAL AQUATIC RESOURCES DELINEATION
FOR THE OLD KANE SPRING ROAD SITE

[See Attached]



5a-20
All Exhibit 3

MEMORANDUM

To: John Bowsher, Quarry Manager
From: Cody Schaaf, Biologist
Subject: Initial Jurisdictional Aquatic Resources Delineation Findings, Old Kane Springs Road Mitigation Site, San Diego County, California
Date: April 22, 2022
Attachment(s): Figures
Attachment A, Site Photos
Attachment B, Data Forms
Attachment C, Plant List
Attachment D, Wildlife List

1 Introduction

This memorandum provides the initial findings of a formal jurisdictional aquatic resources delineation of state waters on the proposed Old Kane Springs Road Mitigation (Mitigation) site in eastern San Diego County, California. The delineation defined aquatic resources potentially under the jurisdiction of California Department of Fish and Wildlife (CDFW) and Regional Water Quality Control Board (RWQCB). No wetlands or waters under the jurisdiction of the US Army Corps of Engineers (USACE) exist on the site. The results of this delineation are preliminary until verified by CDFW and RWQCB.

Attachment A shows photos of representative aquatic features and indicators observed on the site. All data forms collected on the site can be found in Attachment B.

Project Location

The proposed Mitigation site is generally located southwest of the community of Ocotillo Wells, California, south of Highway 78 and west of Split Mountain Road. The approximately 120-acre site spans privately owned desert open space along Old Kane Springs Road in the far eastern portion of San Diego County, California (Figure 1, Project Location). The approximate center of the Mitigation site is 33.122841° N and -116.179786° W (decimal degrees).

2 Regulatory Setting

California Department of Fish and Wildlife

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or other aquatic wildlife.

In Title 14 of the California Code of Regulations, Section 1.72, CDFW defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.”

In Title 14 of the California Code of Regulations, Section 1.56, CDFW defines “lake” to include “natural lakes or man-made reservoirs.” Diversion, obstruction, or change to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife requires authorization from CDFW by entering into an agreement pursuant to Section 1602 of the Fish and Game Code.

California Regional Water Quality Control Board

The State Water Resources Control Board has authority over wetlands through Section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act, as well as California Code of Regulations Section 3831(k) and California Wetlands Conservation Policy. The CWA was established to create a regulatory permitting program designed to address the discharge of pollutants into “waters of the United States,” which includes surface waters and water bodies as defined by U.S. Environmental Protection Agency regulations (e.g., 40 CFR Section 122.2). All “waters of the United States” in California are also “waters of the state” (defined by the Porter-Cologne Water Quality Control Act as “any surface water or ground water, including saline waters, within the boundaries of the state.” [Water Code Section 13050(e)]). However, not all waters of the state (e.g., ground water) are waters of the United States.

Clean Water Act - Section 401

The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state’s water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The Central Valley RWQCB (Region 5) has authority for Section 401 compliance in the project area. A request for certification is submitted to the regional board at the same time that an application is filed with the USACE. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) for impacts to waters of the state under the Porter-Cologne Act (described below).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board and each RWQCB as the principal state agencies responsible for the protection of water quality in California. The Porter-Cologne Water Quality Control Act provides that “All discharges of waste into the waters of the State are privileges, not rights.” Waters of the state are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as

“any surface water or groundwater, including saline waters, within the boundaries of the state.” All dischargers are subject to regulation under the Porter–Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The Central Valley RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction.

3 Methods

Desktop Review

Prior to conducting fieldwork, Dudek conducted a review of hydrology, soils and all previously mapped wetland, riverine, and riparian features associated with the Mitigation site. This included extensive desktop review of the survey area, historical land use, local and regional climactic data, and aerial photography (including historical aerials) with topographic configurations and vegetative signatures. These signatures may suggest the potential or presence of potentially jurisdictional waters at the time of the field survey. This information was evaluated by consulting the following available sources:

- 7.5-minute Harper Canyon and Borrego Mountain quadrangle maps (and surrounding quads) (USGS 2018)
- Historical aerials (Google Earth 2021)
- The web-based U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper (USFWS 2021)
- The National Hydrography Dataset (USGS 2021)
- UC Davis/NRCS SoilWeb (UC Davis/NRCS 2021)
- The latest state and federal regulatory definitions, guidance documents, and delineation manuals for state and federally regulated waters (including wetlands)

Field Delineation Methods

Dudek biologists Callie Amoaku, Cody Schaaf, Erin Bergman and Charles Adams conducted the delineation of the Mitigation site in September 2021 (Table 1). Photos (see Attachment A) and various data sheets were collected during the delineation (see Attachment B).

Table 1. Jurisdictional Delineation Schedule

Date	Personnel	Conditions
09/01/2021	Callie Amoaku, Cody Schaaf, Erin Bergman, Charles Adams	79-97°F, 0-60% cloud cover (cc), 0–3 mile-per-hour (mph) winds

The site was evaluated for evidence of fluvial indicators such as drainage swales, mud cracks, drift, wracking, cut banks, and sediment transportation and sorting. The extent of any potential aquatic resources was determined by mapping the areas with fluvial characteristics and topography showing evidence of consistent flow patterns and hydrologic connectivity. To assist in the mapping of non-wetland waters, data was collected using the USACE's *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (USACE 2008). Dudek also utilized the *Episodic Stream Indicator Data Sheet* of the California Energy

Commission (CEC) document *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (CEC 2014) to document several of the features within the study area. These data sheets can be found in Attachment B.

Since no hydrophytic vegetation and/or associated wetlands were present on the site, streambed and non-wetland waters mapping was the focus of the delineation. These features, hereafter referred to simply as “non-wetland waters,” were delineated from bank to bank, using the top of the bank as the boundaries of the channel.

Non-wetland waters were delineated using a Trimble R1 GNSS Receiver with Esri Collector on a mobile device. The widths of each non-wetland water were determined in the field according to the top of bank of each feature. OHWM data forms describing channel attributes across the site are included in Attachment B.

Dudek also mapped vegetation communities and land covers on the site during the delineation. Mapping was in accordance with the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) or the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). Community classifications were selected based on site factors, descriptions, distribution, and characteristic species present within an area. Visible disturbance factors were also be noted during vegetation mapping.

Dudek extensively documented site attributes, including OHWM indicators and vegetation communities, through photos. Attachment A shows photos of representative aquatic features and indicators observed on the site.

Post-Field Desktop Review and Hydrologic Modeling Methods

Desert landscapes often produce problematic OHWM indicators that can be inconsistent (over space and time) and difficult to delineate in the field (USACE 2008). To analyze and further test the initial results of the field delineation, Dudek conducted a hydrologic modeling exercise to ensure that the fluvial indicators observed in the field matched a simulated flow event across the site.

The methods used in the modeling are described in the San Diego County Hydrology Manual (2003). The National Resources Conservation Service (NRCS) hydrologic method, which is outlined in Section 4 of the Hydrology Manual, was used to develop the rainfall-runoff relationship. Hydraulic Engineering Center Hydrologic Modeling System (HEC-HMS) software developed by the U.S. Army Corps of Engineers (USACE) was used to model the precipitation-runoff process of the watershed's contributing flow to the site. Contributing watersheds were delineated using available topographic information and StreamStats, a web-based Geographic Information System (GIS) application developed by the USGS that provides analytical tools for water-resources planning and design purposes. HEC-HMS was utilized to calculate peak discharges for a 25-year rainfall event with a storm duration of 24-hours. Hydraulic Engineering Center River Analysis System (HEC-RAS) software was used to model the 25-year, 24-hour flood inundation areas, depths, and flow velocities at the site. Two-dimensional unsteady-flow modeling was performed to generate maximum flow areas, depths, and velocities. A flow area computational mesh was generated using a 1-meter Digital Elevation Model terrain map from 2016 downloaded from USGS. This flow area mesh was overlaid with the initial field delineation results to display the full potential extent of jurisdictional non-wetland waters on the site.

4 Results - Initial Findings

Soils

Federal and state soil mapping typically used to obtain data on soils underlying the site is not available within the boundaries of the Mitigation site (UC Davis/NRCS 2021). Soil series mapped immediately adjacent to the east of the site include Carrizo very gravelly sand, sloping gullied land, riverwash and Rositas loamy coarse sand (UC Davis/NRCS 2021). Carrizo very gravelly sand, riverwash and sloping gullied land are ranked as hydric soils by the Natural Resources Conservation Service (NRCS 2021).

Vegetation

Vegetation mapping performed by Dudek during the delineation indicated that two desert vegetation communities occur on the site: desert dry wash woodland and Sonoran mixed woody scrub. These communities are briefly described below. Their acreages on the site are presented in Table 2 below; Figure 2 displays these communities as they occur on the site.

Table 2. Vegetation Communities

Vegetation Communities	Acreage
Desert Dry Wash Woodland	69.08
Sonoran Mixed Woody Scrub	50.55
Total	119.63

Desert Dry Wash Woodland is described by Obebauer et al. (2008) as an open to dense, drought-deciduous riparian scrub woodland 30-60 feet tall that is typically dominated by ironwood (*Olneya tesota*), desert willow (*Chilopsis linearis*) or blue palo verde (*Parkinsonia florida*). It occurs in sandy, gravelly washes and arroyos of the lower Mojave and Colorado deserts. These washes typically have braided channels that are substantially rearranged with every surface flow event. On site, this community is dominated by ironwood and occupies the main alluvial fan/wash in the center of the site. Scattered creosote bush (*Larrea tridentata*) shrubs occur within this community, along with white bursage (*Ambrosia dumosa*).

Sonoran Mixed Woody Scrub is described by Obebauer et al. (2008) as a Colorado desert community with mixed woody species occurring on well-drained slopes and alluvial fans, usually at the base of mountains. The three most characteristic species of this community also dominate this vegetation community on site: creosote bush, white bursage and ocotillo (*Fouquieria splendens*). This community occurs outside of the well-defined alluvial fans/drainages on the site.

Comprehensive lists of the plant and wildlife species observed on the site within these habitats during the vegetation mapping and jurisdictional delineation are included in Attachments C and D.

Summary

Three watersheds totaling 20.4 square miles were determined to contribute flow to the site. Figure 3, Watershed Map, displays the watersheds directly contributing flow to the site which were utilized in the hydrologic modeling exercise. The USFWS NWI Mapper (USFWS 2021) shows a series of 4 small riverine features flowing east to west through a well-defined alluvial fan in the central portion of the site; this was confirmed during the site visit, where many low flow channels were observed moving through the main wash in the center of the site. Additional minor channels were braided through additional floodplain and limited upland areas outside of the main wash.

According to USFWS NWI mapping (USFWS 2021), riverine features on the site continue off site to the east and flow through the alluvial fan until it widens and becomes undefined near Split Mountain Road, approximately 4 miles east of the site; at this point, the features are no longer mapped. Hydrologic connectivity to downstream washes or known creeks and rivers is unclear, but it is likely that sheet flows or groundwater from these features that cross the site eventually drain into San Felipe Creek and later the Salton Sea, east of the site.

4.1 Non-Wetland Waters

Overall, the site landscape drains water in an easterly direction, mainly through a large alluvial fan/wash consisting of numerous braided low-flow channels and swales within the desert dry wash woodland and Sonoran mixed woody scrub vegetation communities; one large non-wetland water was mapped to include all active low-flow channels within their larger floodplain area that exhibits low topographic variability between active flow channels and floodplain terraces. The central floodplain/wash on the site was very well defined with cut banks and strong fluvial indicators within and between low-flow channels. The northern and southern floodplains were a mosaic of floodplain terraces containing numerous unvegetated low-flow channels within a floodplain of low topographic variability with minor and often inconsistent fluvial indicators.

Additionally, a few smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub outside of larger floodplains were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. All aquatic features in the study area deemed to be potentially jurisdictional, confirmed through both the field delineation and associated hydrologic modeling, are displayed in Figure 4, Aquatic Resources Map.

In general, nearly all the field-mapped non-wetland water and low-flow channel boundaries (mapped based on evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks) fell within the maximum flow areas generated through the hydrologic model. The northern and southernmost portions of the site, outside of the central wash, showed more inconsistent and less-pronounced fluvial and OHWM indicators in the field; hydrologic modeling was used to refine the extent of non-wetland water boundaries within the Mitigation site. Figure 4 displays the boundaries of hydrologically modeled and field-verified non-wetland waters on the site and likely corresponds to accurate surface flow areas across the site during a significant runoff event.

Non-wetland waters on the site are ephemeral, meaning they only flow during storm events. These features are likely regulated by RWQCB and CDFW as waters of the state.

4.2 Swales

Several potential swale features without well-defined banks may present on site; these include areas of occasional surface sheet flow with slight topographic depressions and occasional, but often inconsistent, fluvial indicators that may or may not be subject to regulation by any of the agencies. These features were not mapped under the scope of this delineation but typically fell within the main floodplains of the mapped extent of non-wetland waters (Figure 3). Representative photos of these potential swale features within the larger floodplains are provided in Attachment A.

4.3 Potential Jurisdictional Aquatic Resources Summary

Table 3 below summarizes the results of the jurisdictional delineation and the areas of potential jurisdictional aquatic resources observed and mapped on the Project site.

Table 3. Potential Jurisdictional Aquatic Resources

Type	Jurisdiction	Acres/Linear Feet
Non-Wetland Waters of the State (Within Alluvial Fan/Wash)	CDFW and RWQCB	88.5/13,950
Total Potential Jurisdictional Aquatic Resources		88.5/13,950

5 Summary

The site supports 88.5 acres (13,950 linear feet) of non-wetland waters of the state in the form of an expansive desert wash and several isolated channels braided through the surrounding upland habitats. These non-wetland waters likely fall under the jurisdiction of CDFW and RWQCB given the well-defined fluvial indicators they display. The results of this delineation are preliminary until verified by CDFW and RWQCB.

6 References

- CEC (California Energy Commission). 2014. *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants*. Prepared by California State University, Fresno, and the California Department of Fish and Wildlife. February 2014.
- Google Earth. 2021. *Aerial Photographs*. 1:200 scale.
- Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Nongame-Heritage Program, California Department of Fish and Game.
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. March 2008. https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/rtcref/ch9.0/rtcrefaletters/014%202014-12-19_OberbauerTM2008.pdf

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UC Davis/NRCS (University of California, Davis, California Soil Resource Lab; University of California, Division of Agriculture and Natural Resources; Natural Resources Conservation Service). 2021. SoilWeb. University of California; USDA-NRCS. <https://data.nal.usda.gov/dataset/soilweb>.

USACE. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual, ERDC/CRREL TR-08-12. Prepared by R.W. Lichvar and S.M. McColley. Hanover, New Hampshire: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. August 2008.
<https://apps.dtic.mil/dtic/tr/fulltext/u2/a486603.pdf>.

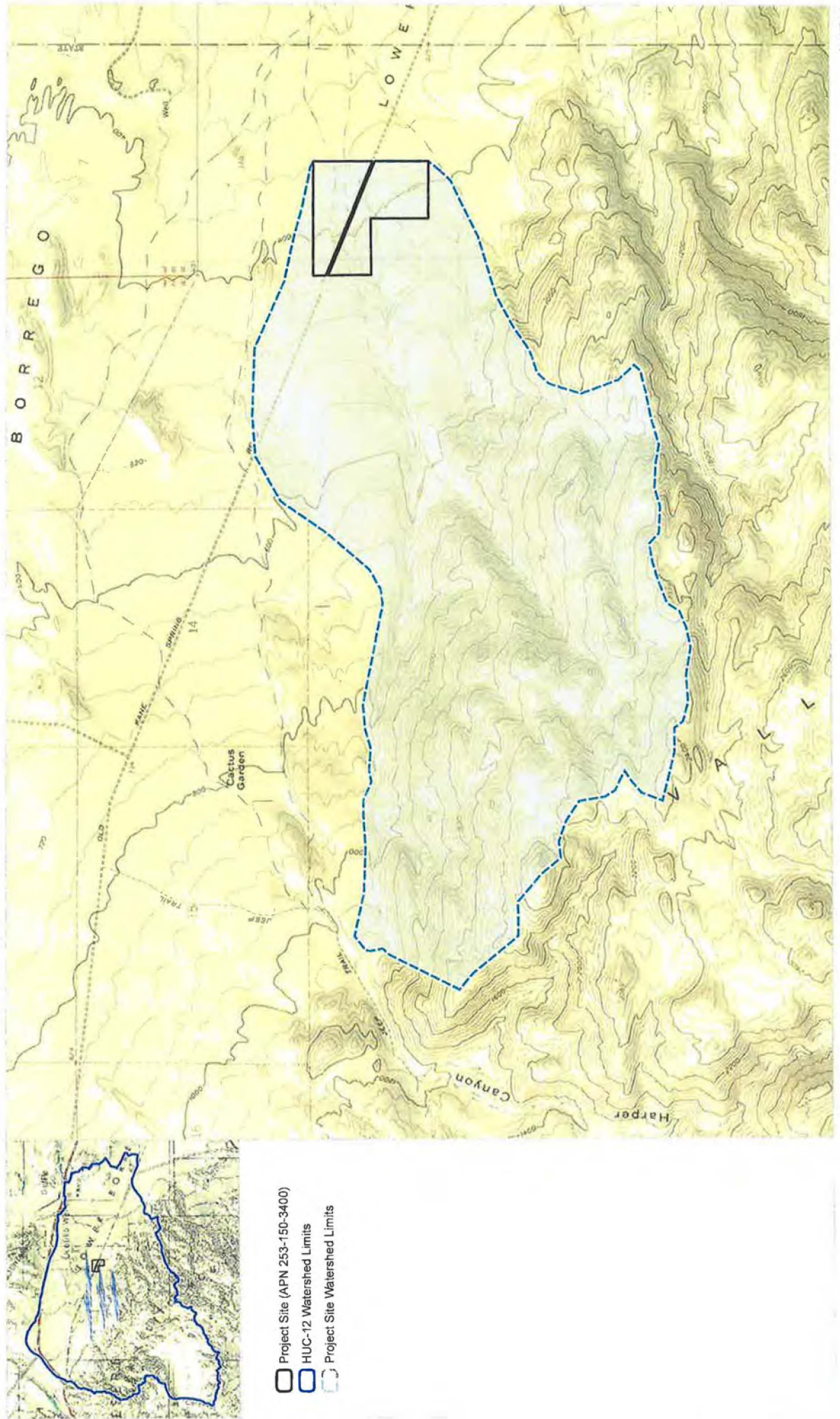
USFWS (U.S. Fish and Wildlife Service). 2021. "National Wetland Inventory" [map]. <http://www.fws.gov/data>.

USGS (U.S. Geological Survey). 2018. The National Map – Data Delivery: Topographic Maps.
<https://www.usgs.gov/core-science-systems/ngp/tnm-delivery/topographic-maps>.

USGS. 2021. National Hydrography Dataset. <http://nhd.usgs.gov/>.



FIGURE 2
Vegetation Map



-  Project Site (APN 253-150-3400)
-  HUC-12 Watershed Limits
-  Project Site Watershed Limits

FIGURE 3
Watershed Map

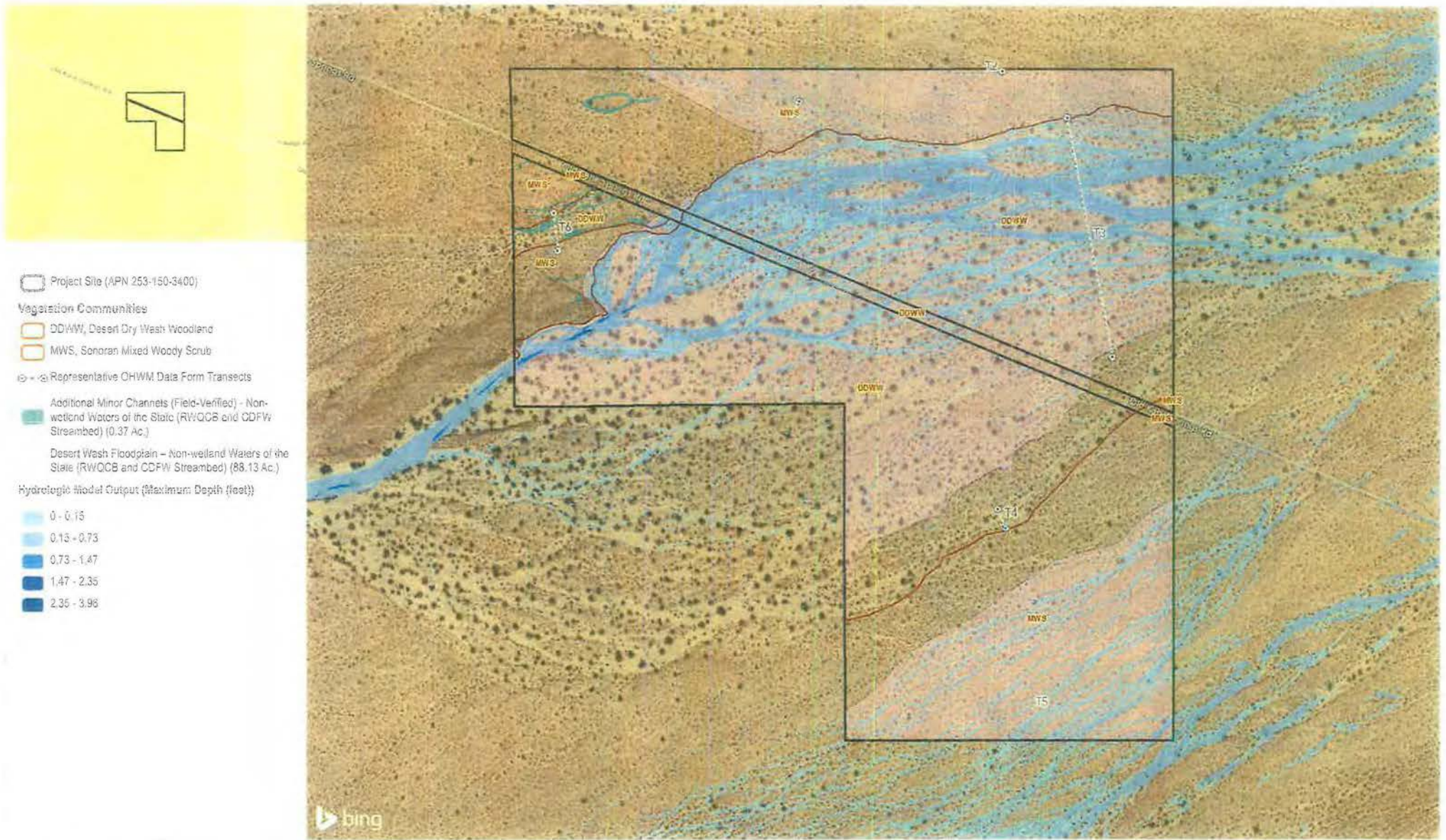


FIGURE 4
Aquatic Resources Map

Attachment A

Site Photos

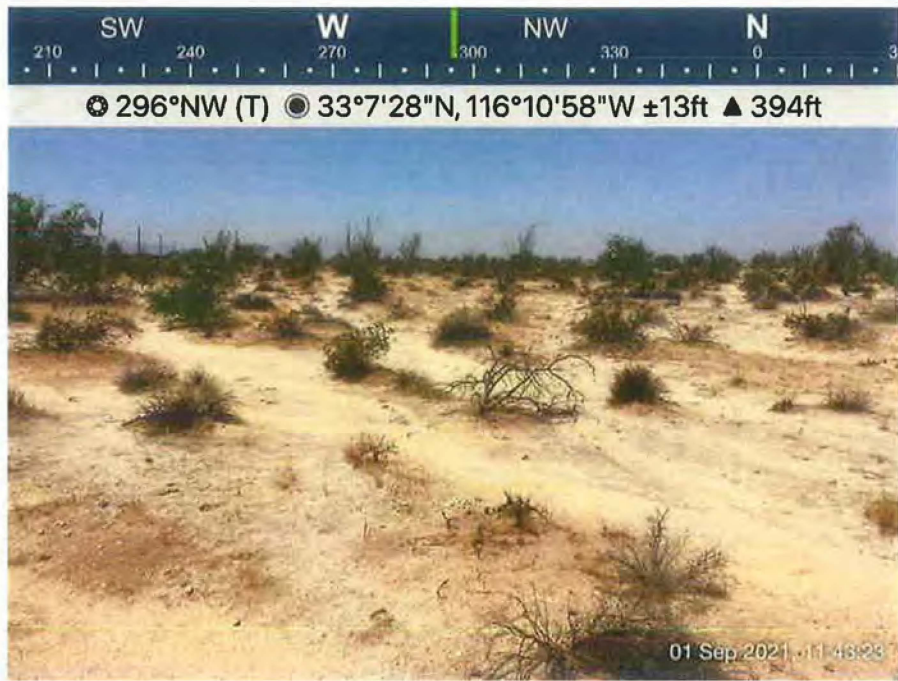


Photo 1: Representative photo showing minor low-flow channels braided throughout desert vegetation the northern portion of the site. This area is considered a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 2: Additional minor channels braided throughout the northern portion of the site. This area is considered a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 3: The northern edge of the central wash is shown here with clear cut banks. Minor channels from the northern floodplain are shown in the right side of the photo entering the central wash.



Photo 4: The southern boundary of the central wash is less well defined, but clear differences in the cover of creosote bush can be seen; to photo right and outside of the wash, much higher cover of creosote bush and cacti is observed.



Photo 5: The middle of the central wash is dominated by ironwood trees and contains many braided low flow channels with strong fluvial indicators. Ripples and flow patterns in the sand can be seen in this photo as well as exposed rocks at low flow channel edges.

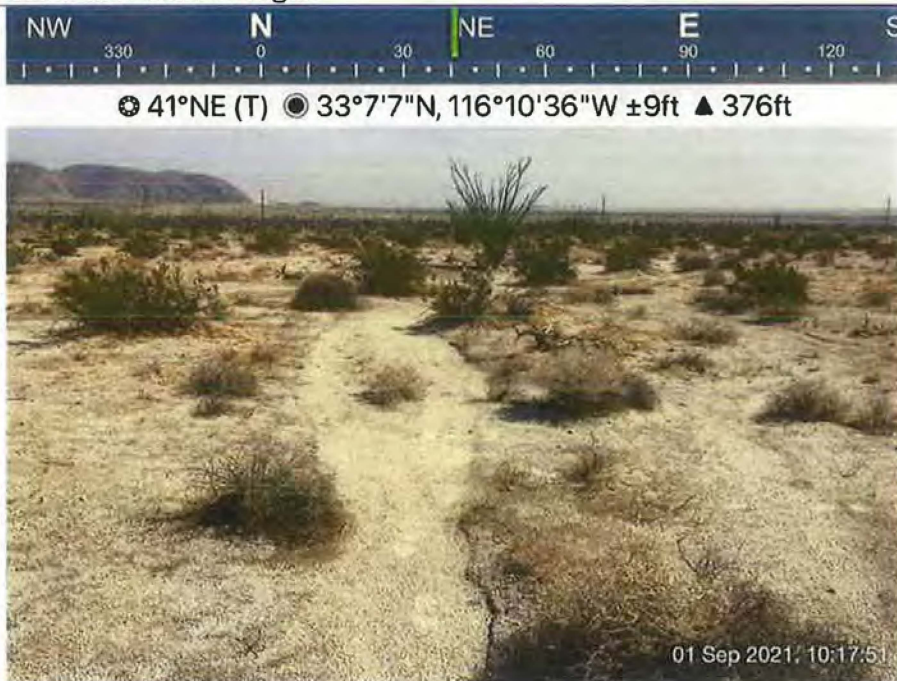


Photo 6: Minor channels with small cut banks and other fluvial indicators are present in certain areas of the southern portion of the site. Channels are braided together and considered to be a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 7: Looking across Transect 1 (T1) where an OHW form was taken across a potential swale/weakly defined low-flow channel feature within the larger desert wash floodplain in the northern portion of the site.



Photo 8: Looking across Transect 2 (T2) where an OHW form was taken across a low-flow channel feature with small but defined banks within the larger desert wash floodplain in the northern portion of the site.



Photo 9: Looking across Transect 3 (T3) where an OHW form was taken within the main desert wash/floodplain feature with many low-flow channels showing evidence of ripple marks in the sand, small cut banks and a much higher density of ironwood trees. The entire wash, including its many adjacent low-flow channels are considered one large non-wetland water.



Photo 10: Looking across Transect 4 (T4) where an OHW form was taken across an unvegetated upland area showing no evidence of banks/indicators of flow despite the appearance of a drainage on aerial imagery.



Photo 11: Looking across Transect 5 (T5) where an OHW form was taken across a low-flow channel feature with small but defined banks within the broader desert wash floodplain in the southern portion of the site.



Photo 12: Looking across Transect 6 (T6) where an *Episodic Stream Indicator Data Sheet* was taken across an desert area with several small, isolated non-wetland water features braided throughout the landscape.

Attachment B

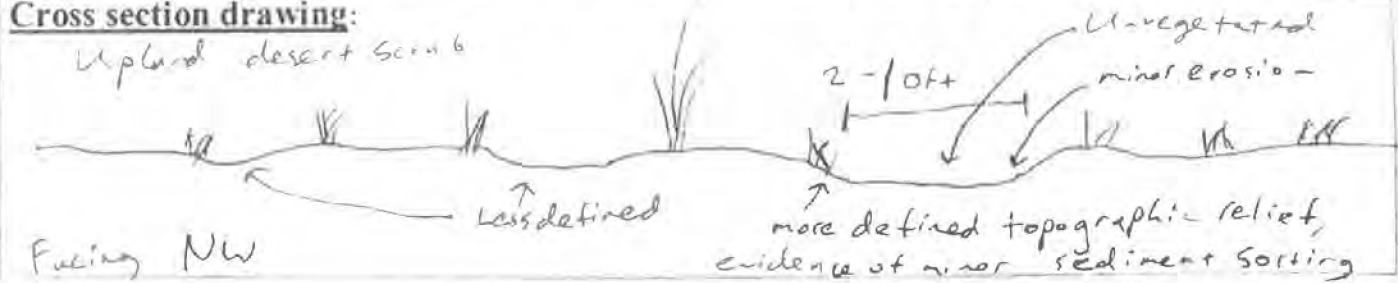
Data Forms

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Old Kane Springs Rd Mitigation Site		Date: 9/1/21	Time: n/a
Project Number: 13581.04		Town: Ocotillo Wells	State: CA
Stream: None - Potential Swale		Photo begin file#:	Photo end file#:
Investigator(s): Lody Scheat, Callie Amoaku			
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?		Location Details: Open space / desert off Old Kane Springs Rd.	
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?		Projection: Datum: WGS84	
Coordinates: 33.125156, -116.180746			
Potential anthropogenic influences on the channel system: OHV, Shooting, and Recreation.			
Brief site description: Upland desert habitat adjacent to large alluvial fan. Some potential swales throughout			
Checklist of resources (if available):			
<input checked="" type="checkbox"/> Aerial photography Dates: 2021		<input type="checkbox"/> Stream gage data Gage number: Period of record:	
<input checked="" type="checkbox"/> Topographic maps		<input type="checkbox"/> History of recent effective discharges	
<input checked="" type="checkbox"/> Geologic maps		<input type="checkbox"/> Results of flood frequency analysis	
<input checked="" type="checkbox"/> Vegetation maps		<input type="checkbox"/> Most recent shift-adjusted rating	
<input checked="" type="checkbox"/> Soils maps		<input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event	
<input checked="" type="checkbox"/> Rainfall/precipitation maps			
<input type="checkbox"/> Existing delineation(s) for site			
<input checked="" type="checkbox"/> Global positioning system (GPS)			
<input type="checkbox"/> Other studies			
Hydrogeomorphic Floodplain Units			
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW:			
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.			
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.			
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.			
a) Record the floodplain unit and GPS position.			
b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.			
c) Identify any indicators present at the location.			
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.			
5. Identify the OHW and record the indicators. Record the OHW position via:			
<input type="checkbox"/> Mapping on aerial photograph		<input checked="" type="checkbox"/> GPS	
<input type="checkbox"/> Digitized on computer		<input type="checkbox"/> Other:	

Project ID: 1358104 Cross section ID: T1 Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: T1

Indicators:

- Change in average sediment texture - minor change to lighter, finer grained sand
- Change in vegetation species
- Change in vegetation cover - many upland areas also un-vegetated
- Break in bank slope
- Other: _____
- Other: _____

Comments: minor change in sediment texture and less vegetated than adjacent areas with shrubs, Not strong indicators, potential swale.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

Potential braided swale

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand to fine sand
Total veg cover: 35 % Tree: 5 % Shrub: 20 % Herb: 10 %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: Potential swale - very inconsistent and many less defined "braids" with similar features exist across the upland portions of the site

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

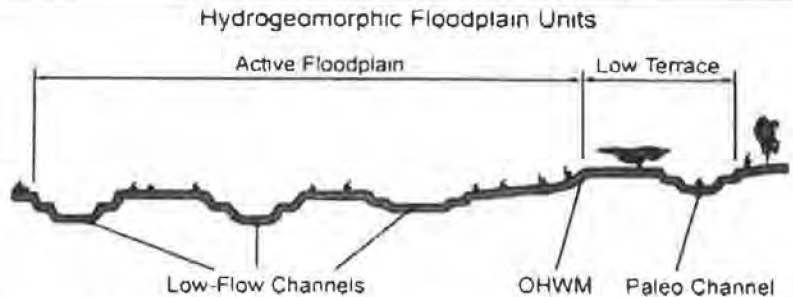
Project: Old Kane Springs Rd mitigation Date: 9/1/21 Time: n/a
 Project Number: 1258104 Town: Ocotillo Well, State: CA
 Stream: Alluvial fan Photo begin file#: Photo end file#:
 Investigator(s): Lady Schauf, Callie Anaku

Y / N Do normal circumstances exist on the site?
 Y / N Is the site significantly disturbed?
 Location Details: Desert alluvial fan
 Projection: Datum: WGS84
 Coordinates: 33 125499, -116.178130

Potential anthropogenic influences on the channel system:
 See T1

Brief site description: minor channel in uplands adjacent to wash

Checklist of resources (if available):
 Aerial photography Dates: 2011
 Topographic maps
 Geologic maps
 Vegetation maps
 Soils maps
 Rainfall precipitation maps
 Existing delineation(s) for site
 Global positioning system (GPS)
 Other studies
 Stream gage data
 Gage number:
 Period of record:
 History of recent effective discharges
 Results of flood frequency analysis
 Most recent shift-adjusted rating
 Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event



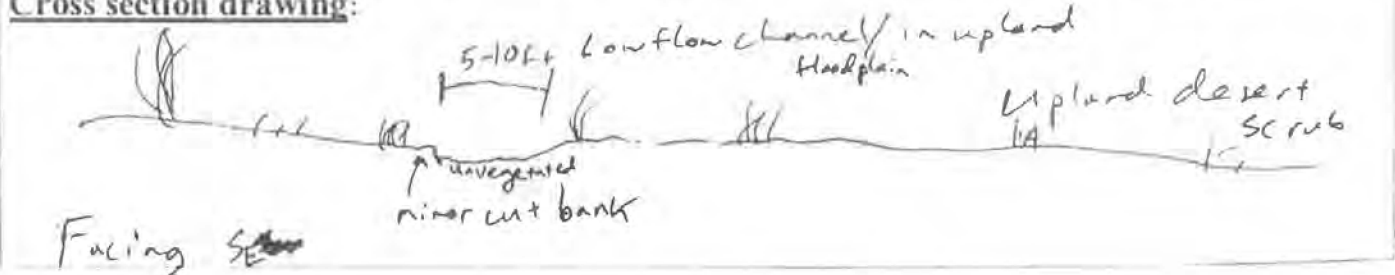
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Project ID: 1358104 Cross section ID: T2 Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: T2

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments: Finer, lighter sand in small channel, Unvegetated, and small cut banks showing erosion

Floodplain unit:

- Low-Flow Channel
- Active Floodplain
- Low Terrace

GPS point: _____

minor channel comprised of both low flow channel and floodplain

Characteristics of the floodplain unit:

Average sediment texture: Coarse - Fine sand
Total veg cover: 01% Tree: _____% Shrub: _____% Herb: 1% (in channel)

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: minor banks and clear surface / topographic relief.

T3
Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Old Kane Springs Rd
 Project Number: 13581.04
 Stream: Alluvial Fan/Wash
 Investigator(s): Cody Schaaf, Callie Anonku

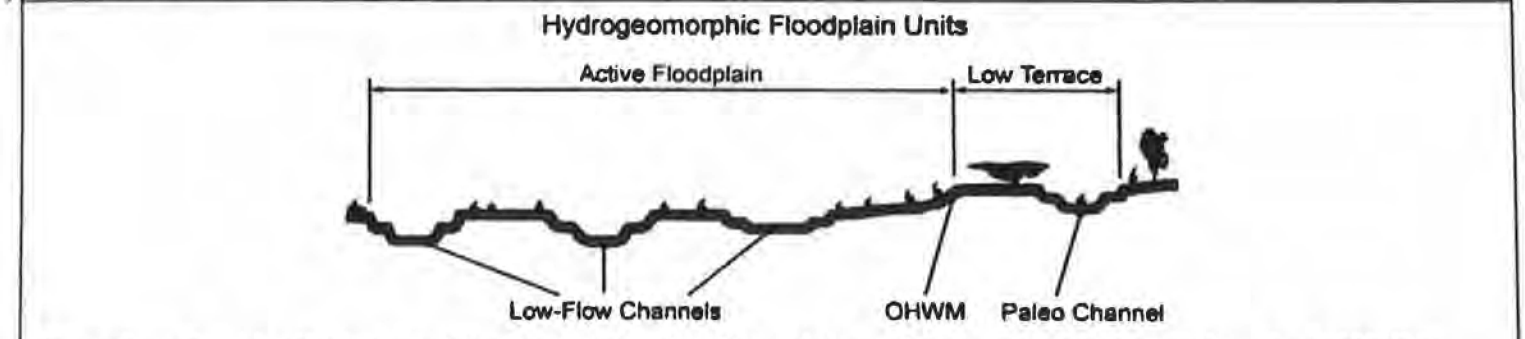
Date: 9/1/21
 Town: Ocotillo Wells
 Photo begin file#:
 Time:
 State: CA
 Photo end file#:

/ Do normal circumstances exist on the site?
 Location Details: In desert wash / Alluvial Fan.
 / Is the site significantly disturbed?
 Projection:
 Datum: WGS 84
 Coordinates: 33.123663, -116.176950

Potential anthropogenic influences on the channel system:
 See T 1

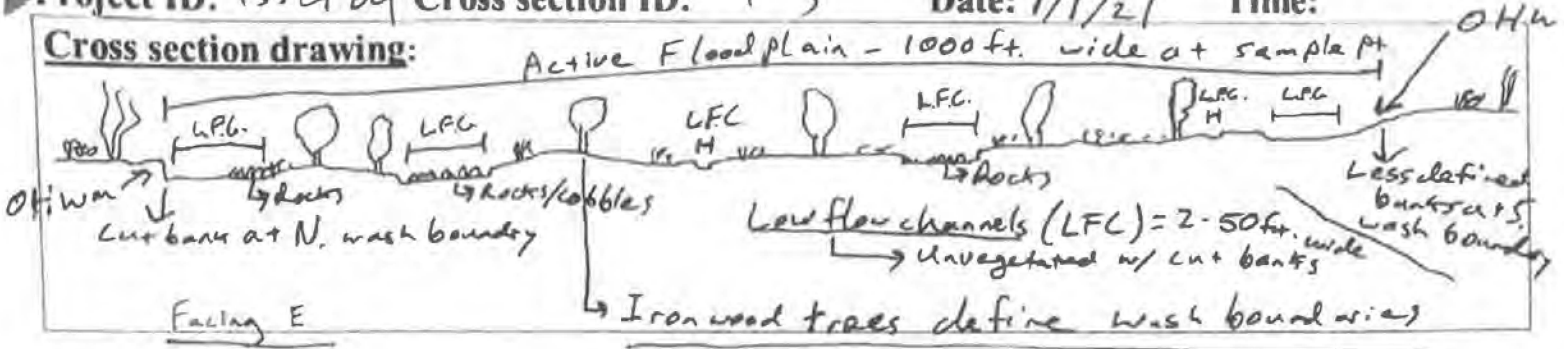
Brief site description: Transect taken across large, wide desert wash with Iron wood (Olneya sp.) dominating vegetation layer. Many low flow channels within wash boundaries. Wash mapped bank to bank and according to presence of Iron wood.

- Checklist of resources (if available):
- Aerial photography
 Dates: 2021
 - Topographic maps
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data
 Gage number:
 Period of record:
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event



- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHWM and record the indicators. Record the OHWM position via:
 - Mapping on aerial photograph
 - GPS
 - Digitized on computer
 - Other:

Cross section drawing:



OHWM

GPS point: see wash boundaries on map

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input checked="" type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments: In wash, veg cover becomes dominated by Iron wood trees. Break in bank slope on N. side of wash well defined. Rocks and cobbles become much more common in and around low flow channels. Iron woods on terraces within floodplain.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: Not mapped

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand w/ some cobbles

Total veg cover: 10 % Tree: _____ % Shrub: _____ % Herb: 10 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input checked="" type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input checked="" type="checkbox"/> Other: <u>Cobbles exposed</u> |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments: Ripples, defined banks, areas of exposed cobbles and clear surface/topographic relief present in low flow channels.

Project ID: 13581⁰⁴ Cross section ID: T3 Date: 9/1/21 Time:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: T3

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand
Total veg cover: ~~30~~ % Tree: ~~10~~ % Shrub: ~~20~~ % Herb: ~~5~~ %

Community successional stage: 10 15
 NA Mid (herbaceous, shrubs, saplings)
 Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input checked="" type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input checked="" type="checkbox"/> Other: <u>Presence of Ironwood</u> |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments: Ripples, benches, banks, and ironwoods present and defining the wash floodplain.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %
Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

74

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

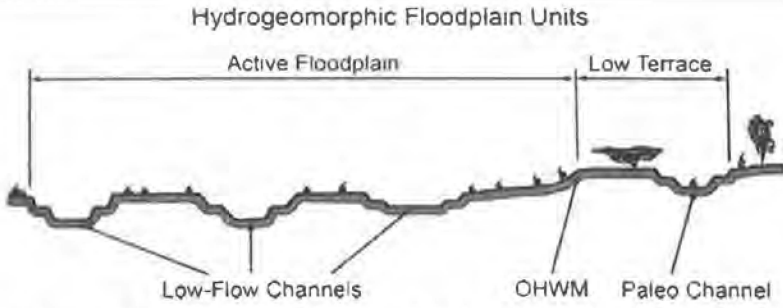
Project: *Old Kane Springs Rd Mitigation* Date: *9/1/21* Time: *n/a*
 Project Number: *13581-04* Town: *Ocotillo Wells* State: *CA*
 Stream: *None* Photo begin file#: Photo end file#:
 Investigator(s): *Cody Schaaf, Callie Anzak*

Y N Do normal circumstances exist on the site?
 Y N Is the site significantly disturbed?
 Location Details: *Upland desert scrub adjacent to alluvial fan*
 Projection: Datum:
 Coordinates: *33.120603, -116.178149*

Potential anthropogenic influences on the channel system:
See T1. Road may exist through this transect

Brief site description: *Base of road adjacent to desert wash in upland scrub. Looks like part of wash on aerial imagery*

- Checklist of resources (if available):
- Aerial photography
Dates: *2021*
 - Topographic maps
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data
Gage number:
Period of record:
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

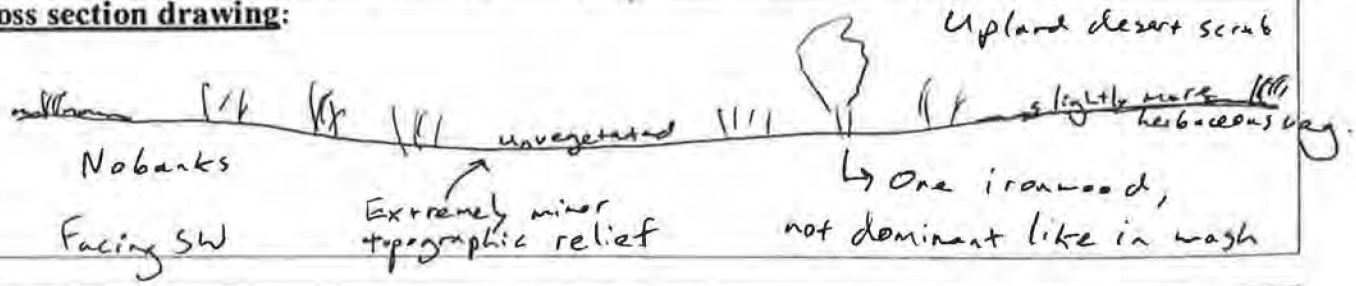


- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
- Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 - Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 - Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - Record the floodplain unit and GPS position.
 - Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - Identify any indicators present at the location.
 - Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 - Identify the OHWM and record the indicators. Record the OHWM position via:
 - Mapping on aerial photograph
 - Digitized on computer
 - GPS
 - Other:

Project ID: 135804 Cross section ID: T4

Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: None

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover - Not an OHWM
- Break in bank slope
- Other: _____
- Other: _____

→ Sediment same as in upland here

Comments: Slightly connects to wash on aerial but this area only ~~shows~~ shows less vegetation cover on ground between shrubs. No clear sign of true fluvial indicators (i.e. banks). Only one or two ironwoods - not significant

as adjacent wash.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: None

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

- Community successional stage:
- NA
 - Early (herbaceous & seedlings)
 - Mid (herbaceous, shrubs, saplings)
 - Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments:

None. If anything, this is an overflow channel for wash that only sees flows in extreme rain events (i.e. 100+ year flooding)

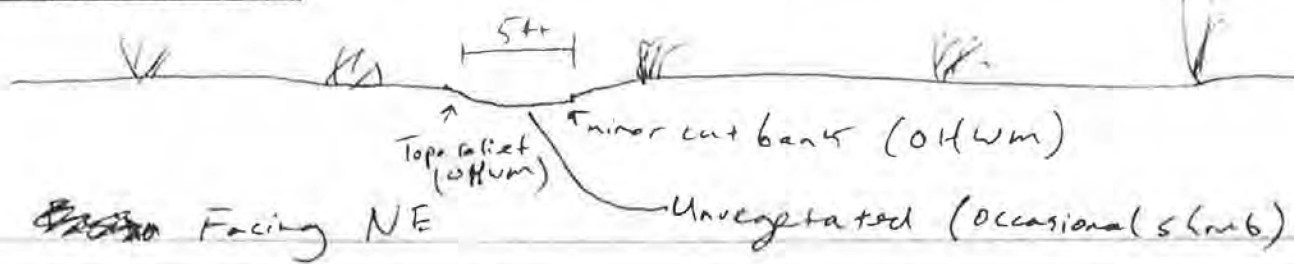
75

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: XXXXXXXXXX Old Kuna Springs Rd Project Number: 13581.04 Stream: Alluvial fan Investigator(s): Cody Schaub, Callie Amato	Date: 9/1/21 Time: n/a Town: Ocotillo Wells, State: CA Photo begin file#: Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE portion of site in upland desert scrub Projection: Datum: Coordinates: 33.118566, -116.177727				
Potential anthropogenic influences on the channel system: <div style="text-align: center; font-size: 1.5em; margin-top: 20px;">See T1</div>					
Brief site description: Small channel in upland desert scrub on SE portion of site. Similar to T2.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: 2021 <input type="checkbox"/> Topographic maps <input checked="" type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: 2021 <input type="checkbox"/> Topographic maps <input checked="" type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: 2021 <input type="checkbox"/> Topographic maps <input checked="" type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event				
Hydrogeomorphic Floodplain Units					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Project ID: B58104 Cross section ID: T5 Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: T5

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments: Minor but defined and consistent bank erosion, unvegetated channel bottom and finer sand.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: see Map

Characteristics of the floodplain unit:

Average sediment texture: Fine to coarse sand
Total veg cover: 5 % Tree: _____ % Shrub: 5 % Herb: _____ %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- (No) Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: minor banks, topographic relief, and drainage patterns. Similar to T2 on NW end of site

Episodic Stream Indicator Data Sheet							page 1 of 4
Site ID: Old Kase Rd. Michigan Michigan			Stream ID: T6 - Upland		Date: 9/1/21		
Nearest Town:			County:				
Investigators: Cody Schaefer, Callie Hroak							
Base Map							
Aerial Photo #:		Date:	Topographic Map Name: Barroge mtn / Harper Cr.		Date: 2018		
GPS Data							
GPS Name:	Datum: WGS84	Transect Elevation: 300 ft	Zone 10 / 11	GPS Error: ± 3 ft / m			
GPS co-ords start of transect: 33.12378 -116.18341			GPS co-ords end of transect: 33.12348 -116.18323				
Geomorphic Province (✓ one)		Mojave ✓	Sonoran/Colorado	Great Basin	Other:		
Landform (✓ all that apply)							
Headwater	Upper fan	Middle fan	Lower fan ✓	Alluvial plain	Axial valley	Playa	
Channel Form (✓ one)							
Single thread ✓	Braided	Compound	Distributary	Discontinuous	Other:		
Transect was selected to:							
✓ Document fluvial activity & boundaries			Document channel elevations & boundaries				
✓ Document habitat associations			Document a change in watercourse morphology				
Other:							
Date of most recent runoff event (if known): Yesterday, 8/31/21							
<p>Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:</p> <p>Alluvial area in desert scrub SW of Ocotillo Wells. Mountain valleys drain flow into gently sloping flats, creating many alluvial fans and washes. Uplands have minor topo. relief that appear to be relict (Not fluvially active) when compared to alluvial floodplains, low flow channels and active washes.</p>							
<p>Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluvies, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.</p>							
<p>N S</p> <p>Left Right</p> <p>85ft+ weak floodplain</p> <p>Upland rocky desert scrub Crocote dominated</p> <p>3ft</p> <p>Ironwoods</p> <p>5ft</p> <p>minor terrace</p> <p>5ft</p> <p>Upland</p> <p>3ft elevation difference</p> <p>Low flow channels Showing minor bank cuts and sediment sorting</p>							

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (-) for indicators not observed. For examples see the Photo Atlas in MESA - Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators		Substrate Particle Size	
		Estimated percentages	
Av soil horizon	✓	Relict bars & swales	
Biotic soil crusts		Rock fractured in place	% Bedrock / Cemented substrate
Bioturbation		Rock varnish	% Boulder ≥ 256 mm
Caliche coatings / layers / rubble	✓	Rock weathering	5 % Cobble ≥ 64 - 256mm
Carbonate etching		Rubified rock undersides	20 % Pebble ≥ 4 - 64 mm
Coppice dunes: active / relict		Soil development	50 % Granule ≥ 2 - 4 mm
Deflated surface	✓	Surface rounding of landform	25 % Sand ≤ 2 mm
Pavement	✓	Woody debris in place	% Silt/Clay Fines
Other:			

Creosote bush scrub with some very minor relict bars / scales but general surface rounding, woody debris in place, and rock exposure suggesting weathering.
 No ^{active} fluvial indicators present in uplands.

Fluvial Indicators		
Bars: sand / gravel	Mud: cracks / curls / drapes	Sediment tails: sand / gravel
Cut banks	Organic drift	vegetation channel alignment
Drainage swales	Overtaken rocks	Water-cut benches
Exposed roots	Scour	Wrack
First-order streams	Sediment ramps: sand / gravel	Wrinkle marks
Flow lineations	Sediment sorting	
Other:		

~~minor cut banks and sediment sorting. Veg / channel alignment is strongest indicator - low flow channels unvegetated and floodplain dominated by ironwood.~~

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined): 25%	Dominant and co-dominant species (if known) and % of total vegetative cover of each: Creosote - 10% Ironwood - 5%	Representative height and width of dominant and co-dominant species: Creosote - 4ft tall, 6wide Ironwood Ocotillo - 10ft tall, 4wide
---	--	--

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences):
 N/A - 5-10% more creosote in upland and floodplain ~~is~~ compared to low flow channel. 3-5% more Ironwood in floodplain compared to upland

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences):
 N/A - No fluvially active units ~~for~~ ~~ocotillo~~ ~~only~~ ~~in~~ ~~upland~~

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences):
 N/A - No fluvially active units ~~yes~~ ~~ocotillo~~ ~~and~~ ~~creosote~~ ~~more~~ ~~upland~~

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (-) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators		Substrate Particle Size	
		Estimated percentages	
Bar forms: sand / gravel	Secondary channels	% Bedrock / Cemented substrate	
Bifurcated flow	Sediment plastering	% Boulder	≥ 256 mm
✓ Drainage swales	Sediment ramps: sand / gravel	% Cobble	≥ 64 - 256 mm
✓ Flow lineations	Sediment sheets: sand / gravel	% Pebble	≥ 4 - 64 mm
Imbricated gravel	✓ Sediment sorting	10 % Granule	≥ 2 - 4 mm
Levee ridges: sand / gravel	Sediment tails: sand / gravel	40 % Sand	≤ 2 mm
Mud: cracks / curls / drapes	✓ Vegetation-channel alignments	50 % Silt/Clay	Fines
Organic drift	Wrack		
Overturmed rocks	Wrinkle marks		
Out-of-channel flow: Lateral floodplain / Terminal floodplain			
Ripples			
Other:			

Low flow channels are snake-like. Channel aligned w/ unvegetated areas. Floodplain shows minor sediment sorting in the form of transport of finer sands.

Erosion Indicators

✓ Cut banks (<i>small</i>)	Rills	Water-cut benches
Exposed roots	Scour	Water level mark
Headcuts	Secondary channels	
Other:		

Small cut banks remain erosion indicator for low flow channels and boundaries of floodplain.

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined): <i>15% in floodplain</i>	Dominant and co-dominant species (if known) and % of total vegetative cover of each: <i>Creosote - 5% Ironwood - 5%</i>	Representative height and width of dominant and co-dominant species: <i>Creosote - 4ft tall, 6" wide Ironwood: 15ft tall, 12" wide</i>
--	--	---

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): *No veg. in low flow channel,*

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): *See above*

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences): *See above*

Attachment C

Plant List

Plant Species

EUDICOTS

ASTERACEAE—SUNFLOWER FAMILY

- Ambrosia dumosa*—white bursage
- Ambrosia salsola* var. *salsola*—burrobrush
- Encelia farinosa*—brittle bush
- Pectis papposa* var. *papposa*—manybristle chinchweed
- Stephanomeria pauciflora*—brownplume wirelettuce

BORAGINACEAE—BORAGE FAMILY

- Cryptantha* sp. —Unknown *Cryptantha* species

BRASSICACEAE—MUSTARD FAMILY

- Sysimbrium* sp. —Unknown mustard species

CACTACEAE—CACTUS FAMILY

- Cylindropuntia echinocarpa*—Wiggins' cholla
- Cylindropuntia ganderi*—Gander's buckhorn cholla
- Ferocactus cylindraceus*—California barrel cactus
- Opuntia basilaris*—beavertail pricklypear

EUPHORBIACEAE—SPURGE FAMILY

- Ditaxis lanceolata*—narrowleaf silverbush
- Euphorbia micromera*—Sonoran sandmat
- Euphorbia polycarpa*—smallseed sandmat

FABACEAE—LEGUME FAMILY

- Olneya tesota*—ironwood
- Psoralea schottii*—Schott's dalea
- Senegalia greggii*—catclaw acacia

FOUQUIERIACEAE—OCOTILLO FAMILY

- Fouquieria splendens* ssp. *splendens*—ocotillo

KRAMERIACEAE—RHATANY FAMILY

- Krameria bicolor*—white ratany

LAMIACEAE—MINT FAMILY

- Condea emoryi*—desert lavender

MALVACEAE—MALLOW FAMILY

Eremalche rotundifolia—desert fivespot

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Allionia incarnata var. *villosa*—trailing windmills

ONAGRACEAE—EVENING PRIMROSE FAMILY

Eremothera boothii ssp. *condensata*—shredding suncup

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum deflexum—flatcrown buckwheat

SOLANACEAE—NIGHTSHADE FAMILY

Datura discolor—desert thorn-apple

ZYGOPHYLLACEAE—CALTROP FAMILY

Kallstroemia californica—California caltrop

Larrea tridentata—creosote bush

MONOCOTS

POACEAE—GRASS FAMILY

Hilaria rigida—big galleta grass

* *Schismus barbatus*—common Mediterranean grass

* signifies introduced (non-native) species

Attachment D

Wildlife List

Wildlife Species

BIRDS

BUSHTITS

AEGITHALIDAE--LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

INVERTEBRATES

BUTTERFLIES

PIERIDAE—WHITES AND SULFURS

Nathalis iole—dainty sulphur

MAMMALS

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit

KANGAROO RATS

HETEROMYIDAE—POCKET MICE AND KANGAROO RATS

Dipodomys deserti—desert kangaroo rat

REPTILES

LIZARDS

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris—tiger whiptail

SNAKES

VIPERIDAE—VIPERS

Crotalus cerastes—sidewinder

**EXHIBIT 4
SPECIFIC COMMENTS AND ERRATA**

5a-21
All Exhibit 4

Page	Section/Text	Comment
ix	Table of Contents, Appendix D: Biological Resource Reports	Suggest including the following as additional reports in this section: 1) Approved Jurisdictional Determination issued by the U.S. Army Corps of Engineers on February 8, 2021 (see Exhibit 1); and 2) Jurisdictional aquatic resources delineation for the Old Kane Spring Road Site prepared by Dudek in April 2022 (see Exhibit 4).
ES-5	Executive Summary, Project Objectives	Consider revising the final bullet with the following modification: <i>"Provide compensatory mitigation for potential impacts to waters of the state as a result of project implementation in compliance with State of California Fish & Game Code Section 1600 and the Port-Cologne <u>Porter-Cologne Water Quality Control Act (Porter-Cologne Act).</u>"</i>
ES-7	First paragraph - Summary of alternatives	Consider revising the second sentence, as follows: <i>"The following alternatives, <u>which were evaluated in the 2019 SEIS</u>, were selected and analyzed/compared to the project and are evaluated in the SEIR."</i>
ES-7 through ES-9	Executive Summary, Summary of Alternatives	On February 8, 2021 the USACE issued an Approved Jurisdictional Determination (see Exhibit 1) confirming that there are no waters of the United States subject to regulation under Section 404 of the Clean Water Act in the project area. As such, all references to "waters of the United States" should be removed and replaced with "waters of the State."
ES-23	Impact 4.2-4, Impact 4.2-5	Significance after mitigation is blank. Insert "LTS,"
ES-28	Impact 4.6-4	Replace "rom" with "from."
1-1	Introduction	In the first sentence, change "Condition Use Permit" to "Conditional Use Permit."
1-1	Section 1.1 (Purpose of a Subsequent Environmental Impact Report)	In the second paragraph, eliminate references to waters of the United States. Consider using the following modified text: <i>"The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of waters of the United States <u>aquatic resources</u> at the Quarry by restoring, enhancing, and reserving aquatic resources at a property where aquatic functions are similar to the impacted functions."</i>
1-4	Section 1.2 (Summary of the Proposed Project)	Eliminate references to waters of the United States and replace with waters of the state.
1-6	Section 1.5 (Responsible Parties)	Under "Federal Agencies" the USACE is identified as a federal agency to coordinate with for the issuance of a Section 404 permit. However, as previously indicated, the USACE issued an Approved Jurisdictional Determination on February 8, 2021 confirming the absence of waters of the United States in the project area. Therefore, a Section 404 permit is no longer required. Please revise accordingly.
1-6	Section 1.5 (Responsible Parties)	Under "State" agencies the Colorado River RWQCB is identified as issuing a 401 Certification. However, this is incorrect as the aquatic features in the project area are not subject to Clean Water Act jurisdiction. Please revise to state that the RWQCB will be issuing Waste Discharge Requirements for the project in accordance with the Porter-Cologne Act.
1-6	Section 1.5 (Responsible Parties)	Under "Regional and Local Agencies" it is unclear why the Colorado River RWQCB is identified as both a state agency and as a regional and local agency. Please correct or clarify as needed.

Page	Section/Text	Comment
2-2	Section 2.2 (Project Background, Mitigation Sites)	Remove references to "waters of the United States" and replace with "waters of the State."
2-7	Figure 2-2b	The Project site boundary should track the boundaries of Parcels 140-030-090, 140-130-100, and 140-030-110. The adjacent parcels include vegetation communities that will benefit from the restoration activities but are not part of the Project site. Figure 2-2b should be revised accordingly.
2-11 through 2-12.	Section 2.5.1 (Project Location and Access) and Table 2-1	Viking Ranch consists of Parcels 140-030-090, 140-130-100, and 140-030-110, which have a combined total area of approximately 160 acres. There are an additional 43 acres of adjacent land that will benefit from the mitigation project but are not part of the Project site. The discussion of Project location and Table 2-1 should be revised accordingly.
2.25	Section 2.6 (Proposed Project Elements – Viking Ranch Restoration)	Figure 2-6 should be referenced in the first paragraph.
2-26	Baseline Conditions, first bullet	Note that plastic oil containers have been removed from the site.
2-28	Section 2.6 (Following Viking Ranch Mitigation Description)	Consider adding a description for the preservation and long-term resource management of Old Kane Springs Road site, which is currently missing from Section 2.6. The description should reference Figure 2-4.
2-31	Section 2.7.1	For greater clarity, consider adding the following phrase to the end of last sentence: "for Viking Ranch."
3-5	Section 3.3.3 (Statutory and Regulatory SEIR Provisions)	Revise the third sentence of the last paragraph as follows: <i>"The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of waters-of-the-United-States (WoUS) aquatic resources at the Quarry by restoring, enhancing, and preserving aquatic resources at a property where aquatic functions are similar to the impacted functions."</i>
4.1-21	Section 4.1.4.4 (Old Kane Springs Road Preservation Site)	Revise the first sentence as follows: <i>"Emissions associated with preservation of the Old Kane Springs Preservation Site would be limited to regular maintenance infrequent truck trips for periodic site monitoring and would be negligible."</i>
4.2-1	Section 4.2 (Biological Resources) - Introductory Section	Consider adding the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (see Exhibit 1) as an additional literature source.
4.2-12, 4.2-23, and 4.2-52	Biological Resources	It should be noted in the FSEIR that Peninsular bighorn sheep is a fully protected under the Fish and Game Code and that no "take" of this species is required or will be sought by USG in connection with the Project.
4.2-26	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Delete the reference to non-wetland waters of the United States and replace with non-wetland waters of the State.

Page	Section/Text	Comment
4.2-27	Section 4.2.1.3 (Biological Resource Conditions at Present, Well No. 3 Site and Pipeline)	Revise the following statement as indicated: <i>"According to the 2019 SEIS, there are no jurisdictional wetlands present within the proposed pipeline alignment. However, there are a few drainage courses along the alignment that would likely meet criteria as state jurisdictional ephemeral stream channels, subject to permitting under Section 16013 1602 of the Fish and Game Code, and possibly as waters of the US State subject to permitting under the Porter-Cologne Act Section 404 of the Federal Clean Water Act-Imperial County 2019)."</i>
4.2-30	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Consider revising the following statement as indicated: <i>"Pursuant to the federal Clean Water Act, ACOE and RWQCB, Porter-Cologne Act, RWQCB jurisdictional areas include those supporting all three wetlands criteria <u>consistent with and as identified</u> in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the ACOE but can also include waters of the state that may be regulated, pursuant to the state Porter-Cologne Act."</i>
4.2-30 through 4.2-31	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Remove references to "waters of the United States" and replace with "waters of the State."
4.2-34	Table 4.2-4 - Jurisdictional Resources within the Old Kane Springs Road Preservation Site	Remove "ACOE" as a jurisdictional agency from the "Total" line.
4.2-49	Section 4.2.4.3 (Substantial Project Changes - New Information)	The second paragraph of this Section (top of page 4.2-49) should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1).
4.2-63	Impact 4.2-3 (Quarry, Well No. 3 Site and Pipeline Alignment)	This discussion should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1). Among other things, consider revising the text as follows: <i>"The 2008 EIR/EIS determined that Quarry expansion activities would impact existing streambeds which could be under the jurisdiction of CDFG through Sections 1601-3 of the California Fish and Game Code or the US Army Corps of Engineers through Section 404 of the Federal Clean Water Act. <u>However, since that time, the USACE issued an Approved Jurisdictional Determination confirming there are no waters of the United States subject to regulation under Section 404 of the federal Clean Water Act in the project area. However, the RWQCB maintains jurisdiction over the aquatic resources in the project area under the Porter-Cologne Act"</u></i>
4.6-9	Section 4.6.1.3 (Viking Ranch Restoration Site-Floodplain)	The first sentence should be revised as follows: <i>"The floodplain on the Viking Ranch site is shown on <u>Figure 2-4, "Old Kane Springs Road Preservation Site</u> <u>Figure 2-3, Viking Ranch Restoration Site.</u>"</i>
4.6-22	Section 4.6.4.3 (Substantial Project Changes - New Information)	This discussion should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1).
4.6-24	Section 4.6.4.4 (Viking Ranch Restoration Site)	The first paragraph is not relevant to the Viking Ranch Restoration Site and should be deleted.

Page	Section/Text	Comment
4.7-1	Section 4.7.1.1 (Land Use and Planning – Well No. 3 and Associated Pipeline)	The last sentence (“No development was present in 2008”) is incorrect. Disturbance on the private parcel and the pipeline alignment was present prior to 2008. Wells are present on the private parcel, and the pipeline alignment/tramway has an active railroad line in place with a dirt access road paralleling the tramway along its entire length.
4.7-2	Section 4.7.1.2 (Land Use Conditions at Present – Well No. 3 Site and Pipeline Alignment)	The second sentence (“Both the well site and pipeline alignment remain undeveloped with no structures or other improvements”) is incorrect. Disturbance on the private parcel and the pipeline alignment was present prior to 2008. Wells are present on the private parcel, and the pipeline alignment/tramway has an active railroad line in place with a dirt access road paralleling the tramway along its entire length.
4.7-13	Section 4.7.4.3 (Impact 4.7-1)	Revised the second sentence as follows: <i>“There are no established communities adjacent to the Quarry ...”</i>
4.8-5	Section 4.8.3.1 (Significance Criteria – CEQA Appendix G Significance Criteria)	The CEQA Appendix G Significance Criteria are listed for cultural resources but not for Tribal Cultural Resources. Consider adding the criteria listed below for Tribal Cultural Resources from the CEQA Guidelines (Appendix G, Section XVIII), which were used in the subsequent environmental analysis in Section 4.8.4.4: <i>“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: a) 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 b) 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.”</i>
5-16	Section 5.3.5 (Greenhouse Gas Emissions – Project Impacts)	Revise the first sentence as follows: <i>“Project impacts pertaining to geology, soils, and paleontological resources <u>greenhouse gas emissions</u>, as described in Section 4-4 4-5, are as follows:”</i>
5-17	Section 5.3.6 (Hydrology and Water Quality – Project Impacts)	Revise the first sentence as follows: <i>“Project impacts pertaining to geology, soils, and paleontological resources <u>hydrology and water quality</u>, as described in Section 4-4 4-6, are as follows:”</i>

SUGGESTED EDITS TO MITIGATION MEASURES PROPOSED BY CDFW

<p align="center">Mitigation Measure Proposed by CDFW with Edits Proposed by USG (proposed deletions shown in strike-out and additions shown underlined)</p>	<p align="center">Explanation for Proposed Edits</p>
<p><i>Mitigation Measure BIO-[A]: Assessment of Biological Resources</i></p> <p>Prior to adoption of the CEQA document and Project construction activities for <u>Quarry Well No. 3, the associated pipeline, and Viking Ranch</u>, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project <u>construction</u> footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (“endangered, rare or threatened species” as defined in CEQA Guidelines § 15380). <u>those which meet the CEQA definition (“endangered, rare or threatened species” as defined in CEQA Guidelines § 15380).</u> The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.</p>	<p>The CEQA document (<i>i.e.</i>, the SEIR) will be certified prior to approval and construction of the well and pipeline. Therefore, there is no need to require prior “adoption” of the CEQA document.</p> <p>The scope of this proposed measure should be limited to the Quarry Well, the associated pipeline, and Viking Ranch. Construction activities associated with the Quarry, which were previously evaluated under CEQA and NEPA and approved by the County and BLM, will be subject to other equivalent mitigation measures.</p> <p>The “species to be addressed” should be more precisely defined as indicated.</p> <p>Further consultation with USFWS is unnecessary. USG has already consulted the USFWS under Section 7 of the Federal Endangered Species Act and obtained a Biological Opinion from the USFWS.</p>

5b-1

Mitigation Measure 3.4-9: Burrowing Owl Avoidance

Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with ~~all Project components~~ (expansion of quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the lifetime of the Project. ~~If burrowing owls are detected during the focused surveys, the~~

~~The~~ qualified biologist and Project proponent, ~~in coordination with BLM,~~ shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project the activities specified above. The plan shall serve as a protocol of actions to address occupied habitat within future phases of quarry expansion, the proposed site for Well #3 and associated pipeline, and Viking Ranch. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the ~~number and location of occupied burrow sites,~~ acres of burrowing owl habitat that will be impacted, details of site monitoring and reporting requirements, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. ~~If impacts to occupied burrows cannot~~

Consistent with the comment from CDFW, this measure would require that a focused burrowing owl survey be conducted prior to vegetation removal and ground breaking activities. However, instead of requiring the preparation of a Burrowing Owl Plan upon *detection* of an individual burrowing owl specimen during the preconstruction survey, as suggested by the CDFW, this measure, as revised, would require the preparation of a Burrowing Owl Plan *prior to* vegetation removal or ground-disturbing activities. The Burrowing Owl Plan would serve as a standard pre-construction operations manual for the treatment of new quarry phases and other project construction. Among other things, the Burrowing Owl Plan would establish pre-defined survey methods and translocation protocols to avoid or minimize potential impacts.

Note: USG has or will obtain all necessary approvals from the USFWS and will comply with all applicable federal statutes and regulations, including NEPA. For this reason, there is no need to require coordination with BLM or approval by USFWS in this CEQA mitigation measure.

5b-2

<p>be avoided, information shall be provided regarding <u>The Burrowing Owl Plan shall identify adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.</u></p> <p>Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the preconstruction surveys confirm occupied burrowing owl habitat, <u>the Project activities specified above shall be immediately halted until pre-defined avoidance and minimization measures contained in the Burrowing Owl Plan have been implemented.</u> The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance, minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities.</p>	
<p><i>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</i></p> <p>[...]</p> <p><u>To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs.</u> Regardless of the time of year, nesting bird surveys</p>	<p>The first sentence (which CDFW proposes to be stricken) should be retained. The requirement that certain activities be conducted outside the nesting season is part of the existing mitigation measure and is already a requirement of the BLM approval.</p>

5b-2
Cont.

5b-3

shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with ~~all Project components~~ (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys for any of the activities specified above, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on the nature of the planned Project activities, species-specific disturbance tolerance, location of the nest, and nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.

[...]

The activities to which this measure would apply should be specified with more precision as indicated.

Additional criteria for determining the size of the buffer should be included as indicated.

5b-3
Cont.

Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats

Prior to the initiation of ~~Project activities~~ quarrying activities into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch within suitable special-status bat roosting habitat, ~~Imperial County~~ the applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.

If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:

1. ~~for~~ For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be

The activities to which this measure would apply should be specified with more precision as indicated.

This measure should be limited to special-status bats (not common bats).

Identify the conditions for maternity vs. hibernacula more clearly, as indicated.

initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.

2. A For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related

construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. ~~Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.~~

The project area may provide suitable roosting sites (i.e., rock crevices) for special-status bat species. However, the potential loss of rock crevices on the site would not significantly affect roost site availability in the Fish Creek Mountains or the surrounding region. The Project site is adjacent to the Fish Creek Mountains Wilderness managed by the BLM, comprising more than 21,000 acres, and Anza Borrego Desert State Park, comprising more than 600,000 acres. Both are shown on Figure 1 of the Biological Resources Technical Report.

Both the Fish Creek Wilderness and Anza Borrego Desert State Park permanently protect extensive areas of rugged desert mountain landscapes where rock crevices suitable for bat roosting are abundant. Roosting crevice availability does not appear to limit local special-status bat populations.

5b-4
Cont.

5b-5

Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures

[...]

Throughout the lifetime of the Project, the Project proponent shall ~~eliminate all nonessential lighting throughout the Project area and~~ avoid or limit the use of artificial light to the extent practicable during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all new lighting for the Project is fully shielded, cast downward, reduced in intensity to the greatest extent practicable, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at <http://darksky.org/>). ~~Imperial County shall ensure use of~~ To the extent practicable, the Project proponent shall use LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.

[...]

This measure should apply only to any new lighting. Existing lighting is part of baseline conditions.

The phrase “greatest extent” should to be qualified based on what is “practicable.” Without this qualifier, “greatest extent” could be interpreted to mean no lighting at all, which is infeasible.

Mitigation measures will be imposed by the County as conditions of approval.

5b-6

Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program

Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.

No changes proposed.

Kristin Faoro

From: Diana Robinson <DianaRobinson@co.imperial.ca.us>
Sent: Friday, June 2, 2023 8:56 AM
To: Michael Abraham; Bruce Steubing
Cc: Kristin Faoro
Subject: FW: SP21-0002 USG Water Well Project request for comment deadline extension to early hours of Monday June 5, 2023

Good morning Michael and Bruce,

Please see email below from Ms. Harmon.

Thank you,
Diana

From: Edie Harmon <desertharmon@gmail.com>
Sent: Thursday, June 1, 2023 10:23 PM
To: Diana Robinson <DianaRobinson@co.imperial.ca.us>
Subject: Re: SP21-0002 USG Water Well Project request for comment deadline extension to early hours of Monday June 5, 2023

CAUTION: This email originated outside our organization; please use caution.

Diana,

Thank you for taking time to speak on the phone twice today. Per our conversation, I would like to request an extension of the comment deadline from the end of June 2 to Sunday night or Monday morning June 5, 2023. I am very discouraged because my computer keeps deleting things I am writing for an attachment to an email or text in the email itself and then shutting down the computer. I have no clues as to the cause or cure, but I would like to try to get something in writing completed. I have medical appointment in San Diego tomorrow, June 2 and would not be able to get home to send an email before 5 PM. Ongoing research in the Jacumba Wilderness along the border wall will require an approximate 9 mile, 9 hour walk to the border in Skull Valley on Saturday and a 14 hour, approximately 15 mile walk to the border in Davies Valley starting between 2 - 3 AM by moonlight on Monday morning before the day gets too hot. That would leave me Sunday to try to get something to you in writing before you start your work day Monday morning.

In August 2022 I submitted hundreds of pages of text and photos to CBP in response to their proposed remediation/reclamation for just a 14 mile segment of border wall construction from Mt. Signal area west to the west side of Pinto Wash in Davies Valley in the Jacumba Wilderness. Much of what I learned and observed from the impacts of very heavy local downpours and the hurricane of 2022 seem to have confirmed many of the concerns and predictions about reclamation and remediation proposals. Failures I have seen are actually much worse than anything I could have predicted. I have not visited the locations of specific areas mentioned in the USG Well No 3 DSEIR, but I must admit that I am not optimistic about mitigation success as identified in the table in the DSEIR ES and in text throughout the document. Why? Because I have photo-documented what I see as the design and construction failures by the Army Corps of Engineers and the contractor from Montana. I believe that they grossly underestimated the power of moving water in Imperial County, whether from a local downpour or from a hurricane that was far less damaging than the Hurricanes in 1976 and 1977 in SW Imperial County. There is a spectacular example of geology in action just a little more than 2 miles from my home where a once beautiful canyon has had many canyon wall collapses since my first photos of March 2022, with material falling to the ground as I was getting ready to take a photo. From the September 2022 hurricane, there are photos of water flowing across the border to the south, with water 6-8 feet deep in Pinto Wash in Davies

Valley, The water flowing back to the north and into the US in Pinto Wash to east of wilderness was 10-15 feet deep according to Border Patrol and the vegetative debris was piles up against the border wall along the west facing slope to the same depth. The wash on the north experienced scouring of sand in the wash and I could look out of the wash at eye-level because erosion was shoulder deep. Several times local downpours created large and fairly deep temporary lakes.

6a-2
Cont.

The DSEIR repeatedly references the 2018 Dudek groundwater study, but I could find no information in the 2023 DSEIR about the rainfall events of January 2021 and August and September 2022 and other 2022 dates that I cannot remember. Did those rainfall events result in wash and slope geology changes or any significant flood erosion. There were videos of the floodwater flowing from the Jacumba Mountains and into Salton Sea. I found no discussion of specific flood and erosion events from 2021 and 2022 and even early 2023.

6a-3

DSEIR p. 4.6-3 states that the average annual rainfall is 4-5 inches. Average is meaningless because rainfall is highly variable near the mountains. The rainfall in Ocotillo is very different from rainfall where I live several miles to the SE, but closer to the mountains and therefore more subject to the mountain rainfall shadow effect. Where was rainfall data monitored in relation to any of the specific sites mentioned in the DSEIR. FIG 4.6-2 indicates that the site was flown over 5-5-2022, or several months before the heaviest rain events in SW Imperial County, including the hurricane of 9/2022. This suggests to me that the Floodplain map is very likely to be outdated and that there may have been some serious changes to drainages and places of heaviest or deepest stream flow. That is certainly what I saw near the international border during the past year's rain events..

6a-4

6a-5

Many more questions that need better organization and page references..

Because the well is not in the same basin as the residential communities of the Ocotillo Nomirage Community Area, I do not see well interference or adverse impacts from the Well No 3 UNLESS this is followed by a request to increase groundwater export from the existing USG wells near the community of Ocotillo. Does increased quarry output mean increased factory output that would lead to a request to increase export of potable groundwater from wells in the Ocotillo area?

6a-6

Thank you for considering this request.. My computer and email have so many times disappeared what I was writing, I am hoping that this will reach you. Guess I am too tired for so many efforts to start over that I just need sleep now. My apologies for the T-Mobile cell phone disaster that lasted more than a month, I hope ATT will be a bit more reliable. I will be in San Diego for medical appointments, but might be able to hear the phone ring if you want to try to call..

Sincerely,

Eddie Harmon
619-729-7178

On Wed, May 24, 2023 at 2:00 PM Diana Robinson <DianaRobinson@co.imperial.ca.us> wrote:

Hello Ms. Harmon,

I am sorry you are having issues with phone services and internet access. Please let me know if you'd like to meet in our office to go over comments.

Thank you,

Diana

From: Edie Harmon <desertharmon@gmail.com>
Sent: Tuesday, May 23, 2023 5:55 PM
To: Diana Robinson <DianaRobinson@co.imperial.ca.us>
Subject: Re: SP21-0002 USG Water Well Project

CAUTION: This email originated outside our organization; please use caution.

Diana,

I will try to get in some comments. As I tried to tell Planning and the County, the cell phone tower across from my home was basically non-functional since April 6th and officially decommissioned and removed from all T-Mobile tower location maps. I was told that the tower will not be recommissioned. I have to drive to the hill at the bend of Hwy 98 to north of me to have cell phone service. Internet service has been unreliable for some time. Sometimes I can get text messages, but only sometimes. I cannot get voicemail messages where I live.

Modern technology is worse than when we had to drive 6.5 miles to use a pay phone at a gas station. Now there are no pay phones, but everyone is expected to have a cell phone and internet access. How very sad! 5G cell phone service now means no cell phone access, only "No Service". So much for County approved locations and construction for cell phone towers, even ones in service for probably decades.

Edie

On Tue, May 23, 2023 at 3:09 PM Diana Robinson <DianaRobinson@co.imperial.ca.us> wrote:

Good afternoon Ms. Harmon,

I called and could not leave a voice message so I write to reach out and ask if you have any questions or comments on the USG Project. Commenting period ends June 2, 2023.

<https://www.icpds.com/assets/USG-Plaster-City-Quarry-Expansion-&-Well-No.-3-DSEIR-COMBINED-1681836171.pdf>

Thank you,

Diana Robinson, Planning Division Manager

Imperial County Planning & Development Services

801 Main Street, El Centro, CA 92243

Phone (442) 265-1736 x1751 icpds.com

To: Diana Robinson, Planning Division Manager, Imperial County Planning Department (Diana Robinson <DianaRobinson@co.imperial.ca.us>
 From: Edie Harmon (desertharmon@gmail.com)
 Re: USG Plaster City Quarry Expansion & Well No. 3 Project, Project SEIR, CUP Application 20-0016, IS 22-0021; DRAFT SEIR dated April 2023 and some Appendices
 Date: June 4, 2023 (with late submission approved by Diana Robinson on June 2, 2023)

My apologies. This is being prepared following the disappearance of several earlier efforts to submit comments. For mysterious reasons my computer is having problems with the Word Perfect 2021 program I have been using for years, and even stranger computer shut-downs while I was working on my comments. Thank you for being willing to accept these late submitted comments. I have not visited the various sites of project components because I have a low clearance Honda Fit and assume that access to the area would require a different vehicle. Thus, these comments and questions will be general in nature and not USG project well or restoration sites specific.

1. These comments will be limited because I will assume that comments on biological resources including the endangered Peninsular Bighorn Sheep (PBS) will be addressed by PBS experts at CDFW, USFWS, and BLM. Thus I do not plan to submit additional comments on PBS,
2. These comments are related to hydrology, flooding, and changes in geological or surface features in response to issues of heavy local downpours and the most recent hurricane of September 2023. I was living in Imperial County during the hurricane of September 1976 and in Ocotillo during the August 1977 hurricane and several serious flood events in the Ocotillo, Nomirage and Yuha area in SW Imperial County. I recall that the flood waters coming from the Jacumba Mountains destroyed the 2 westbound lanes of I-8, the railroad tracks and bridge to the west of Ocotillo and much of the central party of Ocotillo. Even through there were periods of standing water there was no measurable increase in static water levels in wells monitored by USGS in response to any hurricane or local downpour and flash flooding events. There have been many times when Hwy 98 was closed to all but local traffic because standing water was so deep and the road was filled with sand and rocks that were carried to the E and NE from the Jacumba Mountains where rains were heavier than locally.
3. In August 2022 I submitted hundreds of pages of text and photos to CBP in response to their proposed remediation/reclamation for just a 14 mile El Centro 1 segment of border wall construction from Mt. Signal area going west to the west side of Pinto Wash in Davies Valley in the Jacumba Wilderness. Much of what I learned and observed from the impacts of very heavy local downpours and the hurricane of 2022 seem to have confirmed many of the concerns and predictions about reclamation and remediation proposals. Failures related to unexpected rainfall and its consequences that I have seen and photographed are actually much worse than anything I could have predicted. The DSEIR dated April 2023, approximately 8 months AFTER the local downpour of Aug. 8, 2022 that caused serious erosion damage along the CBP border wall in Skull Valley and left a stranding lake, one of many that I visited in 2022.

6b-1

6b-2

6b-3



Photo of local downpour on 8/8/22 was taken from my property. There was no rain where I live. Four days later, there was standing water that appeared to have been as much as



6b-4

4 - 6 feet deep near the large dune on the west side of Skull Valley in the Jacumba Wilderness that had received water from the downpour seen above right.

4. I have not visited the locations of specific areas mentioned in the USG Well No 3 DSEIR, but I must admit that I am not optimistic about mitigation success as identified in the table in the DSEIR ES and in text throughout the document. Why? Because I have photo-documented what I see as the design and construction failures by the Army Corps of Engineers (ACOE) and the contractor from Montana. I believe that they grossly underestimated the power of moving water in Imperial County, whether from a local downpour or from a hurricane that was far less damaging than the Hurricanes in 1976 and 1977 in SW Imperial County. Revegetation and/or reseeding become increasingly problematic once there has been significant disturbance or removal of topsoil and upper layers of soil near Mt. Signal.
5. DSEIR Fig. 2-3 and Fig. 2-6 Viking Ranch Restoration site use an outdated aerial image from 2018 and probably should be updated following the hurricane of September 2022 as flood waters passed through this property and based on video images made of flood waters flowing from mountains toward Salton Sea. If this property was unimpacted by flood waters since the 2018 image, this information should be clarified. Figures in the Dudek 2018 appendix for these sites suggest that there may well be changes to sizes and locations of some stream channels. It was nice to be able to enlarge figures in the Appendices, even if they are outdated.
6. Have there been flood or drainage changes that affect the quarry and potentially details of the 2008 Reclamation Plan approval? If so, should the 2003 Reclamation plan recorded as 2008-018432 be modified or updated? The approved 2003 reclamation plan is now 20 years old. (See DSEIR p. 2-20.) DSEIR p. 2-23 states that there have been, no changes to the 2003 Reclamation Plan.
7. The “Confidential Cultural Resources Report for the Us Gypsum Company Expansion/modernization Project Supplemental EIS Imperial County, California” Prepared by Pacific Legacy, Inc., 900 Modoc Street, Berkeley, California 94707, Project No. 3215-01, June 2018 had each page identified as “confidential”, so I chose not to read it. This report probably should not have been included in the documents distributed for public review.
8. DSEIR p. 2-24. What are the plans if well #3 fails to meet the projected production output anticipated? There can be no guarantees about the water quality or productivity in terms of gpm or gpd from any well that has not yet been drilled. That is why well drillers with whom I have spoken require payment for drilling and completing construction of a new well prior to finishing the work. They get paid whether or not the well can produce any given quantity of water or even water at all. To drill and complete a well of 6 inches in diameter and 565 feet deep will not be inexpensive. P. 2-25 fails to give the diameter of the water pipeline.
9. Site restoration of the two sites sounds interesting even if I am skeptical. I would be interested in a site visit prior to and during of following completion of the restoration work. Have professionals for the work been selected yet?
10. Has there been evidence of revegetation success at the quarry site, or is there just reliance on the old 2003 reclamation Plan? I am aware of many revegetation failures on BLM lands in SW Imperial County⁷, and special failure of revegetation where sand and gravel operations have been completed. Can there be any revegetation success without supplemental water being added at this quarry site? Might it be possible for tours of the revegetation sites before, during or after for interested members of the public?

Section 4.6 Hydrology and water quality and Appendix G, G-1 and G-2

11. Dudek 2018 Hydrology and Water Quality Study is now five years old.
12. DSEIR p. 4.6-1 states that most of rain that falls in December through March, However, my experience is that the heaviest rainfalls, local downpours and hurricanes seem to come in August-September and can cause serious flash floods with extremely significant flash flood caused erosion of slopes and washes. It is the rains in the mountains in SW Imperial County that may be more relevant to the USG projects than the rainfall in El Centro to the east. Rainfall is very local in SW Imperial County except during hurricanes. What has been the annual rainfall at various locations for the different components of this USG project since the USG project was first proposed?
13. DSEIR p. 4.6-3 states that the average annual rainfall is 4-5 inches. “Average” is meaningless because rainfall is highly variable near the mountains. The rainfall in Ocotillo is very different from rainfall

6b-4
Cont.

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6b-13

where I live several miles to the SE of Ocotillo, but closer to the mountains. Therefore this area is more subject to the mountain rainfall shadow effect. Where was rainfall data monitored in relation to any of the specific sites mentioned in the DSEIR? Here there have been numerous flash flood events bringing moving water from the mountains and leaving standing water in low areas flooding the state Hwy 98 at numerous locations.

6b-13
Cont.

14. DSEIR 4.6-3 describes how flash flooding can cause changes to braided channels or changing aspects of existing stream channels. Has this happened during nor as a result of the Hurricane of 2022? If so, should maps be revised to reflect these changes? Where and what is the current condition of channels through which the flood waters of the 2022 hurricane as they flowed toward the Salton Sea? A map would be educational if nothing else. Did flood waters from the hurricane adversely impact desert pupfish habitat? If so how?

6b-14

15. Is the soil in the area of the project more porous than the soils of the Ocotillo-Coyote Wells Groundwater Basin? I recall Dr. John Izbicki of USGS Water Resources in San Diego reminding me that it would take a long period of standing water to be able to percolate down through 100 feet of dry soil to reach the water table if there is to be any significant recharge. His way of explaining to me why even with flooding and standing water there has been no measurable recharge from the hurricanes of 1976 and 1977 and subsequent heavy rainfall events in the Ocotillo area and its surrounding mountains. Or another way of saying that use and outflow including evapotranspiration exceed any recharge. He said this basin has fossil groundwater with the last significant recharge at the end of the last Ice Age. With declining water levels, when the water is gone, the water is gone.

6b-15

16. DSEIR FIG 4.6-2 indicates that the site was flown over 5-5-2022, or several months before the heaviest rain events in SW Imperial County, including the hurricane of 9/2022. This suggests to me that the Floodplain map is very likely to be outdated and that there may have been some serious changes to drainages and places of heaviest or deepest stream flow. That is certainly what I saw near the international border during the past year's rain events. See photos on last page.

6b-16

17. "According to Dudek (2021), historical aerial imagery and topographic maps show that Coyote Creek meandered across the site creating braided channels through the unconfined basin area. Coyote Creek is within the Borrego Springs Sub-basin 18100203, which lies within the same sub-basin as the proposed Quarry expansion. The area receives water from direct precipitation that flows from Coyote Creek, the surrounding ..." (DSEIR 4.6-9) This suggests that the map of channels should be updated following the flows from Hurricane of Sept. 2022.

6b-17

18. All groundwater studies cited in the DSEIR appear to be outdated, with the most recent being 2018. Since that time there have been several significant flood events which should have triggered at least a modest update of the Dudek and Bonadiman 2018 hydrology studies and/or mention of such events in the 4/2023 USG DSEIR. See DSEIR p. 4.6-19. There was no explanation for why the hydrology studies were not updated for the April 2023 DSEIR and/or whether changes would in any way change some of the restoration proposals or information relevant to the desert pupfish habitat and survival.

6b-18

19. DSEIR p. 4.6-22 states as follows: "**New Information** A Jurisdictional Delineation (Hernandez Environmental Services 2016), Hydrologic and Water Quality Study (Hydrology Study) (Dudek 2018), and Update on Groundwater Conditions Memorandum (Todd Groundwater 2018) were completed as part of the 2019 SEIS." Let me remind you that the DSEIR was dated April 2023. This is at least 7 months after the September hurricane where videos showed flood waters raging down and entering lands and drainages just west of Salton Sea. This is June 2023 so SEIS of 2019 is about four years out of date related to flash flooding and the impacts of the 2022 hurricane event. This information should be updated once again. Why was it not updated? Perhaps I missed an update in 2023 related to the 2022 hurricane, but I could not find it in documents for the DSEIR of April 2023.

6b-19

20. Because well #3 is not in the same basin as the residential communities of the Ocotillo Nomirage Community Area, I do not see well interference or adverse impacts from the Well No 3 **UNLESS** approval of the CUP for well No 3 is followed by a request to increase groundwater export from the existing USG wells near the community of Ocotillo to support increased factory operations at Plaster City. Does increased quarry output mean increased factory output that would lead to a request to

6b-20

increase export of potable groundwater from wells in the Ocotillo area?

- 21. There is a spectacular example of geology in action just a little more than 2 miles from my home where a once beautiful canyon has had many canyon wall collapses since my first photos of March 2022, with material falling to the ground as I was getting ready to take a photo. From the September 9, 2022 hurricane, there are photos of water flowing across the border to the south, with water 6-8 feet deep in Pinto Wash in Davies Valley. The water flowing back to the north and into the US in Pinto Wash to east of wilderness was 10-15 feet deep according to Border Patrol and the vegetative debris was piled up against the border wall along the west facing slope to the same depth. Pinto wash flowing north on the north side of the border experienced scouring of sand in the wash and I could look out of the wash at eye-level because erosion was shoulder deep. Scouring of Pinto Wash north of border barrier and concrete paved road showing the impact of the 2022 hurricane. In places, the flowing water undercut the concrete road creating a drop of almost 3 feet. Photos below are from June 3, 2023. Dark material in foreground is where grading equipment and dozers tried to grind the plant debris into sand north of the concrete road. Just to show the power of moving water.

6b-21



- 22. Several times local downpours created large and fairly deep temporary lakes. The USG 2023 DSEIR repeatedly references the 2018 Dudek groundwater study, but I could find no information in the 2023 USG DSEIR about the rainfall events of January 2021 and August and September 2022 and other 2022 dates that I cannot remember. Did those rainfall events result in wash and slope geology changes or any significant flood erosion in the vicinity of the USG project components areas? There were videos of the floodwater flowing from the Jacumba Mountains and into Salton Sea. I found no discussion of specific flood and erosion events from 2021 and 2022 and even early 20223 in the April 2023 DSEIR.



6b-22

Thank you for accepting these questions and concerns.

Sincerely,

Eddie Harmon, desertharmon@gmail.com

APPENDIX B: MITIGATION MONITORING AND REPORTING PROGRAM

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APPENDIX B

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
AIR QUALITY				
Mitigation Measure 3.6-1a: USG shall ensure all equipment is maintained and tuned according to manufacturer's specifications.	Throughout all construction activities	Permittee or its contractor(s)	Imperial County Planning and Development Services inspection	
Mitigation Measure 3.6-1b: USG shall schedule production activities to minimize daily equipment operations and idling trucks.	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services inspection	
Mitigation Measure 3.6-1c: USG shall comply with all existing and future California Air Resources Board (CARB) and ICAPCD regulations related to diesel-fueled trucks and equipment, which may include: (1) meeting more stringent engine emission standards; (2) retrofitting existing engines with particulate traps; (3) use of low or ultra-low sulfur diesel fuel; and (4) use of alternative fuels or equipment.	Throughout project implementation	Permittee or its contractor(s)	Imperial County Air Pollution Control District inspection	
<p>Mitigation Measure 4.1-1a: The following standard mitigation measures for fugitive PM10 control shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:</p> <ul style="list-style-type: none"> a) All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover. b) All on site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. c) All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. d) The transport of Bulk Materials shall be completely covered unless six inches of 	Throughout all construction activities	Permittee or its contractor(s)	San Diego County Air Pollution Control District	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.</p> <p>e) All track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.</p> <p>f) Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at point of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.</p> <p>g) The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.</p>				
<p>Mitigation Measure 4.1-1b: The following standard mitigation measures for construction combustion equipment shall be implemented throughout project construction activities at the Viking Ranch Restoration Site:</p> <p>a) Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.</p> <p>b) Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.</p> <p>c) Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.</p> <p>d) Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).</p>	Throughout all construction activities	Permittee or its contractor(s)	San Diego County Air Pollution Control District inspection	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
BIOLOGICAL RESOURCES				
Mitigation Measure 3.5-1a: Revegetation: Consistent with the California Surface Mining and Reclamation Act (SMARA), USG shall implement the revegetation plan. In general, revegetation should be designed to restore habitat and cover for wildlife use in conformance with SMARA. Revegetation should be concurrent with closure of individual Quarry areas; wherever ongoing Quarry operation may eliminate access to closed upper Quarry benches, those benches should be revegetated while access is still available.	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 3.5-1b: Phasing of Quarry development and closure: Wherever possible, USG shall begin revegetation of Quarry areas to restore native habitat values concurrently or in advance of opening new Quarry areas.	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 3.5-1c: Migratory birds: In order to avoid potentially fatal impacts on birds protected under the Migratory Bird Treaty Act and the California Fish and Game Code, USG shall survey the area prior to grading and brush removal of previously undisturbed habitat.	Prior to disturbance of previously undisturbed areas	Permittee; Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	
Mitigation Measure 3.5-1d: Peninsular bighorn sheep: USG, in coordination with the BLM, shall initiate formal consultation with the US Fish and Wildlife Service under Section 7 of the Federal Endangered Species Act and implement the terms and conditions of the incidental take statement authorizing the project. The consultation process will result in the development of a Biological Opinion by the U.S. Fish and Wildlife Service (USFWS) that will: (1) provide a statement about whether the proposed project is “likely or not likely to jeopardize” the continued existence of the species, or result in the adverse modification of critical habitat; (2) provide an incidental take statement that authorizes the project; and (3) identifies mandatory reasonable and prudent measures to minimize incidental take, along with terms and conditions that implement them.	This portion of Mitigation Measure 3.5-1d has been successfully implemented. Formal consultation with the USFWS under Section 7 of the FESA was completed in 2019. The resulting Biological Opinion prepared by the USFWS is provided as Appendix D-3 of the Draft SEIR.	Not applicable	Not applicable	
Mining shall be conducted only as approved in the Plan of Operation and the Mine Reclamation Plan. Reclamation shall be conducted concurrently with mining and it shall be initiated within each phase as soon as is feasible. Reclamation shall include slope	This portion of Mitigation Measure 3.5-1d shall be	Permittee or its contractor(s)	Imperial County Planning and Development	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
contouring and revegetation with native plant species as specified in the Reclamation Plan. USG shall instruct its employees and other visitors to the mine to avoid peninsular bighorn sheep. Access to undisturbed lands by humans on foot shall be restricted, and usually would include only biologists and mining personnel. USG shall establish a training program, including new-employee orientation and annual refresher, to educate employees regarding bighorn sheep and the importance of avoidance. USG shall not allow domestic animals (cattle, sheep, donkeys, dogs, etc.) onto the mine site or any lands under USG control. Training for mine employees shall include instructions to report observations of domestic animals to the quarry’s environmental manager. Upon receiving any such reports, the environmental manager shall contact the appropriate authorities for removal of domestic animals.	implemented throughout project implementation		Services	
Mitigation Measure 3.5-1e: Barefoot banded gecko: Suitable habitat occurs throughout much of the Quarry area. Prior to expanding existing quarries or developing new quarries, focused barefoot banded gecko surveys shall be conducted to determine whether the species is present or absent from any proposed new disturbance areas. Surveys would be carried out in cooperation with the CDFW and field biologists would be required to hold Memoranda of Understanding with the CDFW to search for this species. If the species is present, then consultation with CDFW under Section 2081 of CESA to “take” barefoot banded gecko must be completed prior to land disturbance.	Prior to disturbance of previously undisturbed areas	Permittee; Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services; CDFW consultation	
Mitigation Measure 3.5-1f: Agency contacts for impacts to streambeds: Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the California Department of Fish and Wildlife (CDFW) to determine whether CDFW holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code.	Prior to disturbance of previously undisturbed areas	Permittee or its contractor(s)	CDFW consultation	
Mitigation Measure 3.5-2: USG will comply with the Flat-tailed Horned Lizard Rangelwide Management Strategy, as revised, Standard Mitigation Measures when constructing Quarry Well #3 and the Quarry pipelines. <i>*See Appendix 3 of Attachment 1 of this MMRP for the list of standard mitigation measures</i>	Prior to construction of Well No. 3 and associated pipeline	Permittee; Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>Mitigation Measure 3.4-5: Integrated Weed Management Plan. USG will prepare and implement an integrated weed management plan to control invasive weeds including tamarisk (<i>Tamarix</i>) and fountain grass (<i>Pennisetum</i>) in cooperation with the BLM and County of Imperial. The plan will include procedures to help minimize the introduction of new weed species, an assessment of the invasive weed species known within the area associated with the Proposed Action, and procedures to control their spread on site and to adjacent offsite areas. This plan will be submitted to the BLM and County of Imperial for review and approval prior to the start of construction and will be implemented for the life of the Proposed Action.</p>	Prior to initiating construction and throughout project implementation	Permittee or its contractor(s); BLM; Imperial County Planning and Development Services	BLM and Imperial County Planning and Development Services review and inspection	
<p>Mitigation Measure 3.4-6: Mining Activity Monitoring and Reporting. Prior to the beginning of any Quarry expansion activities, USG will identify a Designated Biologist and may additionally identify one or more Biological Monitors to support the Designated Biologist. The Designated Biologist and Biological Monitors will be subject to the approval of the BLM and USFWS. The Designated Biologist will be in direct contact with BLM and USFWS.</p> <p>The Designated Biologist or Biological Monitor will have the authority and responsibility to halt any project activities that are in violation of the conservation and mitigation measures. To avoid and minimize effects to biological resources, the Designated Biologist and/or Biological Monitor will be responsible for the following:</p>	Prior to disturbance of previously undisturbed areas	Permittee; Qualified biologist(s) retained by Permittee; BLM; USFWS	BLM and USFWS approval; BLM annual compliance review	
<ul style="list-style-type: none"> The Designated Biologist will notify BLM's Authorized Officer and USFWS at least 14 calendar days before the initiation of Quarry expansion of new ground-disturbing activities. 	At least 14 days prior to disturbance of previously undisturbed areas	Permittee; Qualified biologist(s) retained by Permittee	BLM and USFWS	
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys and will be on-site during any Quarry expansion activities or other new ground-disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no Quarry expansion activities are conducted while PBS are within a 0.25-mile radius of the activity. 	Prior to and throughout disturbance of previously undisturbed areas	Permittee; Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will immediately notify BLM's Authorized Officer and USFWS in writing if USG does not comply with any conservation measures including, but not limited to, any actual or anticipated failure to implement conservation measures within the periods specified. 	Throughout project implementation	Permittee; Qualified biologist(s) retained by Permittee	BLM and USFWS	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will visit the Quarry site periodically (no less than once per month) throughout the life of the project to administer the Worker Education Awareness Program (WEAP) and ensure compliance with the plans and programs listed below. <ul style="list-style-type: none"> The Designated Biologist will submit an annual compliance report no later than January 31 of each year to BLM's Authorized Officer throughout the life of the project documenting the implementation of these programs/plans as well as compliance/non-compliance with each conservation measure: (1) Integrated Weed Management Plan; (2) WEAP; (3) Reclamation Plan; (4) Wildlife Mortality Reporting Program; and (5) PBS Monitoring Plan. 	Throughout project implementation	Permittee; Qualified biologist(s) retained by Permittee	BLM annual compliance review	
<p>Mitigation Measure 3.4-7: Worker Education Awareness Program (WEAP). Prior to project approval, USG will develop a WEAP, to be implemented upon final approval by BLM and USFWS. The WEAP will be available in English and Spanish. The WEAP will be presented to all workers on the project site throughout the life of the project. Multiple sessions of the presentation may be given to accommodate training all workers. Wallet-sized cards summarizing the information will be provided to all construction, operations, and maintenance personnel. The WEAP will be approved by the BLM, USFWS, and CDFW, and will include the following: (1) Descriptions of special-status wildlife of the region, including PBS, and including photos and how to identify adult and sub-adult male and female PBS; (2) The biology and status of special-status species of the area, including PBS; (3) A summary of the avoidance and minimization measures and other conservation measures; (4) An explanation of the PBS observation log (see PBS-2), including instruction on correctly filing data; (5) An explanation of the flagging or other marking that designates authorized work areas; and (6) Actions and reporting procedures to be used if any wildlife, including PBS is encountered.</p>	Prior to project approval and throughout project implementation	Permittee or its contractor(s); BLM; USFWS; CDFW	BLM; USFWS; CDFW review; Imperial County Planning and Development Services inspection	
<p>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures: USG will implement the following measures throughout the life of the project (e.g., Plant and Quarry operations).</p> <ul style="list-style-type: none"> To the extent feasible, initial site clearing for Quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) will be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs. Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with the expansion of quarrying activities into previously undisturbed areas, the 	Prior to disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>construction of Well No. 3 and associated pipeline, and restoration of Viking Ranch and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys for any of the activities specified above, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on the nature of the planned project activities, species-specific disturbance tolerance, location of the nest, and nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines if the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. A qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.</p>				
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys no more than seven days prior to initial site clearing for Quarry expansion or pipeline construction. To the extent feasible, special-status wildlife (e.g., reptiles) will be removed from “harm’s way” prior to site clearing. If an active bird nest, including active burrowing owl burrows are present, the biologist in consultation with CDFW will mark a suitable buffer area around the nest and project activities will not proceed within the buffer area until the nest is no longer active. 	No more than seven (7) days prior to disturbing previously undisturbed areas	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services; CDFW consultation	
<ul style="list-style-type: none"> For project activities in windblown sand habitats on pipeline routes, the Designated Biologist or Biological Monitor shall be present in each area of active surface disturbance throughout the workday. The Designated Biologist or Biological Monitor will survey work areas immediately prior to ground-disturbing activities and will examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85° F) for the presence of flat-tailed horned lizard or Colorado Desert fringe-toed lizard. In addition, all potential wildlife hazards (e.g., open pipeline trenches, holes, or other deep excavations) 	Throughout project implementation	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
shall be inspected for the presence of any wildlife, particularly including the flat-tailed horned lizard or Colorado Desert fringe-toed lizard, prior to backfilling.				
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will be on-site during any Quarry expansion activities or other new ground-disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no Quarry expansion activities are conducted while PBS are within a 0.25-mile radius of the activity. 	Throughout project activities within expansion areas	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Speed limits along all access roads will not exceed 15 miles per hour. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Throughout the lifetime of the project, the project proponent shall avoid or limit the use of artificial light to the extent practicable during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all new lighting for the project is fully shielded, cast downward, reduced in intensity to the greatest extent practicable, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). To the extent practicable, the project proponent shall use LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> The boundaries of all areas to be newly disturbed (including Quarry expansion areas, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment will be confined to the flagged areas. The Biological Monitor will be on the site to ensure that no ground-disturbing activities occur outside the staked area during initial Quarry expansion or ground disturbance. 	Prior to disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services periodic inspection	
<ul style="list-style-type: none"> Spoils will be stockpiled only within previously disturbed areas, or areas designated for future disturbance (including spoils areas designated in the PoO). 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspection	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<ul style="list-style-type: none"> No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight. Any uncovered pitfalls will be excavated to 3:1 slopes at the ends to provide wildlife escape ramps. Covered pitfalls will be covered completely to prevent access by small mammals or reptiles. 	Throughout project implementation	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> To avoid wildlife entrapment (including birds) all pipes or other construction materials or supplies will be covered or capped in storage or laydown area, and at the end of each work day in construction, Quarrying and processing/handling areas. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently. 	Throughout project implementation	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the project site, on off-site project facilities and activities, or in support of any other project activities. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Avoid wildlife attractants. All trash and food-related waste shall be placed in self-closing raven-proof containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife. Pooled rainwater or floodwater within quarries will be removed to avoid attracting wildlife to the active work areas. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Any injured or dead wildlife encountered during project-related activities shall be reported to the Designated Biologist, Biological Monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, the Designated Biologist or Biological Monitor shall notify the BLM, USFWS, and/or CDFW, as appropriate, within 24 hours of the discovery. 	Throughout project implementation	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services; BLM, USFWS, and CDFW review	
<ul style="list-style-type: none"> Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats: Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by 	Prior to and throughout disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist(s) retained by Permittee	Imperial County Planning and Development Services; CDFW review	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:</p> <ul style="list-style-type: none"> – For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed. – For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided 				

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>by accepted exclusion and deterrent techniques.</p> <ul style="list-style-type: none"> Implementation of this measure, combined with the other measures provided in this SEIR, will reduce impacts to special status bats to a less than significant level; however, additional mitigation measures may be required through the regulatory permit process. 				
<p>Mitigation Measure 3.4-9: Burrowing Owl Avoidance. Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with expansion of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of Viking Ranch over the lifetime of the project. The qualified biologist and project proponent shall prepare a Burrowing Owl Plan that shall be submitted to CDFW for review and approval prior to commencing the activities specified above. The plan shall serve as a protocol of actions to address occupied habitat within future phases of quarry expansion, the proposed site for Well No. 3 and associated pipeline, and Viking Ranch. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the acres of burrowing owl habitat that will be impacted, details of site monitoring and reporting requirements, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been reevaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Burrowing Owl Plan shall identify adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The project proponent shall implement the Burrowing Owl Plan following CDFW review and approval.</p> <p>Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version). Preconstruction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the preconstruction surveys confirm occupied burrowing owl habitat, the project activities specified above shall be immediately halted until pre-defined avoidance</p>	<p>Prior to disturbance of undisturbed areas; no less than 14 days prior to start of project-related activities and within 24 hours prior to new ground disturbance</p>	<p>Permittee; Qualified biologist(s) retained by Permittee; CDFW</p>	<p>Biological monitoring; CDFW</p>	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
and minimization measures contained in the Burrowing Owl Plan have been implemented.				
Mitigation Measure 3.4-10: Critical Habitat. To minimize impacts to PBS designated critical habitat, USG will conduct 1:1 on-site reclamation as specified in the Mining and Reclamation Plan for all project disturbance areas. Additionally, USG will acquire or set aside an area of designated critical habitat away from the Quarry’s operations for long-term wildlife habitat conservation, to minimize the loss of designated critical habitat within the Quarry. The habitat acquisition measure will be applicable for public lands directly affected by the Proposed Action. The acquired lands will consist of native desert vegetation within designated PBS critical habitat. Acquisition lands may include claim areas that are not disturbed by the mining project. Any lands proposed for acquisition to minimize the loss of critical habitat will be subject to review and approval by the BLM and Wildlife Agencies.	Prior to and throughout project implementation	Permittee; BLM; USFWS; CDFW	BLM; USFWS; CDFW review and approval	
Mitigation Measure 3.4-11: PBS Monitoring and Reporting. USG will support the CDFW PBS monitoring and reporting program within the federal action area by funding the purchase of radio collars and the capture of ten (10) PBS in the Fish Creek and Vallecito Mountains Ewe Group areas, to provide location monitoring data over a ten-year period. The funding amount will be \$157,115 (cost provided by CDFW), to be transferred to the CDFW program via a means agreed upon by USG, BLM, and CDFW. Implementation of this measure, combined with the other measures provided in this SEIR, will reduce impacts to PBS to a less than significant level; however, additional mitigation measures may be required through the regulatory permit process.	Upon project approval	Permittee	BLM and CDFW	
Mitigation Measure 3.4-12: PBS Avoidance and Minimization. USG will implement the following measures throughout the life of the project. <ul style="list-style-type: none"> New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the Wildlife Agencies. 	Throughout disturbance of previously undisturbed areas	Permittee or its contractor(s)	Imperial County Planning and Development Services; CDFW and USFWS	
<ul style="list-style-type: none"> Blasting will be minimized during the lambing season (January 1 through June 30) within the Plaster City Quarry Phases 6Bp, 7Bp, 8, and 9 by building up a stockpile of material during the other months. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<ul style="list-style-type: none"> The Designated Biologist or Biological Monitor will be on-site during any Quarry expansion activities or other new ground-disturbing activities and will walk the perimeter of the Quarry expansion area and view surrounding habitat with binoculars, stopping work if PBS are within a 0.25-mile radius of the activity. 	Throughout disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist retained by Permittee	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> If a PBS enters an active work area, all heavy equipment operations will be halted until it leaves. Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify USFWS and BLM. 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Fencing installed anywhere within the Quarry area will be standard temporary construction fencing, silt fencing, or chain-link fence at least 7 feet tall. Any proposed permanent fencing design will be submitted for BLM and USFWS review and approval to confirm that the fence design is not likely to pose a threat to PBS. 	Throughout project implementation	Permittee or its contractor(s)	BLM and USFWS review and approval	
<ul style="list-style-type: none"> When mobile or stationary equipment at the quarry is replaced, upgraded, or relocated, any feasible opportunities to reduce noise levels will be implemented (e.g., quieter designs for new equipment will be used if feasible). 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> Quarrying procedures such as loading and unloading rock will be modified wherever practicable to minimize noise (e.g., by unloading rock into the crusher bin while it is partially full). 	Throughout project implementation	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<ul style="list-style-type: none"> In consultation with BLM, CDFW, and USFWS, USG may construct and maintain a supplemental water source to ensure water availability to Peninsular bighorn sheep in the Fish Creek Mountains ewe group during summer drought. 	Throughout project implementation	Permittee or its contractor(s)	BLM, CDFW, AND USFWS consultation	
<p>Mitigation Measure 3.4-13. Future Quarry Phasing Notification and Review. USG will notify the BLM, CDFW, and USFWS 90 days prior to initiating future mining activities in the four phases nearest to the highest PBS occurrence and habitat connectivity areas (phases 6Bp, 7Bp, 8, and 9). Upon notification, the agencies will coordinate with USG to review PBS occurrence and activity in the vicinity obtained during the intervening years, as well as relevant documentation of Nelson’s bighorn sheep behavior near other mining operations. PBS avoidance and minimization measures may be revised as needed to conform to new information.</p>	90 days prior to initiating mining activities in project phases 6Bp, 7Bp, 8, and 9	Permittee or its contractor(s)	BLM, CDFW, USFWS review	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<p>Mitigation Measure 4.2-2a: Minimize Temporary Use Areas: During pipeline construction the need for temporary use areas would be minimized by using the USG private parcels on either end of the alignment for staging and equipment and material storage. Materials would be transported to the project areas as needed for immediate use.</p>	Throughout pipeline construction activities	Permittee or its contractor(s)	Imperial County Planning and Development Services	
<p>Mitigation Measure 4.2-2b: Wildlife Avoidance and Minimization Measures—Viking Ranch Restoration Site</p> <p>To avoid impacts to common and special-status wildlife on the Viking Ranch Restoration site, the following measures shall be implemented during restoration activities:</p> <ul style="list-style-type: none"> The clearing of vegetation and other initial site disturbance shall occur outside of the bird nesting season. Grading shall take place between September 1 and March 1. If grading must occur during the nesting season, a qualified wildlife biologist and biological monitor shall conduct a nesting bird survey prior to clearing work. If an active nest is found it shall be protected in place with a work-free buffer with a radius determined by the biologist in consultation with the CDFW. 	Throughout disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist retained by Permittee	San Diego County Planning and Development Services; BLM, USFWS, CDFW	
<ul style="list-style-type: none"> Preconstruction surveys for San Diego black-tailed jack and/or active burrows shall be conducted by a qualified biologist prior to initiating restoration activities on the site. If any individuals are observed in a burrow or shelter form, they will be allowed to leave the area on their own accord. Once the burrow is determined clear of rabbits, a qualified biologist shall collapse the burrow or shelter form. 	Prior to disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist retained by Permittee	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> Speed limits on all access roads shall not exceed 15 miles per hour. 	Throughout project implementation	Permittee or its contractor(s)	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky. 	Throughout project implementation	Permittee or its contractor(s)	San Diego County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
<ul style="list-style-type: none"> The boundaries of all areas to be newly disturbed (including areas proposed for clearing and grading, access roads, staging and equipment storage areas) shall be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment shall be confined to the flagged area. The biological monitor shall be onsite to ensure that no ground disturbing activities occur outside of the flagged area during vegetation clearing, grading, or other ground disturbing activities. 	Prior to and throughout disturbance of previously undisturbed areas	Permittee or its contractor(s); Qualified biologist retained by Permittee	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight. 	Throughout project implementation	Permittee or its contractor(s)	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> To avoid wildlife entrapment all pipes and other construction materials and supplies shall be covered or capped in storage areas, and at the end of each workday. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently. 	Throughout project implementation	Permittee or its contractor(s)	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> To avoid wildlife attractants, all trash and food-related waste shall be placed in self-closing raven-proof containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife. Pooled rainwater shall be avoided or removed to avoid attracting wildlife. 	Throughout project implementation	Permittee or its contractor(s)	San Diego County Planning and Development Services	
<ul style="list-style-type: none"> Any injured or dead wildlife encountered during site restoration or monitoring shall be reported to the project biologist, biological monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, the project biologist or biological monitor shall notify the USFWS and/or CDFW as appropriate, within 24 hours of the discovery. 	Throughout project implementation	Permittee or its contractor(s); Qualified biologist retained by Permittee	San Diego County Planning and Development Services; USFWS and/or CDFW	
<p>Mitigation Measure 4.2-2c: Assessment of Biological Resources: Prior to construction activities for Quarry Well No. 3, the associated pipeline, and Viking Ranch, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the construction footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code Section 3511), will be completed. Species to</p>	Prior to initiating construction of Well No. 3 and pipeline and restoration of Viking Ranch site	Permittee; Qualified biologist retained by Permittee; CDFW	San Diego and Imperial Counties consultation with CDFW.	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
be addressed should include all “endangered, rare or threatened species” as defined in CEQA Guidelines Section 15380. The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.				
Mitigation Measure 4.2-3: Lake and Streambed Alteration Program: Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under Section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code Section 1602 resources associated with the Project.	Prior to issuance of grading permit and/or initiation of construction activities	Permittee	CDFW Lake and Streambed Alteration Program	
CULTURAL RESOURCES				
Mitigation Measure 3.8-3: If any archaeological resources are encountered during implementation of the Proposed Action, construction or any other activity that may disturb or damage such resources shall be halted, and the services of a qualified archaeologist shall be secured to assess the resources and evaluate the potential impact. Such construction or other activity may resume only after the archaeological resources have been assessed and evaluated and a plan to avoid or mitigate any potential impacts to a level of insignificance has been prepared and implemented.	Throughout project implementation	Permittee or its contractor(s); Qualified archaeologist retained by Permittee	Imperial County Planning and Development Services	
Mitigation Measure 3.6-1: Develop and Implement a Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects. Avoidance and protection measures for cultural resources within the Project APE will be outlined in a Construction Monitoring and Inadvertent Discovery Plan. This Plan will be prepared and approved prior to the implementation of any of the action alternatives. It will describe worker awareness training, avoidance measures, and monitoring procedures that will be implemented to protect known cultural resources from Project impacts. It will also detail the procedures	Prior to project implementation and throughout project implementation	Permittee or its contractor(s); Qualified archaeologist retained by Permittee	Imperial County Planning and Development Services	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
that will be used to assess, manage, and mitigate potential impacts on inadvertent discoveries during Project implementation.				
Mitigation Measure 3.6-2: Develop a Maintenance Notification Agreement for Future Maintenance of Pipeline Rights-of-Way. A Maintenance Notification Agreement will be outlined prior to the authorization of any pipeline right-of-way grant to ensure continued avoidance of archaeological resources during the life of the grant. This agreement will identify the schedule and data needs that will be submitted by USG to BLM when maintenance is needed on any of the pipelines authorized for this project. The BLM archaeologist will review this data to determine if and where archaeological monitors are needed during future maintenance activities.	Prior to authorization of pipeline right-of-way from BLM; throughout project implementation	Permittee or its contractor(s); BLM	BLM review	
Mitigation Measure 4.3-1: Develop and Implement a Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects. Avoidance and protection measures for cultural resources within the Viking Ranch APE shall be outlined in a Construction Monitoring and Inadvertent Discovery Plan. This Plan will be prepared and approved prior to the implementation of any of the action alternatives. The Plan shall describe worker awareness training, avoidance measures, and monitoring procedures that will be implemented to protect known cultural resources from project impacts. It shall also detail the procedures that will be used to assess, manage, and mitigate potential impacts on inadvertent discoveries during project implementation.	Prior to project implementation and throughout project implementation	Permittee or its contractor(s); Qualified archaeologist retained by Permittee	San Diego County Planning and Development Services	
Mitigation Measure 4.3-2: Inadvertent Discovery of Unmarked Burials. If human remains are uncovered during project activities, the project operator shall immediately halt work within 50 feet of the find, contact the Imperial County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c) and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, and designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, with the MDL regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.	Throughout project implementation	Permittee or its contractor(s); Imperial County Coroner; Native American Heritage Commission (NAHC)	Compliance with existing state regulations	

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES				
Mitigation Measure 3.2-1a: Reclaimed cut slopes in the alluvial materials (map units Qya and Qoa) should be constructed no steeper than 1.75H:1V up to a maximum height of 100 feet.	Throughout project construction phases	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 3.2-1b: Reclaimed cut slopes in the gypsum (map unit Tfc) should be no steeper than 1H:1V up to a maximum height of approximately 225 feet.	Throughout project construction phases	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 3.2-1c: Any large, unstable, rounded boulders on reclaimed slopes steeper than approximately 2H:1V should be removed or stabilized prior to the end of reclamation.	Prior to completion of reclamation activities	Permittee or its contractor(s)	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 3.2-3: Once the pipeline alignment is located and staked, a pre-construction pedestrian field survey is recommended in order to locate any surficial fossil localities and verify the geologic units underlying the area associated with the Proposed Action. For any areas where potential resources cannot be avoided by the pipeline construction, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) should be prepared and implemented by a BLM-permitted paleontologist and approved by the BLM and Imperial County.	Prior to initiating pipeline construction	Permittee; BLM-permitted paleontologist, BLM, Imperial County	Imperial County Planning and Development Services periodic inspections	
Mitigation Measure 4.4-1: Pre-construction pedestrian field surveys shall be conducted throughout the proposed areas of disturbance for the Well No. 3 site, the final pipeline alignment, and the Viking Ranch site to locate any surficial fossil localities and verify the underlying geologic units. For any areas where potential resources are identified in a preconstruction field survey and cannot be avoided by proposed construction activities, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared and implemented by a qualified paleontologist and approved by Imperial County.	Prior to and throughout project implementation	Permittee or its contractor(s); Qualified paleontologist retained by Permittee	Imperial County Planning and Development Services	
GREENHOUSE GAS EMISSIONS				
See Air Quality				

MITIGATION MEASURES	IMPLEMENTATION PROCESS			
	Timing	Responsibility	Monitoring Method	Verification [Name/Date]
Mitigation Measure 1: USG has already acquired approximately \$1.6 million in emission credits for the Project to meet applicable air quality standards. Similarly, to the extent necessary, USG will acquire recognized carbon credits to offset the project's increased GHG emissions.	Prior to project implementation	Permittee; CARB	Imperial County Planning and Development Services	
HYDROLOGY & WATER QUALITY				
Mitigation Measure 3.3-7: An earthen berm will be constructed along the west side of the Quarry in order to preserve the natural drainage pathway. The berm would work as a natural earth channel, to preserve existing flow characteristics in the drainage area and protect the Quarry from flood waters by diverting water away from the Quarry and towards the Fish Creek Wash. This channel requires a minimum 50-foot bottom width for the floodway and 2:1 channel side slopes. The graded channel only requires an earthen berm of approximately 5 feet high, assuming 2 feet of freeboard. The berm would be 5 feet high by 20 feet wide, and would provide an adequate solution to contain and divert run-off.	This measure has been successfully implemented by the Permittee	Not applicable.	Not applicable.	Not applicable.
TRIBAL CULTURAL RESOURCES				
See Cultural Resources				

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Working Group of
Flat-tailed Horned Lizard
Interagency Coordinating Committee

**Flat-tailed Horned Lizard
Rangewide Management Strategy**



*An Arizona - California
Conservation Strategy*

May 1997

**Flat-tailed Horned Lizard
Rangewide Management Strategy**

Prepared by

**Flat-tailed Horned Lizard
Working Group of
Interagency Coordinating Committee**

Edited by

Larry D. Foreman

May 1997

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Executive Summary

The Flat-tailed Horned Lizard Rangewide Management Strategy has been prepared to provide guidance for the conservation and management of sufficient habitat to maintain viable populations of flat-tailed horned lizards (*Phrynosoma mcallii*). The species is found only in southwestern Arizona, southeastern California, and adjacent portions of Sonora and Baja California Norte, Mexico.

The species was proposed for listing as a threatened species by the U. S. Fish and Wildlife Service (USFWS) on November 29, 1993. Human activities have resulted in the conversion of roughly 34 percent of the historic habitat of the flat-tailed horned lizard to other uses, such as agriculture and urban development. Evidence suggests that populations of this species have declined in some of the remaining habitat areas.

The Rangewide Management Strategy calls for the establishment of five flat-tailed horned lizard management areas - four in California and one in Arizona. Surface disturbing activities would be limited in these areas. Land alterations outside of these management areas would not be restricted, but special mitigation and compensation measures would be applied. In addition, one research area is proposed, where research is encouraged. Local agencies and private landowners are encouraged to establish one additional management area in the Coachella Valley in California.

The Rangewide Management Strategy was prepared by representatives from Federal, state, and local governments. It is designed to be used as the basis for a conservation agreement among the agencies. Signatory agencies will incorporate measures in the Rangewide Strategy into their land management plans. Compliance with the National Environmental Policy Act and state counterparts will be achieved through these management plans or revisions. The planned actions in the Rangewide Management Strategy are organized in a step-down format used by the USFWS in recovery plans.

Recommended Citation:

Foreman, L. D. (Ed.) 1997. Flat-tailed horned lizard rangewide management strategy. Report of interagency working group. 61pp. plus appendices.

Introduction

Description of Species

Taxonomy

The flat-tailed horned lizard was first described by Hallowell in 1852 as *Anota mcallii* after U.S. Army Colonel George A. M'Call who collected the first type specimen (Johnson and Spicer 1985). Due to the lack of external ear openings, the flat-tailed horned lizard was initially placed in a separate genus (*Anota*) from other horned lizards (Johnson and Spicer 1985). Norris and Lowe (1951) decided that similarities of *mcallii* to other horned lizards were greater than its differences and placed it into the genus *Phrynosoma*. No subspecies of flat-tailed horned lizard (*Phrynosoma mcallii*) have been described (Funk 1981).

Field Characters

The flat-tailed horned lizard has the typical flattened body shape of horned lizards. It is distinguished from other species in its genus by its dark vertebral stripe; lack of external ear openings; long, broad and flattened tail; and comparatively long spines on the head (Funk 1981). The flat-tailed horned lizard has two rows of fringed scales on each side of its body. The species is cryptic in color, ranging from pale gray to light rust brown dorsally, and white or cream (unspotted) ventrally with a prominent umbilical scar. The only apparent external difference between males and females is the presence of enlarged postanal scales in males. Maximum snout-vent length for the species is 8.4 cm (Muth and Fisher 1992), while of hatchlings range from 3.0 to 3.8 cm (Johnson and Spicer 1985).

The only other horned lizard known to be sympatric with the flat-tailed horned lizard is the desert horned lizard (*Phrynosoma platyrhinos*). The latter is distinguished from the flat-tailed horned lizard by a combination of characters including absence of a dark vertebral stripe, an exposed tympanum, a spotted ventral surface in most individuals, a single row of fringed scales, and a narrower and less flattened tail. Apparent hybrids between the two species, exhibiting a mix of morphological characteristics, have been observed in the vicinity of Ocotillo, California (Stebbins 1985).

Listing History

In California, the flat-tailed horned lizard was designated a sensitive species by the Bureau of Land Management (BLM) in 1980 (BLM 1980). The purpose of the designation was to provide increased management attention to prevent population declines and habitat loss or degradation

that might result in Federal or State listing as endangered or threatened. The designation raises the level of concern for flat-tailed horned lizards in the environmental review process and in land use planning. No specific habitat or population protection measure or review process is required or prohibited by the sensitive species designation. By present BLM policy, species designated sensitive are, at a minimum, afforded the protection provided candidate species (BLM 1988). This includes direction to 1) determine distribution, abundance, and population status, 2) develop a habitat management program, and 3) coordinate with the USFWS (BLM 1988).

On January 25, 1988, the California Fish and Game Commission received a petition requesting listing of the flat-tailed horned lizard as an endangered species. On May 13, 1988, the Commission accepted the petition and designated the flat-tailed horned lizard a candidate species. The California Department of Fish and Game (CDFG) reviewed the petition and other information; the CDFG recommended in its review (Bolster and Nicol 1989) that the species be listed as threatened. On June 22, 1989, the Commission voted against the proposed listing.

The Arizona Game and Fish Department (AGFD) currently has the flat-tailed horned lizard on its list of wildlife of special concern (AGFD, in prep). This designation affords no legal protection to the species, but is used in planning to encourage habitat conservation and management consideration. Collection of flat-tailed horned lizards is prohibited in both Arizona and California, except by special permit.

The USFWS included the flat-tailed horned lizard as a Category 2 candidate for listing as a threatened or endangered species in its original "Review of Vertebrate Wildlife" published in the *Federal Register*, December 10, 1982 (USFWS 1982). Category 2 candidate species were those for which data in the USFWS possession indicate that listing may be appropriate, but additional information is needed to support a proposed rule. In a 1985 revision of the candidate list, the species was retained as a Category 2 candidate (USFWS 1985). Due to new data (especially Carlson and Mayhew 1988, Olech undated, and Rorabaugh *et al.* 1987), the USFWS elevated the flat-tailed horned lizard to a Category 1 candidate in its revised list issued on January 6, 1989 (USFWS 1989). Category 1 candidate species were those for which the USFWS had sufficient information to support a proposal to list them as threatened or endangered.

On November 29, 1993, the USFWS published a proposed rule to list the flat-tailed horned lizard as a threatened species (USFWS 1993). The USFWS cited "documented and anticipated population declines associated with widespread habitat loss, fragmentation, and degradation due to human activities such as agricultural developments, urban expansion, off-highway vehicle use, energy developments, and military activities" as the primary bases for the proposed listing. The USFWS found that critical habitat was not determinable at that time. A public meeting was held in El Centro on March 22, 1994, to gather public comment. At this time, no final rule on the proposed listing has been issued.

The Mexican Government has designated the flat-tailed horned lizard a threatened species. As such, the species is protected from collection, sale, and commerce, and its habitat is afforded special protection (Secretaria de Desarrollo Social 1994).

Distribution

The flat-tailed horned lizard is found in the extreme southwestern corner of Arizona, the southeastern corner of California, and adjoining portions of Sonora and Baja California, Mexico (Figure 1). In Arizona, the flat-tailed horned lizard is found in southern Yuma County, primarily south of Interstate 8 and west of the Gila Mountains. Estimates of suitable habitat in Arizona have ranged from 135,900 to 176,000 acres (Johnson and Spicer 1985, Rorabaugh *et al.* 1987, Hodges 1995). Suitable habitat is found east and south of the City of Yuma outside of the Colorado River floodplain and adjoining croplands. Lands within the range of the flat-tailed horned lizard in Arizona include Federal lands administered by the Marine Corps Air Station at Yuma, the BLM, and the Bureau of Reclamation (BR); State of Arizona lands; and private lands. The majority of the flat-tailed horned lizard's range in Arizona is on the Barry M. Goldwater Range.

The flat-tailed horned lizard is found in California in portions of eastern San Diego County, central Riverside County, and Imperial County. The majority of the habitat for the species is in Imperial County (Turner *et al.* 1980). The range of the flat-tailed horned lizard encompasses approximately 1,800,000 acres in California (Bolster and Nicol 1989, Rado 1981); however, much of the land within this range is unsuitable, including the Salton Sea and other habitats not used by the species, such as urban and agricultural areas. Areas identified as especially important to the species in California encompass approximately 210,000 acres and are found primarily in four regions (Rado 1981, Turner *et al.* 1980). The El Centro Resource Area (BLM, California Desert District) administers three of these areas: West Mesa, East Mesa, and Yuha Desert. Portions of West Mesa and East Mesa are jointly managed by the BLM and the U. S. Navy. The BR has withdrawn a large portion of these areas. The California Department of Parks and Recreation (CDPR) manages much a fourth area in California, including Ocotillo Wells State Off-Highway Vehicle Area (Ocotillo Wells SVRA) and a portion of Anza-Borrego Desert State Park.

About 29 percent of the range of the flat-tailed horned lizard is in Mexico. In Baja California Norte, the range extends from the International Border west of Mexicali south to Laguna Salada. In Sonora the species has been found in the sandy plains immediately south of and contiguous with habitat in Arizona, and east through the Pinacate Region to the sandy plains around Puerto Penasco and Bahia de San Jorge (Johnson and Spicer 1985, Gonzales-Romero and Alvarez-Cardenas 1989). The flat-tailed horned lizard is probably absent from the volcanic areas in the Pinacate Region and the dune fields of the Gran Desierto. Records from Sonora Highway 2,

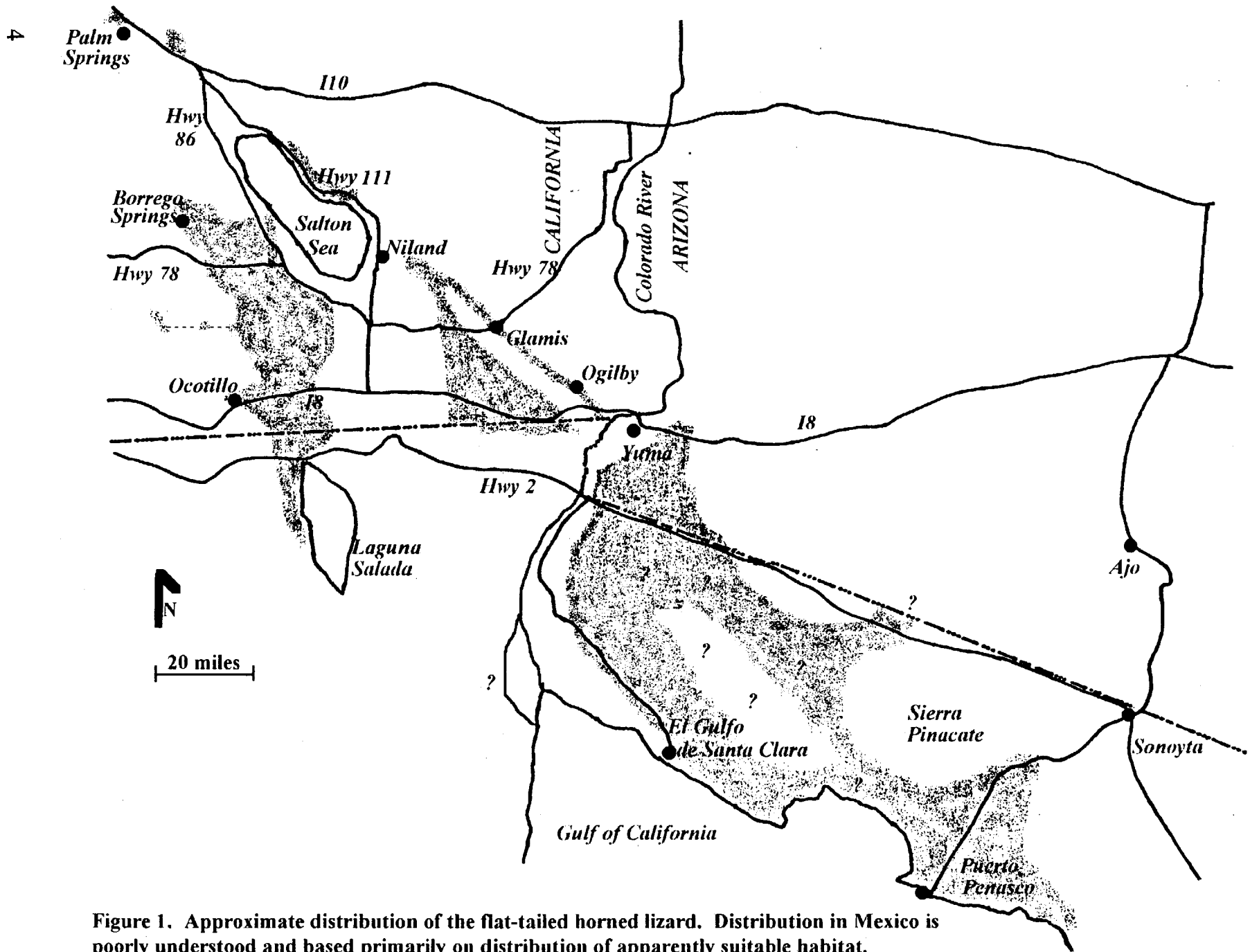


Figure 1. Approximate distribution of the flat-tailed horned lizard. Distribution in Mexico is poorly understood and based primarily on distribution of apparently suitable habitat.

just south of the International Boundary, suggest the species might be present in the area of Pinta Sands on the Cabeza Prieta National Wildlife Refuge.

Life History

Habitat Use

Flat-tailed horned lizards occur entirely within the Lower Colorado River Valley Subdivision of Sonoran Desert Scrub (Turner and Brown 1982). This is the largest and most arid subdivision of the Sonoran Desert. Annual precipitation varies from 5.8 cm at El Centro, California to 13.5 cm at Palm Springs. Summer temperatures range from 30 to 45°C.

Most records for flat-tailed horned lizards come from the creosote (*Larrea tridentata*)-white bursage (*Ambrosia dumosa*) series of Sonoran desertscrub (Turner and Brown 1982). It is this open community in association with sandy flats and valleys that is often described as flat-tailed horned lizard habitat (Stebbins 1985, Turner and Medica 1982, Rorabaugh *et al.* 1987). Although most records for the species are from sandy flats or areas with a veneer of fine, windblown sand, the flat-tailed horned lizard has also been collected or observed in areas with little or no windblown sand, such as badlands in the Yuha Basin and the Borrego Valley, and on saltbush flats at the northeastern end of the Salton Sea (Turner *et al.* 1980; Wone and Beauchamp 1995a). The species has also been recorded in the mixed scrub series of Sonoran desertscrub (Turner and Brown 1982), on gravelly soils in Anza-Borrego Desert State Park, and in association with senita cactus (*Lophocereus schottii*) in Sonora. Flat-tailed horned lizards are probably rare in the unvegetated portions of major dune systems, such as the Algodones Dunes and the dunes of the Gran Desierto (Luckenbach and Bury 1983, McCalvin 1993).

In California, the species has been recorded in a comparatively broad range of habitats, including sandy flats and hills, badlands, salt flats, and gravelly soils. In Arizona, the species is apparently restricted to sandy and hardpan flats. This may be due to habitat availability. In Arizona, the presence of big galleta grass (*Hilaria rigida*) was correlated with flat-tailed horned lizard abundance and may be an important vegetation component of its habitat (Rorabaugh *et al.* 1987). However, big galleta grass is not present in many high density flat-tailed horned lizard areas in California (Turner and Medica 1982; Rorabaugh *et al.* 1987). In California, Muth and Fisher (1992) found both white bursage (*Ambrosia dumosa*) and indigo bush (*Dalea emoryi*) were preferred by flat-tailed horned lizards, presumably because of their ability to trap wind-blown sand and provide shade for thermal cover.

The desert horned lizard is the only other horned lizard known to occur sympatrically with the flat-tailed horned lizard. Subtle differences have been described in preferred microhabitat use by both species in close proximity. Rorabaugh *et al.* (1987) characterized desert horned lizard habitat as gently sloping alluvial terrain dominated by washes vegetated with small trees such as palo verde (*Cercidium microphyllum*) and ironwood (*Olneya tesota*). As described previously, flat-tailed horned lizard habitat in the near proximity was described as consisting of finer sand, more level and unbroken terrain, and sparse creosotebush-bursage vegetation.

Food Habits

Ants constituted 97 percent of the prey items in flat-tailed horned lizard scats examined by Pianka and Parker (1975) and Turner and Medica (1982). The percentage of ants in their diet is greater than other horned lizards (Pianka and Parker 1975). The most important ant species are harvester ants in the genera *Messor* and *Pogonomyrmex* (Turner and Medica 1982). Studies in California (Turner and Medica 1982) and Arizona (Turner and Medica 1982; Rorabaugh *et al.* 1987) showed positive correlations between flat-tailed horned lizard scat abundance and harvester ant nests.

Like other carnivorous desert lizards, flat-tailed horned lizards primarily use preformed water (water found in their food) to maintain proper water balance (Schmidt-Nielsen 1964). Free-standing water is not usually available in flat-tailed horned lizard habitat. Dew, which is used as a water source by lizards in other climates, is uncommon in southwestern deserts. It normally occurs at cool temperatures and evaporates before lizards become active enough to use it (Schmidt-Nielsen 1964). The use of free water by flat-tailed horned lizards is debatable. Mayhew (1968) states that flat-tailed horned lizards have never been seen drinking water in the wild or in captivity. However, Johnson and Spicer (1985) witnessed a captive flat-tailed horned lizard drinking water that was sprayed on it.

Reproduction

Flat-tailed horned lizards are oviparous and early maturing, and they can produce multiple clutches (Howard 1974). Two cohorts of hatchlings may be produced each year, in late July and in September (Muth and Fisher 1992). Hatchlings from the first cohort in July may reach sexual maturity after their first winter season, whereas hatchlings born later may require an additional growing season to mature (Howard 1974).

Compared to most other horned lizards, flat-tailed horned lizards produce relatively small egg clutches [mean clutch size of about 5, range of 3 to 7 (Howard 1974, Pianka and Parker 1975)]. Howard (1974) developed a productivity index as a product of the number

of egg clutches per year and the average number of eggs per clutch. The flat-tailed horned lizard productivity ranked the lowest among the horned lizards studied followed by the desert horned lizard. Howard (1974) suspected that very high temperatures and high aridity experienced by both species resulted in their lower reproductive potential. A sex ratio of 1:1 (males:females) was documented in populations in California (Turner and Medica 1982, Muth and Fisher 1992).

Behavior

Unlike other iguanid lizards, which often flee when approached, flat-tailed horned lizards generally remain still (Wone and Beauchamp 1995a) or may even bury themselves in the loose sand (Norris 1949). This reluctance to move when disturbed, together with cryptic coloration and flattening of the body, makes them very difficult to locate in the field.

Flat-tailed horned lizards studied by Muth and Fisher (1992) spent 54 percent of the day in some form of movement. Most activity occurred throughout the mid-day in spring and fall. As summer temperatures increase, flat-tailed horned lizards shift to two activity periods, morning and evening (Mayhew 1968).

During the active season, flat-tailed horned lizards spend the night just beneath the surface of the sand, in burrows, or on the surface (Klauber 1939, Smith 1946, Muth and Fisher 1992). At least some individuals escape extreme surface temperatures during the day by retreating to burrows they have excavated (Rorabaugh 1994). The availability of burrows, or soils friable enough for burrow construction to a depth of 10 cm, may be necessary for flat-tailed horned lizards to escape extreme temperatures (Muth and Fisher 1992, Rorabaugh 1994).

Adult flat-tailed horned lizards are obligatory hibernators; torpor cannot be prevented in winter under normal laboratory conditions (Mayhew 1968). Mayhew (1965) suspected that reduced food availability, as well as decreasing photoperiod and lower metabolic rate resulting from reduced temperature is the hibernation triggering mechanism. Adults cease eating in the fall regardless of temperature and will starve if prevented from hibernating. Winter dormancy for flat-tailed horned lizards in California began in mid-November and continued until mid-February (Muth and Fisher 1992). Mayhew (1965) found the majority of adult flat-tailed horned lizards hibernated in burrows they had dug within 5 cm of the surface. All winter-dormant flat-tailed horned lizards found by Muth and Fisher (1992) were within 10 cm of the surface.

At least some juveniles are active during the winter (Muth and Fisher 1992). Winter activity may allow juveniles to continue growing through winter and reach reproductive maturity at an earlier age (Howard 1974, Smith and Ballinger 1994). Whereas adults may

be able to make metabolic adjustments for hibernation, juveniles may have to remain active so their fat reserves can be supplemented throughout winter (Muth and Fisher 1992). The smaller body size of the juveniles would allow them to reach a preferred body temperature on warm winter days quicker than the larger adults (Schmidt-Nielsen 1964).

Flat-tailed horned lizards have unusually large home ranges for lizards their size. At a West Mesa study site, the mean home range size for all flat-tailed horned lizards with more than 18 recaptures was 6.7 ac. (Muth and Fisher 1992). At a site in the Yuha Desert, Turner and Medica (1982) estimated home ranges of 0.32 ac. and 0.12 ac. for male and female flat-tailed horned lizards, respectively. However, the small size of the Yuha Desert study plot (10.1 ac.) combined with relatively few recaptures and a relatively short study period likely resulted in an underestimate of home range size.

Population Dynamics

No definitive data exist on population dynamics. However, information from scat counts (Rorabaugh 1994) and the studies of Muth and Fisher (1992) suggest that densities fluctuate greatly and that these fluctuations may be associated with winter/spring precipitation and production of annual plants in the spring. This pattern is true for other desert lizards (see Mayhew 1967, Hoddenbach and Turner 1968, Parker and Pianka 1975, and others.)

Flat-tailed horned lizard populations may fluctuate in response to prey availability. Harvester ant population sizes fluctuate with the availability of seeds, which are correlated with the amount and timing of precipitation (Beatley 1967, Brown *et al.* 1979). Harvester ants rely on seed storage during periods of climatic stress, thus decreasing their availability as a food source for flat-tailed horned lizards during periods of low precipitation (Brown *et al.* 1979).

Population Viability Analysis - The Flat-tailed Horned Lizard Conservation Team (see Appendix 6) has conducted population viability analyses with the simulation models RAMAS and VORTEX. Although not complete at this time, the Team's preliminary work has clarified research needs and has provided some insight into the mechanisms of flat-tailed horned lizard population dynamics. Population variables such as age-specific survivorship, fecundity, and population size; sex ratios; age at first reproduction; density dependence; stochasticity; and other variables are used in the analysis to generate information about population viability, especially extinction risk for specified time intervals.

Ideally, these analyses would define an initial population size and reserve size needed to support a viable population for a specified time interval, such as 100 or 500 years.

Unfortunately, population demographics and stochasticity in possible reserves is not adequately understood to provide this information. However, the Team believes that sufficient data exist to identify variables that are most important in determining population viability. Research should be prioritized to develop accurate estimates of these variables under varying conditions, and management reserves should target altering key variables to enhance population viability.

Preliminary results with RAMAS and VORTEX suggest that population viability is particularly sensitive to changes in mortality rates. Other important variables are fecundity and the effects of environmental stochasticity, such as drought and years with above average precipitation. Fecundity and precipitation are affected minimally by management. However, by reducing activities that result in mortality, directly or indirectly, management within reserves could increase the viability of flat-tailed horned lizard populations. Thus, the preliminary population viability analyses suggest that actions that limit sources of mortality will increase the chances that populations will persist into the future. Preliminary results also highlight the need for accurate estimates of population variables, particularly age-specific clutch size and numbers of clutches produced per female annually; mortality rates, particularly for juvenile lizards; population density; and how population parameters vary over time and with precipitation or annual plant production. Better estimates of population variables would greatly enhance the value of population viability analyses in guiding the management of this species.

Current Management and Conservation of Flat-tailed Horned Lizard Habitat

Federally-administered Lands

Arizona. Title I of the Colorado River Salinity Control Act of 1974 (Public law 93-320) established a 5-mile protective and regulatory groundwater pumping zone 5 miles north of and paralleling the international boundary between Mexico and the United States. This zone, known as the "Five-Mile Zone," is in compliance with Minute 242 of the 1944 Mexican Water Treaty between the United States and Mexico. The BR uses a portion of the zone for a series of water wells and pumps, an under and above ground canal, and a series of settling ponds (Fig. 11). The ponds are used for disposing of saline sludge generated by the Yuma Desalinization Plant.

The passage of the Military Lands Withdrawal Act of 1986 (Public law 99-606) transferred land management responsibilities on the Barry M. Goldwater Range to the BLM. The BLM administers public lands within flat-tailed horned lizard habitat under both the "Yuma

District Resource Management Plan" (BLM 1987a) and the "Lower Gila South Resource Management Plan (Goldwater Amendment)" (BLM 1990), which includes the Goldwater Range. Formerly part of the Lower Gila South Resource Area, this portion of the Goldwater Range is now administered by the BLM's Yuma Field Office.

On the Goldwater Range, flat-tailed horned lizard habitat occurs in portions of three special management areas: 1) the Gran Desierto Dunes Area of Critical Environmental Concern (ACEC); 2) the Yuma Desert and Sand Dunes Habitat Management Area; and 3) the extreme western portion of the Tinajas Altas Mountains ACEC. In these areas, off-highway vehicle use, camping, new rights-of-way, and other land use authorizations are limited.

On public lands outside the Goldwater Range, off-highway vehicle use is limited to existing roads and trails. A route designation map is available from the Range Management Officer, Marine Corps Air Station - Yuma. On the Goldwater Range, off-highway vehicle use is limited to designated roads and trails. For safety reasons, the Marine Corps Air Station, Yuma, issues range passes for visitors to the Goldwater Range. Visitors are restricted to driving street-legal vehicles, which further inhibits off-road travel.

For military activities on the Goldwater Range, the USFWS has prepared a conference report (USFWS 1996a) which provides guidance for activities affecting flat-tailed horned lizard.

California.

In 1980, the Secretary of the Interior signed the California Desert Conservation Area Plan (BLM 1980) prescribing land uses on BLM-administered lands in California. The existing network of designated routes is illustrated on BLM's Desert Access Guides (maps). The Desert Plan established two ACECs to conserve the flat-tailed horned lizard - the Yuha Basin (40,622 acres) and East Mesa ACECs (40,712 acres). The Desert Plan also directed that habitat management plans be written for lands adjacent to these ACECs. Although not designated specifically for the flat-tailed horned lizard, the San Sebastian Marsh/San Felipe Creek ACEC (6,337 acres) and Salt Creek Desert Pupfish/Rail Habitat ACEC (4,288 acres) also contain habitat for the flat-tailed horned lizard. An expansion of the latter, to be renamed Dos Palmas ACEC, to 14,880 acres is currently in review.

In 1981, a combined plan was prepared for the Yuha Basin ACEC (BLM 1981). Specific actions in the plan were designed to protect sensitive cultural and wildlife resources while allowing for mineral material sales, geothermal development, and motorized vehicle competitive events. In 1983, a habitat management plan was prepared for the adjacent Yuha Desert area (BLM 1983). Measures were similar to the Yuha Basin ACEC Plan

with additional measures dealing with monitoring of flat-tailed horned lizard population trends, exchanges and acquisitions, and formation of an interagency coordinating committee. In response to indications of declining flat-tailed horned lizard populations and increasing damage to cultural resources due to route proliferation and cross-country vehicle travel in Yuha Basin, the "Yuha Desert Management Plan" (BLM 1985) was prepared. This plan covers both of the previous areas plus several adjacent ACECs and Natural Areas. The plan tightened controls on, but did not eliminate, off-highway vehicle competitive events. Routes of travel were reduced in number. Camping was restricted to a 25-foot corridor along routes of travel. Law enforcement was increased. Other actions dealing with interagency coordination and monitoring of population trends were strengthened. In 1985, the Yuha Basin ACEC was expanded to 63,000 acres.

In 1982, the "Southern East Mesa ACEC Management Plan" (BLM 1982a) and "East Mesa Wildlife Habitat Management Plan" (BLM 1982b) were completed. The two plans covered adjacent areas and included similar measures. Although not previously conducted in East Mesa, competitive events were formally prohibited, but oil and gas leasing and geothermal energy development were allowed. The ACEC is closed to mineral material sales. Inventory and monitoring of flat-tailed horned lizard populations were given a high priority.

In 1986, the "San Sebastian Marsh/San Felipe Creek [ACEC] Management Plan" (BLM 1986a) was signed. Based on scat counts, flat-tailed horned lizards are locally abundant in this ACEC (BLM 1986a). Most measures in the plan were aimed at protecting and enhancing the aquatic and riparian resources. The ACEC is closed to vehicle entry. The ACEC encompasses about 5,100 acres administered by the BLM and about 1,250 acres administered by the CDFG.

The West Mesa ACEC was officially designated in 1986 to protect habitat of the flat-tailed horned lizard, rare plants, and cultural resources. No plan has been written at this time. The ACEC encompasses more than 20,300 acres, including about 1,600 acres of private land.

In the early 1980's, the Coachella Valley Preserve System was established primarily for conservation of the Coachella Valley fringe-toed lizard (*Uma inornata*). Major portions of the preserve system were acquired by the BLM, USFWS, CDFG, CDPR, and The Nature Conservancy. The System consists of three units totaling about 20,114 acres (Coachella Valley Preserve - 17,076 acres; Willow Hole-Edom Hill Preserve - 1,863; and Indian Avenue Preserve - 1,175 acres). About 6,000 acres of the System contain suitable flat-tailed horned lizard habitat. The USFWS holdings were designated the Coachella Valley National Wildlife Refuge System. BLM-administered lands were designated an ACEC in 1993. The CDFG lands were designated an Ecological Reserve. The CDPR

manages the adjacent Indio Hills State Park in a manner consistent with the Preserve goals. An interim plan was prepared in 1986 by The Nature Conservancy; it was replaced by an updated, interagency management plan in 1995 (BLM *et al.* 1995). A preserve management team meets quarterly to discuss management activities. No vehicular traffic is allowed.

A habitat management plan for the Algodones Dunes was prepared in 1987 (BLM 1987b). Based on scat counts, flat-tailed horned lizards are present in small numbers, mostly around the periphery of the dunes. The plan focuses on general enhancement and protection of the flora and fauna of the dunes. Most of the dunes north of Highway 78 is designated wilderness; the dune area south of Highway 78 is open to vehicular cross-country travel.

Limited habitat for flat-tailed horned lizard is found in the Dos Palmas/Salt Creek ACEC along the northeastern side of the Salton Sea. Planning for the area is currently underway.

In 1990, the BLM and CDFG signed the "Management Strategy for the Flat-tailed Horned Lizard on Bureau of Land Management Administered Lands within the California Desert Conservation Area" (BLM and CDFG 1990). Habitat categories were defined, and a category map was developed in the plan. A policy and formula were instituted for projects to compensate for lost or degraded habitat. Other management activities to reduce habitat degradation and loss were implemented. Measures implemented through various plans were brought into a species rangewide (California only) context. Among these were the research program, the inventory and monitoring program, interagency coordination, and habitat compensation.

The foundation for an inventory and monitoring program on BLM-administered land was laid in 1978 with surveys conducted on East Mesa, West Mesa, and Yuha Basin (Turner *et al.* 1978). Some monitoring has been conducted every year since then except 1980, 1982, and 1983. Methods have been refined through the years and were standardized in 1990 (BLM and CDFG 1990). Trends on BLM-administered lands have been analyzed periodically (Olech undated, Wright 1993). In addition to BLM-administered lands, inventories of the Navy target areas (Dames & Moore 1995, Rorabaugh 1996a) and Salton Sea Naval Base (Muth and Fisher 1989, Rorabaugh 1996b) have been conducted. Research on Federal lands has been restricted to a few studies on life history (e.g., Norris 1949, Mayhew 1965, Muth and Fisher 1992) and impacts of off-highway vehicles (e.g., Olech 1986).

The Congress has withdrawn two military ranges in California, R-2510 (West Mesa) and R-2512 (East Mesa). The ranges have been withdrawn from all forms of appropriation under public land laws and are reserved for use by the Secretary of the Navy for defense-

related purposes. This withdrawal became effective on October 1, 1996, and is in effect for 25 years. Flat-tailed horned lizards occur throughout both of these ranges. Although the ranges are withdrawn from entry for non-military uses, R-2510 is adjacent to an off-highway vehicle open area, and trespass off-highway vehicle activity occurs. R-2512 also has some off-highway vehicle use but to a lesser extent. Land management strategies and responsibilities will be developed through a new memorandum of understanding between BLM and the Department of the Navy.

About 600,000 acres, mostly in Imperial County, were withdrawn by Secretarial orders dating back to the early 1900's for use by the BR in development of the All American Canal, Boulder Canyon, Colorado River Storage, and Yuma Reclamation projects. Lands were withdrawn from settlement, sales, location under the mining laws, and entry. The majority of these withdrawn lands are managed by the BLM under an agreement with the BR signed in 1978. The Federal Land Policy and Management Act of 1976 directed agencies holding withdrawals to work with the BLM to determine which withdrawals were obsolete and should be terminated; agency recommendations were to be submitted to the Department of the Interior for review and approval. In January 1992, recommendations reflecting the coordinated efforts of the BR, BLM, and the Imperial and Coachella Valley Irrigation Districts were submitted to the Department of the Interior. It was recommended that 133,712 acres continue under withdrawal and that withdrawals be terminated on 444,781. Lands released from withdrawal will be covered by the California Desert Conservation Area Plan (BLM 1980). Lands continuing under withdrawal and covered under the earlier agreements will also be managed by the BLM.

State Lands

Arizona. The Arizona State Land Department has not developed a plan for the management of State of Arizona lands within flat-tailed horned lizard habitat. The State Land Department is processing land purchase applications for State of Arizona lands east of Yuma and near San Luis.

California. Lands within Anza-Borrego Desert State Park are managed to conserve native plant and animal communities. Mining, soil removal, grazing, rockhounding, artifact collection, hunting, shooting, and other activities that could cause surface disturbances are prohibited in the park. Flat-tailed horned lizards occur on an estimated 30,000 to 40,000 acres of the Park.

Within the 600,000-acre park, there is a system of primitive roadways about 500 miles in length. No vehicular activity is allowed off these roadways. Violators are cited by patrol rangers; backup is provided by the park's patrol aircraft. Designated roads that might impact sensitive natural or cultural resources can be closed seasonally or permanently by

order of the District Superintendent. Off-highway vehicles are prohibited from park roads unless they are licensed for use on highways. This rule essentially excludes use of all-terrain vehicles, quad-runners, high performance two-cycle motorcycles, and most dune buggies.

All animal and plant life within Anza-Borrego Desert State Park is protected. No collection of reptiles is allowed, with the exception of those taken under a scientific collecting permit issued by the park office. Reptile poaching takes place on paved roadways, but usually does not include flat-tailed horned lizards (Anza-Borrego Desert State Park Files, Mark Jorgensen, pers. comm.)

Ocotillo Wells SVRA is a 40,000-acre park managed by the CDPR, Off-Highway Motor Vehicle Recreation Division (OHMVRD). It is mandated to provide off-highway vehicle recreation in a manner to sustain long-term use. As in Anza-Borrego Desert State Park, mining, soil removal, livestock grazing, artifact collecting, hunting, and shooting are prohibited within the SVRA. No collecting of reptiles is allowed except under a scientific collecting permit issued by the CDFG and approved by the SVRA. In 1991, an extensive wildlife survey and habitat protection plan (Kutilek *et al.* 1991) were completed in the SVRA. The presence of flat-tailed horned lizards and the possibility of listing precipitated a study in 1994 (Wone *et al.* 1994) to develop methods for monitoring population trends in the SVRA. In these on-going studies, methods of monitoring of flat-tailed horned lizard population trends on permanent plots in the SVRA and on control plots are being assessed.

Mexico

Lands in El Parque Nacional del Pinacate and at Cerro Pinto and the Sierra del Rosario in Sonora and near the delta of the Colorado River in Sonora and Baja California are in core protection zones of biosphere reserves (Reserva de la Biosfera de El Pinacate y Gran Desierto de Altar and Reserva de la Biosfera del Alto Golfo de California y Delta del Rio Colorado). El Parque Nacional del Pinacate is an area administered by the Mexican government with use restrictions similar to a national park in the United States. However, the boundaries are not well established, and enforcement of regulations is minimal. The Pinacate area is primarily a volcanic zone within which habitat for flat-tailed horned lizards is probably limited to the sandy northern, western, and southern perimeter. Reserva de las Biosfera Alto Golfo includes flat-tailed horned lizard habitat in the vicinity of the Colorado River Delta in Sonora.

Census and Survey Methods

The distribution and relative abundance of flat-tailed horned lizards has been estimated throughout the range of the species in California and Arizona by use of standardized

transects in which numbers of flat-tailed horned lizards and their scat are counted and used as an index to relative abundance (Turner and Medica 1982, Rorabaugh *et al.* 1987, Olech undated, BLM and CDFG 1990, Wright 1993). Two critical assumptions of the survey method are 1) flat-tailed horned lizard scat is readily distinguishable from other lizard's scat, and 2) scat and lizard counts are correlated with densities of flat-tailed horned lizards.

The first assumption is largely met by not counting scat less than 5.5 mm in diameter (Muth and Fisher 1992) and not using scat counts to estimate relative density in areas where desert horned lizards occur (desert horned lizard scat is indistinguishable from that of flat-tailed horned lizards) (Turner and Medica 1982). The relationship between scat counts and horned lizard density has never been examined, but recent work suggests that if these variables are correlated, the relationship may be weak, particularly in the case of small data sets (Muth and Fisher 1992, Rorabaugh 1994). Wright found a correlation between counts of flat-tailed horned lizards and scat; however, the relationship between lizard counts and relative abundance is unknown. Use of lizard count data to estimate relative density is suspect due to the infrequency with which flat-tailed horned lizards are observed on transects (i.e., on average less than 1 animal per 10 hours of searching) (Turner and Medica 1982, Rorabaugh *et al.* 1987) and because environmental conditions are likely to influence flat-tailed horned lizard activity and detectability.

Scat counts have also been used to estimate trends in flat-tailed horned lizard relative abundance (Olech undated, Wright 1993). High scat and flat-tailed horned lizard counts have been consistently recorded from West Mesa, Yuha Basin, near Ocotillo Wells, southern East Mesa, and the Yuma Desert (Rorabaugh *et al.* 1987, Wright 1993). These areas are also where flat-tailed horned lizards are most commonly observed. Scat counts in the same area may fluctuate greatly from year to year (Wright 1993, Rorabaugh 1994); however, mean annual counts in the Yuha Basin declined significantly from 1979 to 1993 (Wright 1993). No statistically significant trends have been detected in either southern East Mesa and West Mesa (Wright 1993). Trend data are not available for the Ocotillo Wells area or the Yuma Desert. Controlled experiments in which scat and flat-tailed horned lizard counts are conducted in areas of known flat-tailed horned lizard density are needed to evaluate the value of using transect data to estimate relative abundance and population trends.

Survey work, analyses of population demographics, and development of survey techniques is ongoing at the Ocotillo Wells SVRA (Wone *et al.* 1994, Wone *et al.* 1995, Wone and Beauchamp 1995a, 1995b). Studies funded by Department of Defense and conducted by Utah State University were initiated in 1995 on the Goldwater Range. The goals are to develop a survey protocol, determine methods for estimating population density, quantify demographics and behavior, and identify effective capture techniques.

Threats

From the historic range in Mexico and the United States, the flat-tailed horned lizard has lost approximately 34 percent of its original habitat (Johnson and Spicer 1985, Rado 1981). In the U.S., the filling of the Salton Sea from 1905 through 1907 and the periodic inundation of the Laguna Salada have removed about 320,000 acres of habitat. Rado (1981) estimated that about 315,000 acres of habitat in California had been lost to agricultural development and support facilities such as aqueducts and canals. In addition, about 83,000 acres of the original range of the flat-tailed horned lizard in California and about 16,000 acres in Arizona have been converted to urban use. Additional unknown acreage has been degraded due to utility lines, geothermal development, sand and gravel mining, off-highway vehicle use, waste disposal sites, military activities, Border Patrol activities, and roads. In remaining habitat areas, evidence suggests that populations of flat-tailed horned lizards have declined in the Yuha Basin and northern East Mesa (Wright 1993, USFWS 1993).

In Sonora less than 10 percent of the habitat has been converted to agricultural, urban, or other uses. In Baja California Norte, considerable habitat loss has occurred in the Mexicali Valley where urban and agricultural development extends from Mexicali to the Colorado River.

Several aspects of the ecology and behavior of the flat-tailed horned lizard contribute to the species' sensitivity to habitat loss and degradation. Among these are the following: 1) the flat-tailed horned lizard is distributed over a relatively small area (Figure 1); 2) relatively low clutch size may limit the ability of lizard populations to recover from declines; 3) the large home range of the flat-tailed horned lizard means that surface-disturbing activities may affect lizard populations for relatively great distances from project sites; 4) flat-tailed horned lizards often freeze in response to danger, which makes them susceptible to mortality on roads and in other areas of activity; and 5) flat-tailed horned lizards are found in valleys and flats where the majority of residential and agricultural development typically occurs.

Agricultural Development

Agricultural development has occurred primarily in the Imperial, Coachella, Mexicali, and Colorado River valleys and on Yuma Mesa. Portions of the Colorado and Imperial valleys were converted entirely to agriculture many decades ago. Limited new agricultural development is continuing northward in the Imperial Valley along the edges of the Salton Sea and on Yuma Mesa. Similarly, in the Coachella Valley development of new lands for agriculture is continuing, especially around Indio and southward adjacent to the Salton Sea. The rate of new development is relatively slow due to limitations on irrigation water. Conversion to agriculture eliminates flat-tailed horned lizard habitat.

Densities of some predators are elevated at or near agricultural lands. Relatively high densities of predators (e.g., common raven, greater roadrunner, American kestrel, burrowing owl, and loggerhead shrike) may result in elevated predation on flat-tailed horned lizards in adjacent undeveloped lands.

Urbanization

Southeastern California and southwestern Arizona are experiencing dramatic growth in human population. Most of the new urban development is occurring on agricultural lands in the Imperial, Coachella, and Colorado River Valleys. However, some urban development is occurring in flat-tailed habitat in the Coachella Valley, Borrego Valley, and on the Yuma Mesa near Yuma and San Luis, Arizona. This development results in a direct loss of habitat and habitat degradation resulting from a variety of human activities, such as off-highway vehicle use and other recreational activities, road construction, route proliferation, and illegal dumping of trash. Urban development may also result in increased populations of potential predators, such as common ravens and domestic dogs and cats, resulting in above natural predation rates on flat-tailed horned lizards in adjacent wildlands (Bolster and Nicol 1989). Growth is also occurring in San Luis, Sonora, including development of an 8,000-acre industrial park in flat-tailed horned lizard habitat on the east end of the city.

Off-highway Vehicle Use

Over the past 20 years, there have been numerous bibliographies (e.g., Webb and Wilshire 1983) and literature reviews (e.g., Berry, in prep) on the effects of off-highway vehicle activity. In 1983, Webb and Wilshire (1983) published a comprehensive analysis on the impacts and management of off-road vehicles in arid regions.

Legal off-highway vehicle use falls into four basic kinds: 1) use of existing routes and trails for access and touring, 2) use of existing routes and trails by motorcycles, four-wheel drive vehicles, and all-terrain cycles as a recreational activity, 3) use of existing routes and trails for competitive vehicle events, and 4) cross-country travel in off-highway vehicle "open areas."

Illegal off-highway vehicle activity occurs in some areas but is limited by law enforcement, signing, and public information and education. The U.S. Border Patrol conducts patrols and rescues near the International Border which sometimes involves cross-country travel.

Currently, California BLM and the Ocotillo Wells SVRA permit competitive events on West Mesa and in Yuha Basin on the western side of the flat-tailed horned lizard's range. In addition, within this area, cross-country travel (or "free-play") is allowed in the BLM's

Plaster City Open Area, the BLM's Superstition Hills Open Area, and the Ocotillo Wells SVRA. Portions of these open areas support flat-tailed horned lizard populations in various densities.

The nature and extent of impacts of off-highway vehicle use depends upon the kind of activity (Webb and Wilshire 1978, Adams *et al.* 1982). Most desert soils are susceptible to compaction from vehicles. Important factors determining the intensity of compaction are soil moisture, vehicle type, and amount of vehicle activity (Davidson and Fox 1974, Webb *et al.* 1978, Adams and Endo 1980). Compaction results in increased water and wind erosion and decreased water infiltration and retention. Important factors in erosion of desert soils are slope, soil particle size, and size of disturbed area (Adams and Endo 1980). Compaction of soils may negatively affect burrowing of flat-tailed horned lizards or the construction of ant nests. Changes in soil characteristics may affect the ability of the soil to support vegetation, resulting in decreased density, diversity, and biomass of plant cover (Davidson and Fox 1974, Webb *et al.* 1978).

Off-road vehicles may impact vegetation by physically damaging roots, stems, or whole plants (Hall 1980). The resulting decrease in biomass and/or change in species diversity may result in a reduced or degraded food base for ant prey species. In addition, decreases in plant cover will decrease protection from predators and shelter from solar heating and wind.

In addition to the indirect effects noted above, flat-tailed horned lizards could be killed directly by being run over, either above ground or in burrows. Flat-tailed horned lizard winter burrows are shallow (average depth of 5.6 cm, range 2.6-10.0, n=6 [Muth and Fisher 1992]); thus, burrows and lizards in burrows may be crushed by vehicles. Bury, Luckenbach, and Busack (Bury *et al.* 1977) found reduced biomass, density, and diversity of reptiles in heavily used areas of off-highway vehicle open areas.

It has been shown that prolonged noise can adversely effect some lizards (e.g., desert iguana, Mojave fringe-toed lizard) (Bondello 1976, Brattstrom and Bondello 1983). However, it is not known whether or not vehicle noise at levels and durations anticipated in the desert negatively impact flat-tailed horned lizards. Effects are more likely where prolonged, loud noise occurs. A bibliography of literature on the effects of noise on animals can be found in Brattstrom (1978).

Utilities

Habitat disturbance from transmission lines results primarily from installation of towers, construction and use of access routes to the tower sites, use of the tower site, use of line-pulling sites, and maintenance activities. Total disturbance is relatively small, usually less

than 8 acres per mile. Vasek *et al.* (1975a) found in the Mojave Desert that the overall, long-term effects are a permanently devegetated maintenance road, enhanced vegetation along the road edge and between tower sites, and reduced vegetation cover under the towers, which recovered significantly but not completely in about 33 years. If crushing, rather than blading, is required, time to recovery of spur routes, tower sites, and pulling sites can be reduced. Although new access routes are usually required, sometimes transmission lines are placed along existing maintenance roads.

Habitat disturbance from pipelines results from trenching, stock piling of fill, refilling the trench, and moving vehicles along the corridor during construction and inspections. Total disturbance is also relatively small but greater than transmission lines (i.e., usually less than 16 acres per mile). Natural habitat restoration in the construction zone requires many decades and perhaps centuries (Vasek *et al.* 1975b).

Habitat disturbance from burying fiber-optic cable results primarily from the crushing of vegetation where the tracked vehicle lays the cable. The disturbed area is usually narrow (< 4 meters) resulting in a small disturbance overall (usually less than 1.5 acres per mile).

Neither pipelines, transmission lines, nor fiber-optic cables are likely to function as barriers to movements. However, roads constructed to build or maintain these utilities may cause a proliferation of new access roads into previously undisturbed areas, resulting in off-site habitat disturbance.

Highways, Canals, Railroads

Construction of highways, canals, and railroads eliminates linear strips of flat-tailed horned lizard habitat. Vehicles traveling on roadways may also crush flat-tailed horned lizards. Such mortality could depress local populations and perhaps function as a partial barrier to movement. Flat-tailed horned lizards are less likely to be run over on railroads, but the tracks may create a significant barrier to movements. Some may drown in large canals as well as small agricultural drains, but the significance is unknown. Canals probably function as nearly absolute barriers, with flat-tailed horned lizards able to cross only at bridges and syphons. Barriers to movement can create small, local populations which are susceptible to stochastic events and extinction (Wilcox and Murphy 1985). For example, the Andrade Mesa, a small strip of flat-tailed horned lizard habitat in California north of croplands in Mexico and south of the All-American Canal, is effectively isolated. Highways, canals, and railroads may also facilitate urban and agricultural development, which results in further loss, degradation, and fragmentation of habitat.

Yuma County has proposed to construct the Area Service Highway linking the Araby Road Exit on Interstate 8 and San Luis, Arizona. The proposed route would pass through

approximately 10 miles of previously undisturbed flat-tailed horned lizard habitat and would upgrade and pave approximately 5 miles of an existing dirt road.

A new International Border crossing for commercial trucks is proposed to be constructed east of San Luis, Arizona. Improved access is likely to facilitate urban and industrial development, which will cause further loss of habitat on both sides of the international border.

The BR and cooperating water districts have proposed construction of a new, concrete-lined All-American Canal adjacent to the existing unlined canal, from 1 mile west of Pilot Knob to Drop 3 of the Canal in southeastern Imperial County, California (Bureau of Reclamation and Imperial Irrigation District 1990). Construction would destroy a linear strip of desert scrub and dune habitat approximately 400 to 600 feet in width and 23 miles in length. Approximately 725 acres of flat-tailed horned lizard habitat would be lost (Bransfield and Rorabaugh 1993). The project is currently on hold.

Mining and Mineral Material Extraction

Mining and mineral extraction activities cause habitat loss and degradation as a result of long-term loss of vegetation cover and removal of top soil. Associated activities, such as truck and light vehicle traffic can result in direct mortality within the project area as well as outside of the project site along access roads. Even though most mineral material sites (e.g., sand and gravel) are small, their cumulative effect can be significant.

Geothermal Power Development

Geothermal power development is occurring in the Imperial and Mexicali valleys, particularly in agricultural lands, but also in adjacent desert lands. Much geothermal development has occurred in flat-tailed horned lizard habitat in the southwestern portion of East Mesa. Habitat loss and degradation results from power plant construction, wells, pipelines, transmission lines, and service roads. At present, geothermal energy companies believe that the geothermal resource is exploited at or near capacity (Rob Waiwood, Geologist, BLM California Desert District, pers. comm.). No additional power plants are proposed for East Mesa. Some additional disturbance will occur from replacement wells and associated facilities (e.g., pipelines).

Oil and Gas Development

Extensive leasing by the Federal Government of oil and gas rights occurred in the early 1980's in the Salton Sea Trough. Some leasing also occurred in the Yuma Desert south of Yuma. These leases were highly speculative. Only one test well was drilled in

California, and two test wells were drilled in Arizona. None of these wells were profitable, and no oil or gas resources have been identified. At present there are no active Federal leases for oil and gas within the range of the flat-tailed horned lizard in the United States.

Potentially, portions of public land within the range of the flat-tailed horned lizard could be offered for lease in the future. Leasing, which is discretionary, would not take place unless interest had been expressed by the oil and gas industry. Any leasing would be required to adhere to the regulatory standards in sections 3100 to 3540 of the *43 Code of Federal Regulations*. Oil and gas leases may be issued with standard stipulations as well as additional stipulations for sensitive areas, including stipulations requiring no surface occupancy.

The development of an oil and gas field would result in loss or degradation of habitat from well pads, pipelines, and service roads. Some direct mortality could occur on roads used by trucks and other vehicles. Under current regulations the amount and location of disturbance on Federal lands would be subject to strong controls.

Landfills

In recent years there have been increasing attempts to place large, regional landfills serving distant urban centers in remote areas, such as the Colorado Desert. The proposals range from 2,000 to 20,000 acres in size. Large landfills in flat-tailed horned lizard habitat would result in a permanent loss of habitat. Additional degradation of habitat as well as direct mortality and population fragmentation would occur from trash transportation, such as railroads and roads, and ancillary facilities. Although strongly stipulated to limit the effect, landfills may increase populations of predators (e.g., ravens, roadrunners) that potentially could prey on flat-tailed horned lizards many miles from the landfill.

In the past, the Federal Government issued leases to cities and counties for landfills serving local areas. Currently, Federal agencies are disposing of, primarily through exchange or sale, lands proposed for landfills. Local agencies may still develop new sites on private lands in wildland areas. Even though relatively small in size (10-200 acres), these landfills would result in negative effects on flat-tailed horned lizards similar to large, regional landfills.

The Federal Government, through the General Services Administration, recently sold 640 acres of land south of Yuma to the City of Yuma for a regional landfill. The land is located just east of the Arizona State Prison along County 23rd Street (Fig. 11). The land is known to be previously undisturbed and is known to be occupied by flat-tailed horned

lizards. The landfill will replace the existing Yuma County landfill located east of Somerton, Arizona.

Military Activities

Three military ranges contain flat-tailed horned lizard habitat. These include lands under airspaces R-2510 in West Mesa and R-2512 in East Mesa and the Salton Sea Test Base. R-2510 overlays target areas 101 and 103, and R-2512 overlays target areas 68 and 95. These ranges are managed by the Naval Air Facility El Centro. The third range is R-2301W located on the western half of the Barry M. Goldwater Aerial Gunnery Range, which is managed by the Marine Corps Air Station at Yuma. The Moving Sands and Cactus West Target Areas are located within R-2301W. Activities on the military ranges vary greatly from range to range and over time. Within flat-tailed horned lizard habitat activities consist of the use of inert (non-exploding) bombs, rockets, and cannon strafing of specific target areas. These targets have an impact area radius of up to 1,500 feet. There are currently five targets in use in Arizona and California. Some of the existing targets have been in use since the early 1940's.

Other activities associated with military ranges include limited ground support associated with air warfare training, clean-up of target sites, cargo parachute drops, roadway and runway maintenance, mobile target activity, and target grading, disking, and general maintenance. Most activity is confined to existing roadways and designated staging areas. Very little off-road activity is required except for special training missions or access by emergency vehicles. Foreseeable future uses of flat-tailed horned lizard habitat in Arizona are described in the Yuma Training Range Complex Draft Environmental Impact Statement; the USFWS has reviewed these activities and provided a conference report on April 17, 1996 (USFWS 1996a). No changes in current uses are anticipated on the California Ranges.

Some military activities result in small amounts of direct habitat disturbance. Effects are likely to be small except where activities are concentrated. Some incendiary devices may start wildfires. See the following section for a discussion of the effects of fire. Explosion of ordnance, aircraft noise at and near airstrips, and other sources of loud noise may cause deafness in lizards at and near the sources of such noise (Brattstrom and Bondello 1983).

Fire

In the summer of 1992, a dense, dried stand of non-native annual plants fueled a fire in northern East Mesa that burned approximately 3,600 acres. Although the effects of the fire have not been quantified, large numbers of perennial shrubs, particularly creosote, were killed. Several small fires of less than ten acres have also been fueled by dried, non-

native plants in the Coachella Valley. Habitat in portions of the Coachella Valley and on East Mesa and in Sonora support dense stands of non-native annuals and, as a result, are particularly susceptible to fire. Fires are presumably ignited by lightning strikes, campfires, highway and railroad sources, catalytic converters on off-highway vehicles, military activities (particularly use of flares and bombing), and other activities. Fires are more frequent near towns and roads (Tracy 1994) and are likely to occur after annual plants cure in the spring and before late summer or winter rains reduce the fire hazard.

The effects of fire on flat-tailed horned lizard habitat have not been studied. However, many species of perennial shrubs in desert scrub habitats are generally poorly adapted to fire (Brown and Minnich 1986, Minnich 1994). Fire in desert scrub communities causes vegetational conversion to communities that are more fire tolerant (Minnich 1994). Recovery of pre-fire cover and biomass of desert shrubs is achieved only after several decades (Minnich 1994). Creosote and white bursage, which are often dominant perennial shrubs in flat-tailed horned lizard habitat, typically experience high mortality during fires. Big galleta grass, also an important perennial in some areas, resprouts vigorously after fire (Minnich 1994). Although fire suppression activities are needed to control the size of fires, off-highway access during fires and creation of fire lines can result in habitat damage (Duck *et al.* 1994).

If fire occurs when flat-tailed horned lizards are on or near the surface, individuals could be killed directly by the fire. The effects of vegetation community conversion on flat-tailed horned lizards are unknown, but decreased shrub cover could make individuals more susceptible to predation and environmental extremes. Changes in plant community composition could also facilitate changes in substrates and ant populations that could adversely affect flat-tailed horned lizards. Additional study is needed to quantify the effects of fire on this species and its habitat.

Pesticide Use

Agricultural fields in the range of the flat-tailed horned lizard are sprayed aerially with insecticides to control various insect pests. These pesticides may drift onto adjacent wildlands and kill ants, the primary prey of flat-tailed horned lizards (BLM 1990). Pesticide drift is less likely to be concentrated sufficiently to kill flat-tailed horned lizards directly, but dosages may become lethal if accumulated in the tissues by consuming contaminated prey. Pesticide tolerances of flat-tailed horned lizards are unknown (Johnson 1989). Drift of herbicides from croplands may also injure or kill plants in adjacent flat-tailed horned lizard habitat.

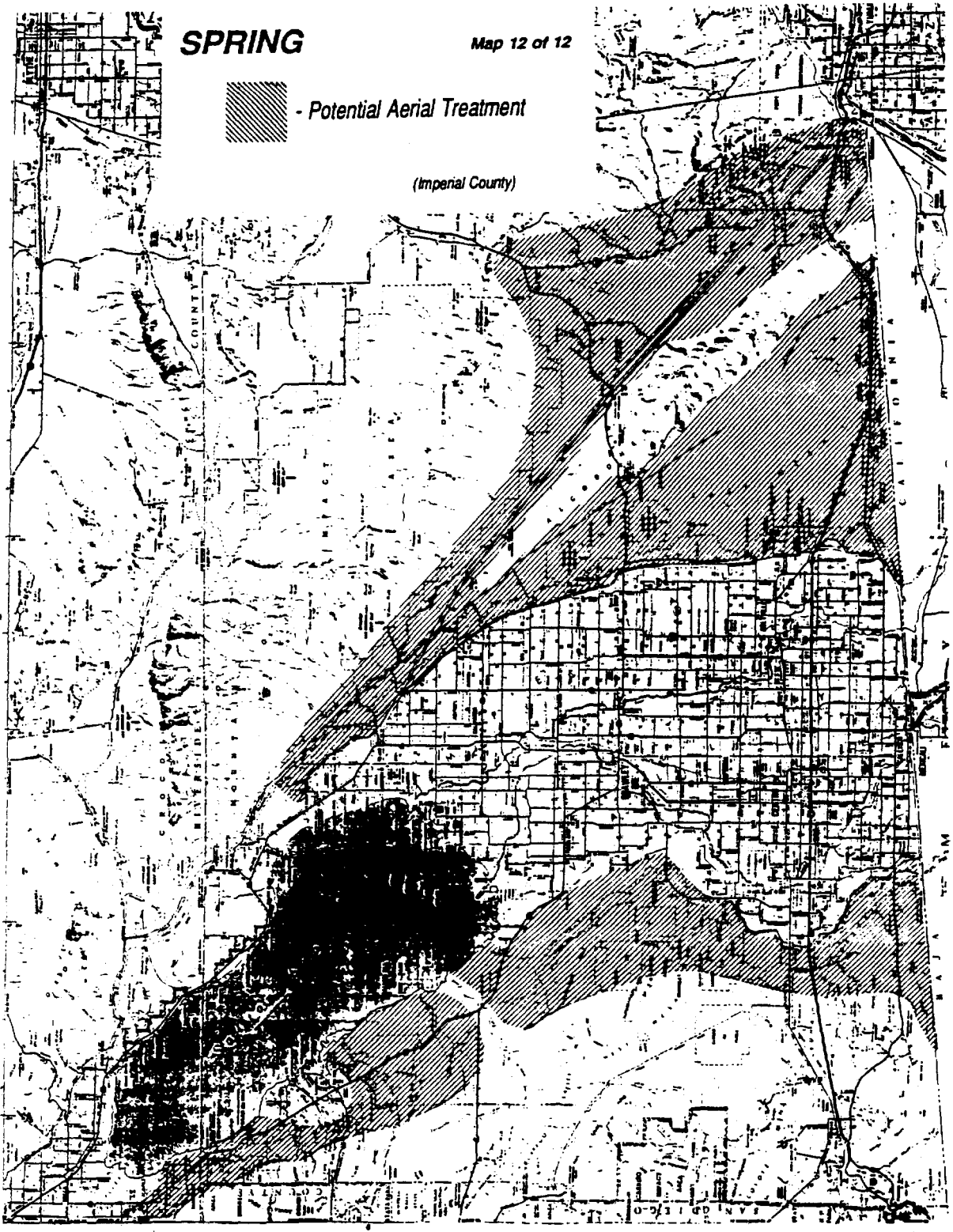
Since 1943 the California Department of Food and Agriculture has conducted a control program for the exotic beet leafhopper, a carrier of curly top virus, which damages crops.

The program has entailed aerial application of insecticides (DDT from 1956-1965 and malathion since 1965) in areas known to harbor the insect. In the past this has included portions of East Mesa, West Mesa, and Yuha Basin in California (Calif. Dept. of Food and Agric. 1991). Figure 2 shows the requested treatment area according to current plans (Calif. Dept. of Food and Agriculture 1995). Historically, treatments in the Imperial Valley have occurred in about one out of every three years with aerial treatment acreage varying between 3,000 and 27,000 acres. The last aerial treatment in this program in Imperial County was in 1991. (Calif. Dept. of Food and Agriculture 1995).

Effects of malathion on the flat-tailed horned lizard have not been studied; however, studies on other lizards has shown no direct effects at applications many times higher than planned here (Hall and Clark 1982; Peterle and Giles 1964; Giles 1970). Harvester ants, which are the primary prey of flat-tailed horned lizards, could be killed by the insecticide treatments (Bolster and Nicol 1989). Proposed treatment protocols call for application during night or early morning hours in the winter or spring. Since most ants in a colony are underground during these cool periods, few ants should be killed directly (Calif. Dept. of Food and Agriculture 1995). Though incomplete, previous monitoring studies have shown that ant colonies recover within a short time (Peterson 1991).

Despite mitigation measures, the overall effects of the program are uncertain. Effects of applying broad-spectrum insecticide over many years to desert scrub communities are potentially many and complex. For instance, changes in invertebrate communities may include changes in pollinator and herbivore populations, which may in turn alter plant communities. Changes in plant communities could precipitate further changes in invertebrate communities and create altered conditions for vertebrates, as well. The effects of this program need further study. The USWFS has recently issued a biological/conference opinion on the beet leafhopper control program (USFWS 1996b). The terms and conditions stipulate that, after the designation of flat-tailed horned lizard management areas, no treatments may occur in those areas and that aerial treatments in high density flat-tailed horned lizard habitat elsewhere should be restricted to the fall and winter months to the extent possible. The decision of the BLM California State Director (March 6, 1997) in authorizing a beet leafhopper malathion control program on public lands in California includes the following terms and conditions:

"2. All treatment within flat-tailed horned lizard habitat shall be by aerial means only and shall be limited to only one treatment in a given area per year. Program personnel shall not use off-road vehicles in flat-tailed horned lizard habitat, except on designated roads. Treatments within areas designated by BLM as high density flat-tailed horned lizard habitat shall be conducted during the fall and winter months to the maximum extent practicable.



E-14

Figure 2. Requested beetle leafhopper malathion treatment area within range of flat-tailed horned lizard (from Calif. Dept. of Food and Agric. 1995).

3. If 'flat-tailed horned lizard management areas' are designated during the life of the permit [5 years] pursuant to the ongoing interagency effort to develop a conservation agreement for this species, no treatments shall occur in these management areas after such designations have become effective."

Exotic Plants

Many species of introduced, non-native plants occur in flat-tailed horned lizard habitat. Most are Mediterranean or Asian annual species that germinate in the winter or spring months. Split grass (*Schismus barbatus*) is common throughout the range of the flat-tailed horned lizard and locally abundant. Sahara mustard (*Brassica tournefortii*) and Russian thistle (*Salsola kali*) are locally abundant. Sahara mustard appears to be spreading rapidly in some areas. Many other non-native annual species may be present, especially species in the families Gramineae (grasses), Chenopodiaceae (goosefoots), Cruciferae (mustards), and Compositae (sunflowers), particularly near agricultural areas and near streams or wetlands. Density, diversity, and productivity of both native and non-native annual plants vary greatly from year to year. In years with abundant winter and spring rainfall, densities and diversity of annual plants are often relatively high (Tevis 1958, Inouye 1991, Rorabaugh 1994).

The effects of non-native annual plants on the flat-tailed horned lizard are unknown. However, their abundance in flat-tailed horned lizard habitat is of concern for several reasons. In portions of East Mesa, the Coachella Valley, and habitat in Sonora, densities of Russian thistle and/or Sahara mustard are very great in some years, with stem or culm densities perhaps great enough to impede movement by flat-tailed horned lizards, which are relatively wide-bodied and active. As previously discussed (see section on Fire), high productivity of non-native annuals can fuel fires that destroy native perennial shrubs and facilitate changes in plant composition.

Where non-native annuals have significantly changed plant communities, the types of food available to harvester ants have also been altered. Relationships among species of harvester ants and between ant populations and environmental variables are complex (Ryti and Case 1988, Mackay 1991). Changes in annual plant communities may trigger changes in ant communities that could, in turn, affect predators of ants, including flat-tailed horned lizards.

In addition to non-native annual plants, saltcedar (*Tamarix chinensis*), a non-native perennial shrub or tree, has invaded areas of shallow groundwater in flat-tailed horned lizard habitat on the west side of West Mesa, in the Yuha Basin (Wright 1993), and along portions of the All-American and Coachella Canals. Flat-tailed horned lizards have been

recorded in saltcedar communities (Kim Nicol and Betsy Bolster, CDFG, pers. comm.), but dense stands of saltcedar are likely unsuitable for them.

Predation

The same species that have been documented as predators on other horned lizard species also prey on flat-tailed horned lizards (Pianka and Parker 1975). Duncan *et al.* (1994) reported predation by American kestrel (*Falco sparverius*), common raven (*Corvus corax*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), and kit fox (*Vulpes macrotis*) in California. The greater roadrunner (*Geococcyx californianus*), thrashers (*Toxostoma* spp.) and other avian predators are also likely to prey on flat-tailed horned lizards (Bryant 1911). Muth and Fisher (1992) documented predation on flat-tailed horned lizards by round-tailed ground squirrels (*Spermophilus tereticaudus*) and possibly sidewinders (*Crotalus cerastes*). They also considered coachwhip (*Masticophis flagellum*), patch-nosed snake (*Salvadora hexalepis*), glossy snake (*Arizona elegans*), and leaf-nosed snake (*Phyllorhynchus decurtatus*) to be possible flat-tailed horned lizard predators.

Predator densities are often elevated near human development (Bryant 1911). For example, data from the Breeding Bird Survey show that populations of common raven have increased 4.7-fold in the Colorado Desert between 1969 and 1988 (BLM *et al.* 1989). Elevated predation may contribute to a cumulative set of adverse effects that result in population declines in some areas.

Land Disposal

Lands that are removed from Federal or state ownership are available for agricultural development, urban development, landfills, or other surface disturbing activities consistent with local zoning regulations. These activities result in varying degrees of habitat loss and adverse effects to flat-tailed horned lizard populations.

The Arizona State Land Department is disposing of land occupied by flat-tailed horned lizards in two areas: 1) near Fortuna Road east of Yuma and south of Interstate 8 and 2) near the town of San Luis. The parcels of State lands that are currently being sold are immediately adjacent to residential and commercial development and have reached what the State Land Department feels is their peak value. It is expected that these lands will be developed as housing or commercial property soon after their sale and thus will no longer be useable as habitat for flat-tailed horned lizards. The State Land Department is currently denying land sale applications for other State land parcels in flat-tailed horned lizard habitat because these lands have not yet reached their highest potential value.

Other Activities

Various specialized projects and facilities have been proposed for desert areas that provide habitat for the flat-tailed horned lizard. As habitat is lost to these projects, populations of flat-tailed horned lizards will be reduced accordingly. An example of such a project is the Cheyenne Unit of the Arizona State Prison in the Yuma Desert. Together with the existing Cocopah Unit, the prison complex will occupy about 640 acres of former flat-tailed horned lizard habitat (Fig. 11).

Management Program

Overall Goal

MAINTAIN VIABLE POPULATIONS OF FLAT-TAILED HORNED LIZARDS FOR AT LEAST 100 YEARS.

Management Objectives

- Conserve sufficient habitat to maintain viable populations of flat-tailed horned lizards in five management areas.
- Maintain a "long-term stable" or increasing population trend in all management areas. A population that is stable over the long term exhibits no downward trend in numbers or densities of animals after the effects of natural demographic and environmental stochasticity are removed.
- Establish a research area of no less than 60,000 acres in which research related to the flat-tailed horned lizard will be conducted and encourage other research anywhere that promotes conservation of the species.
- Encourage the protection through strong conservation management of one additional management area in the Coachella Valley.
- Outside of management areas, limit the loss of habitat and effects on populations of flat-tailed horned lizards through the application of effective mitigation and compensation.
- Encourage adoption of a flat-tailed horned lizard conservation program in Mexico.

General Management Strategy

In 1994, the USFWS, BLM, BR, Department of Defense, and several other agencies signed Memorandum of Understanding (MOU) "...on Implementation of the Endangered Species Act" that established a general framework for cooperation and participation among cooperators in the conservation of species tending toward Federal listing as threatened or endangered under the Endangered Species Act. The MOU identified the development of conservation agreements as a valuable process for achieving conservation of species through voluntary cooperation. A conservation agreement is a formal, written document agreed to by the USFWS and other cooperators that identifies specific actions and responsibilities for which each party agrees to be accountable. The objective of a conservation agreement is to reduce threats to a candidate species or its habitat, possibly lowering the listing priority or eliminating the need to list the species.

It is intended that this strategy will form the basis of a conservation agreement among the cooperators for management of flat-tailed horned lizards. If the USFWS determines that the resulting conservation agreement would be effective and that listing the flat-tailed horned lizard is unnecessary, it would retain the ability to reconsider the effectiveness of the agreement. Lack of compliance among the cooperators, a change of circumstances, or other reasons may alter the expected result of this strategy. If threats to the flat-tailed horned lizard or its habitat are not reduced, the USFWS may proceed with another proposed or an emergency listing.

The purpose of this strategy is to provide a framework for conserving sufficient habitat to maintain several viable populations of the flat-tailed horned lizard throughout the species' range in the United States. Further research on the demography of the species will be needed to precisely define the number of lizards in a viable population and the habitat area necessary to support a viable population. In the absence of such research and analyses, this strategy recommends establishing management areas encompassing large blocks of habitat where surface disturbing and mortality causing activities are minimal.

Signatory agencies will incorporate measures in the Rangewide Strategy into their land management plans. Compliance with the National Environmental Policy Act and state counterparts will be achieved through these management plans or revisions.

Management Areas

Management areas were designed to include most flat-tailed horned lizard habitat identified as key areas in previous studies, even though the absolute densities of flat-tailed horned lizards within the management areas are not known. To the best of our ability and with the most recent information, management areas were proposed based upon accepted principles of good preserve design (Appendix 1). The management areas have been placed

where significant conflict over the special management prescriptions is not occurring and is not anticipated. The management areas include as large an area as possible, but avoid extensive, existing and predicted management conflicts (e.g., off-highway vehicle open areas, geothermal development). Conflicts which are localized in nature (e.g., sand and gravel mines, military bombing targets) may be included within some of the management areas.

The prescriptions that guide the management of lands within the management areas (see part 2 of "Planning Actions") are designed primarily to reduce surface disturbance and to promote reclamation of areas, such as duplicate roads, that are no longer needed.

Research Area

A Research Area (RA) is proposed in California (Fig. 6 and 10) where studies of the flat-tailed horned lizard will be encouraged and funded by the CDPR's Division of Off-Highway Motor Vehicle Recreation. The RA is about 76,700 acres in size. About 43,000 acres of the RA are owned by the State and managed as the Ocotillo Wells State Vehicle Recreation Area (OWSVRA). BLM has 20,900 acres, of which about 8,000 acres which are managed by the OWSVRA. The remaining 12,900 acres of BLM land are managed according to provisions in the California Desert Conservation Area Plan. The State has applied to BLM under the Recreation and Public Purposes Act for transfer and patenting of all 20,900 acres of BLM to the OWSVRA. The State is also actively acquiring the remaining private lands (12,800 acres) within the RA.

While the OWSVRA prohibits most surface disturbing activities, off-highway vehicle free-play, racing, and touring will continue. A comparison of flat-tailed horned lizard densities in areas with and without off-highway vehicle activity will be the subject of study. It is not yet known if these activities will preclude the maintenance of a viable population of flat-tailed horned lizards at OWSVRA.

Corridors

It is recognized that the Colorado River has been a long-term, natural barrier between populations in Arizona and California, and that this may have resulted in genetic divergence (see Fig. 1, p. 4). Within historic times, the population in East Mesa has been effectively isolated from those to the west and south by the Salton Sea, extensive agricultural development, canals, and highways. However, those management areas to the west (i.e., Yuha Desert, West Mesa, and Borrego Badlands) lie relatively close to one another, and some movement between management areas may occur. Planned actions provide guidance for managers to maintain sufficient habitat to provide for interchange of flat-tailed horned lizards between management areas. In this way, those naturally

adjoining populations of flat-tailed horned lizards will be able to interbreed, helping to maintain genetic vigor, and natural recolonization could occur in the case of extirpation from a management area.

Other Areas

Flat-tailed horned lizard habitat outside of these management areas would receive a degree of protection through mitigation and compensation. Specifically, signatories to the conservation agreement would ensure that adverse effects of projects they authorize outside of management areas would be mitigated and that residual effects would be compensated in accordance with a standard formula. The funds obtained through compensation would be used to consolidate land ownership within the management areas, enhance habitat, or conduct research.

Mexican Habitat

Although this rangewide management strategy currently addresses habitat only in the United States, there are objectives and planned actions for establishing and maintaining contacts with appropriate agencies and personnel in Mexico to promote the conservation of flat-tailed horned lizard habitat within Mexico. Agencies that have the authority to work with Mexico, including the AGFD, CDFG, USFWS, and BLM, will be making these contacts. It is hoped that through these contacts and exchanges of ideas a similar management strategy will be adopted in Mexico. This program may include corridors between management areas in the United States and Mexico.

Route Closures

To reduce direct mortality from vehicles and to limit the increase in surface disturbance from the proliferation of routes, each discretionary, designated route in an MA shall require justification for the necessity of the route. Designated routes shall be prioritized in terms of importance to the flat-tailed horned lizard and to the OHV community and other public and private route users. Redundant, low priority, and non-essential routes in MAs shall be closed and restored.

The following process will be utilized to reduce route density in MAs:

- Step 1 - A small, interdisciplinary team shall be formed. The team should include, at a minimum, biological and recreation staff from the land management agency and representatives of USFWS, the state wildlife agency, the state off-highway recreation agency, and important user

groups. Other management agency staff, such as surface protection specialist or realty specialist, may be added as desirable.

- Step 2 - The team shall identify non-discretionary routes (e.g., routes with existing rights-of-way) and discretionary routes (i.e., routes that can be closed at the discretion of the land management agency).
- Step 3 - Representatives of users of routes shall assign an importance priority to each discretionary route. A written justification for each desired open route shall be prepared.
- Step 4 - The team shall evaluate route densities and priorities, flat-tailed horned lizard population density and trend data, flat-tailed horned lizard home range size, and habitat disturbance attributed to routes to determine the level of route closures needed to ensure viable populations of flat-tailed horned lizards. Areas within MAs that support high levels of vehicular use and that are particularly important for the flat-tailed horned lizard shall be identified as high priority areas for route closure.
- Step 5 - Within areas identified for route closure, the team shall identify discretionary routes needing closure. Any discretionary route that serves no identifiable purpose, parallel routes, routes with no identifiable destination, and routes with high resource damage shall also be recommended for closure. Routes along utility corridors and canals and routes used by agencies (e.g., Border Patrol access) shall be evaluated for closure except to specific, authorized users.
- Step 6 - All necessary Federal and State environmental reviews shall be completed.
- Step 7 - Closed routes shall be signed, as necessary, and restored.

Habitat Rehabilitation

Damaged and degraded areas in the desert may take centuries to recover their original appearance and ecosystem function without intervention. Preparation of the ground surface and replanting of vegetation may speed the restoration of the native flora, the rebuilding of the soil structure, and the reestablishment of native wildlife. Damaged and degraded areas within the management areas, including closed routes of travel, shall be rehabilitated using the most effective techniques known. These techniques include, but are not limited to, those discussed briefly in Appendix 8.

Inventory, Monitoring, and Research

The flat-tailed horned lizard is among the least known of the phrynosomatid lizards in the United States. Existing inventory methods based on counting scat have unknown precision and accuracy. Investigators have been unable to find and capture, then recapture individuals on a regular basis. Population trends in most areas are unknown. Long-term monitoring of habitat and populations will be continued or initiated, but new methodologies will need to be developed. It is anticipated that research funded in the Department of Defense Legacy Program being initiated in 1995 will lead to new or revised monitoring methods.

Several important aspects of the species ecology and life history are unknown or uncertain. More information on how human activities impact flat-tailed horned lizards is needed. Research into various aspects of life history, impacts of activities, and management effectiveness is proposed in this strategy. The list of proposed research topics (see Planning Action 8) and monitoring parameters (see Planning Action 9) was developed by the Workgroup and was reviewed and modified by the Conservation Team.

Inventory, monitoring, and research data collected from these efforts will be analyzed by an Interagency Coordinating Committee and considered during annual reviews. Based on this information, actions may be modified through a Management Oversight Group.

Planning Actions

The following planning actions have been developed as recommendations to management agencies to ensure that the goal of population viability within each management area is achieved. It is understood that implementation of these actions is subject to availability of funds and compliance with all applicable regulations. It is anticipated that specific actions may be modified based on information obtained from future monitoring, research, and evaluations of the effectiveness of this strategy. Annual evaluations and proposed modifications of this strategy shall be coordinated through the Flat-tailed Horned Lizard Interagency Coordinating Committee. The Management Oversight Group will meet as necessary to review recommendations of the Interagency Coordinating Committee and may make corresponding modifications to planning actions in the Strategy.

1. Delineate and designate five flat-tailed horned lizard management areas (MAs) and one flat-tailed horned lizard research area (RA). See Table 1 (Appendix 2) for a summary of land ownership within each MA. Boundary descriptions and geographic information system (GIS) maps are on file with land management agencies.

- 1.1 Designate the Yuma Desert Flat-tailed Horned Lizard MA as shown on Figure 3 (Appendix 2). If the proposed Area Service Highway is constructed along a portion of the boundary of the MA, the east and south side of the right-of-way will be the new western and northern boundary of the MA, as appropriate.
 - 1.2 Designate the East Mesa Flat-tailed Horned Lizard MA as shown on Figure 4 and 5 (Appendix 2).
 - 1.3 Designate the West Mesa Flat-tailed Horned Lizard MA as shown on Figure 6 and 7 (Appendix 2).
 - 1.4 Designate the Yuha Desert Flat-tailed Horned Lizard MA as shown on Figure 6 and 8 (Appendix 2).
 - 1.5 Designate the Borrego Badlands Flat-tailed Horned Lizard MA as shown on Figure 6 and 9 (Appendix 2).
 - 1.6 Designate the area shown in Figure 6 and 10 (Appendix 2) in and around the Ocotillo Wells SVRA as the Ocotillo Wells Flat-tailed Horned Lizard Research Area (RA).
 - 1.7. Encourage the development of one additional flat-tailed horned lizard MA in the Coachella Valley by working with other agencies and organizations in developing a Coachella Valley Multi-species Plan that incorporates a management area capable of sustaining a viable population of flat-tailed horned lizards.
2. Define and implement management actions necessary to minimize loss or degradation of habitat.
 - 2.1 Mitigate and compensate, as needed, project impacts on flat-tailed horned lizard and its habitat both within and outside of MAs and the RA through humane and cost-effective measures.
 - 2.1.1 Apply mitigation measures in Appendix 3, as appropriate, based on the nature of the anticipated impacts.
 - 2.1.2 In accordance with Appendix 4, require compensation for residual impacts remaining after application of other mitigation measures.

- 2.2 Limit land use authorizations that would cause surface disturbance within the MAs.
 - 2.2.1 Land use applications will continue to be reviewed on a case-by-case basis for impacts on flat-tailed horned lizards and their habitat. Every attempt shall be made to locate projects outside of MAs. New rights-of-way may be permitted only along the boundaries of MAs and only if impacts can be mitigated to avoid long-term effects on populations of flat-tailed horned lizards in the MA. Where discretionary, other new authorizations may be permitted if the habitat disturbance does not pose a significant barrier to lizard movements. Disturbance shall be limited to 10 acres or less per authorization, if possible. If individual disturbances over 10 acres are necessary, the Interagency Coordinating Committee and the Management Oversight Group shall be contacted to provide suggestions for minimizing potential impacts to flat-tailed horned lizards. The cumulative new disturbance per MA may not exceed 1 percent of the total acreage. All authorizations must be conducted in accordance with applicable mitigation and compensation.
 - 2.2.2 All federally owned lands in the MAs shall be retained in Federal ownership (except the patenting of mining claims pursuant to the General Mining Law of 1872). Lands in MAs owned by the State of California and managed as preserves, refuges, or parks shall be retained in state ownership.
 - 2.2.3 Maintenance of all existing rights-of-way facilities may continue within MAs.
 - 2.2.4 The proposed Area Service Highway is outside of the Yuma Desert MA. This and other new road construction along the boundary of the Yuma Desert MA shall require fencing to reduce access to the MA and lizard exclusion fencing to reduce lizard mortality.
- 2.3 Limit and/or reduce surface disturbance in MAs from discretionary minerals actions.
 - 2.3.1 Allowable activities are the following: 1) leasing under the mineral leasing laws with no surface occupancy; 2) development and production in existing mineral material extraction sites in accordance with local, state, and federal laws and land-use plans, and subject to applicable mitigation; 3) new leases and permits for geothermal energy with stipulations of no

surface occupancy (in California MAs only); and other mining and exploration activities authorized under the General Mining Law of 1872. Replacement wells and operation and maintenance of facilities shall be allowed on existing leases. The activities listed above shall be subject to applicable mitigation and compensation (Appendices 3 and 4, respectively).

- 2.4 Limit vehicle access and limit route proliferation within MAs.
 - 2.4.1 Reduce new road construction to a minimum by coordinating access needs and avoiding conflicts and replication in road use, development, and management. Allow maintenance of roads on a case-by-case basis, recognizing that maintenance of some roads may be necessary to prevent proliferation of parallel routes. Any new surface disturbance associated with road maintenance shall require mitigation.
 - 2.4.2 All routes shall be designated "closed" to motorized vehicles, "open" for general public use by all types of vehicles, or "limited" to a specific season, user, or vehicle type or number. Vehicle use shall be restricted to designated open and limited routes. Routes in MAs shall be given a high priority for signing.
 - 2.4.3 Reduce open and limited route density in MAs, particularly in portions of MAs where route density is high.
 - 2.4.4 Participating land managers shall coordinate with the U. S. Border Patrol to ensure cooperation with and enforcement of vehicle regulations in MAs and the RA to the maximum extent possible.
- 2.5 Limit the impacts of recreational activities within MAs.
 - 2.5.1 All types of vehicle-oriented recreation in compliance with current regulations may occur within the RA.
 - 2.5.2 Permit no competitive recreational events within MAs. A competitive event is any event where speed or elements of competition (i.e., winning) are present in any form. Non-competitive events may be allowed on routes designated open for public use during the flat-tailed horned lizard season of hibernation. Other types of vehicle-based recreation except camping (see action 2.5.4) in compliance with current regulations may occur within MAs.

- 2.5.3 Allow non-motorized recreational activities, such as rockhounding, hiking, backpacking, non-vehicle based camping, picnicking, bicycling, horseback-riding, hunting, birdwatching, and nature study, in all MAs and the RA in accordance with existing regulations. Development of new recreational facilities, such as visitor centers, campgrounds, mountain bike trails, equestrian trails, shall not be allowed within MAs, if these would create new surface disturbance. Installation of interpretive signing and informational kiosks is allowed.
- 2.5.4 Allow vehicle-based camping only in developed campgrounds, designated camping areas or within 50 feet from centerline of a designated open route within MAs. More restrictive measures may apply in certain areas. Non-vehicle camping may occur anywhere.
- 2.5.5 No long-term camping areas shall be designated or developed in MAs.
- 2.6 Make no sales and allow no commercial collecting of native plant products (including whole plants, plant parts, flowers, and seeds) within MAs, except as needed for rehabilitation projects within the MAs.
- 2.7 Within the MAs, allow off-road military maneuvers and encampments only in designated sites. Allow other military activities on previously disturbed lands managed by Department of Defense agencies consistent with normal operations and functions. Marine Corps activities on the Barry M. Goldwater Range shall be governed by Conference Opinion 2-21-95-F-114, dated April 17, 1996 (USFWS 1996) whether the species is listed or not. This conference opinion is consistent with the strategy set forth in this document.
- 2.8 Suppress fires in MAs and the BLM-administered lands in the RA using a mix of the following methods: 1) aerial attack with fire retardants, 2) crews using hand tools to create fire breaks, 3) mobile attack engines limited to public roads, designated open routes, and routes authorized for limited-use. Do not allow earth-moving equipment (such as bulldozers) except in critical situations to protect life, property, or resources. Post-suppression mitigation shall include rehabilitation of firebreaks and other ground disturbances using hand tools.
- 2.9 No pesticide treatments shall be applied within MAs.
- 2.10 Within an MA, other discretionary land uses and activities not consistent or compatible with the above restrictions and the general management strategy shall not be approved by the authorizing agency.

3. Within the MAs, rehabilitate damaged and degraded habitat, including closed routes and other small areas of past intense activity. Methods to be used may include, but are not limited to, a) ripping or scarifying compacted soils, b) recontouring the surface, c) pitting or imprinting the surface, d) seeding with native plants, e) planting seedlings, f) irrigating, and g) barricading. These techniques are described briefly in Appendix 8.

4. Attempt to acquire through exchange, donation, or purchase from willing sellers all private lands within MAs.
 - 4.1 Establish and maintain with approval of the Management Oversight Group (see Plan Action 6.1.1) a prioritized list of parcels or screening criteria for acquisition within each MA and habitat corridor.
 - 4.2 Seek funding to acquire key parcels within MAs.
 - 4.3 Using compensation and other funds, acquire land within MAs in accordance with established priorities and/or criteria.
 - 4.4 Participate in exchanges where opportunities arise to acquire key parcels within MAs.

5. Maintain or establish effective habitat corridors between naturally adjacent populations.
 - 5.1 Activities in potential habitat corridors between MAs and the RA shall be regulated or mitigated so that at least occasional interchange of flat-tailed horned lizards occurs among adjacent populations. Potential habitat corridors include lands between West Mesa and Yuha Desert MAs and between West Mesa MA and Ocotillo Wells RA. In addition, activities in the Yuha Desert and Yuma Desert MAs that would prevent interchange of flat-tailed horned lizards across the International Border shall be prohibited.
 - 5.2 Coordinate conservation efforts with Mexico and Immigration and Naturalization Service to ensure continued movement of flat-tailed horned lizards across the International Border in the Yuha Desert and Yuma Desert MAs.

6. Coordinate activities and funding among the participating agencies and Mexican agencies.
 - 6.1 Maintain information exchange and coordination of monitoring, management activities, and research.
 - 6.1.1 Establish a Flat-tailed Horned Lizard Management Oversight Group (FTHL MOG) consisting of management representatives from agencies participating in the conservation agreement (see Planned Action 6.2). The FTHL MOG shall provide management-level leadership, coordination, and oversight in the implementation of this Management Strategy. The FTHL MOG shall review progress in implementing the conservation agreement, approve amendments to the Strategy, set priorities, and recommend measures to resolve management issues relevant to implementation of the Management Strategy. The FTHL MOG shall provide overall policy guidance and coordination among the cooperators for the use of compensation funds.
 - 6.1.2 Hold semi-annual meetings of the Interagency Coordinating Committee (ICC). Each of the participating agencies shall designate a representative(s) to the ICC. Representatives from other agencies, organizations, and groups with special interests or knowledge of the flat-tailed horned lizard may also be invited to ICC meetings. The ICC shall function as a forum for exchange of information on research results and proposals and for discussion of technical and management issues. The ICC may be assigned specific duties and responsibilities by the FTHL MOG.
 - 6.1.3 Develop a forum for discussions with agencies and individual counterparts in Mexico to coordinate activities, provide information exchange, and promote development of a flat-tailed horned lizard conservation program in Mexico.
 - 6.2 Confirm commitment of agencies participating in this Management Strategy through development and signing of a conservation agreement.
 - 6.3 Incorporate management actions from this Strategy when developing multi-agency, multi-species ecosystem plans for the ecoregions in the range of the flat-tailed horned lizard incorporating management actions from this Strategy.

- 6.3.1 Incorporate actions in the development of the Western Colorado Desert Coordinated Management Plan (including the Yuha Desert, West Mesa, East Mesa, Borrego Badlands MAs and Ocotillo Wells RA).
- 6.3.2 Incorporate actions in the development of the Coachella Valley Multi-species Plan (including proposed Coachella Valley MA.)
- 6.4 Coordinate with the Border Patrol in developing mutual agreements for the conservation of natural resources.
- 7. Promote the purposes of the strategy through law enforcement and public education.
 - 7.1 Provide law enforcement in MAs sufficient to ensure compliance with off-highway vehicle and other regulations as described in the planned actions.
 - 7.2 Public information and education about the MAs and RA, including but not limited to interpretive signs and brochures, shall be made available to the public at the offices and interpretive centers of the participating agencies. Information provided shall describe the purposes of the MAs and RA and shall list all pertinent regulations.
- 8. Encourage and support research that will promote the conservation of flat-tailed horned lizards or desert ecosystems and will effectively define and implement necessary management actions, both within and outside of MAs and the RA. Planned actions 8.3 and 8.4 shall be emphasized, as recommended by the Conservation Team.
 - 8.1 All research shall be conducted under permit from the land management agency. Permits from the state game and fish agency may also be required.
 - 8.2 The Ocotillo Wells SVRA shall continue to budget for research for at least 5 years. Research designs will be recommended by a team of scientists and managers. Results shall be distributed to other land management agencies.
 - 8.3 Develop a cost-effective technique for assessing flat-tailed horned lizard abundance.

- 8.3.1 Test trapping and other techniques (e.g., pit fall traps, minnow traps, drift fences, funnel traps, road surveys, walking surveys, and detection by dogs) to enumerate flat-tailed horned lizards directly.
- 8.3.2 Determine effectiveness of direct enumeration techniques and scat counts as an index of relative abundance using test plots of known density.
- 8.4 Determine the following life history and demographic parameters and how they vary with environmental conditions:
 - Age-specific mortality
 - Longevity
 - Clutch size
 - Age-specific number of clutches per year
 - Hatching success
 - Recruitment
 - Diet
 - Home range size
- 8.5 Determine effects of the following activities and factors on flat-tailed horned lizard demographics and habitat:
 - Paved roads and highways
 - Off-highway vehicle use and associated activities
 - Geothermal development
 - Pesticide Use
 - Predation
 - Non-native plants
 - Fire
- 8.6 Determine genetic variation among populations and the effects of barriers on movements.
 - 8.6.1 Determine genetic variation in populations in the different MAs.
 - 8.6.2 Determine effects of human-created barriers such as railroads, canals, paved roads, agricultural fields, and extensively denuded areas.
 - 8.6.3 Determine effects of natural barriers, such as the Colorado River.
- 8.7 Determine the effectiveness of the mitigation measures described in Appendix 3.

- 9.0 Continue inventory and monitoring.
- 9.1 Continue to inventory lands within the range of flat-tailed horned lizards.
- 9.2 Monitor habitat quality and population trends in five MAs to determine progress toward overall management goal.
 - 9.2.1 The ICC shall monitor implementation of the strategy and/or resulting conservation agreement.
 - 9.2.2 Land management agencies shall monitor regional population trends using standardized techniques to be developed (see Planned Action 8.3).
 - 9.2.3 Land management agencies shall document habitat disturbance and loss.
 - 9.2.4 The ICC shall prepare an annual report of monitoring results and progress on implementation.
 - 9.2.5 New inventory, monitoring, and research data shall be used in evaluations of the Management Strategy and in assessing proposed changes to the Management Strategy. Solicit and consider input from affected agencies and the public before incorporating any such modifications.

Implementation

Priorities, Estimated Costs, Schedule

The following table displays the priority, responsible agency, estimated cost, and schedule for completing each planning action. Initiation of these actions is subject to availability of funds.

The priorities indicated in the table are assigned the following definitions:

- Priority 1:** An action that must be taken in the near term to conserve the species and prevent irreversible population declines.
- Priority 2:** An action that must be taken to prevent significant declines in population or habitat quality.
- Priority 3:** All other actions necessary to meet the goals and objectives of this Strategy.

The following abbreviations are used in the implementation table for the responsible parties:

ABDSP	=	Anza-Borrego Desert State Park
AGFD	=	Arizona Game and Fish Department
BLM	=	Bureau of Land Management
BR	=	Bureau of Reclamation
ICC	=	Interagency Coordinating Committee
CDFG	=	California Department of Fish and Game
OWSVRA	=	Ocotillo Wells State Vehicular Recreation Area
USFWS	=	U. S. Fish and Wildlife Service
USMC	=	U. S. Marine Corps
USN	=	U. S. Navy

Flat-tailed Horned Lizard Strategy Implementation Schedule

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
1. Delineate and designate flat-tailed horned lizard management areas.										
1	1.1	Designate Yuma Desert MA	2	BLM BR USMC	8	4				
1	1.2	Designate East Mesa MA	2	BLM USN	8	4	4			
1	1.3	Designate West Mesa MA	2	BLM USN	8	4	4			
1	1.4	Designate Yuha Desert MA	2	BLM	8	4	4			
1	1.5	Designate Borrego Badlands MA	2	ABDSP	4	2	2			
3	1.6	Designate Ocotillo Wells RA	1	BLM OWSVRA ABDSP	8	4	4			
3	1.7	Encourage MA in Coachella Valley	1	BLM USFWS CDFG	0					
2. Define and implement actions necessary to minimize loss or degradation of habitat.										
1	2.1.1	Apply mitigation measures	on-going	All	0					
1	2.1.2	Require compensation	on-going	All	15	3	3	3	3	3
1	2.2.1	Limit discretionary land uses authorizations and ROWs to 10 acres and 1% total per MA	on-going	All	0					
1	2.2.2	Do not dispose of lands in MAs	on-going	All	0					

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
3	2.2.3	Maintenance in existing ROWs may continue	on-going	All	0					
2	2.2.4	Require fencing along Yuma MA boundary road								
2	2.3.1	Limit surface disturbance from mineral activities in MAs	on-going	All	0					
2	2.4.1	Reduce new roads to a minimum in MAs	2	All	0					
1	2.4.2	Designate routes "open," "closed, or limited." Give route signing a priority.	2/on-going	BLM	180	40	80	20	20	20
1	2.4.3	Reduce route density in MAs	See 2.4.2							
1	2.4.4	Coordinate with U. S. Border Patrol	on-going	BLM BR USN USMC OWSVRA ABDSP	20	4	4	4	4	4
3	2.5.1	Vehicle-oriented recreation allowed in RA	on-going	BLM OWSVRA	0					
1	2.5.2	No competitive recreational events in MAs	on-going	All	0					
2	2.5.3	Non-motorized recreational activities allowed in MAs, but no new recreational facilities	on-going	All	0					
2	2.5.4	Limit camping in MAs	2/on-going	BLM	20	10	10			
2	2.5.5	No new long-term visitor areas in MAs	on-going	All	0					
3	2.6	Do not sell plant products in MAs	on-going	All	0					
1	2.7	Allow military maneuvers and encampments only in designated sites in MAs	on-going	USN USMC	0					

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
3	2.8	Suppress fires in MAs using limited fire suppression methods in MAs	on-going	All	0					
1	2.9	Prohibit pesticide treatments in MAs	on-going	All	0					
3	2.10	Limit other activities consistent with above	on-going	All	0					
3. Rehabilitate damaged and degraded habitat.										
2	3	Rehabilitate damaged and degraded habitat in MAs	on-going	BLM BR ABDSP USMC USN	200	40	40	40	40	40
4. Bring all lands within management areas into public management.										
3	4.1	Maintain prioritized list of parcels for acquisitions; and respect private rights	1	All	0					
3	4.2	Seek funds for land acquisitions in MAs (37,600 acres of private lands acres in California MAs and 15,500 acres of State Land Department lands in Yuma Desert MA at \$250 per acre)	on-going	All	15,900					

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
3	4.3	Use compensation funds to acquire key lands in MAs	on-going	BLM AGFD CDFG ABDSP OWSVRA	20	4	4	4	4	4
3	4.4	Exchange lands opportunistically	on-going	BLM	20	4	4	4	4	4
5. Maintain or establish effective habitat corridors between naturally adjacent populations.										
2	5.1	Limit or mitigate activities in movement corridors	on-going	All	25	5	5	5	5	5
3	5.2	Coordinate with Mexico and INS	on-going	All	10	2	2	2	2	2
6. Coordinate activities and funding among the participating agencies and Mexican agencies.										
2	6.1.1	Establish FTHL MOG	on-going	All	20	4	4	4	4	4
2	6.1.2	Hold semi-annual ICC meetings	on-going	All	5	1	1	1	1	1
3	6.1.3	Establish forum for discussions with agencies and individuals in Mexico	on-going	All	5	1	1	1	1	1
1	6.2	Develop Conservation Agreement	1	All	4 ¹					

1 Cooperative Agreement to be developed and signed in 1997.

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
2	6.3.1	Incorporate actions in Western Colorado Desert ecosystem plan (Note: other state and local agencies will fill key roles)	3	BLM CDFG OWSVRA ABDSP USFWS USN	750	20	300	250	200	
2	6.3.2	Incorporate actions in Coachella Valley Multi-species Plan (Note: other state and local agencies will fill key roles)	3	BLM CDFG USFWS	600	300	200	100		
1	6.4	Coordinate with U. S. Border Patrol and develop mutual agreements	2	BLM BR	6	3	3			
7. Promote the purposes of the strategy through law enforcement and public education.										
1	7.1	Provide adequate law enforcement	on-going	BLM CDFG AGFD	750	150	150	150	150	150
3	7.2	Provide public information and education	on-going	All	25	5	5	5	5	5
8. Conduct research necessary to effectively define and implement necessary management actions.										
3	8.1	Require permits for research	on-going	All	5	(schedules to be determined)				
						1	1	1	1	1

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
2	8.2	Ocotillo Wells SVRA shall continue to fund research	on-going	OWSVRA	200 ¹	40	40	40		
2	8.3.1	Test trapping as a population census technique	2	OWSVRA USMC	170 ²					
2	8.3.2	Test direct counting methods	2	OWSVRA USMC		Included in 8.2 and 8.3.1				
2	8.4	Determine life history and demographic data	2	USMC OWSVRA	100	Also included in 8.2 and 8.3.1				
2	8.5	Determine effects of conflicting activities	5	All	300					
3	8.6.1	Determine genetic variation in population	5	All	30					
3	8.6.2	Determine effects of non-natural barriers	5	All	30					
3	8.6.3	Determine effects of natural barriers	5	All	15					
3	8.7	Determine effectiveness of mitigation measures	5	All	20					

1 Funding for 5-year study began in 1996.

2 Funding for multi-year study provided in 1996.

(continued)

Flat-tailed Horned Lizard Strategy Implementation Schedule (continued).

Priority number	Action number	Planned action	Duration (yrs)	Resp. agency	Total cost (\$000)	Cost estimates (\$000)				
						FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
9. Continue inventory and monitoring.										
2	9.1	Continue inventories	on-going	BLM OWSVRA ABDSP USFWS AGFD CDFG	125	25	25	25	25	25
2	9.2.1	Monitor implementation	on-going	ICC	40	8	8	8	8	8
2	9.2.2	Monitor population trends	on-going	BLM OWSVRA ABDSP	200	0	50	50	50	50
1	9.2.3	Document habitat disturbance and loss	on-going	BLM OWSVRA ABDSP	40	8	8	8	8	8
2	9.2.4	Prepare annual monitoring/ implementation report	on-going	ICC	20	4	4	4	4	4
1	9.2.5	Use new inventory, monitoring, and research data in evaluations and proposed changes	on-going	All	0					

(End of Table)

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APPENDIX 1

Principles of Good Preserve Design

The following principles of reserve design are taken from Noss and Cooperrider (1994). They presented the list with the following introduction:

In their conservation strategy for the northern spotted owl, Thomas *et al.* (1990) listed five reserve design concepts that they characterized as 'widely accepted among specialists in the fields of ecology and conservation biology.' We agree, and paraphrase these guidelines below, adding a sixth (from Noss 1992) that applies to species that are especially sensitive to human disturbance and, therefore, greatly in need of protection.

1. Species well distributed across their native range are less susceptible to extinction than species confined to small portions of their range.
2. Large blocks of habitat containing large populations of a target species are superior to small blocks of habitat containing small populations.
3. Blocks of habitat close together are better than blocks far apart.
4. Habitat in contiguous blocks is better than fragmented blocks.
5. Interconnected blocks of habitat are better than isolated blocks, and dispersing individuals travel more easily through habitat resembling that preferred by the species in question.
6. Blocks of habitat that are roadless or otherwise inaccessible to humans are better than roaded and accessible habitat blocks.

APPENDIX 2

Tables and Figures Describing Management Areas

Table 1. Sizes (acres) and ownership of proposed flat-tailed horned lizard management areas.

Management Area ¹	Federal Non-military ²	Federal Military	State ³	Private	TOTAL
Yuma Desert ⁶	16,200	99,300 ⁴	15,500 ⁵		131,000
East Mesa	99,900	8,500		6,900	115,300
West Mesa	83,200	29,800	1,300	21,800	136,100
Yuha Basin	57,200			3,000	60,200
Borrego Badlands			36,500	5,900	42,400
TOTAL	256,300	138,100	53,200	37,600	485,200

1. The existing Coachella Valley Preserve includes about 17,076 acres administered by Federal and State agencies and private organizations.
2. Includes lands administered by the BLM and BR.
3. Includes lands administered by CDPR, California State Lands Commission, and Arizona State Land Department.
4. Lands administered by U. S. Marine Corps and BLM.
5. State lands administered by Arizona State Land Department. It is expected that these lands will not be managed under this Strategy.
6. A portion of the Yuma Desert MA boundary will be formed by the proposed Area Service Highway, if and when constructed.

List of Figures Showing Management Areas

Figure 3	Page 65	Map of proposed Yuma Desert Flat-tailed Horned Lizard Management Area.
Figure 4	Page 66	Map of proposed East Mesa Flat-tailed Horned Lizard Management Area.
Figure 5	Page 67	East Mesa Management Area.
Figure 6	Page 68	Map of proposed Yuha Desert, West Mesa, and Borrego Badlands Flat-tailed Horned Lizard Management Areas and proposed Ocotillo Wells Research Area.
Figure 7	Page 69	West Mesa Management Area.
Figure 8	Page 70	Yuha Desert Management Area.
Figure 9	Page 71	Borrego Badlands Management Area.
Figure 10	Page 72	Ocotillo Wells Research Area.
Figure 11	Page 73	Bureau of Reclamation lands in Yuma Desert Management Area.

On the following pages, Figures 3, 4, and 6 show the general location of the MAs and RA. Figures 5, 7, 8, 9, and 10 are included to show more detailed land ownership and to show routes of travel in California. Some of these routes are closed to use. Land ownership may not reflect the most recent acquisitions, especially in the Ocotillo Wells RA and the Borrego Badlands MA where the California Department of Parks and Recreation has been actively acquiring lands. Map 11 is included to show details of Bureau of Reclamation lands in Arizona. Note that the map scales vary greatly.

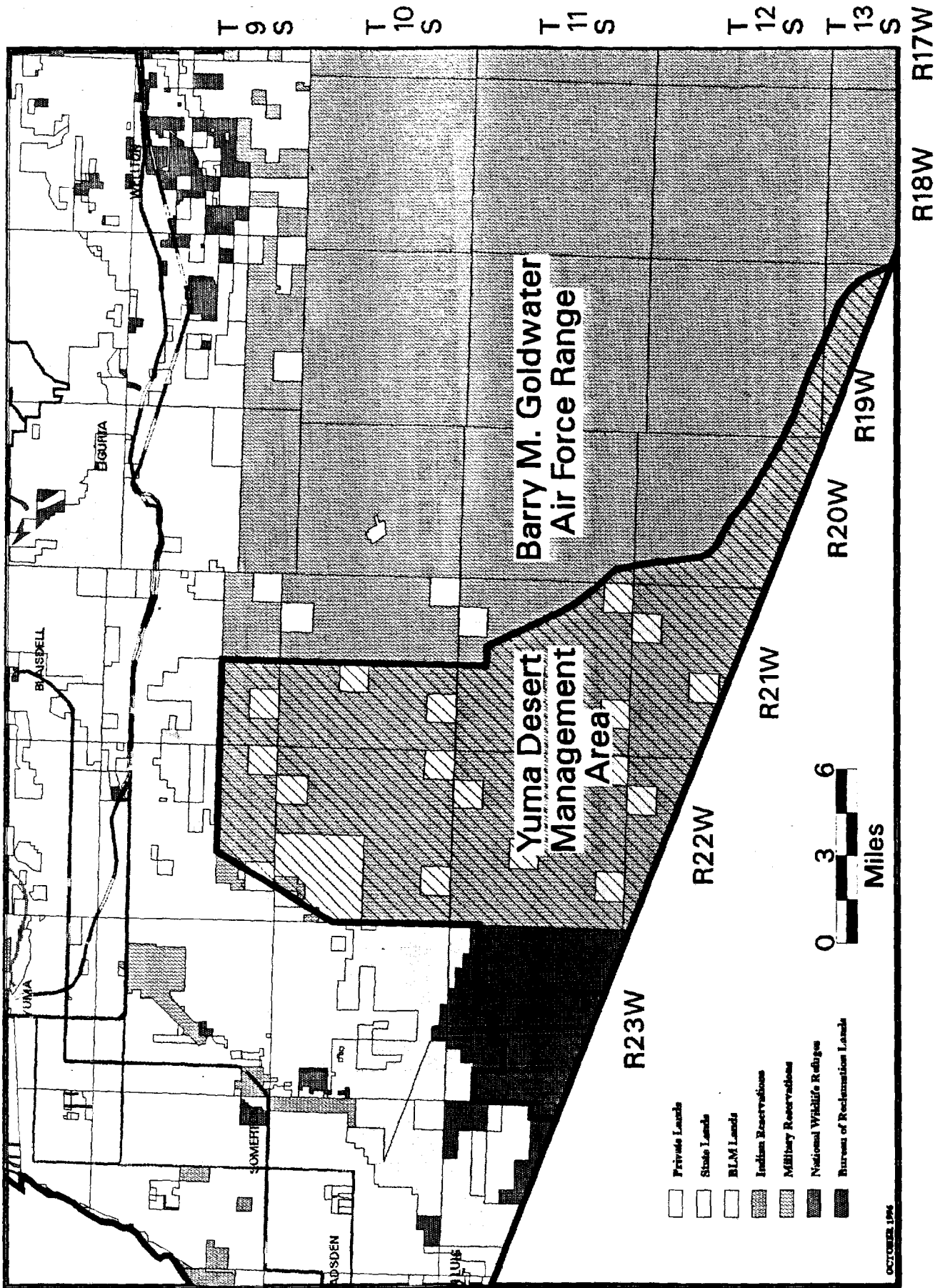


Figure 3. Map of proposed Yuma Desert Flat-tailed Horned Lizard Management Area. (One inch equals 4.8 miles; Mapscale about 1:300,000)

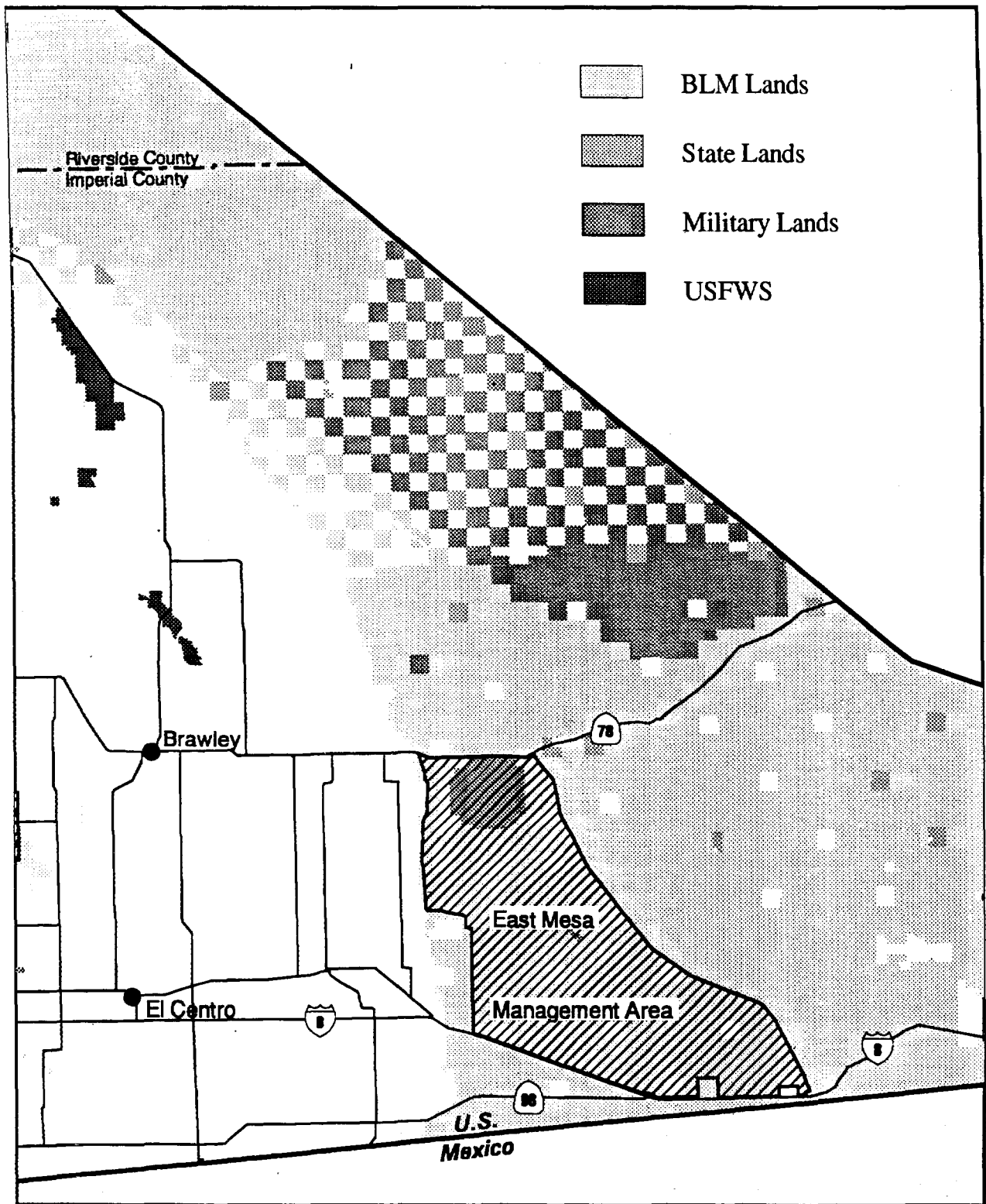


Figure 4. Map of proposed East Mesa Flat-tailed Horned Lizard Management Area (One inch equals 7.9 miles; Mapscale 1:500000).

Figure 5.
East Mesa Management Area

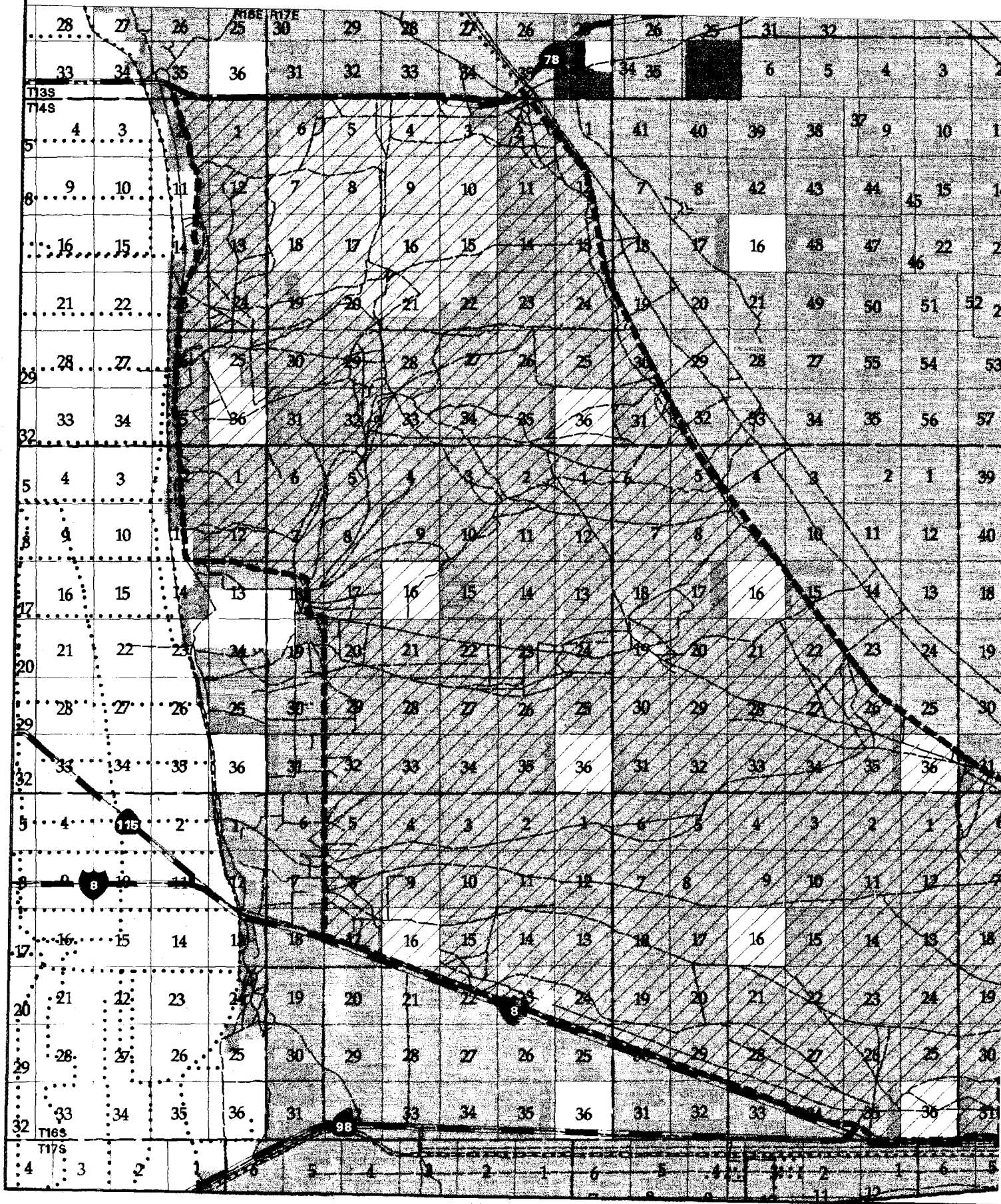
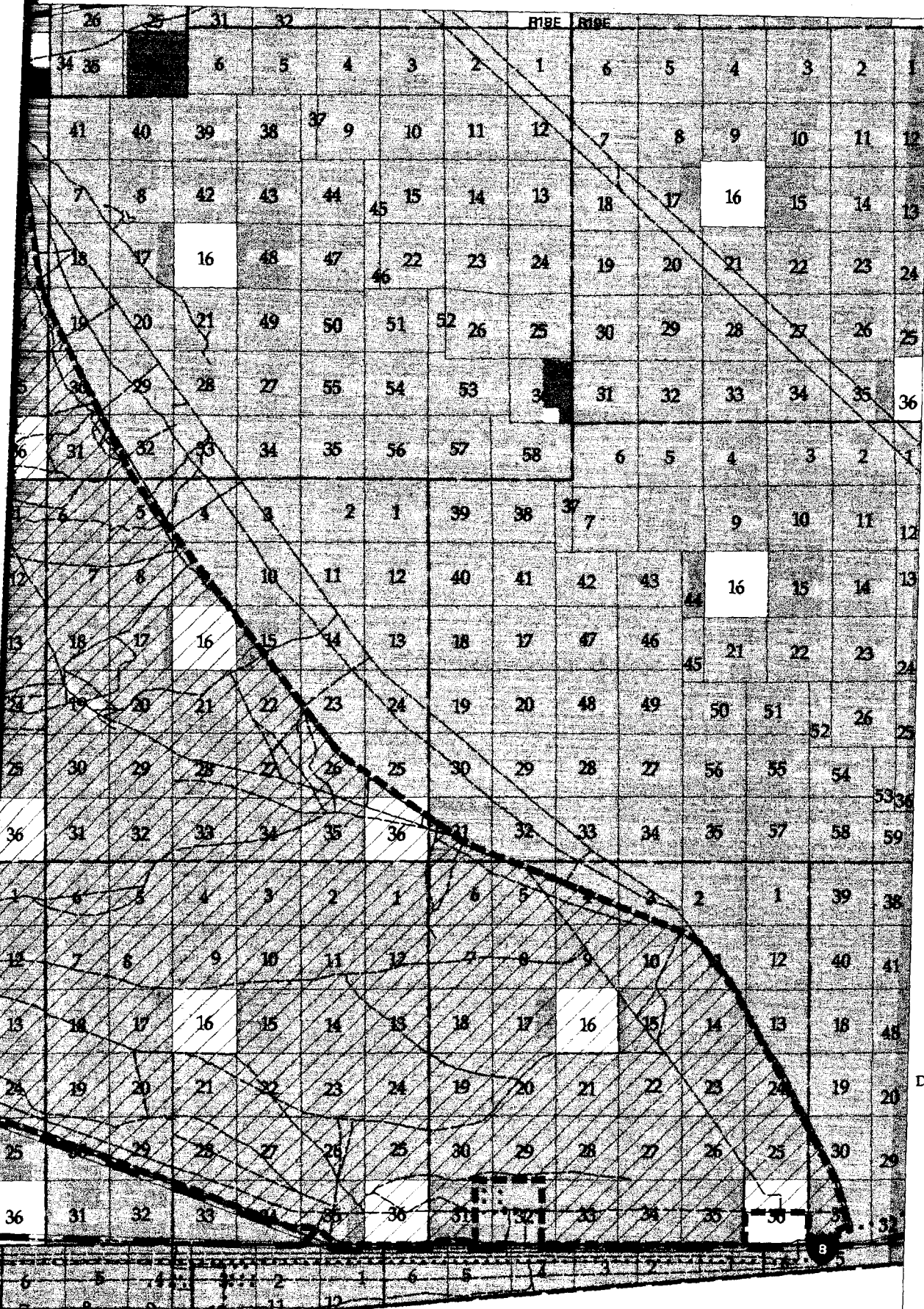


Figure 5.
at Mesa Management Area



- Management Area
- Private
- Military Lands
- BLM Lands
- State Lands
- Major Highways
- Roads
- Canals
- Township-Range
- Section Lines



Miles
Scale 1 : 140090

Data Sources:
BLM
Teale Data Center



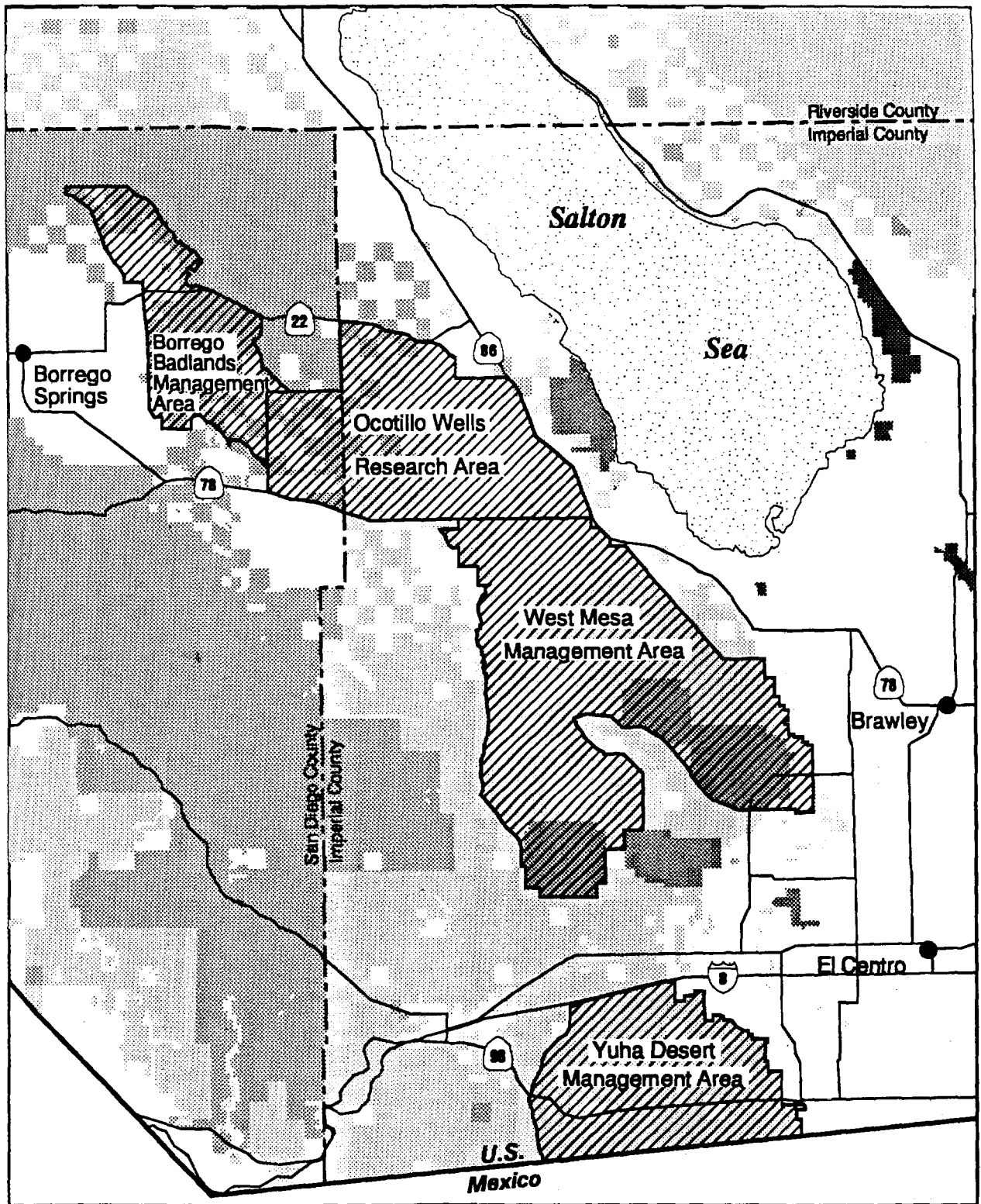


Figure 6. Map of Proposed Yuha Desert, West Mesa, and Borrego Badlands Flat-tailed Horned Lizard Management Areas and proposed Ocotillo Wells Research Area (One inch equals 7.9 miles; Mapscale 1:500000).

Figure 7.
West Mesa Management Area

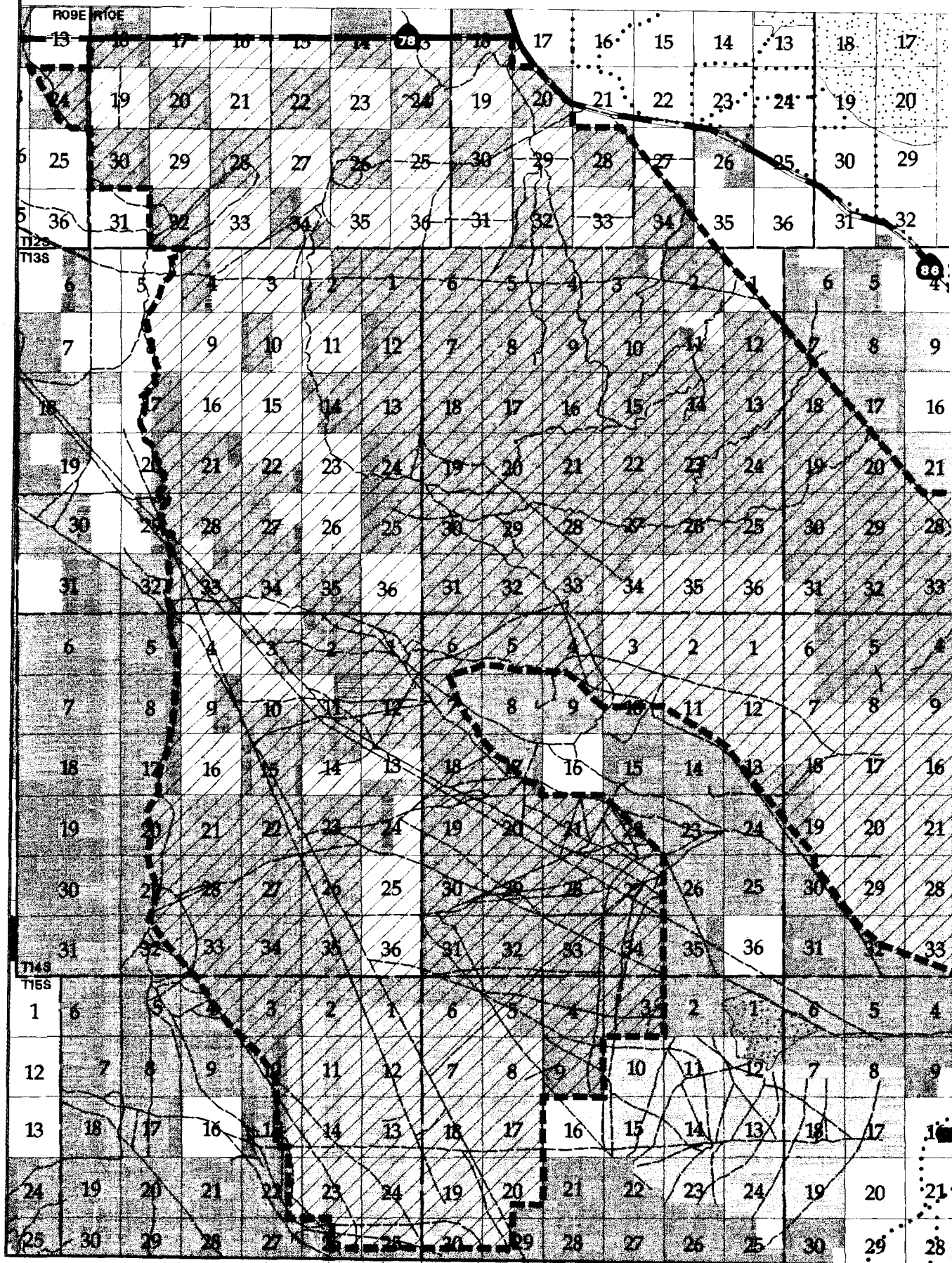
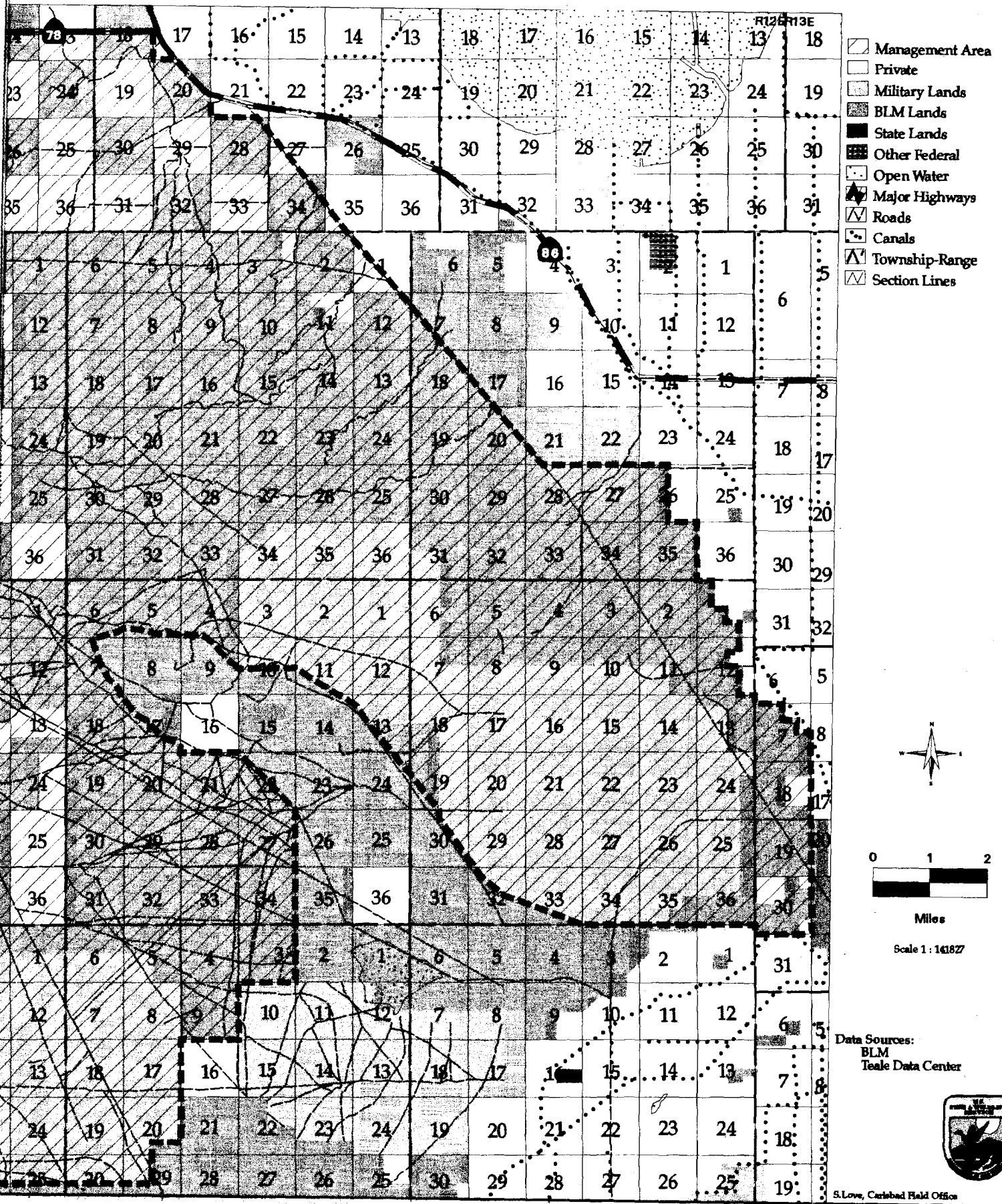


Figure 7.
West Mesa Management Area

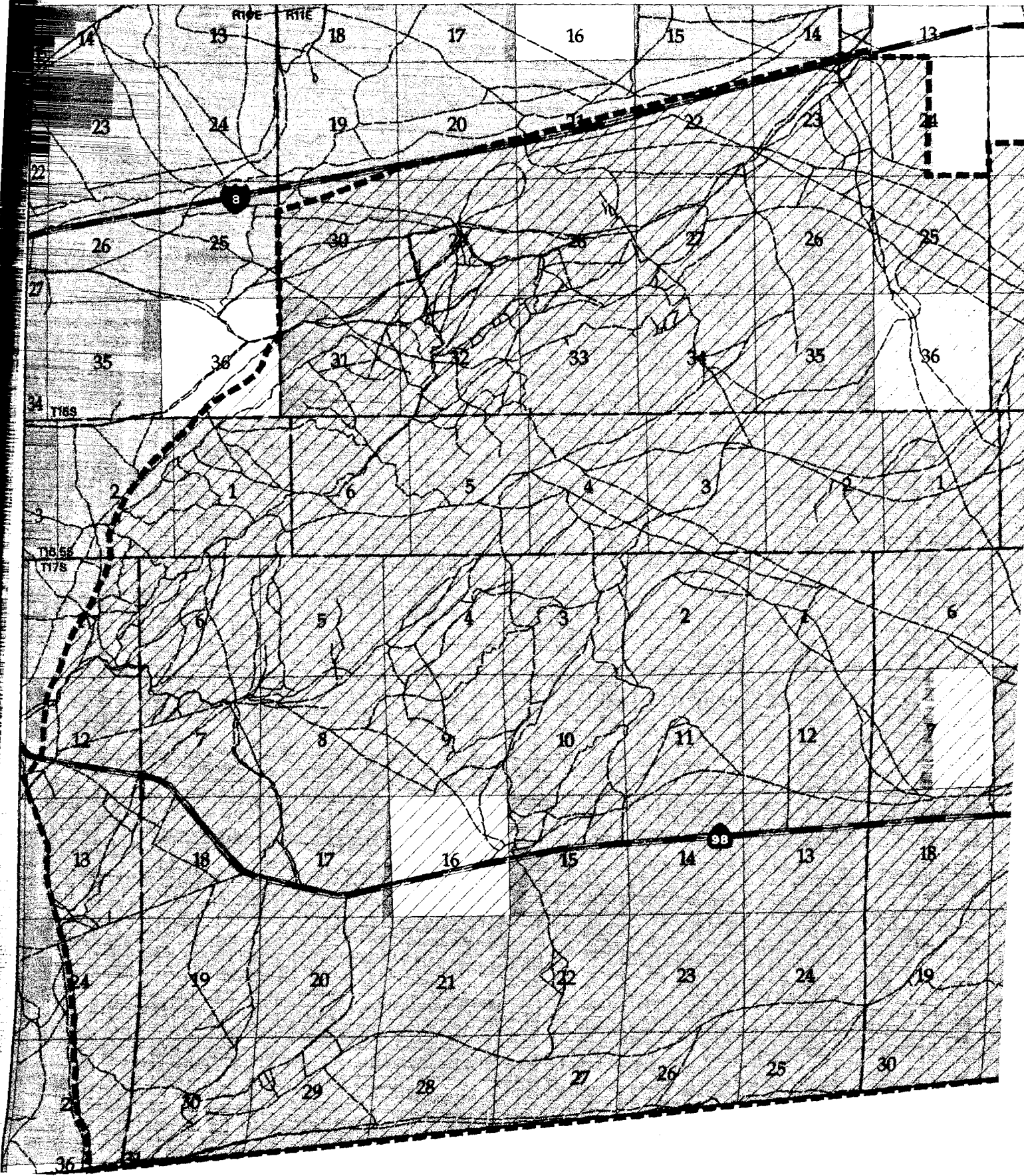


Data Sources:
BLM
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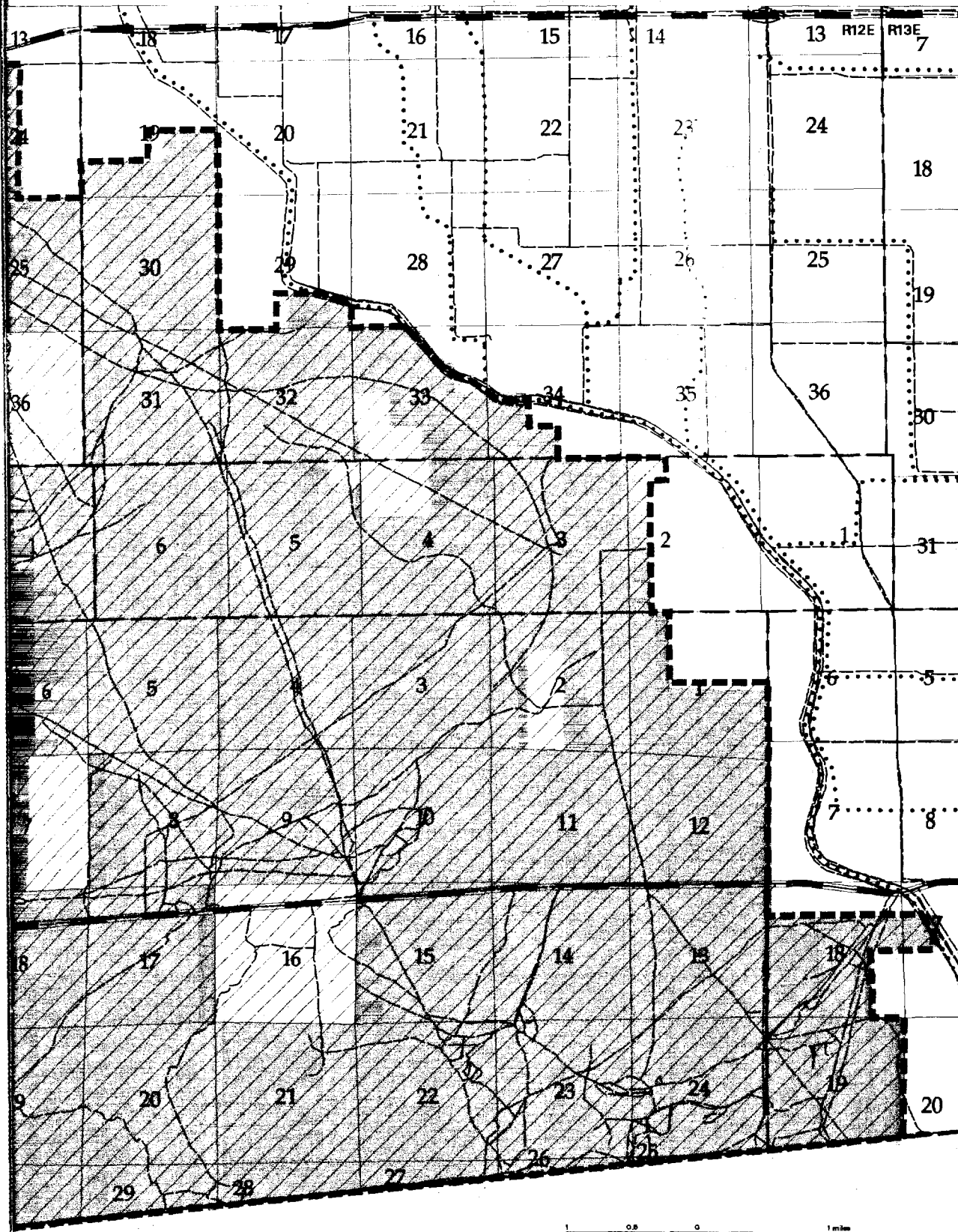










S. Love, Carlsbad Field Office

Figure 8.
Yuha Desert Management A



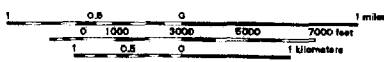
8.
Management Area



-  Management Area
-  BLM Lands
-  Private
-  Major Highways
-  Roads
-  Canals
-  Township-Range
-  Section Lines



Data Sources:
BLM
Teale Data Center

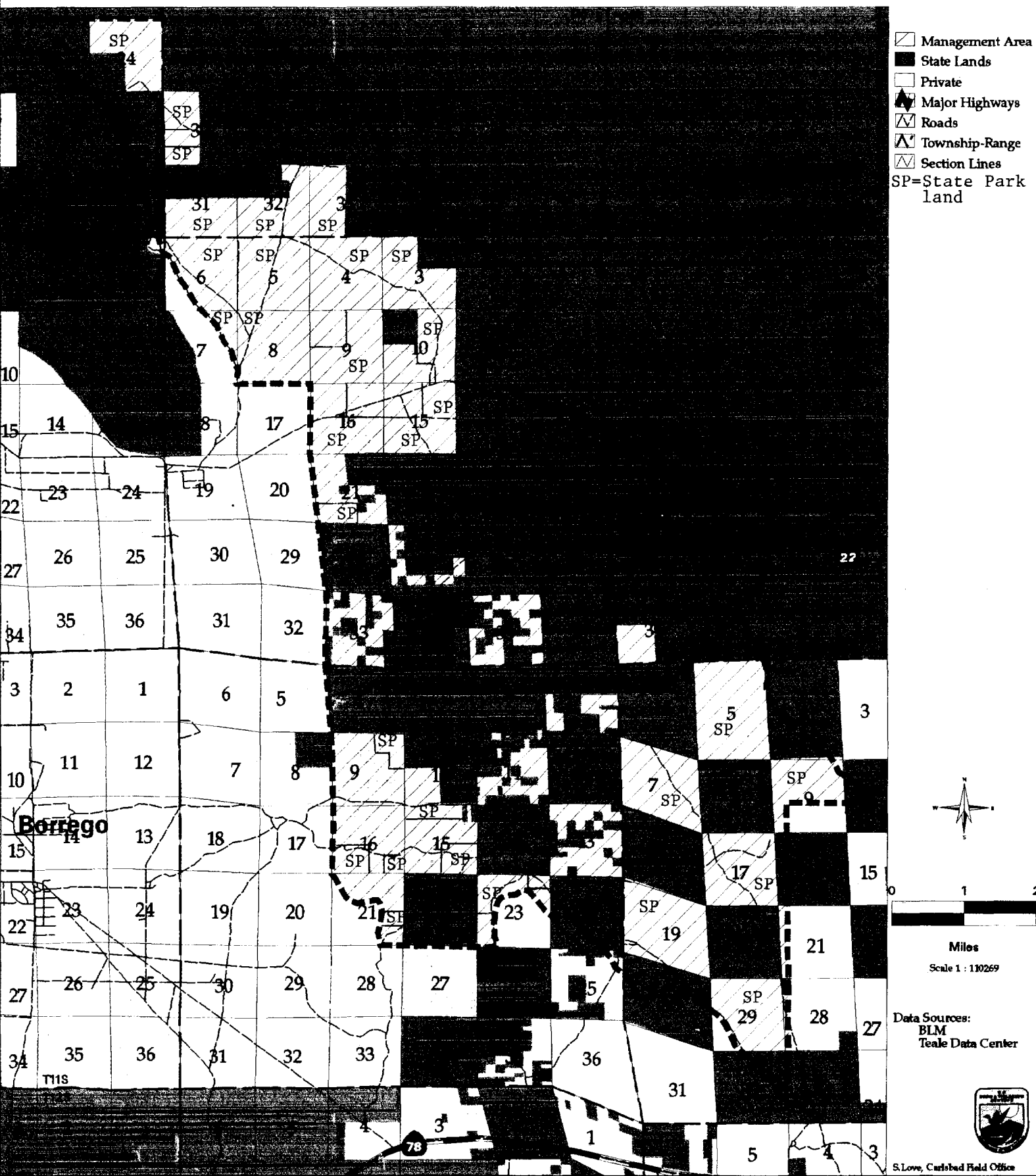


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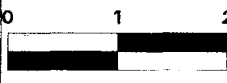


S. Love, Carlsbad Field Office

Figure 9.
Borrego Badlands Management Area



- Management Area
- State Lands
- Private
- Major Highways
- Roads
- Township-Range
- Section Lines
- SP=State Park land



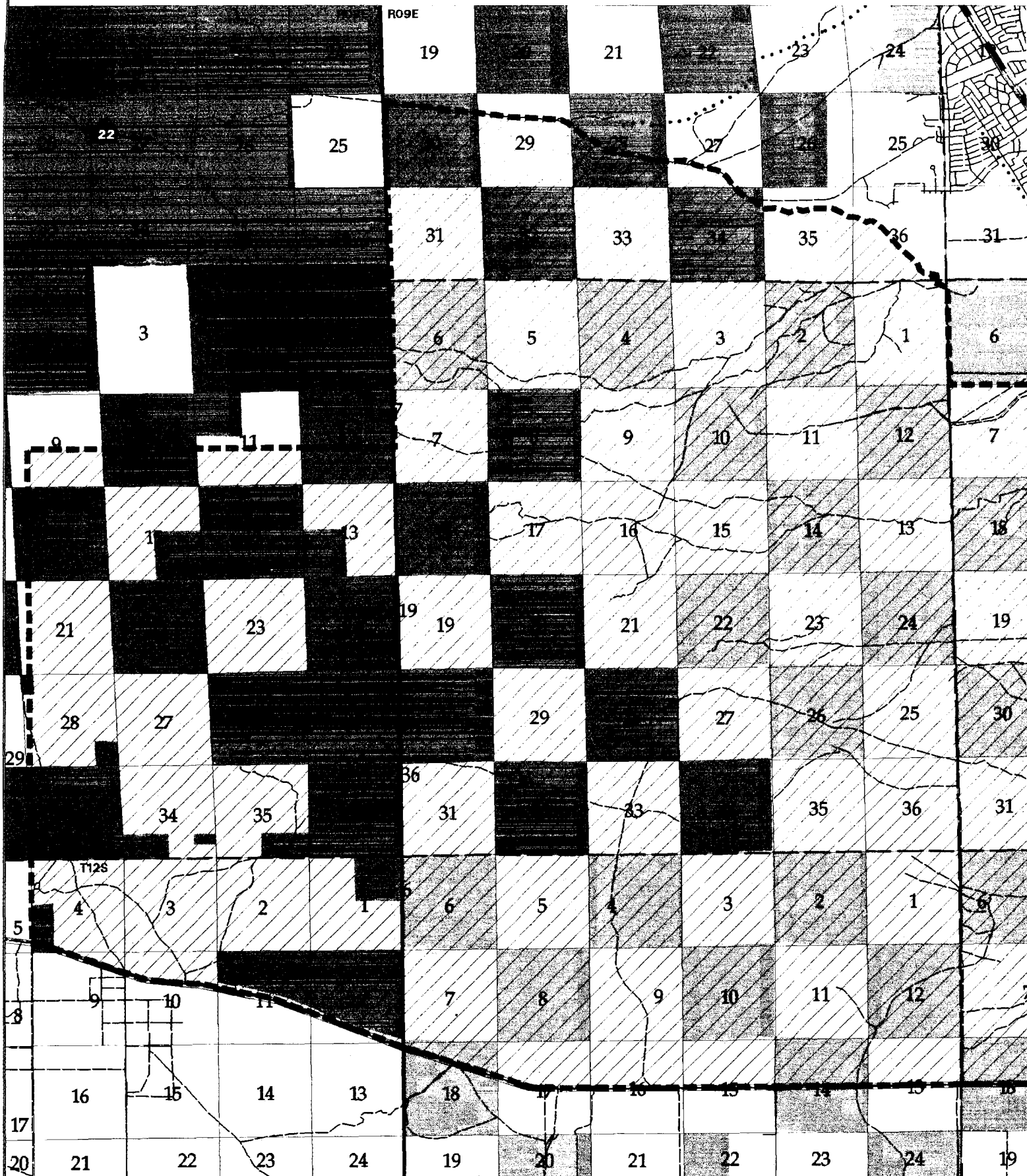
Miles
 Scale 1 : 110269

Data Sources:
 BLM
 Teale Data Center

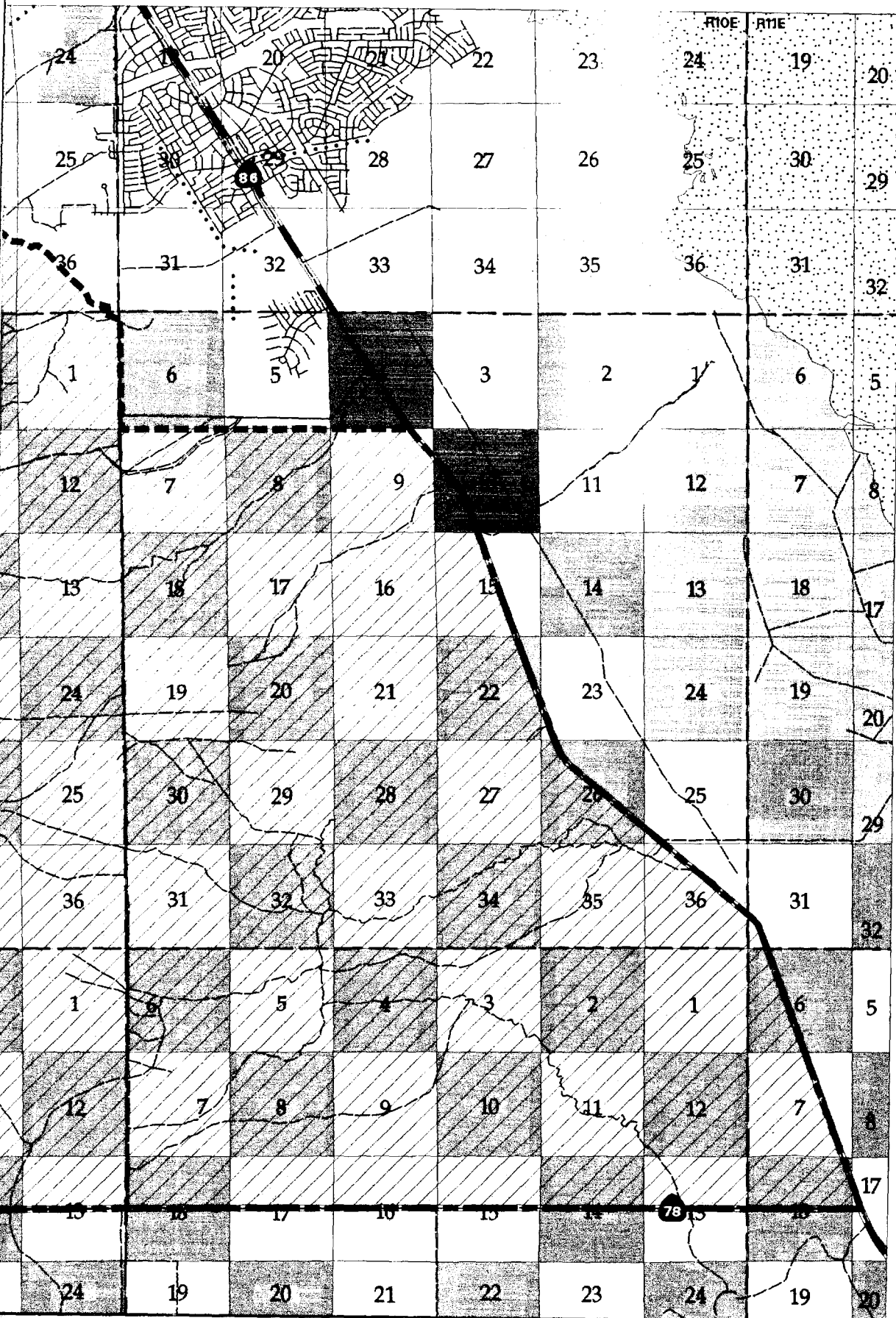













S.Love, Carlsbad Field Office

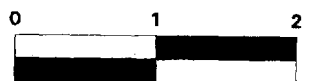
Figure 10.
Ocotillo Wells Research Area



Research Area



-  Management Area
-  Private
-  Military Lands
-  BLM Lands
-  State Lands
-  Open Water
-  Major Highways
-  Roads
-  Canals
-  Township-Range
-  Section Lines



Miles
Scale 1 : 86252

Data Sources:
BLM
Teale Data Center



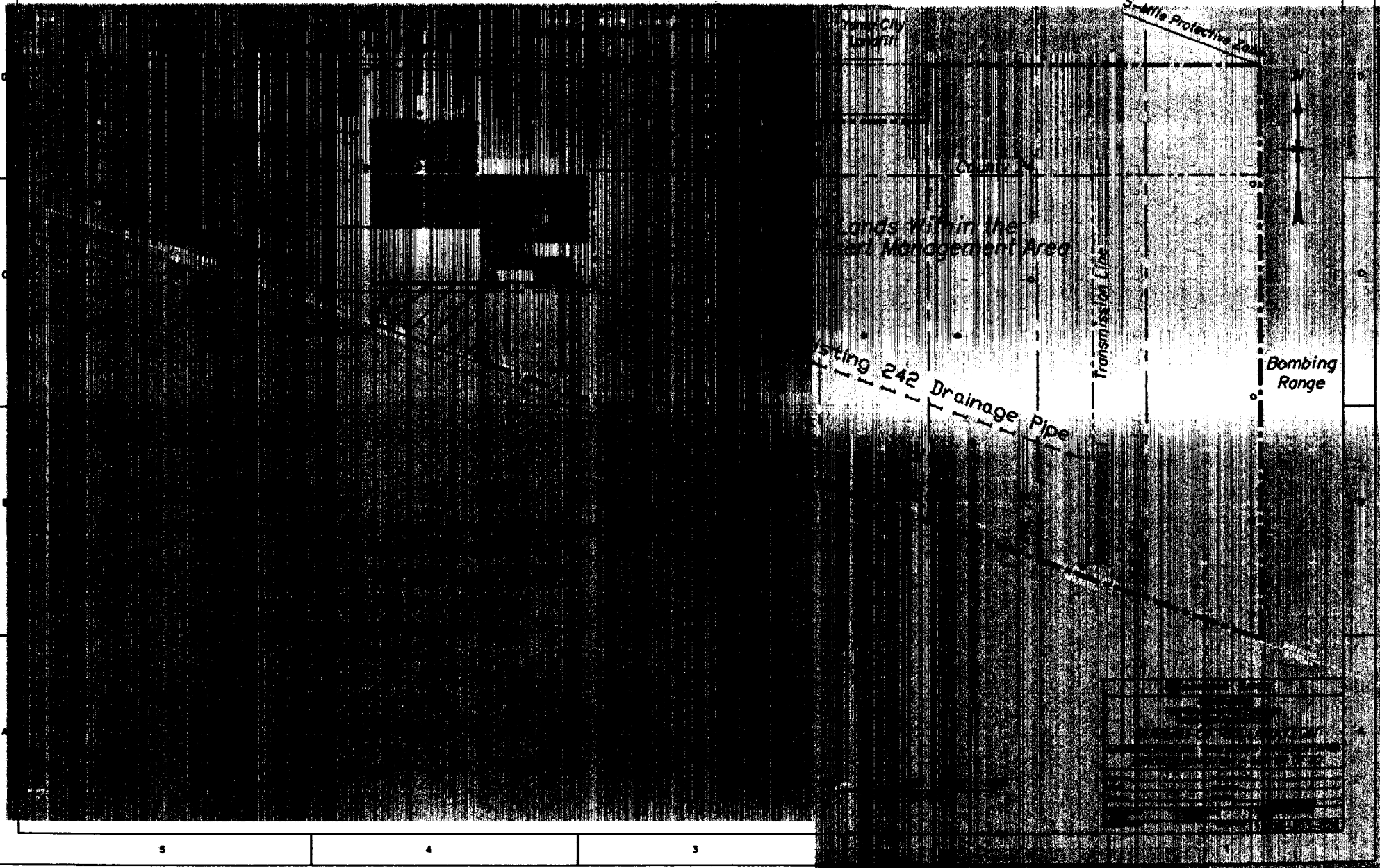


Figure 11. Bureau of Reclamation lands in Yuma Desert Management Area.

APPENDIX 3

List of Standard Mitigation Measures for Flat-tailed Horned Lizard

The following mitigation measures are to be incorporated into all surface-disturbing projects where applicable. The measures are to be modified to conform with the nature of the project.

1. Within flat-tailed horned lizard management areas and the research area, construction in areas unsuitable for burrowing by flat-tailed horned lizards shall be limited to the dormant period (November 15 through February 15) for the flat-tailed horned lizard.
2. A worker education program shall be developed and implemented. Wallet-cards summarizing this information shall be provided to all construction and maintenance personnel. The education program shall include the following aspects at a minimum:
 - biology and status of the flat-tailed horned lizard,
 - protection measures designed to reduce potential impacts to the species,
 - function of flagging designating authorized work areas,
 - reporting procedures to be used if a flat-tailed horned lizard is encountered in the field, and
 - importance of exercising care when commuting to and from the project area to reduce mortality of flat-tailed horned lizards on roads.
3. To the extent possible, surface-disturbing projects shall be located outside of flat-tailed horned lizard management areas and the research area. If a project must be located within a management area or the research area, effort shall be made to locate the project in a previously disturbed area or in an area where habitat quality is poor. A survey of the project site shall be conducted prior to construction in order to assist in locating the project.
4. Prior to project initiation, an individual shall be designated as a field contact representative (FCR). The FCR shall have the authority to ensure compliance with protective measures for the flat-tailed horned lizard and will be the primary agency contact dealing with these measures. The FCR shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
5. All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas which have been flagged to eliminate adverse impacts

to the flat-tailed horned lizard and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.

6. Within MAs [or outside MAs if judged necessary], a biological monitor shall be present in each area of active construction throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of horned lizards by a biologist (see Measure 13). The biological monitors shall have sufficient education and field experience or training with the flat-tailed horned lizard to understand its biology and behavior. The monitor(s) shall perform the following functions:
 - a. Ensure that all project-related activities are in compliance with these measures. The biological monitor shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
 - b. Examine construction areas periodically (at least hourly when surface temperatures exceed 30° C) for the presence of flat-tailed horned lizards. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of flat-tailed horned lizards prior to backfilling.
 - c. Work with the construction supervisor to take steps, as necessary, to avoid disturbance to flat-tailed horned lizards and their habitat. If avoiding disturbance to a flat-tailed horned lizard is not possible or if a flat-tailed horned lizard is found trapped in an excavation, the affected lizard shall be captured by hand and relocated.
7. Only persons authorized by the California Department of Fish and Game [California] or the Arizona Game and Fish Department [Arizona] shall be permitted to handle flat-tailed horned lizards.
8. If surveys are required, they must be conducted as specified in the interim survey protocol (Appendix 7) or an alternative subsequently approved by the Management Oversight Group.
9. Relocated flat-tailed horned lizards shall be placed in the shade of a large shrub a short distance from the construction zone and in the direction of undisturbed habitat. If surface temperatures in the sun are less than 30° C or exceed 50° C, the biologist or FCR, if authorized to handle, shall hold the flat-tailed horned lizard for later release. Initially, captured flat-tailed horned lizards shall be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards shall be held at temperatures between 25 and 35° C and shall not be exposed to direct sunlight. Release shall occur as soon as possible after capture and during daylight hours when surface temperatures range from 32 to 40° C. If such conditions do not occur within 48 hours of capture, the lizard shall be transferred to a terrarium containing at least 2 inches of sand

from the project area. The terrarium shall be maintained at 10 to 20° C until conditions at the site are appropriate for release. Lizards shall be allowed to acclimate to higher surface temperatures prior to release. The biologist shall be allowed some judgement and discretion to ensure that survival of flat-tailed horned lizards found in the project area is likely.

10. Within flat-tailed horned lizard habitat, the area of disturbance of vegetation and soils shall be the minimum required for the project. [If possible, specify a maximum disturbance allowable based on the specifics of the project.] Clearing of vegetation and grading shall be minimized. Wherever possible, rather than clearing vegetation and grading the right-of-way, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized.
11. Existing roads shall be used for travel and equipment storage whenever possible.
12. Where feasible and desirable, in the judgement of the lead agency, newly created access routes shall be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, maintenance of access control structures and facilities shall be maintained by the project proponent for the life of the project and until habitat restoration is completed, including monitoring.
13. Sites of permanent or long-term projects in MAs where continuing activities are planned and where flat-tailed horned lizard mortality could occur shall be enclosed with flat-tailed horned lizard barrier fencing to prevent lizards from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should consist of 0.5-inch wire mesh fastened securely to posts. The wire mesh should extend at least 12 inches above the ground and 12 inches below the surface of the ground. Any gates or gaps in the fence should be constructed to prevent lizard entry. After clearing the area of horned lizards, no on-site monitor is required (see Measure 6).
14. A project-specific habitat restoration plan shall be developed by the project proponent under approval by the lead agency. The plan shall consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the project area, noxious weed control, and additional erosion control. Generally, the restoration objective shall be to return the disturbed area to a condition that will perpetuate previous land use. Periodic inspection of the restored area shall be conducted by the project proponent. Restoration shall include eliminating any hazards to flat-tailed horned lizards created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing perennial shrubs during restoration shall be minimized, even if such shrubs have been crushed by construction activities.

APPENDIX 4

Compensation Formula

Compensation shall be required to offset the residual effects of projects affecting flat-tailed horned lizard habitat. Residual effects are those that remain after all reasonable on-site mitigation measures are incorporated into a project. The goal of compensation is to make a project's net effect neutral or positive to the flat-tailed horned lizard. If the adverse effects of an action can be fully mitigated (no net adverse impact) or if an action would result in no adverse effects on habitat, then compensation is not required. Adverse residual effects to habitat shall be compensated through acquisition of habitat within an MA or contribution to a compensation fund that will be used to acquire lands and enhance habitat in MAs. Funds shall not be used for law enforcement or monitoring. Priorities for use of compensation funds shall be determined by the Flat-tailed Horned Lizard Management Oversight Group (FTHL MOG).

The compensation formula to be applied for disturbance of habitat within a management area is presented in this appendix. The multiplying factor (M) is multiplied by the number of acres disturbed to arrive at the compensation acreage. If the land to be disturbed is within a management area, the multiplying factor will range from 3 to 6. Outside of the management areas, but within occupied habitat as determined according to the survey protocol (see Appendix 7), the multiplication factor shall be 1. Compensation shall not be required for disturbance of areas that clearly do not support the species or desert scrub communities, such as agricultural and urban areas. A detailed description of how to evaluate each factor may be found in "Compensation for the Desert Tortoise" (Desert Tortoise Compensation Team, 1991).

Signatories to the Flat-tailed Horned Lizard Conservation Agreement will not be required to compensate for the conservation activities defined on pages 43-48 of the Management Strategy. In addition, the establishment of the MAs with a 1 percent cap (Planning Action 2.2.1) on new surface disturbance represents compensation for agency activities that may disturb flat-tailed horned lizard habitat while limiting the activities of signatory agencies on their lands. The 1 percent cap on new surface disturbance within MAs will remain in effect for 5 years, after which the 1 percent cap will be reviewed by the MOG and amended, if necessary, based on more recent information. Each agency may permit disturbances of up to 1 percent of the land that the agency manages within the MA. Additions to the 242 Well Field by the Bureau of Reclamation and existing, on-going activities at Department of Defense facilities (for the Marine Corps Base - Yuma, these activities are described in the EIS for the Yuma Training Range Complex) do not count towards this 1 percent. If disturbance greater than the 1 percent cap is desired, the agency may request use of the 1 percent disturbance allowance of other signatory agencies in the MA.

All surface disturbance within each MA must be reported to the ICC, which will report to the MOG. Federal agencies will comply with the National Environmental Policy Act and the Council on Environmental Quality guidelines in regards to any further compensation. State agencies will follow procedures in their respective environmental laws, if any. If compensation beyond the level of contribution by an agency to an MA is necessary, the agency shall use the compensation formula to determine the amount of compensation. Compensation funds shall be targeted for habitat acquisition and enhancement in California and for habitat acquisition and accelerated implementation of management actions in Arizona.

If it is desirable or necessary to convert the compensation acreage to a monetary equivalent, the fee is multiplied by the estimated cost to purchase land. Each agency may develop its own estimate of land cost in accordance with standard policies and procedures. The agency to receive the compensation land or fee shall be determined through coordination among the permitting agencies. Typically, the compensation fee or land will go to the agency that predominantly manages the nearest management area. Each of the signatories shall maintain an accounting of all compensation funds paid and collected. These accountings shall be incorporated into the annual monitoring report. The Bureau of Land Management shall act as a clearinghouse for compensation funds and accounting data.

The multiplying factor (M) is computed as follows:

$$M = C + A + G + E + D$$

where the factors are evaluated as shown below:

C	Classification of habitat:	
	a) The lands disturbed are in a management area.	3
	b) The lands disturbed are outside a management area but within existing flat-tailed horned lizard habitat as determined by methods in Appendix 7. (Do not add the following factors.)	1
A	Adjacent habitat impacts:	
	a) Adjacent lands will not be affected.	0
	b) Adjacent habitat will receive direct or indirect deleterious impacts.	0.5
G	Growth inducing effects within flat-tailed horned lizard habitat:	
	a) The project will have no growth inducing effects.	0
	b) The project will have growth inducing effects.	0.5
E	Existing disturbance on site:	
	a) There is moderate to heavy existing habitat disturbance.	0
	b) There is little or no existing habitat disturbance.	1
D	Duration of effect:	
	a) The effects of the project are expected to be short term (< 10 years).	0
	b) The effects of the project are expected to be long term (> 10 years).	1

APPENDIX 5

List of Participants

Flat-tailed Horned Lizard Rangewide Strategy Working Group

Primary Workgroup participants are indicated by an "*." Others participated in one or more meetings, contributed written material, or provided review comments:

David Amme	California Department of Parks and Recreation, Off-Highway Motorized Vehicle Recreation Division (OHMVRD), Sacramento, California
Sherry Barrett	U. S. Fish and Wildlife Service, Carlsbad Field Office, Carlsbad, California
Pat Boykin	Bureau of Land Management, Yuma Field Office, Yuma, Arizona
*Richard Cabanilla	County of Imperial, Department of Planning and Building, El Centro, California
Mark Cochran	Dames and Moore (Consultants), Tuscon, Arizona
Major Joe Cox	United States Marine Corps Air Station, Range Management Department, Yuma, Arizona
*John Crow	United States Navy, El Centro Naval Air Facility, Public Works Department, El Centro, California
Dave Daniels	Bureau of Land Management, Yuma Field Office, Yuma, Arizona
Debbie DeBock	Bureau of Land Management, Yuma Field Office, Yuma, Arizona
*Bill Fisher	Department of the Navy, Southwest Division, San Diego, California

*Larry Foreman Bureau of Land Management, California Desert District,
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*Cliff Gruenberg Imperial County, Agriculture Commission, El Centro, California

Phil Hansen California Department of Fish and Game, Rancho Cordova, California

Mark Haynes United States Border Patrol, Yuma Sector Headquarters,
Yuma, Arizona

*Susanna Henry Bureau of Land Management, Yuma Field Office, Yuma, Arizona

Bob Henry Arizona Game and Fish Department, Yuma, Arizona

*Jeff Howland Arizona Game and Fish Department, Non-Game Branch,
Phoenix, Arizona

*Curt Itogawa California Department of Parks and Recreation,
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*Mark Jorgensen California Department of Parks and Recreation,
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Palm Springs Field Station, North Palm Springs, California

Sharon Keeney California Department of Fish and Game, Indio, California

Eric Mellink Centro de Investigacion Cientifica y de Educacion Superior de
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*Bryan Morrill United States Marine Corps Air Station,
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*Nancy Nicolai Bureau of Land Management, El Centro Resource Area,
El Centro, California

Xanthi Panos County of Yuma, Department of Development Services,
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Linden Piest Arizona Game and Fish Department, Yuma, Arizona

Robert Powell County of Imperial, Agricultural Commission, El Centro, California

Terry Reed Bureau of Land Management, El Centro Resource Area,
El Centro, California

Michael Remington Imperial Irrigation District, Imperial, California

Fred Rivera United States Navy, El Centro Naval Air Facility,
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*Jim Romero Bureau of Reclamation, Yuma Area Office, Yuma, Arizona

*Jim Rorabaugh U. S. Fish and Wildlife Service, Phoenix State Office,
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Les Weeks California Department of Parks and Recreation, OHMVRD,
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Gavin Wright Bureau of Land Management, Palm Springs-South Coast Resource
Area, Palm Springs, California

APPENDIX 6

Flat-tailed Horned Lizard Conservation Team - Role and Participants

Role in the Development of the Rangewide Management Strategy

The Flat-tailed Horned Lizard Conservation Team was formed as an advisory group to the Rangewide Strategy Working Group. The purpose of the Team was to ensure that the Strategy was based upon the best biological information available. The Team included most investigators who have conducted significant research on the species since 1978. The Team also included other experts in lizard ecology, herpetology, and conservation biology. The Team was charged with carrying out the following tasks:

1. Evaluate the need for and usefulness of conducting a population viability analysis for the flat-tailed horned lizard,
2. Prepare a population viability analysis, if appropriate,
3. Identify research needed to ensure effective conservation of the flat-tailed horned lizard,
4. Identify monitoring activities and protocols needed to guide and document implementation of the Rangewide Strategy.
5. Assist the Rangewide Strategy Working Group in the application of the principles of conservation biology to size and number of management areas and management needs within the management areas, and
6. Review and provide comments to the Working Group on drafts of the Rangewide Management Strategy.

In response to these tasks, the Team reviewed and commented on several drafts of the Rangewide Management Strategy, developed research priorities (see planning action 8), developed an interim survey protocol (Appendix 7), and prepared a population viability analysis ("Flat-tailed Horned Lizard, *Phrynosoma mcallii*, Population Viability Analysis: Implications for Conservation Strategies and Research Priorities").

Participants

- Wendy Hodges Department of Zoology, University of Texas,
Austin, Texas
- Mark Fisher University of California, Deep Canyon Desert Research Center,
Palm Desert, California
- Andy Holycross Zoology Department, Arizona State University,
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- Jeff Howland Arizona Game and Fish Department, Non-Game Branch,
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- Jeffrey Lovich National Biological Service, Palm Springs Field Station,
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- Philip Medica National Biological Service,
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- Allen Muth University of California, Deep Canyon Desert Research Center,
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- Jim Rorabaugh U. S. Fish and Wildlife Service, Phoenix State Office,
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- Frederick Turner Santa Monica, California
- Bernie Wone Department of Biological Sciences, San Jose State University,
San Jose, California
- Laurie Vitt Department of Zoology, University of Oklahoma,
Norman, Oklahoma

APPENDIX 7

Flat-tailed Horned Lizard Interim Survey Protocol

Introduction

Several different methods have been developed and used beginning in 1979 to determine relative abundance of the flat-tailed horned lizard. These methods have involved counting horned lizard scat and/or flat-tailed horned lizards during walking surveys (Turner and Medica 1982, Rorabaugh *et al.* 1987, BLM and CDFG 1990, Wone *et al.* 1991). All of these methods assume a correlation between relative abundance and scat and/or lizard counts; however, limited data exist to test this assumption. Research is currently underway on the Goldwater Range in Arizona to more rigorously test scat counts and other methods for determining relative abundance. Until that research is complete, the following interim survey protocol should be used. The objective of this protocol is to provide an assessment of flat-tailed horned lizard presence or absence at specific sites. Absence cannot be confirmed with this protocol, but for planning purposes negative survey results provide reasonable assurance that the species is not present. If the results indicate the species is present in a proposed project area, that project should be subject to appropriate mitigation and compensation.

Areas of Known Occurrence

Based on flat-tailed horned lizard locality records, resource and land management agencies should map areas of known flat-tailed horned lizard occurrence. In these areas, if major habitat alteration or conversion has not taken place since the species was detected, assume it is present.

Areas of Unknown Occurrence

Resource and land management agencies should map areas in which the presence of the species is in question. These areas would include potentially suitable habitat within or on the edge of the species' range in which the species is undocumented. Where the presence or absence of the flat-tailed horned lizard needs to be determined, the following surveys shall be conducted:

Scat and Horned Lizard Surveys

Walking surveys shall be conducted, including separate surveys for horned lizard scat and horned lizards. Transects shall consist of parallel, linear routes evenly-spaced across the survey area. Each route shall be traversed by a single worker. Scat and lizard survey routes shall be alternated. During surveys for scat, workers should focus on finding scat within a swath approximately 1.3 meters (50 inches) in width (but scat observed outside of the 1.3 meter transect swath shall also be noted). Scat between 5.5 and 10 mm in diameter that contain predominantly ant parts shall be considered horned lizard scat.

In large-scale survey efforts involving walking surveys, flat-tailed horned lizard encounter rates have averaged about one lizard per 10 hours of survey time (Hodges 1995, Wright 1993, Wone *et al.* 1991, Rorabaugh *et al.* 1987, Turner and Medica 1982). Thus, to provide a reasonable chance of finding a flat-tailed horned lizard, a minimum of 10 hours of survey effort shall be expended in each section (640 acres) surveyed. Survey effort in portions of sections shall be reduced proportionally (i.e., five hours of surveys in a half section). However, in areas of less than 247 acres (1 km²), no less than four hours of surveys shall be conducted.

Although investigators shall focus on finding either horned lizard scat or horned lizards, both scat and horned lizards shall be noted during either type of survey. All surveys shall be conducted from April through September. Lizard surveys shall be conducted when surface temperatures in the sun range from 35 to 50°C. Scat surveys shall not be conducted for at least 12 days after heavy rains, hailstorms, or strong winds of an intensity sufficient to move considerable amounts of sand across roads or that damage signs and trees.

Road Surveys

Flat-tailed horned lizards are often easier to detect on roadways than during walking surveys. Thus, road surveys shall also be conducted and shall consist of driving all roads in or near the survey area and recording any horned lizards observed. Workers should drive very slowly (no more than 10 miles per hour on unpaved roads) to allow detection of lizards. Road surveys should be conducted from April through September primarily in the morning when substrate temperatures adjacent to the road and in the sun range from 35 to 50°C.

Data Records

The location of transects, and each flat-tailed horned lizard, desert horned lizard, and horned lizard scat found during walking or road surveys shall be recorded on maps of scale no less than 1:24,000. Date and time observed, and (if captured) sex and snout-vent length

shall be recorded for each horned lizard observed. A 35-mm color photograph with the lizard filling at least half of the frame shall be taken of each horned lizard. A sample of horned lizard scat shall be collected. A qualitative assessment of the habitat should be conducted, including listing dominant perennial and annual plants, substrate types, and level of disturbance (note roads, OHV tracks, vegetation removal, etc.) Photographs can be used to document habitat characteristics. Survey dates, and beginning and ending times and surface temperatures of each survey shall be recorded. Any blocks of time not actually spent conducting the survey shall be subtracted from the total survey time. Data collected during walking surveys shall be recorded on the attached sample survey form. Survey results shall be detailed in a report to which all survey forms and data on lizards, including photographs and maps, shall be appended.

Required Authorizations and Qualifications

Only persons authorized by Arizona Game and Fish Department (in Arizona) or California Department of Fish and Game (in California) shall handle flat-tailed horned lizards. Only qualified investigators shall conduct walking surveys. Investigators shall have documented training and experience in surveying for flat-tailed horned lizards and their scat, or shall obtain training from an experienced investigator. Training for workers conducting scat counts shall consist of conducting surveys in the field for at least one full workday with an experienced investigator and demonstrating competency by counting at least 90 percent of the scat counted by the experienced investigator on a transect on which the trainee walks in front of the experienced investigator and on which at least 20 scat are observed by the experienced investigator. Investigators shall also be trained to distinguish flat-tailed horned lizards from desert horned lizards. Prior to any survey effort, a survey proposal shall be developed and approved by Arizona Game and Fish Department (in Arizona), California Department of Fish and Game (in California), and/or by the State or Federal agency that manages the lands to be surveyed.

Interpretation of Survey Results

The following criteria shall be used to derive presence or absence of the flat-tailed horned lizard from the survey results:

- Species present if:
1. Flat-tailed horned lizards are found; or
 2. Horned lizard scat is found and the desert horned lizard is unlikely to occur at the project site; or

3. Flat-tailed horned lizards have been found within two miles and the habitat is suitable and continuous between the project site and the site of the locality record.

Species absent if:

1. No scat or horned lizards are found; and
 - a. No flat-tailed horned lizards have been found within two miles of the project site; or
 - b. Flat-tailed horned lizard locality record(s) exist within two miles, but the habitat is not continuous or suitable between the locality and project set; or
2. Scat is found, no flat-tailed horned are found, but desert horned lizards occur or are likely to occur, and
 - a. No flat-tailed horned lizard locality record(s) exist within two miles of the project site, or
 - b. Flat-tailed horned lizard locality record(s) exist within two miles, but the habitat is not continuous or suitable between the locality and project set.

If, based on the above analysis, flat-tailed horned lizards are deemed present, locality records, scat occurrence, and descriptions of habitat shall be used to delineate the extent of occupied habitat.

APPENDIX 8

Overview of Techniques for Rehabilitation of Lands in Flat-tailed Horned Lizard Management Areas

The measures described below are intended to speed the rebuilding of soil structure and the restoration of the native flora and fauna. The techniques described below are not exhaustive. It is expected that new techniques will be developed, and the techniques described will be refined. For a summary of available literature, see Lovich (1993).

Alleviating soil compaction improves water infiltration and allows for plant root growth. Current methods for rehabilitating closed routes include ripping and scarifying compacted surfaces using farming implements such as tillers and disks pulled by tractors.

After the compacted surface is broken up, other implements can be used to smooth the rough surface and return it to its original contour. Among the equipment used are drag harrows with either spike-tines and flex-tines or link-chain harrows. Road berms may need to be broken up and leveled to visually eliminate the roadbed and to allow natural drainage of the area. Pitting or imprinting implements that can be pulled by a pickup truck or a tractor may also be used. A pitted soil surface allows plants to become more easily established by providing small areas where seeds and rainwater can be captured.

Planting native shrubs and/or seeding native plants to the prepared area may facilitate restoration. However, restoration in desert scrub communities is often unsuccessful, and restoration techniques are not well-studied in the very arid regions of the Sonoran Desert, where flat-tailed horned lizards occur (Bauder and Larigauderie 1991). Restoration at route intersections is especially important to discourage vehicle use. Planted seedlings also provide a barrier to traffic because plants will usually need to be protected by wire mesh cages for the first year.

When planting seedlings, a critical element of survival is the amount of root biomass the plant has when it is planted. The root biomass will keep the plant alive during the long hot summer. Some slow growing species, such as creosote bush (*Larrea tridentata*), may need to grow for one to two years before planting to acquire the necessary root mass to survive without watering. Other critical elements in successful restoration projects which use container stock include 1) spring planting, 2) proper conditioning at the nursery, 3) anti-herbivory cages around each plant, and 3) maintenance of the restoration project (Bauder and Larigauderie 1991). The National

Park Service at Joshua Tree National Park, Viceroy Gold Mine, and Organ Pipe National Monument has established very successful nurseries for desert plants.

Seeds from native plants can be collected nearby and broadcast over or placed in imprinted depressions in the newly prepared soil. Although irrigating may be possible in some small locations, the success of most seedings is dependent on unpredictable rainfall. Broadcast seeding is relatively inexpensive, and, if rainfall is fortuitous, plants may become established at a relatively high density and in a random pattern. Although the methods for seeding are varied, they may not accomplish the desired restoration. However, seeding techniques are less time consuming and much less expensive than planting seedlings and may, in some cases, be as effective. The success of seeding projects is increased if seeding occurs immediately before the rainy season, seeds are covered, a mulch is used, and seeds are collected near the restoration site (Bauder and Larigauderie 1991).

For additional copies of this report, contact:

**Dr. Larry D. Foreman
U. S. Department of the Interior
Bureau of Land Management
6221 Box Springs Blvd.
Riverside, CA 92507
(909) 697-5387**

APPENDIX C: DRAFT SEIR APPENDICES ERRATA

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*Appendix D-5:
Approved Jurisdictional Determination*

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
5900 LA PLACE COURT
CARLSBAD, CALIFORNIA 92008

February 8, 2021

SUBJECT: Approved Jurisdictional Determination

Luis Carrazco
United States Gypsum
3810 West Evan Hewes Highway
Imperial, California 92251

Dear Mr. Carrazco:

I am responding to your request (File No. SPL-2014-00216-SAS) received November 17, 2020, for an approved jurisdictional determination (AJD) for the U.S. Gypsum Company Plaster City Quarry Expansion project site (lat 38.00388°N, long -116.07249 °W) located near the town of Ocotillo Wells, Imperial County, California

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether or not the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on available information, I have determined that waters of the United States do not occur on the review area identified in the enclosed delineation map titled "United States Gypsum Quarry Expansion Aquatic Resource Delineation". The basis for our determination can be found in the enclosed Approved Jurisdictional Determination (JD) form.

This letter includes an approved jurisdictional determination for the U.S. Gypsum Company Plaster City Quarry Expansion project site. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDO
450 Golden Gate Ave.
San Francisco, CA 94102

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **April 8, 2021**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact me at (760) 602-4834 or via e-mail at Kyle.J.Dahl@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Kyle J. Dahl
Chief
San Diego and Imperial Counties Section

Enclosure(s)

.

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: United States Gypsum Company, Luis Carrazco	File Number: SPL-2014-00216-SAS	Date: FEBRUARY 8, 2021
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Attached is:	See Section below
--------------	-------------------

	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Kyle Dahl
U.S. Army Corps of Engineers
Los Angeles District

Phone: (760) 602-4834
Email: Kyle.J.Dahl@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.
San Francisco, CA 94102
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

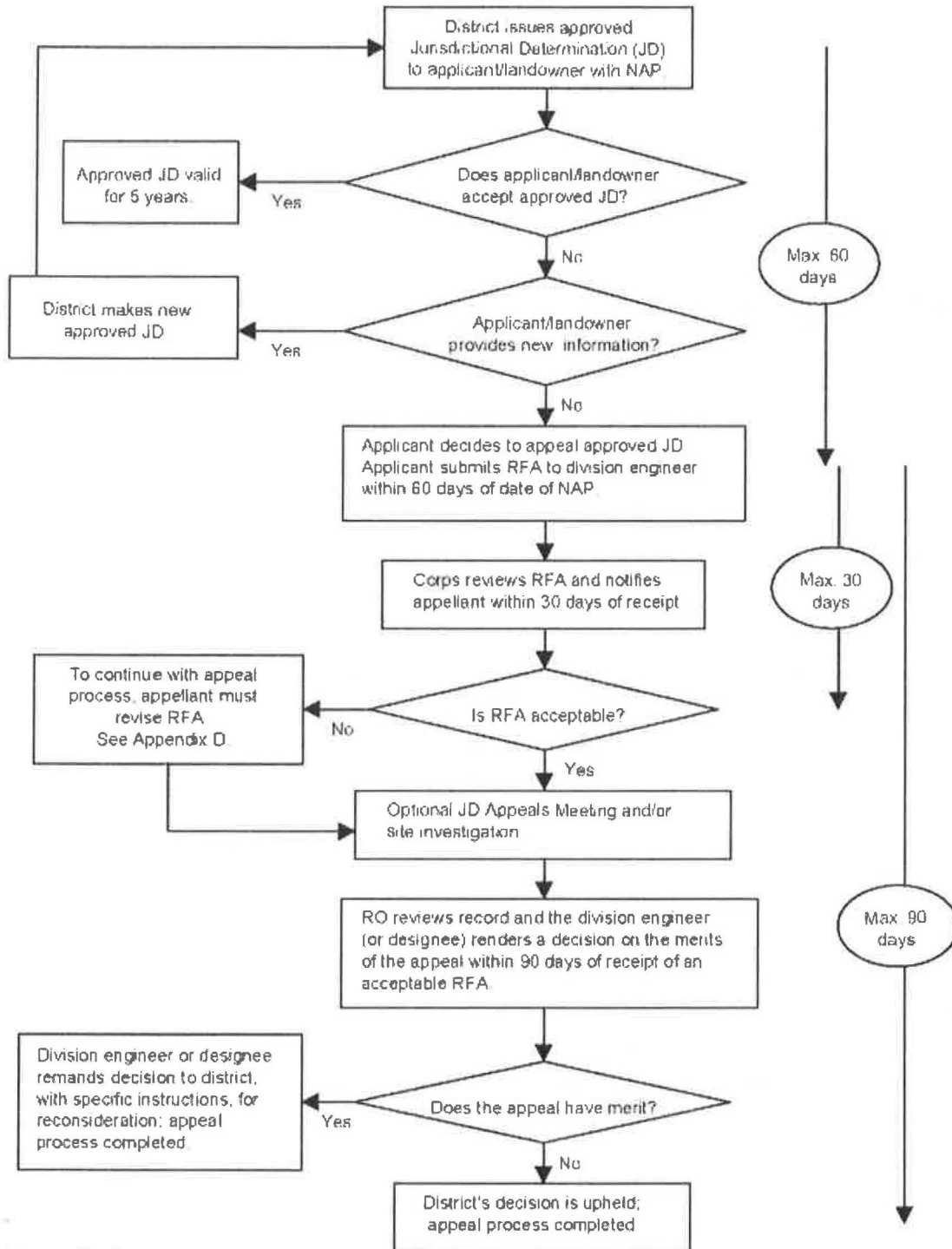
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

Administrative Appeal Process for Approved Jurisdictional Determinations



§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA*. The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal*. The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable*. An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

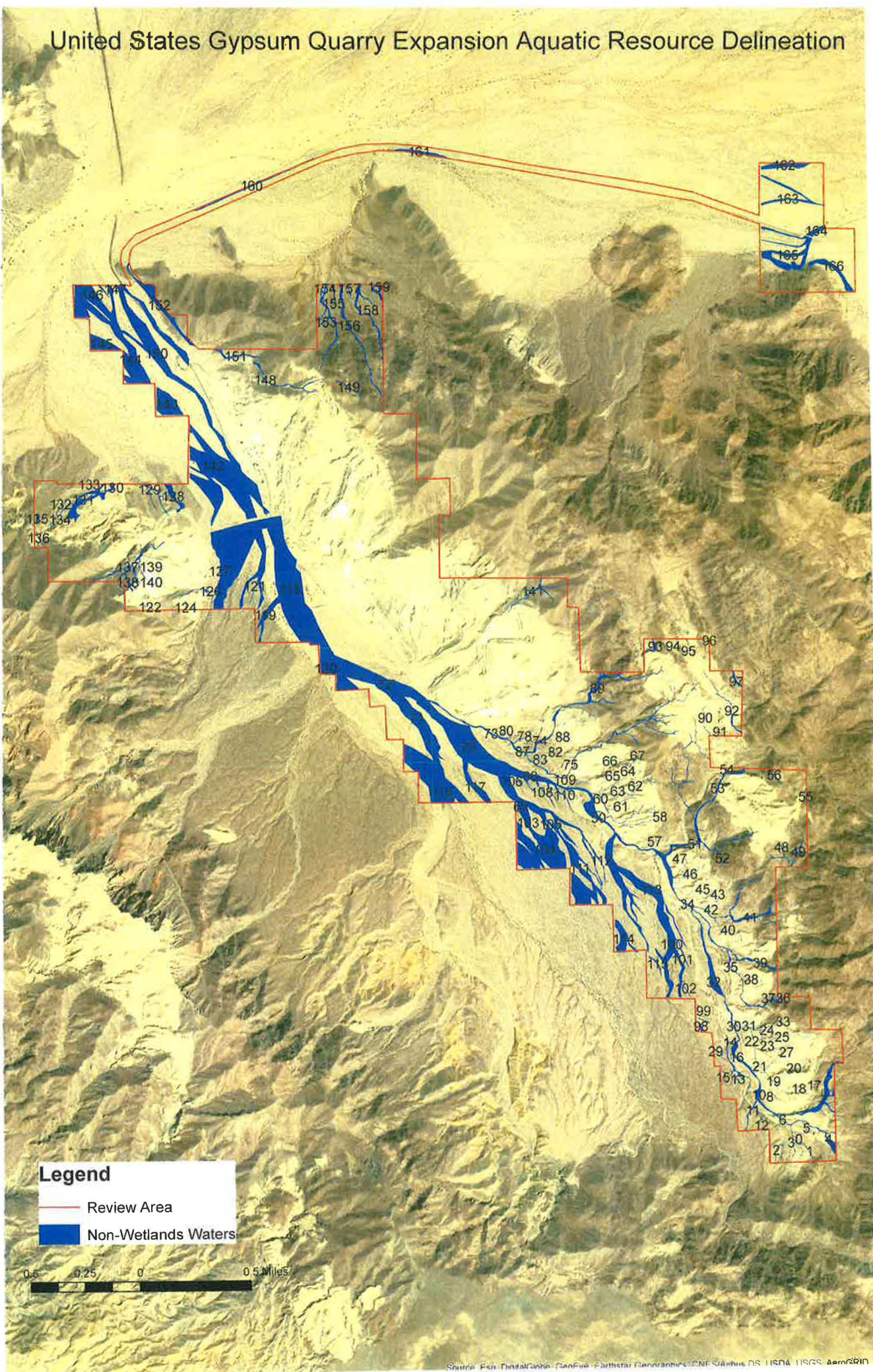
(7) A previously approved JD that has been superceded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.

United States Gypsum Quarry Expansion Aquatic Resource Delineation



Legend
— Review Area
— Non-Wetlands Waters

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*Appendix D-6:
Old Kane Springs Road Jurisdictional Delineation*

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MEMORANDUM

To: John Bowsher, Quarry Manager
From: Cody Schaaf, Biologist
Subject: Initial Jurisdictional Aquatic Resources Delineation Findings, Old Kane Springs Road Mitigation Site, San Diego County, California
Date: April 22, 2022
Attachment(s): Figures
Attachment A, Site Photos
Attachment B, Data Forms
Attachment C, Plant List
Attachment D, Wildlife List

1 Introduction

This memorandum provides the initial findings of a formal jurisdictional aquatic resources delineation of state waters on the proposed Old Kane Springs Road Mitigation (Mitigation) site in eastern San Diego County, California. The delineation defined aquatic resources potentially under the jurisdiction of California Department of Fish and Wildlife (CDFW) and Regional Water Quality Control Board (RWQCB). No wetlands or waters under the jurisdiction of the US Army Corps of Engineers (USACE) exist on the site. The results of this delineation are preliminary until verified by CDFW and RWQCB.

Attachment A shows photos of representative aquatic features and indicators observed on the site. All data forms collected on the site can be found in Attachment B.

Project Location

The proposed Mitigation site is generally located southwest of the community of Ocotillo Wells, California, south of Highway 78 and west of Split Mountain Road. The approximately 120-acre site spans privately owned desert open space along Old Kane Springs Road in the far eastern portion of San Diego County, California (Figure 1, Project Location). The approximate center of the Mitigation site is 33.122841° N and -116.179786° W (decimal degrees).

2 Regulatory Setting

California Department of Fish and Wildlife

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or other aquatic wildlife.

In Title 14 of the California Code of Regulations, Section 1.72, CDFW defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.”

In Title 14 of the California Code of Regulations, Section 1.56, CDFW defines “lake” to include “natural lakes or man-made reservoirs.” Diversion, obstruction, or change to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife requires authorization from CDFW by entering into an agreement pursuant to Section 1602 of the Fish and Game Code.

California Regional Water Quality Control Board

The State Water Resources Control Board has authority over wetlands through Section 401 of the Clean Water Act (CWA) and the Porter–Cologne Water Quality Control Act, as well as California Code of Regulations Section 3831(k) and California Wetlands Conservation Policy. The CWA was established to create a regulatory permitting program designed to address the discharge of pollutants into “waters of the United States,” which includes surface waters and water bodies as defined by U.S. Environmental Protection Agency regulations (e.g., 40 CFR Section 122.2). All “waters of the United States” in California are also “waters of the state” (defined by the Porter-Cologne Water Quality Control Act as “any surface water or ground water, including saline waters, within the boundaries of the state.” [Water Code Section 13050(e)]). However, not all waters of the state (e.g., ground water) are waters of the United States.

Clean Water Act – Section 401

The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state’s water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The Central Valley RWQCB (Region 5) has authority for Section 401 compliance in the project area. A request for certification is submitted to the regional board at the same time that an application is filed with the USACE. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) for impacts to waters of the state under the Porter-Cologne Act (described below).

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act established the State Water Resources Control Board and each RWQCB as the principal state agencies responsible for the protection of water quality in California. The Porter–Cologne Water Quality Control Act provides that “All discharges of waste into the waters of the State are privileges, not rights.” Waters of the state are defined in Section 13050(e) of the Porter–Cologne Water Quality Control Act as

“any surface water or groundwater, including saline waters, within the boundaries of the state.” All dischargers are subject to regulation under the Porter–Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The Central Valley RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction.

3 Methods

Desktop Review

Prior to conducting fieldwork, Dudek conducted a review of hydrology, soils and all previously mapped wetland, riverine, and riparian features associated with the Mitigation site. This included extensive desktop review of the survey area, historical land use, local and regional climactic data, and aerial photography (including historical aerials) with topographic configurations and vegetative signatures. These signatures may suggest the potential or presence of potentially jurisdictional waters at the time of the field survey. This information was evaluated by consulting the following available sources:

- 7.5-minute Harper Canyon and Borrego Mountain quadrangle maps (and surrounding quads) (USGS 2018)
- Historical aerials (Google Earth 2021)
- The web-based U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper (USFWS 2021)
- The National Hydrography Dataset (USGS 2021)
- UC Davis/NRCS SoilWeb (UC Davis/NRCS 2021)
- The latest state and federal regulatory definitions, guidance documents, and delineation manuals for state and federally regulated waters (including wetlands)

Field Delineation Methods

Dudek biologists Callie Amoaku, Cody Schaaf, Erin Bergman and Charles Adams conducted the delineation of the Mitigation site in September 2021 (Table 1). Photos (see Attachment A) and various data sheets were collected during the delineation (see Attachment B).

Table 1. Jurisdictional Delineation Schedule

Date	Personnel	Conditions
09/01/2021	Callie Amoaku, Cody Schaaf, Erin Bergman, Charles Adams	79-97°F, 0-60% cloud cover (cc), 0–3 mile-per-hour (mph) winds

The site was evaluated for evidence of fluvial indicators such as drainage swales, mud cracks, drift, wracking, cut banks, and sediment transportation and sorting. The extent of any potential aquatic resources was determined by mapping the areas with fluvial characteristics and topography showing evidence of consistent flow patterns and hydrologic connectivity. To assist in the mapping of non-wetland waters, data was collected using the USACE's *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (USACE 2008). Dudek also utilized the *Episodic Stream Indicator Data Sheet* of the California Energy

Commission (CEC) document *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (CEC 2014) to document several of the features within the study area. These data sheets can be found in Attachment B.

Since no hydrophytic vegetation and/or associated wetlands were present on the site, streambed and non-wetland waters mapping was the focus of the delineation. These features, hereafter referred to simply as “non-wetland waters,” were delineated from bank to bank, using the top of the bank as the boundaries of the channel.

Non-wetland waters were delineated using a Trimble R1 GNSS Receiver with Esri Collector on a mobile device. The widths of each non-wetland water were determined in the field according to the top of bank of each feature. OHWM data forms describing channel attributes across the site are included in Attachment B.

Dudek also mapped vegetation communities and land covers on the site during the delineation. Mapping was in accordance with the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) or the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). Community classifications were selected based on site factors, descriptions, distribution, and characteristic species present within an area. Visible disturbance factors were also be noted during vegetation mapping.

Dudek extensively documented site attributes, including OHWM indicators and vegetation communities, through photos. Attachment A shows photos of representative aquatic features and indicators observed on the site.

Post-Field Desktop Review and Hydrologic Modeling Methods

Desert landscapes often produce problematic OHWM indicators that can be inconsistent (over space and time) and difficult to delineate in the field (USACE 2008). To analyze and further test the initial results of the field delineation, Dudek conducted a hydrologic modeling exercise to ensure that the fluvial indicators observed in the field matched a simulated flow event across the site.

The methods used in the modeling are described in the San Diego County Hydrology Manual (2003). The National Resources Conservation Service (NRCS) hydrologic method, which is outlined in Section 4 of the Hydrology Manual, was used to develop the rainfall-runoff relationship. Hydraulic Engineering Center Hydrologic Modeling System (HEC-HMS) software developed by the U.S. Army Corps of Engineers (USACE) was used to model the precipitation-runoff process of the watershed's contributing flow to the site. Contributing watersheds were delineated using available topographic information and StreamStats, a web-based Geographic Information System (GIS) application developed by the USGS that provides analytical tools for water-resources planning and design purposes. HEC-HMS was utilized to calculate peak discharges for a 25-year rainfall event with a storm duration of 24-hours. Hydraulic Engineering Center River Analysis System (HEC-RAS) software was used to model the 25-year, 24-hour flood inundation areas, depths, and flow velocities at the site. Two-dimensional unsteady-flow modeling was performed to generate maximum flow areas, depths, and velocities. A flow area computational mesh was generated using a 1-meter Digital Elevation Model terrain map from 2016 downloaded from USGS. This flow area mesh was overlaid with the initial field delineation results to display the full potential extent of jurisdictional non-wetland waters on the site.

4 Results - Initial Findings

Soils

Federal and state soil mapping typically used to obtain data on soils underlying the site is not available within the boundaries of the Mitigation site (UC Davis/NRCS 2021). Soil series mapped immediately adjacent to the east of the site include Carrizo very gravelly sand, sloping gullied land, riverwash and Rositas loamy coarse sand (UC Davis/NRCS 2021). Carrizo very gravelly sand, riverwash and sloping gullied land are ranked as hydric soils by the Natural Resources Conservation Service (NRCS 2021).

Vegetation

Vegetation mapping performed by Dudek during the delineation indicated that two desert vegetation communities occur on the site: desert dry wash woodland and Sonoran mixed woody scrub. These communities are briefly described below. Their acreages on the site are presented in Table 2 below; Figure 2 displays these communities as they occur on the site.

Table 2. Vegetation Communities

Vegetation Communities	Acreage
Desert Dry Wash Woodland	69.08
Sonoran Mixed Woody Scrub	50.55
Total	119.63

Desert Dry Wash Woodland is described by Obebauer et al. (2008) as an open to dense, drought-deciduous riparian scrub woodland 30-60 feet tall that is typically dominated by ironwood (*Olneya tesota*), desert willow (*Chilopsis linearis*) or blue palo verde (*Parkinsonia florida*). It occurs in sandy, gravelly washes and arroyos of the lower Mojave and Colorado deserts. These washes typically have braided channels that are substantially rearranged with every surface flow event. On site, this community is dominated by ironwood and occupies the main alluvial fan/wash in the center of the site. Scattered creosote bush (*Larrea tridentata*) shrubs occur within this community, along with white bursage (*Ambrosia dumosa*).

Sonoran Mixed Woody Scrub is described by Obebauer et al. (2008) as a Colorado desert community with mixed woody species occurring on well-drained slopes and alluvial fans, usually at the base of mountains. The three most characteristic species of this community also dominate this vegetation community on site: creosote bush, white bursage and ocotillo (*Fouquieria splendens*). This community occurs outside of the well-defined alluvial fans/drainages on the site.

Comprehensive lists of the plant and wildlife species observed on the site within these habitats during the vegetation mapping and jurisdictional delineation are included in Attachments C and D.

Hydrology

Three watersheds totaling 20.4 square miles were determined to contribute flow to the site. Figure 3, Watershed Map, displays the watersheds directly contributing flow to the site which were utilized in the hydrologic modeling exercise. The USFWS NWI Mapper (USFWS 2021) shows a series of 4 small riverine features flowing east to west through a well-defined alluvial fan in the central portion of the site; this was confirmed during the site visit, where many low flow channels were observed moving through the main wash in the center of the site. Additional minor channels were braided through additional floodplain and limited upland areas outside of the main wash.

According to USFWS NWI mapping (USFWS 2021), riverine features on the site continue off site to the east and flow through the alluvial fan until it widens and becomes undefined near Split Mountain Road, approximately 4 miles east of the site; at this point, the features are no longer mapped. Hydrologic connectivity to downstream washes or known creeks and rivers is unclear, but it is likely that sheet flows or groundwater from these features that cross the site eventually drain into San Felipe Creek and later the Salton Sea, east of the site.

4.1 Non-Wetland Waters

Overall, the site landscape drains water in an easterly direction, mainly through a large alluvial fan/wash consisting of numerous braided low-flow channels and swales within the desert dry wash woodland and Sonoran mixed woody scrub vegetation communities; one large non-wetland water was mapped to include all active low-flow channels within their larger floodplain area that exhibits low topographic variability between active flow channels and floodplain terraces. The central floodplain/wash on the site was very well defined with cut banks and strong fluvial indicators within and between low-flow channels. The northern and southern floodplains were a mosaic of floodplain terraces containing numerous unvegetated low-flow channels within a floodplain of low topographic variability with minor and often inconsistent fluvial indicators.

Additionally, a few smaller non-wetland waters flowing through the upland Sonoran mixed woody scrub outside of larger floodplains were mapped adjacent to or connecting to the wash; these features had well-defined banks (albeit smaller and less pronounced than those associated with the larger wash) and stood out from the surrounding upland vegetation community. All aquatic features in the study area deemed to be potentially jurisdictional, confirmed through both the field delineation and associated hydrologic modeling, are displayed in Figure 4, Aquatic Resources Map.

In general, nearly all the field-mapped non-wetland water and low-flow channel boundaries (mapped based on evidence of flow and hydrology indicators, such as bed and bank, drift deposits, sediment sorting, and/or mud cracks) fell within the maximum flow areas generated through the hydrologic model. The northern and southernmost portions of the site, outside of the central wash, showed more inconsistent and less-pronounced fluvial and OHWM indicators in the field; hydrologic modeling was used to refine the extent of non-wetland water boundaries within the Mitigation site. Figure 4 displays the boundaries of hydrologically modeled and field-verified non-wetland waters on the site and likely corresponds to accurate surface flow areas across the site during a significant runoff event.

Non-wetland waters on the site are ephemeral, meaning they only flow during storm events. These features are likely regulated by RWQCB and CDFW as waters of the state.

4.2 Swales

Several potential swale features without well-defined banks may present on site; these include areas of occasional surface sheet flow with slight topographic depressions and occasional, but often inconsistent, fluvial indicators that may or may not be subject to regulation by any of the agencies. These features were not mapped under the scope of this delineation but typically fell within the main floodplains of the mapped extent of non-wetland waters (Figure 3). Representative photos of these potential swale features within the larger floodplains are provided in Attachment A.

4.3 Potential Jurisdictional Aquatic Resources Summary

Table 3 below summarizes the results of the jurisdictional delineation and the areas of potential jurisdictional aquatic resources observed and mapped on the Project site.

Table 3. Potential Jurisdictional Aquatic Resources

Type	Jurisdiction	Acres/Linear Feet
Non-Wetland Waters of the State (Within Alluvial Fan/Wash)	CDFW and RWQCB	88.5/13,950
Total Potential Jurisdictional Aquatic Resources		88.5/13,950

5 Summary

The site supports 88.5 acres (13,950 linear feet) of non-wetland waters of the state in the form of an expansive desert wash and several isolated channels braided through the surrounding upland habitats. These non-wetland waters likely fall under the jurisdiction of CDFW and RWQCB given the well-defined fluvial indicators they display. The results of this delineation are preliminary until verified by CDFW and RWQCB.

6 References

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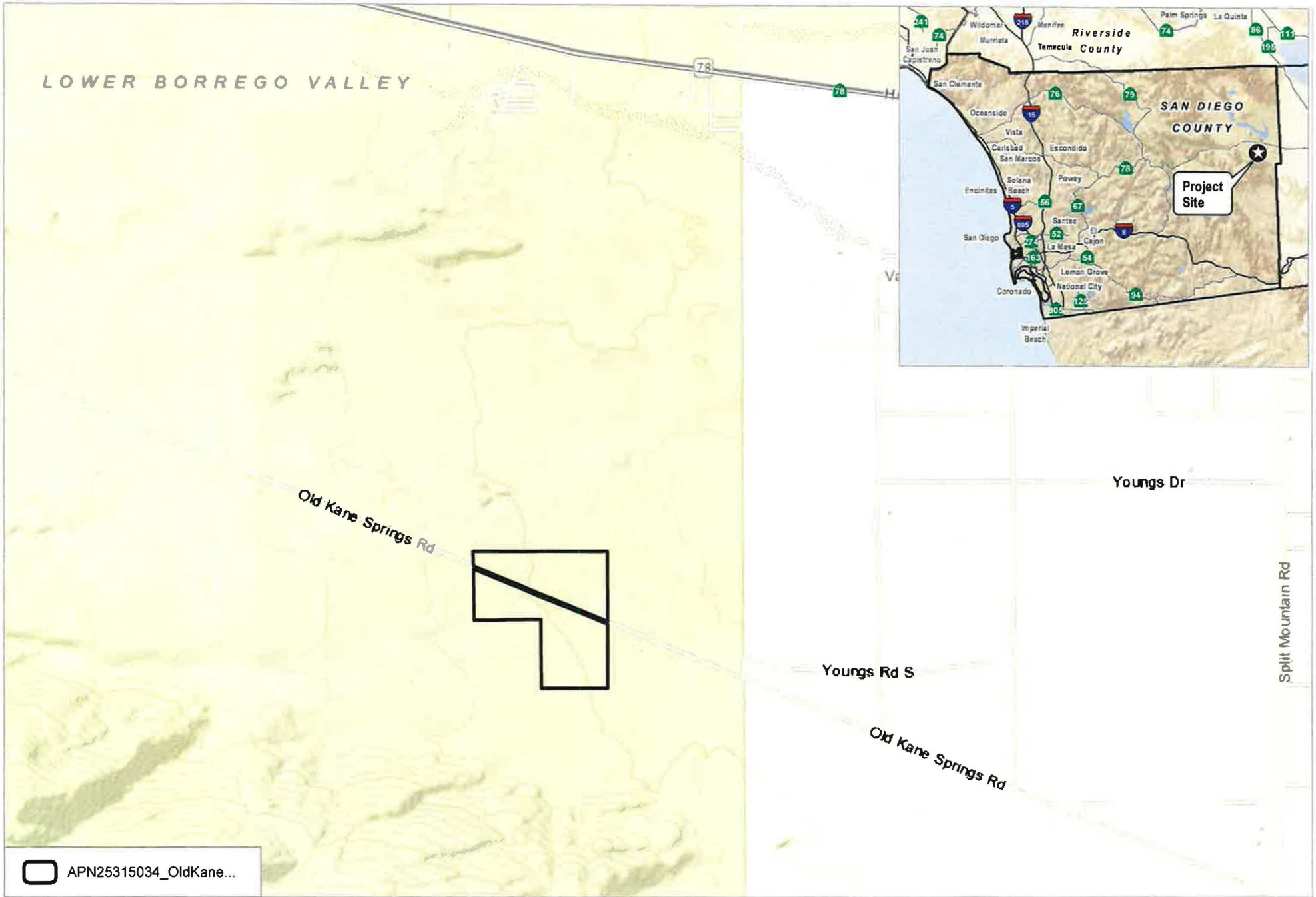
UC Davis/NRCS (University of California, Davis, California Soil Resource Lab; University of California, Division of Agriculture and Natural Resources; Natural Resources Conservation Service). 2021. SoilWeb. University of California; USDA-NRCS. <https://data.nal.usda.gov/dataset/soilweb>.

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<https://www.usgs.gov/core-science-systems/ngp/tnm-delivery/topographic-maps>.

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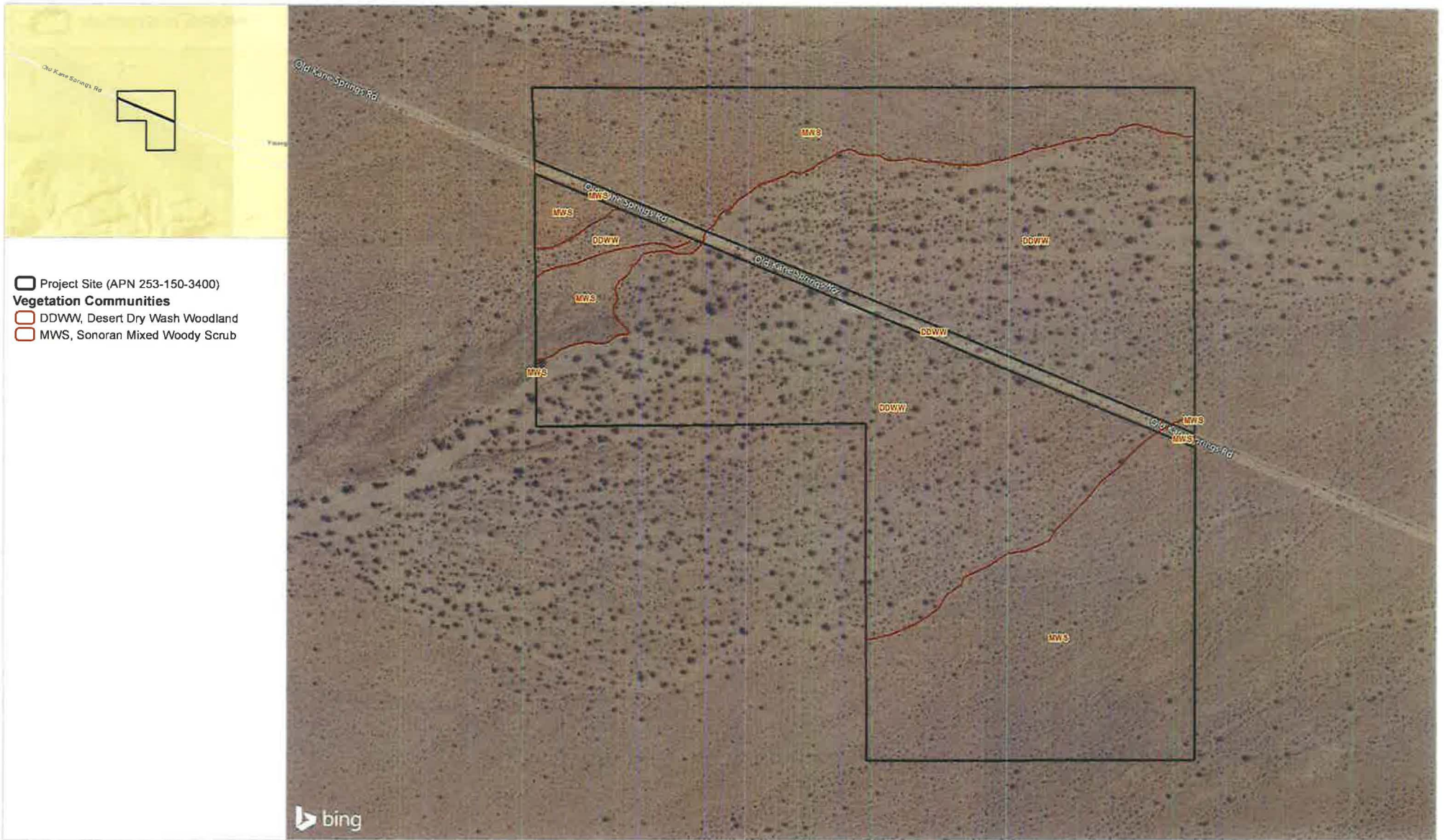
SOURCE: USGS 7.5-Minute Series Harper Canyon Quadrangle



FIGURE 1

Project Location

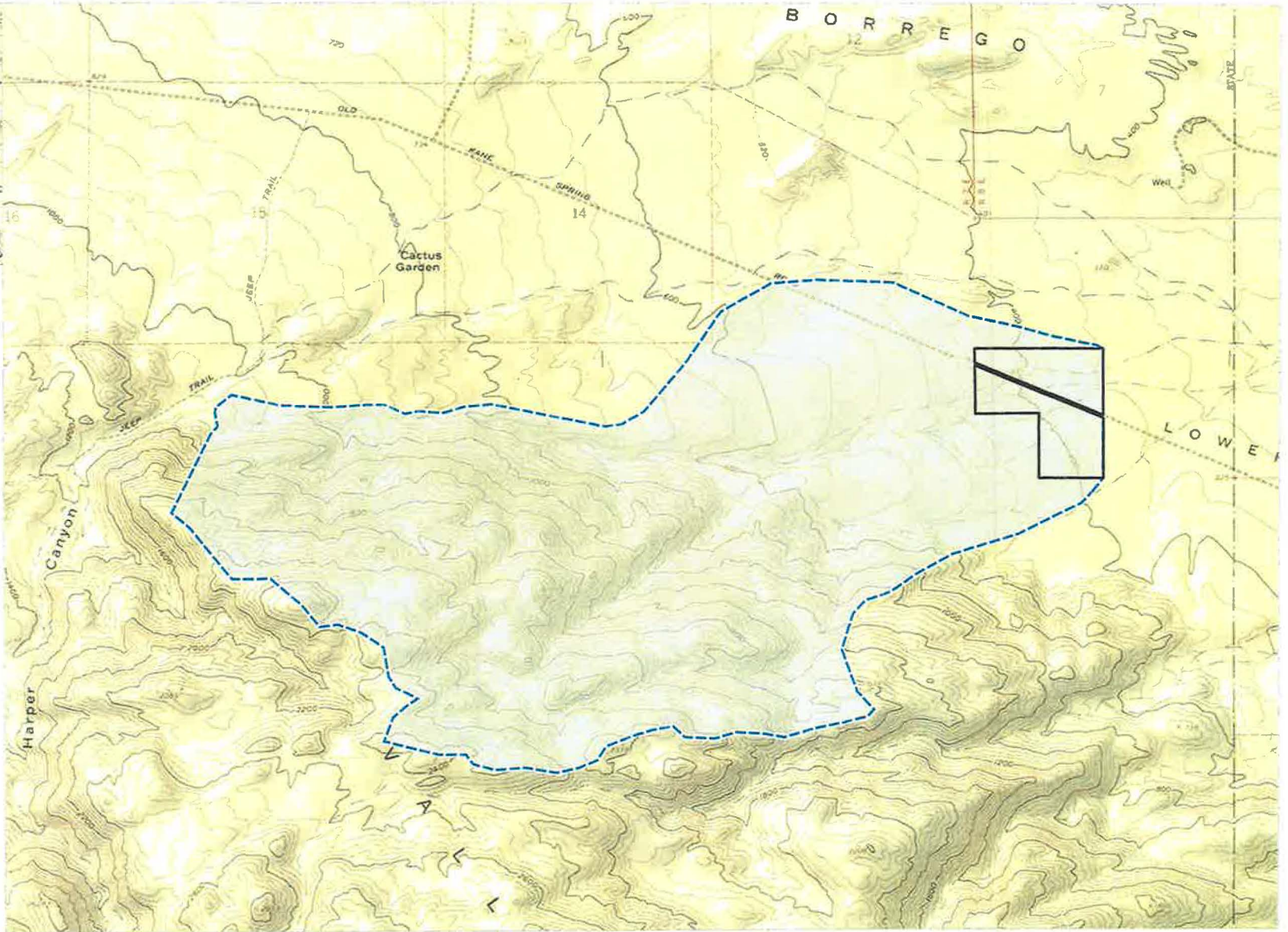
Initial Jurisdictional Aquatic Resources Delineation Findings for Old Kane Springs Road Mitigation Site



© 2012 Microsoft. All rights reserved. Bing Maps. Version 7.0.0.0.

FIGURE 2
Vegetation Map

Water: An electrical pump draws water from the Colorado River through Old Kane Springs Road Mitigation...



- Project Site (APN 253-150-3400)
- HUC-12 Watershed Limits
- Project Site Watershed Limits

FIGURE 3
Watershed Map

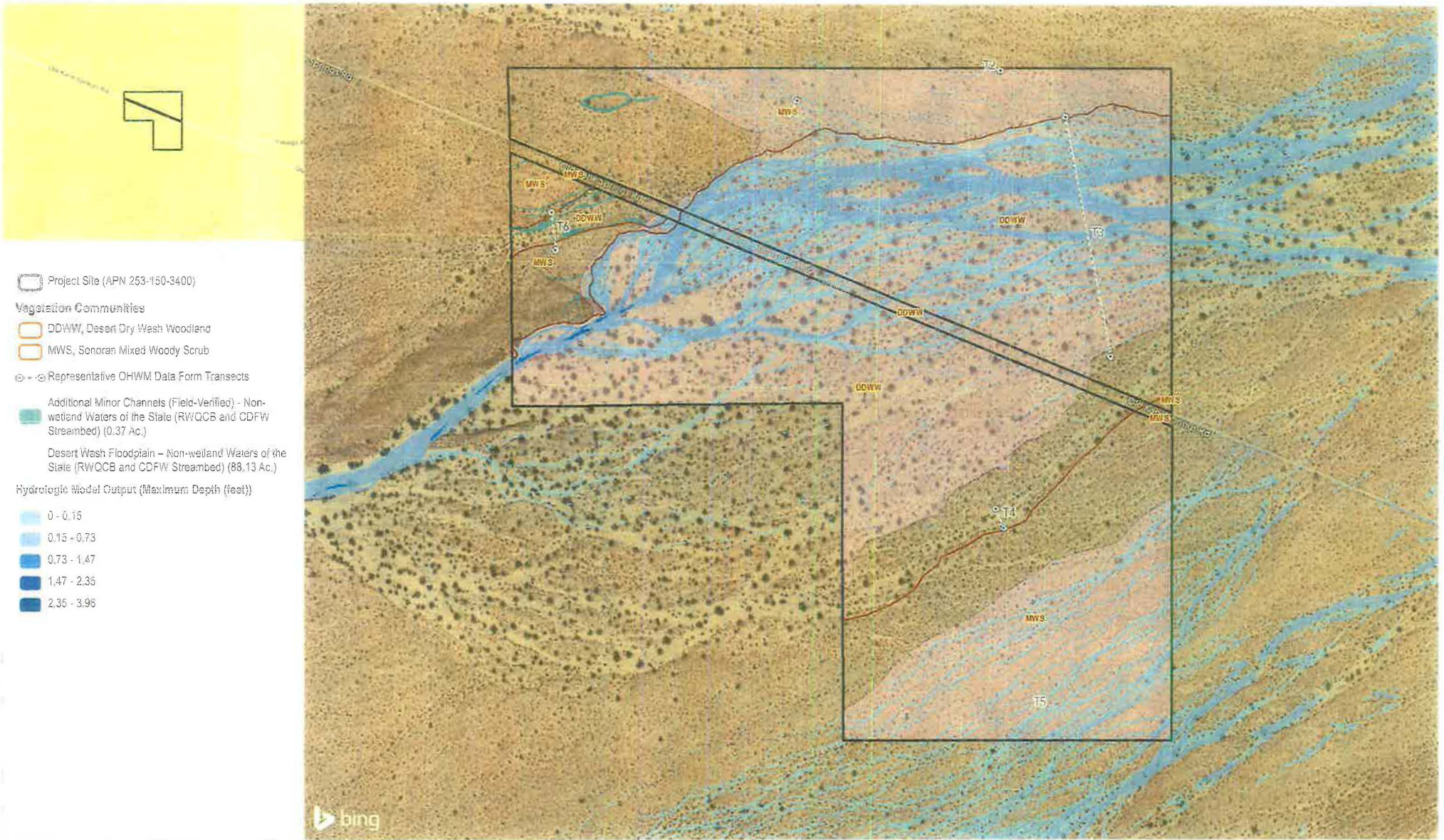


FIGURE 4
Aquatic Resources Map

Attachment A

Site Photos

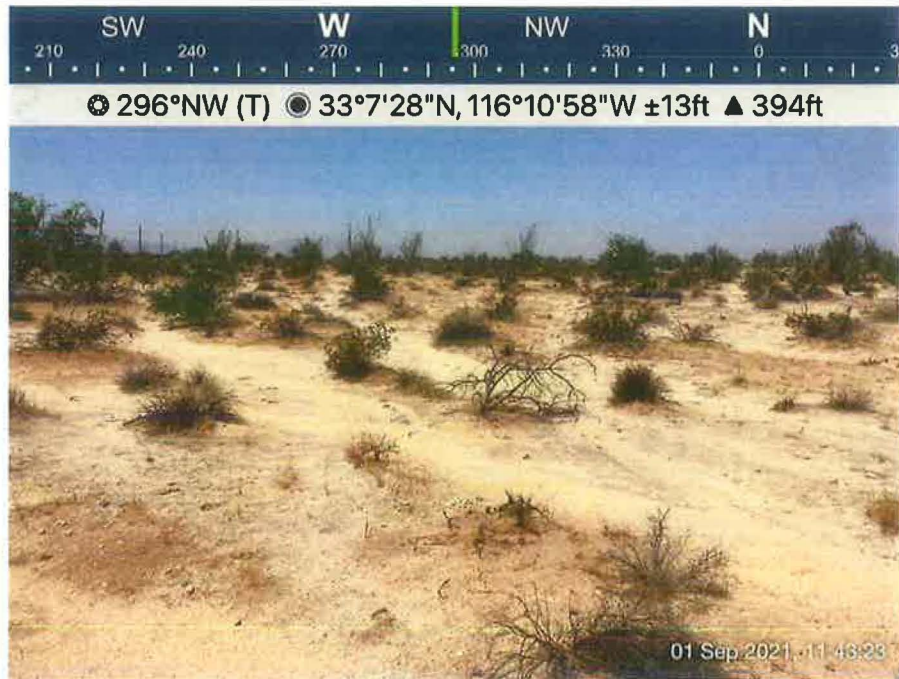


Photo 1: Representative photo showing minor low-flow channels braided throughout desert vegetation the northern portion of the site. This area is considered a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 2: Additional minor channels braided throughout the northern portion of the site. This area is considered a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 3: The northern edge of the central wash is shown here with clear cut banks. Minor channels from the northern floodplain are shown in the right side of the photo entering the central wash.



Photo 4: The southern boundary of the central wash is less well defined, but clear differences in the cover of creosote bush can be seen; to photo right and outside of the wash, much higher cover of creosote bush and cacti is observed.



Photo 5: The middle of the central wash is dominated by ironwood trees and contains many braided low flow channels with strong fluvial indicators. Ripples and flow patterns in the sand can be seen in this photo as well as exposed rocks at low flow channel edges.

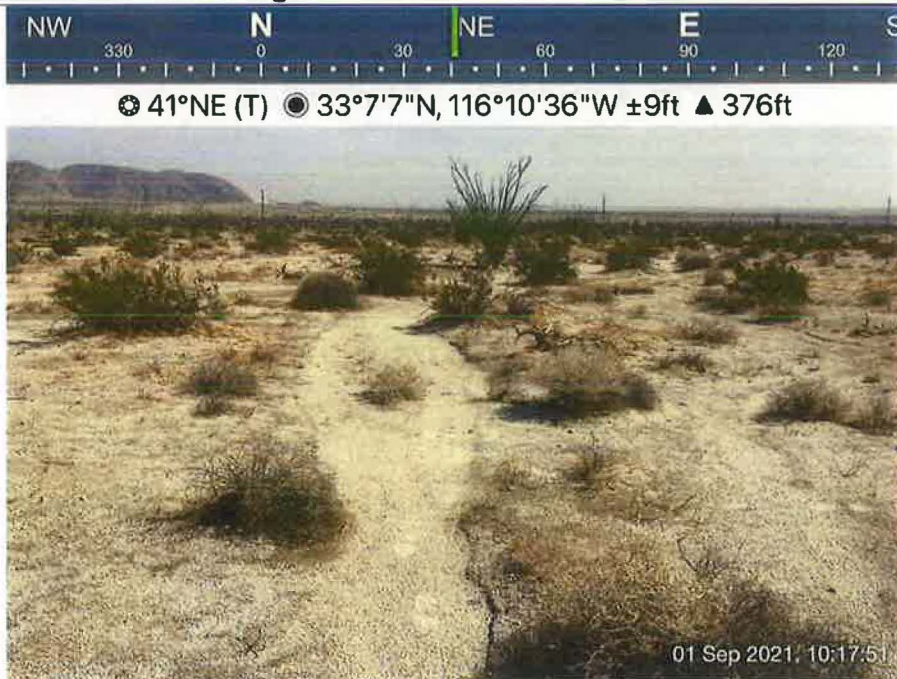


Photo 6: Minor channels with small cut banks and other fluvial indicators are present in certain areas of the southern portion of the site. Channels are braided together and considered to be a desert wash floodplain/non-wetland water given the numerous channels present and low topographic variability.



Photo 7: Looking across Transect 1 (T1) where an OHW form was taken across a potential swale/weakly defined low-flow channel feature within the larger desert wash floodplain in the northern portion of the site.



Photo 8: Looking across Transect 2 (T2) where an OHW form was taken across a low-flow channel feature with small but defined banks within the larger desert wash floodplain in the northern portion of the site.



Photo 9: Looking across Transect 3 (T3) where an OHW form was taken within the main desert wash/floodplain feature with many low-flow channels showing evidence of ripple marks in the sand, small cut banks and a much higher density of ironwood trees. The entire wash, including its many adjacent low-flow channels are considered one large non-wetland water.



Photo 10: Looking across Transect 4 (T4) where an OHW form was taken across an unvegetated upland area showing no evidence of banks/indicators of flow despite the appearance of a drainage on aerial imagery.



Photo 11: Looking across Transect 5 (T5) where an OHW form was taken across a low-flow channel feature with small but defined banks within the broader desert wash floodplain in the southern portion of the site.



Photo 12: Looking across Transect 6 (T6) where an *Episodic Stream Indicator Data Sheet* was taken across an desert area with several small, isolated non-wetland water features braided throughout the landscape.

Attachment B

Data Forms

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

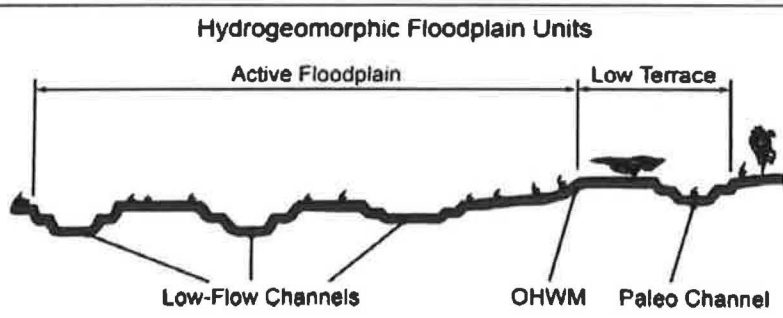
Project: Old Kane Springs Rd Mitigation Site Date: 9/1/21 Time: n/a
 Project Number: 13581.04 Town: Ocotillo Wells State: CA
 Stream: None - Potential Swale Photo begin file#: Photo end file#:
 Investigator(s): Lody Schaaf, Callie Amaku

Y / N Do normal circumstances exist on the site?
 Y / N Is the site significantly disturbed?
 Location Details: Open space / desert off Old Kane Springs Rd.
 Projection: Datum: WGS84
 Coordinates: 33.125156, -116.180746

Potential anthropogenic influences on the channel system:
 OHV, Shooting, and Recreation.

Brief site description: Upland desert habitat adjacent to large alluvial fan. Some potential swales throughout

Checklist of resources (if available):
 Aerial photography Dates: 2021
 Topographic maps
 Geologic maps
 Vegetation maps
 Soils maps
 Rainfall/precipitation maps
 Existing delineation(s) for site
 Global positioning system (GPS)
 Other studies
 Stream gage data Gage number:
 Period of record:
 History of recent effective discharges
 Results of flood frequency analysis
 Most recent shift-adjusted rating
 Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

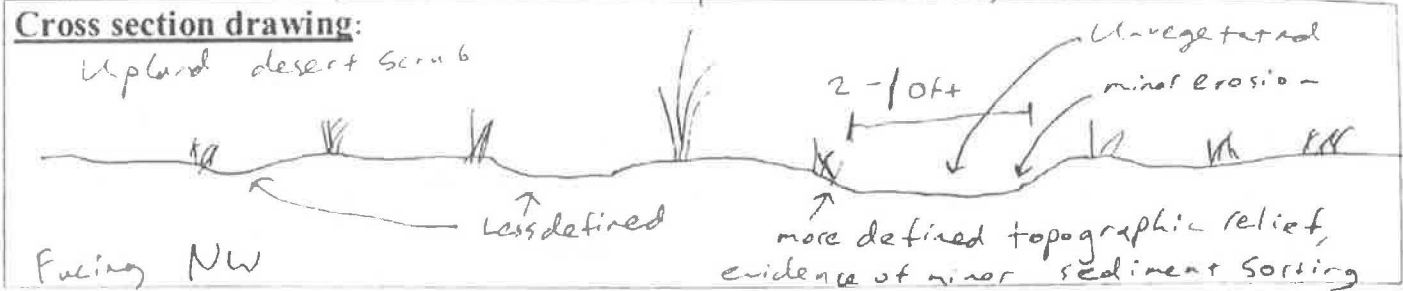


- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW M:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHW M and record the indicators. Record the OHW M position via:

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Project ID: 13581.04 Cross section ID: T1 Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: T1

Indicators:

- Change in average sediment texture - minor change to lighter, finer grained sand
- Change in vegetation species
- Change in vegetation cover - many upland areas also unvegetated
- Break in bank slope
- Other: _____
- Other: _____

Comments: minor change in sediment texture and less vegetated than adjacent areas with shrubs, Not strong indicators, potential swale.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

Potential braided swale

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand to fine sand
Total veg cover: 35 % Tree: 5 % Shrub: 20 % Herb: 10 %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: Potential swale - very inconsistent and many less defined "braids" with similar features exist across the upland portions of the site

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Old Kane Springs Rd mitigation	Date: 9/1/21	Time: n/a
Project Number: 1358104	Town: Ocotillo Well,	State: CA
Stream: Alluvial fan	Photo begin file#:	Photo end file#:
Investigator(s): Lady Schauf, Callie Anonku		

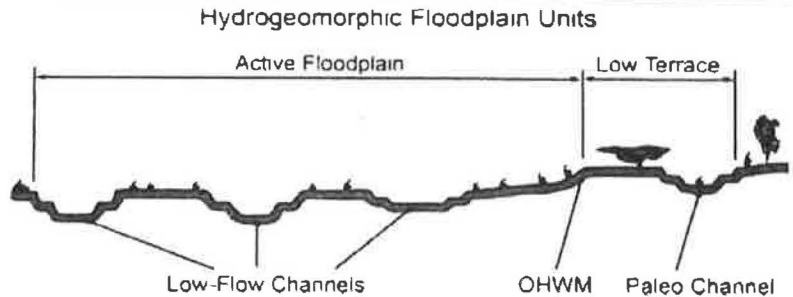
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?	Location Details: Desert + alluvial fan
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Projection:
	Datum: WGS84
	Coordinates: 33 125499, -116.178130

Potential anthropogenic influences on the channel system:
 See T 1

Brief site description: minor channel in upland adjacent to wash

Checklist of resources (if available):

<input checked="" type="checkbox"/> Aerial photography Dates: 2011	<input type="checkbox"/> Stream gage data Gage number:
<input checked="" type="checkbox"/> Topographic maps	Period of record:
<input checked="" type="checkbox"/> Geologic maps	<input type="checkbox"/> History of recent effective discharges
<input checked="" type="checkbox"/> Vegetation maps	<input type="checkbox"/> Results of flood frequency analysis
<input checked="" type="checkbox"/> Soils maps	<input type="checkbox"/> Most recent shift-adjusted rating
<input checked="" type="checkbox"/> Rainfall/precipitation maps	<input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event
<input type="checkbox"/> Existing delineation(s) for site	
<input checked="" type="checkbox"/> Global positioning system (GPS)	
<input type="checkbox"/> Other studies	

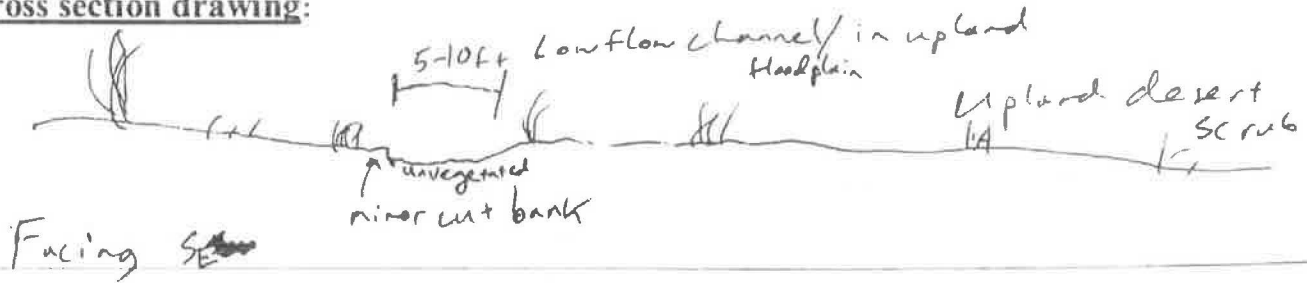


- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHWM and record the indicators. Record the OHWM position via:

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Project ID: 1358104 Cross section ID: T2 Date: 9/1/21 Time:

Cross section drawing:



OHW

GPS point: T2

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments: Finer, lighter sand in small channel, Unvegetated, and small cut banks showing erosion.

Floodplain unit:

- Low-Flow Channel
- Active Floodplain
- Low Terrace

GPS point: _____

minor channel comprised of both Low flow channel and floodplain

Characteristics of the floodplain unit:

Average sediment texture: Coarse - Fine sand
Total veg cover: 01% Tree: _____% Shrub: _____% Herb: 1% (in channel)

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: minor banks and clear surface / topographic relief.

T3
Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Old Kane Springs Rd
 Project Number: 13581.04
 Stream: Alluvial Fan/Wash
 Investigator(s): Cody Schaaf, Callie Amante

Date: 9/1/21
 Town: Ocotillo Wells
 Photo begin file#:
 Time:
 State: CA
 Photo end file#:

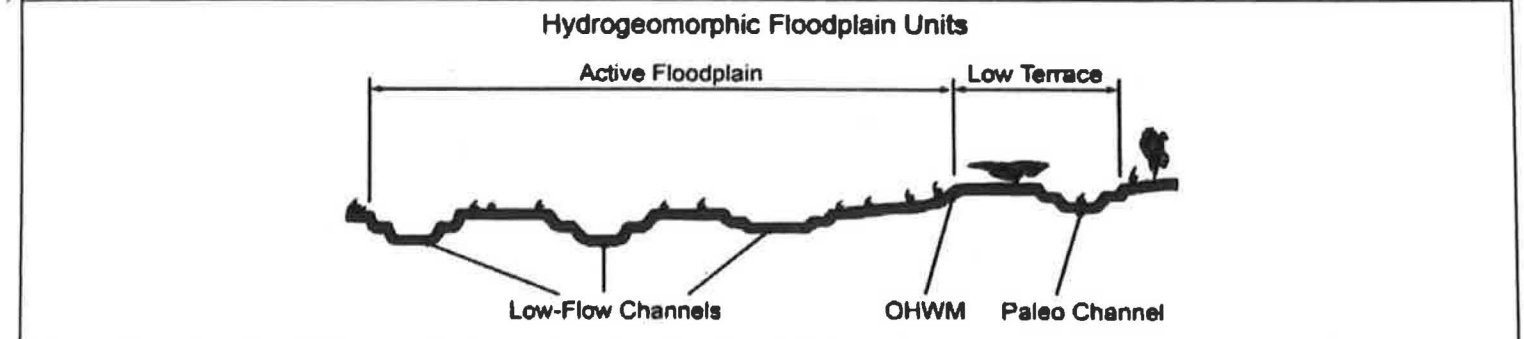
Y / N Do normal circumstances exist on the site?
 Y / N Is the site significantly disturbed?

Location Details: In desert wash / Alluvial Fan.
 Projection: Datum: NGS 84
 Coordinates: 33.123663, -116.176950

Potential anthropogenic influences on the channel system:
 See T 1

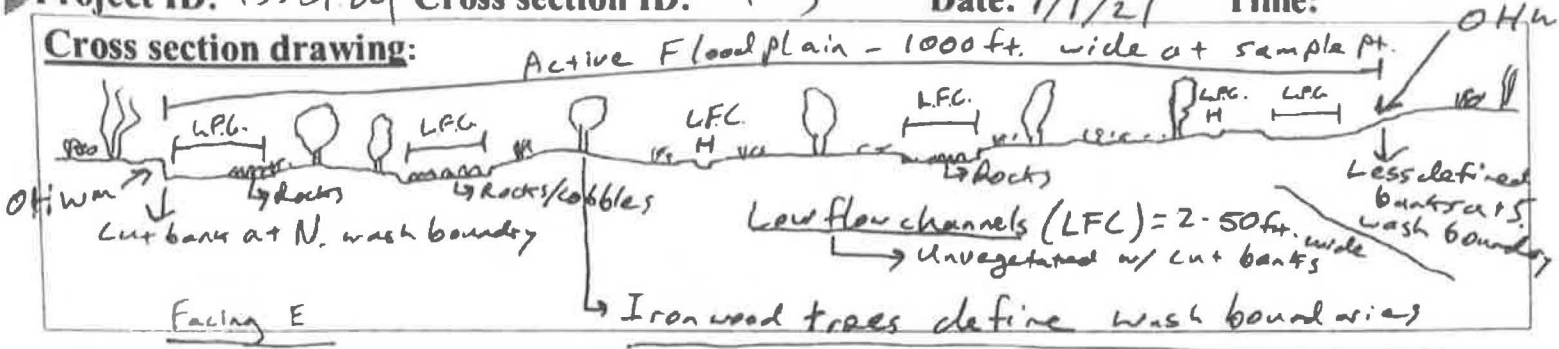
Brief site description: Transect taken across large, wide desert wash with Iron wood (Olneya sp.) dominating vegetation layer. many low flow channels within wash boundaries. Wash mapped bank to bank and according to presence of Iron wood.

- Checklist of resources (if available):
- Aerial photography
 Dates: 2021
 - Topographic maps
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data
 Gage number:
 Period of record:
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event



- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHWM and record the indicators. Record the OHWM position via:
 - Mapping on aerial photograph
 - Digitized on computer
 - GPS
 - Other:

Cross section drawing:



OHWM

GPS point: see wash boundaries on map

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments: In wash, veg. cover becomes dominated by Ironwood trees. Break in bank slope on N. side of wash well defined. Rocks and cobbles become much more common in and around low flow channels. Ironwoods on terraces within floodplain.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: Not mapped

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand w/ some cobbles
 Total veg cover: 30 % Tree: _____ % Shrub: _____ % Herb: 30 %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: Cobbles exposed
- Other: _____
- Other: _____

Comments: Ripples, defined banks, areas of exposed cobbles and clear surface/topographic relief present in low flow channels.

Project ID: 13581.04 Cross section ID: T3 Date: 9/1/21 Time:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: T3

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand
Total veg cover: ~~30~~ 30% Tree: ~~20~~ 20% Shrub: ~~20~~ 20% Herb: ~~30~~ 5%
Community successional stage: 10 15

- NA Mid (herbaceous, shrubs, saplings)
- Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks Soil development
- Ripples Surface relief
- Drift and/or debris Other: Presence of Ironwood
- Presence of bed and bank Other: _____
- Benches Other: _____

Comments: Ripples, benches, banks, and ironwoods present and defining the wash floodplain.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%
Community successional stage:

- NA Mid (herbaceous, shrubs, saplings)
- Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks Soil development
- Ripples Surface relief
- Drift and/or debris Other: _____
- Presence of bed and bank Other: _____
- Benches Other: _____

Comments:

T4

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

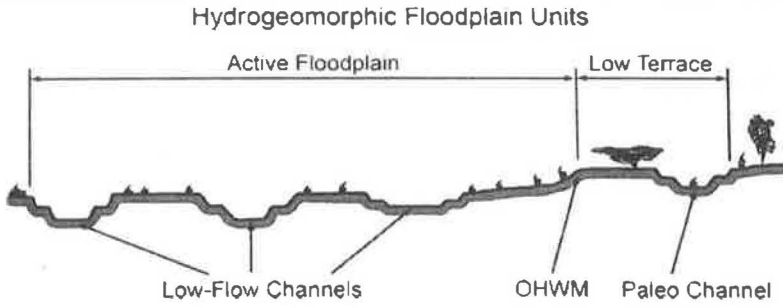
Project: *Old Kane Springs Rd Mitigation* Date: *9/1/21* Time: *n/a*
 Project Number: *13581.04* Town: *Ocotillo Wells* State: *CA*
 Stream: *None* Photo begin file#: Photo end file#:
 Investigator(s): *Cody Schaaf, Callie Anokun*

Y / N Do normal circumstances exist on the site? Location Details: *Upland desert scrub adjacent to alluvial fan*
 Y / N Is the site significantly disturbed? Projection: Datum:
 Coordinates: *33.120603, -116.178149*

Potential anthropogenic influences on the channel system:
See T1. Road may exist through this transect

Brief site description: *Base ground adjacent to desert wash in upland scrub. Looks like part of wash on aerial imagery*

- Checklist of resources (if available):
- Aerial photography Dates: *2021*
 - Topographic maps
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data Gage number: Period of record:
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event



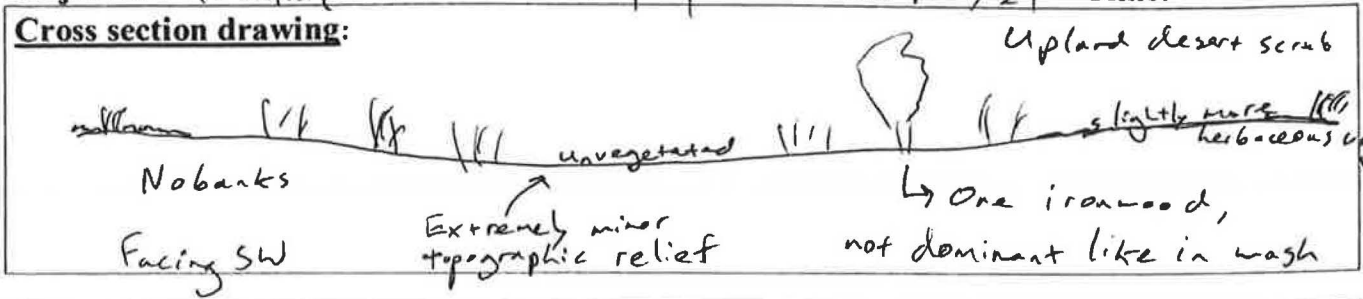
- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
- Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 - Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 - Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - Record the floodplain unit and GPS position.
 - Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - Identify any indicators present at the location.
 - Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 - Identify the OHWM and record the indicators. Record the OHWM position via:

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Project ID: 1358.04 Cross section ID: T4

Date: 9/1/21 Time:

Cross section drawing:



OHWM

GPS point: None

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover - Not an OHWM
- Break in bank slope
- Other: _____
- Other: _____

→ Sediment same as in upland here

Comments: Slightly connects to wash on aerial but this area only ~~shows~~ shows less vegetation cover on ground between shrubs. No clear sign of true fluvial indicators (i.e. banks). Only one or two ironwoods - not significant

as adjacent wash.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: None

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

- Community successional stage:
- NA
 - Early (herbaceous & seedlings)
 - Mid (herbaceous, shrubs, saplings)
 - Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments:

None. If anything, this is an overflow channel for wash that only sees flows in extreme rain events (i.e. 100+ year flooding).

T5

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

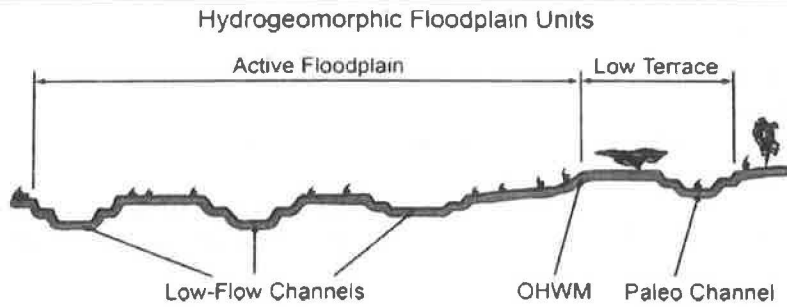
Project: ~~XXXXXXXXXX~~ Old Kane Springs Rd Date: 9/1/21 Time: n/a
 Project Number: 13581.04 Town: Ocotillo Wells, State: CA
 Stream: Alluvial fan Photo begin file#: Photo end file#:
 Investigator(s): Cody Schaub, Callie Amato

Y / N Do normal circumstances exist on the site? Location Details: SE portion of site in upland desert scrub
 Y / N Is the site significantly disturbed? Projection: Datum:
 Coordinates: 33.118566, -116.177727

Potential anthropogenic influences on the channel system:
 See T1

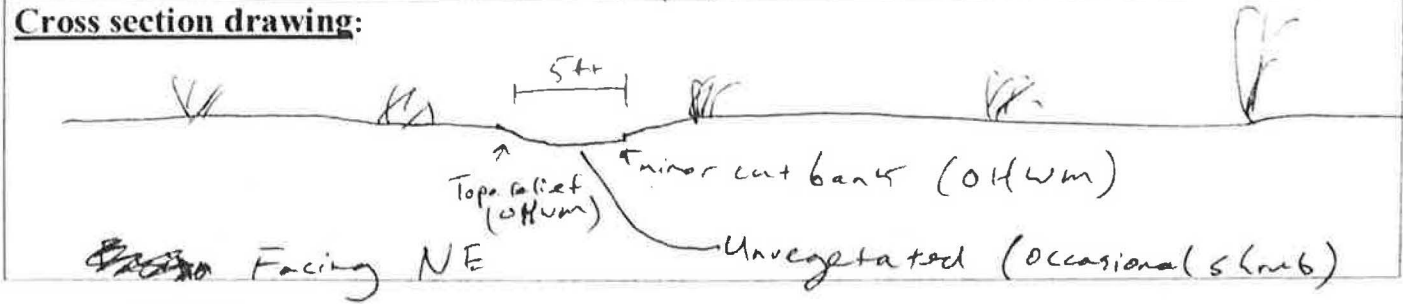
Brief site description: Small channel in upland desert scrub on SE portion of site. Similar to T2.

- Checklist of resources (if available):
- Aerial photography Dates: 2021
 - Topographic maps
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data Gage number: Period of record:
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event



- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHWM and record the indicators. Record the OHWM position via:
 - Mapping on aerial photograph
 - GPS
 - Digitized on computer
 - Other:

Project ID: B58104 Cross section ID: T5 Date: 9/1/21 Time:



OHWM

GPS point: T5

Indicators:

<input checked="" type="checkbox"/> Change in average sediment texture	<input checked="" type="checkbox"/> Break in bank slope
<input type="checkbox"/> Change in vegetation species	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Change in vegetation cover	<input type="checkbox"/> Other: _____

Comments: Minor but defined and consistent bank erosion, unvegetated channel bottom and finer sand.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: see Map

Characteristics of the floodplain unit:

Average sediment texture: Fine to coarse sand

Total veg cover: 5 % Tree: % Shrub: 5 % Herb: %

Community successional stage:

<input type="checkbox"/> NA	<input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings)
<input type="checkbox"/> Early (herbaceous & seedlings)	<input type="checkbox"/> Late (herbaceous, shrubs, mature trees)

Indicators:

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input checked="" type="checkbox"/> Surface relief
(No) <input checked="" type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

Comments: minor banks, topographic relief, and drainage patterns. Similar to T2 on NW end of site.

Episodic Stream Indicator Data Sheet				page 1 of 4	
Site ID: Old Kane Rd. Missouri		Stream ID: T6 - Upland		Date: 9/1/21	
Nearest Town:			County:		
Investigators: Cody Schoof, Callie Hiroaka					
Base Map					
Aerial Photo #:		Date:		Topographic Map Name: Barroge mtn / Harper Cyn	
Date: 2018					
GPS Data					
GPS Name:		Datum: WGS84		Transect Elevation: 300 ft	
Zone 10 / 11		GPS Error: ± 3 ft / m			
GPS co-ords start of transect: 33.12378 -116.18341			GPS co-ords end of transect: 33.12348 -116.18323		
Geomorphic Province (✓ one)		Mojave ✓		Sonoran/Colorado	
		Great Basin		Other:	
Landform (✓ all that apply)					
Headwater		Upper fan		Middle fan	
		Lower fan ✓		Alluvial plain	
				Axial valley	
				Playa	
Channel Form (✓ one)					
Single thread ✓		Braided		Compound	
		Distributary		Discontinuous	
				Other:	
Transect was selected to:					
✓ Document fluvial activity & boundaries			Document channel elevations & boundaries		
✓ Document habitat associations			Document a change in watercourse morphology		
Other:					
Date of most recent runoff event (if known): Yesterday, 8/31/21					
<p>Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:</p> <p>Alluvial area in desert scrub SW of Ocotillo Wells. Mountain valleys drain flows into gently sloping flats, creating many alluvial fans and washes. Uplands have minor topo. relief that appear to be relict (Not fluvially active) when compared to alluvial floodplains, low flow channels and active washes.</p>					
<p>Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluvies, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.</p>					
<p>N Left _____ Right</p> <p>85ft+ weak floodplain</p> <p>Upland rocky desert scrub</p> <p>Crocote dominated</p> <p>3ft</p> <p>Ironwoods</p> <p>5ft</p> <p>minor terrace</p> <p>5ft</p> <p>Upland</p> <p>3ft elevation difference</p> <p>Low flow channels</p> <p>Showing minor bank cuts and sediment sorting</p>					

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (-) for indicators not observed. For examples see the Photo Atlas in MESA - Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators

Substrate Particle Size

Terrestrial Indicators		Substrate Particle Size	
		Estimated percentages	
Av soil horizon	✓	Relict bars & swales	
Biotic soil crusts		Rock fractured in place	% Bedrock / Cemented substrate
Bioturbation		Rock varnish	% Boulder ≥ 256 mm
Caliche coatings / layers / rubble	✓	Rock weathering	5 % Cobble ≥ 64 - 256mm
Carbonate etching		Rubified rock undersides	20 % Pebble ≥ 4 - 64 mm
Coppice dunes: active / relict		Soil development	50 % Granule ≥ 2 - 4 mm
Deflated surface	✓	Surface rounding of landform	25 % Sand ≤ 2 mm
Pavement	✓	Woody debris in place	% Silt/Clay Fines
Other:			

Creosote bush scrub with some very minor relict bars / swales but general surface rounding, woody debris in place, and rock exposure suggesting weathering.
 No ^{active} fluvial indicators present in uplands.

Fluvial Indicators

None

Bars: sand / gravel	Mud: cracks / curls / drapes	Sediment tails: sand / gravel
Gul banks	Organic drift	vegetation channel alignment
Drainage swales	Overturnd rocks	Water-cut benches
Exposed roots	Scour	Wrack
First-order streams	Sediment ramps: sand / gravel	Wrinkle marks
Flow lineations	Sediment sorting	
Other:		

~~minor cut banks and sediment sorting. Veg / channel alignment is strongest indicator - low flow channels unvegetated and floodplain dominated by ironwood.~~

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined): 25%	Dominant and co-dominant species (if known) and % of total vegetative cover of each: Creosote - 10% Ironwood - 5% Ocotillo	Representative height and width of dominant and co-dominant species: Creosote - 4ft tall, 6wide Ocotillo - 10ft tall, 4wide
---	--	---

N/A Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences):
~~5-10% more creosote in upland and floodplain trees compared to low flow channel. 3-5% more Ironwood in floodplain compared to upland~~

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences):
 N/A - No fluvially active units ~~Ironwood only in upland~~

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences):
 N/A - No fluvially active units ~~Yes - Ocotillo and creosote more upland~~

Site ID: Old Kane Springs Rd.

Stream ID: T6

page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (-) for those not observed. For examples see the Photo Atlas in MESA - Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators		Substrate Particle Size	
		Estimated percentages	
Bar forms: sand / gravel	Secondary channels	% Bedrock / Cemented substrate	
Bifurcated flow	Sediment plastering	% Boulder	≥ 256 mm
✓ Drainage swales	Sediment ramps: sand / gravel	% Cobble	≥ 64 - 256 mm
✓ Flow lineations	Sediment sheets: sand / gravel	% Pebble	≥ 4 - 64 mm
Imbricated gravel	✓ Sediment sorting	10	% Granule
Levee ridges: sand / gravel	Sediment tails: sand / gravel	40	≥ 2 - 4 mm
Mud: cracks / curls / drapes	✓ Vegetation-channel alignments	50	% Sand
Organic drift	Wrack		≤ 2 mm
Overturned rocks	Wrinkle marks		% Silt/Clay
Out-of-channel flow: Lateral floodplain / Terminal floodplain			Fines
Ripples			
Other:			

Low flow channels are swale-like. Channel aligned w/ unvegetated areas. Floodplain shows minor sediment sorting in the form of transport of finer sands.

Erosion Indicators

✓ Cut banks (small)	Rills	Water-cut benches
Exposed roots	Scour	Water level mark
Headcuts	Secondary channels	
Other:		

Small cut banks remain erosion indicator for low flow channels and boundaries of floodplain.

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined): 15% in floodplain	Dominant and co-dominant species (if known) and % of total vegetative cover of each: Creosote - 5% Ironwood - 5%	Representative height and width of dominant and co-dominant species: Creosote - 4ft tall, 6" wide Ironwood: 15ft tall, 12" wide
--	--	---

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences):
No veg. in low flow channels,

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences):
See above

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences):
See above

Attachment C

Plant List

Plant Species

EUDICOTS

ASTERACEAE—SUNFLOWER FAMILY

- Ambrosia dumosa*—white bursage
- Ambrosia salsola* var. *salsola*—burrobrush
- Encelia farinosa*—brittle bush
- Pectis papposa* var. *papposa*—manybristle chinchweed
- Stephanomeria pauciflora*—brownplume wirelettuce

BORAGINACEAE—BORAGE FAMILY

- Cryptantha* sp. —Unknown *Cryptantha* species

BRASSICACEAE—MUSTARD FAMILY

- Sysimbrium* sp. —Unknown mustard species

CACTACEAE—CACTUS FAMILY

- Cylindropuntia echinocarpa*—Wiggins' cholla
- Cylindropuntia ganderi*—Gander's buckhorn cholla
- Ferocactus cylindraceus*—California barrel cactus
- Opuntia basilaris*—beavertail pricklypear

EUPHORBIACEAE—SPURGE FAMILY

- Ditaxis lanceolata*—narrowleaf silverbush
- Euphorbia micromera*—Sonoran sandmat
- Euphorbia polycarpa*—smallseed sandmat

FABACEAE—LEGUME FAMILY

- Olneya tesota*—ironwood
- Psoralea schottii*—Schott's dalea
- Senegalia greggii*—catclaw acacia

FOUQUIERIACEAE—OCOTILLO FAMILY

- Fouquieria splendens* ssp. *splendens*—ocotillo

KRAMERIACEAE—RHATANY FAMILY

- Krameria bicolor*—white ratany

LAMIACEAE—MINT FAMILY

- Condea emoryi*—desert lavender

MALVACEAE—MALLOW FAMILY

Eremalche rotundifolia—desert fivespot

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Allionia incarnata var. *villosa*—trailing windmills

ONAGRACEAE—EVENING PRIMROSE FAMILY

Eremothera boothii ssp. *condensata*—shredding suncup

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum deflexum—flatcrown buckwheat

SOLANACEAE—NIGHTSHADE FAMILY

Datura discolor—desert thorn-apple

ZYGOPHYLLACEAE—CALTROP FAMILY

Kallstroemia californica—California caltrop

Larrea tridentata—creosote bush

MONOCOTS

POACEAE—GRASS FAMILY

Hilaria rigida—big galleta grass

* *Schismus barbatus*—common Mediterranean grass

* signifies introduced (non-native) species

Attachment D

Wildlife List

Wildlife Species

BIRDS

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

INVERTEBRATES

BUTTERFLIES

PIERIDAE—WHITES AND SULFURS

Nathalis iole—dainty sulphur

MAMMALS

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit

KANGAROO RATS

HETEROMYIDAE—POCKET MICE AND KANGAROO RATS

Dipodomys deserti—desert kangaroo rat

REPTILES

LIZARDS

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris—tiger whiptail

SNAKES

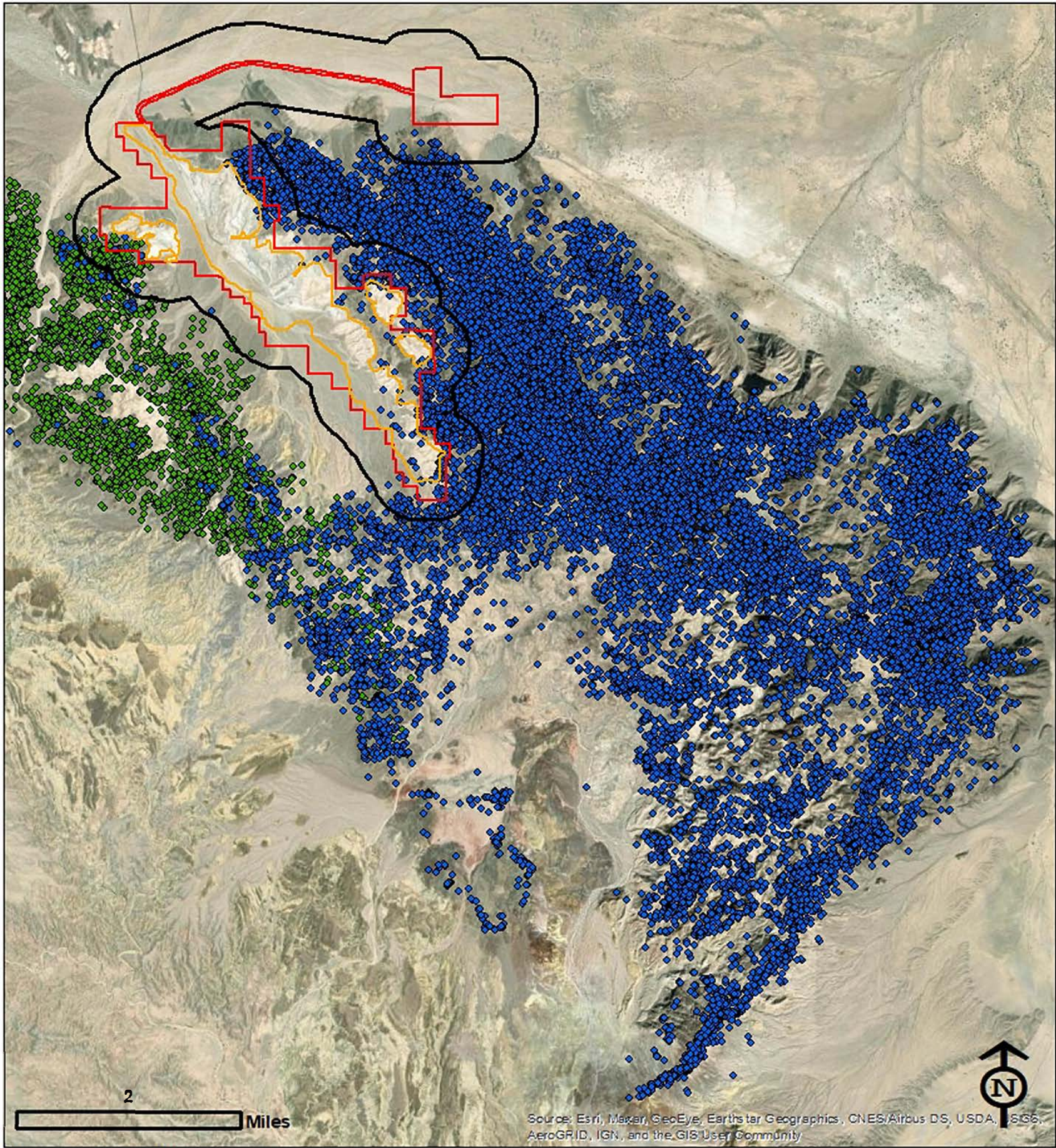
VIPERIDAE—VIPERS

Crotalus cerastes—sidewinder

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Appendix D-7: Peninsular Bighorn Sheep Data Maps

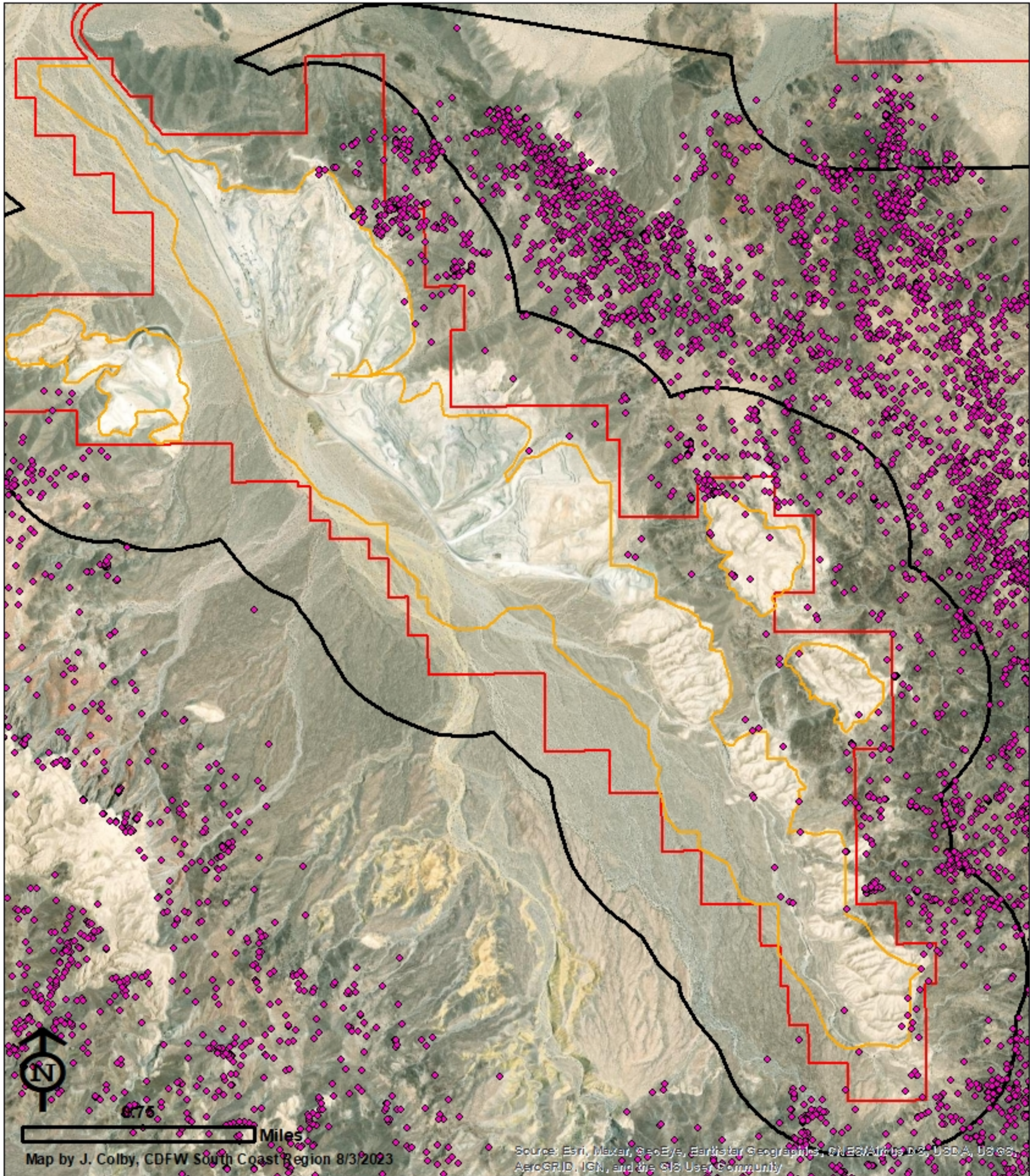
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Map by J. Colby, CDFW South Coast Region

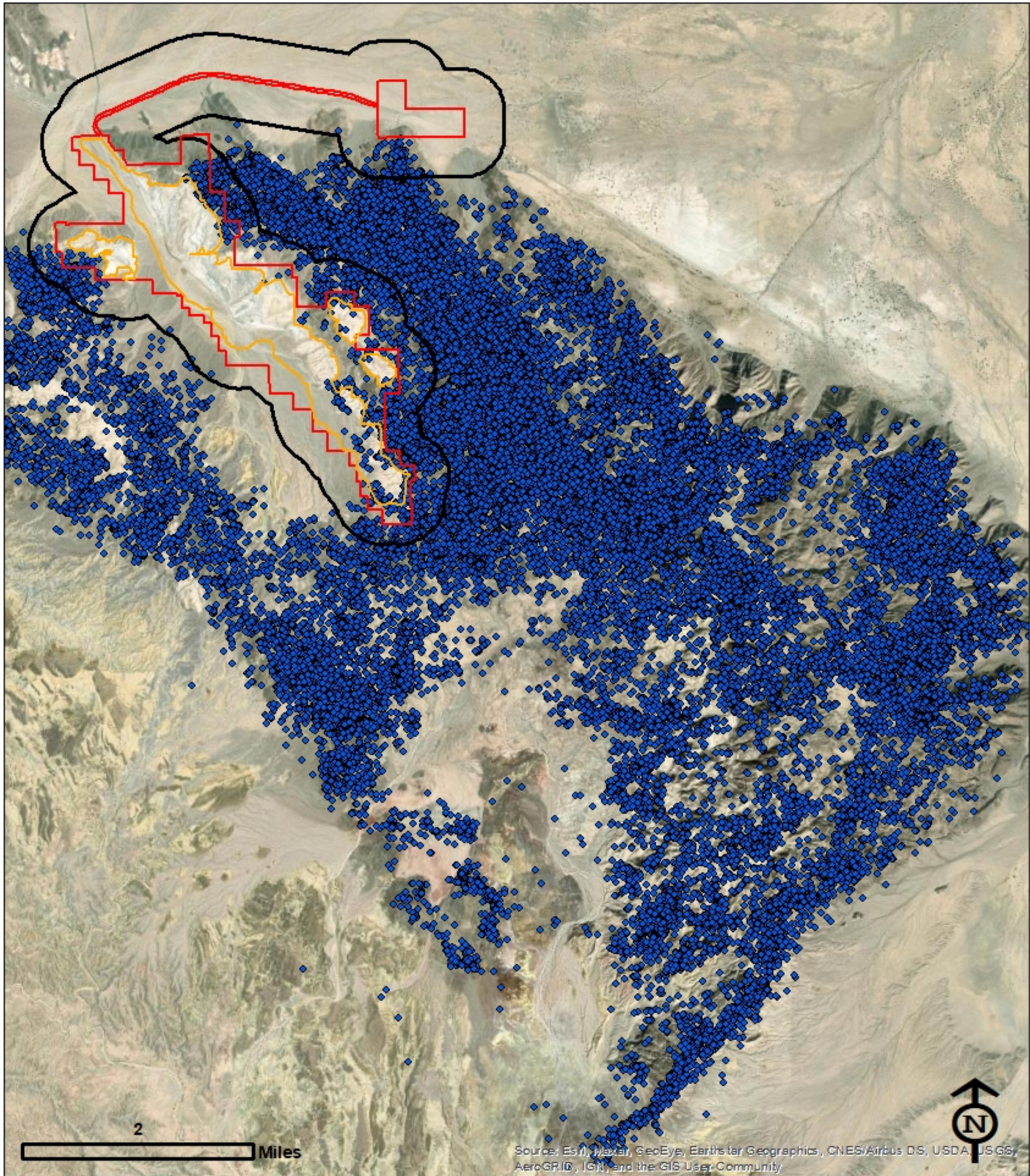
Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data in the Fish Creek Mountains, Imperial County, CA.

- FCM data for 12 ewes 2015 - 2022
- VM data for 4 Ewes 2015 - 2022
- Quarry Boundary
- Federal Action Area
- Plaster City Quarry Project Area



Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data 2015 - 2022 Fish Creek Mountain, Imperial County, CA.

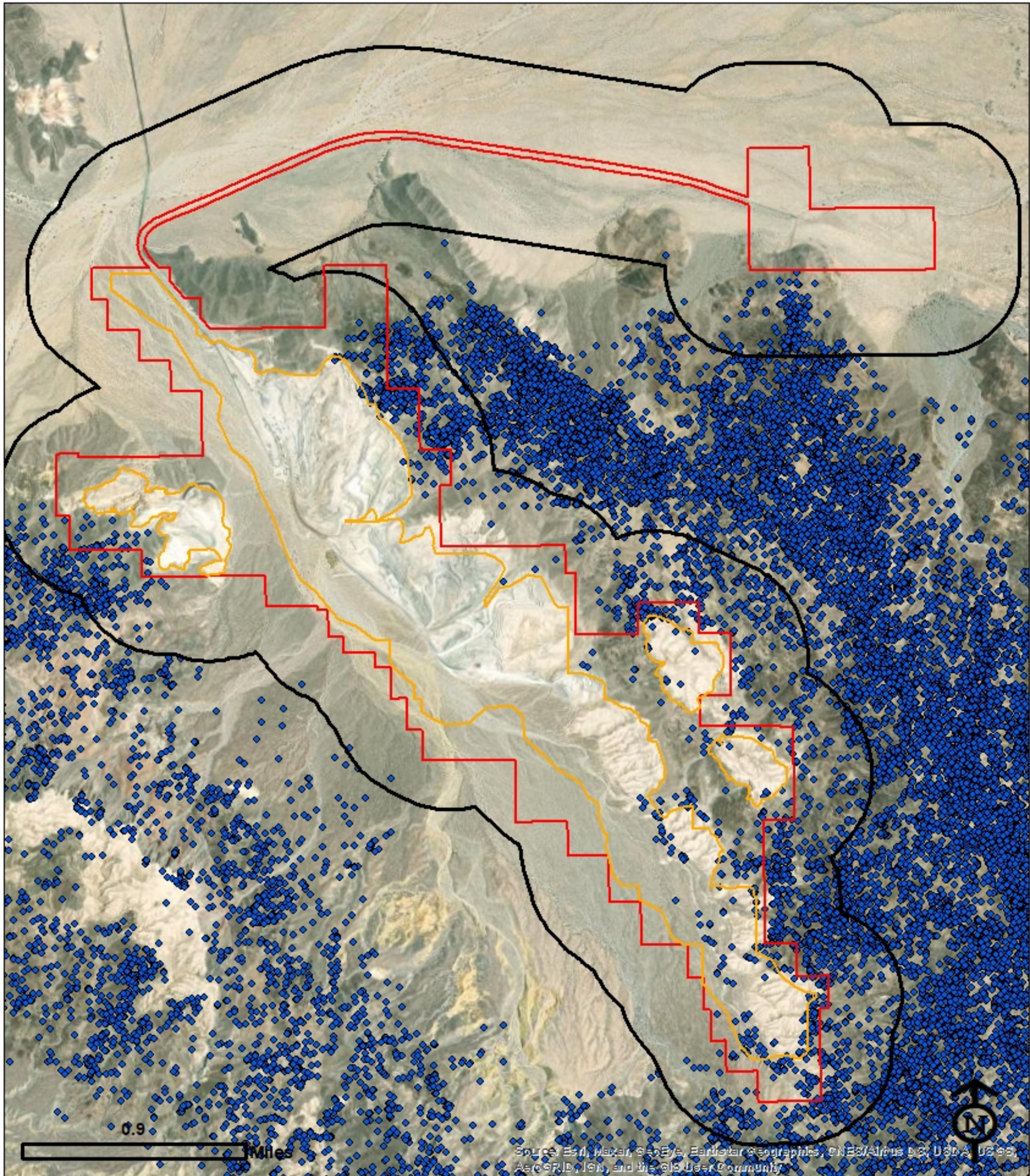
- ◆ Lambing season data for 16 ewes (Jan-May)
 - ▭ Plaster City Quarry Project Area
- ▭ Quarry Boundary
 - ▭ Federal Action Area



Map by J. Colby, CDFW South Coast Region 8-2-2023

Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data in the Fish Creek Mountain, Imperial County, CA.

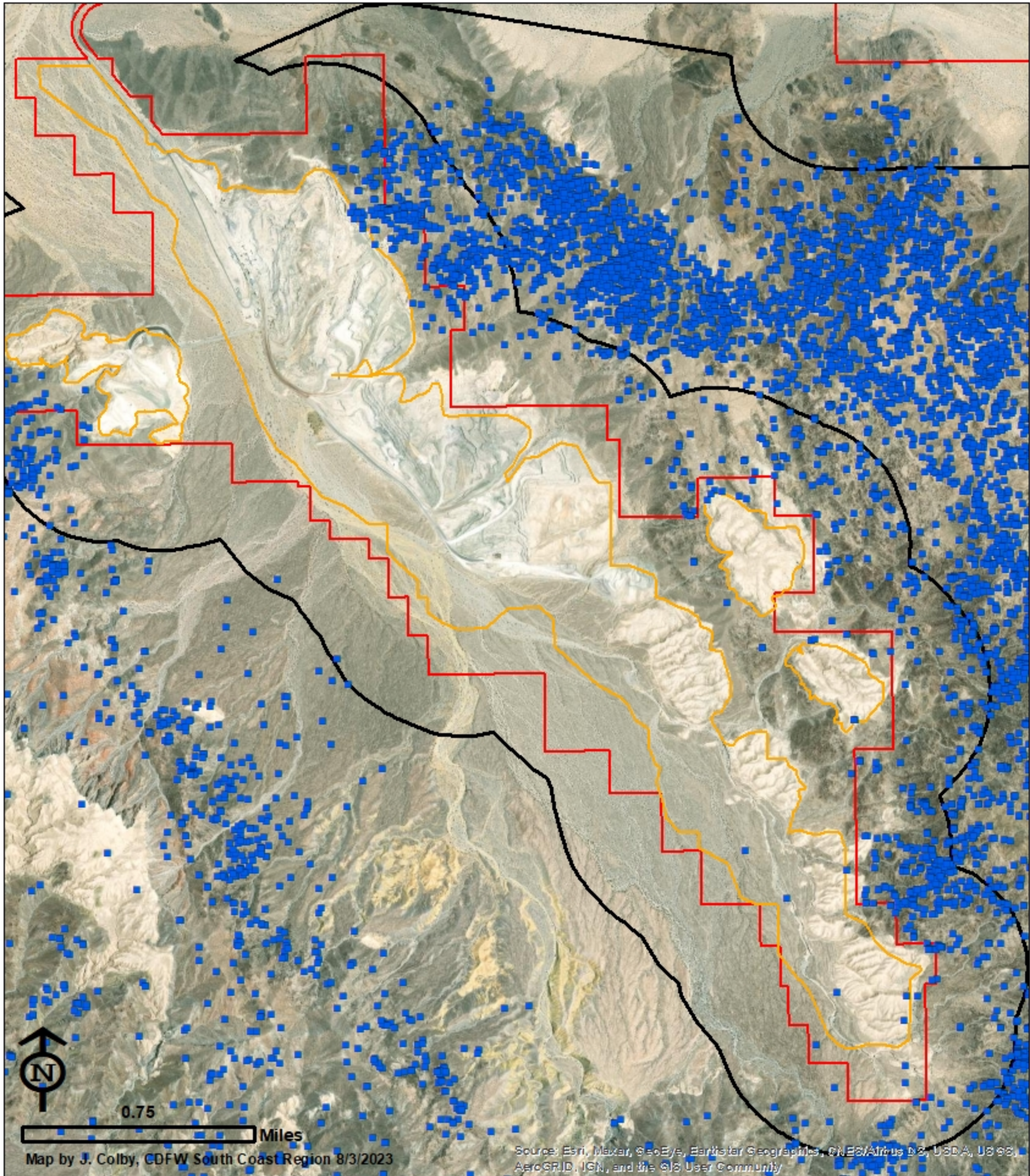
- ◆ Radio-collared data for 16 PBS 2015 - 2022
- ▭ Quarry Boundary
- ▭ Plaster City Quarry Project Area
- ▭ Federal Action Area



Map by J. Colby, CDFW South Coast Region 8-2-2023

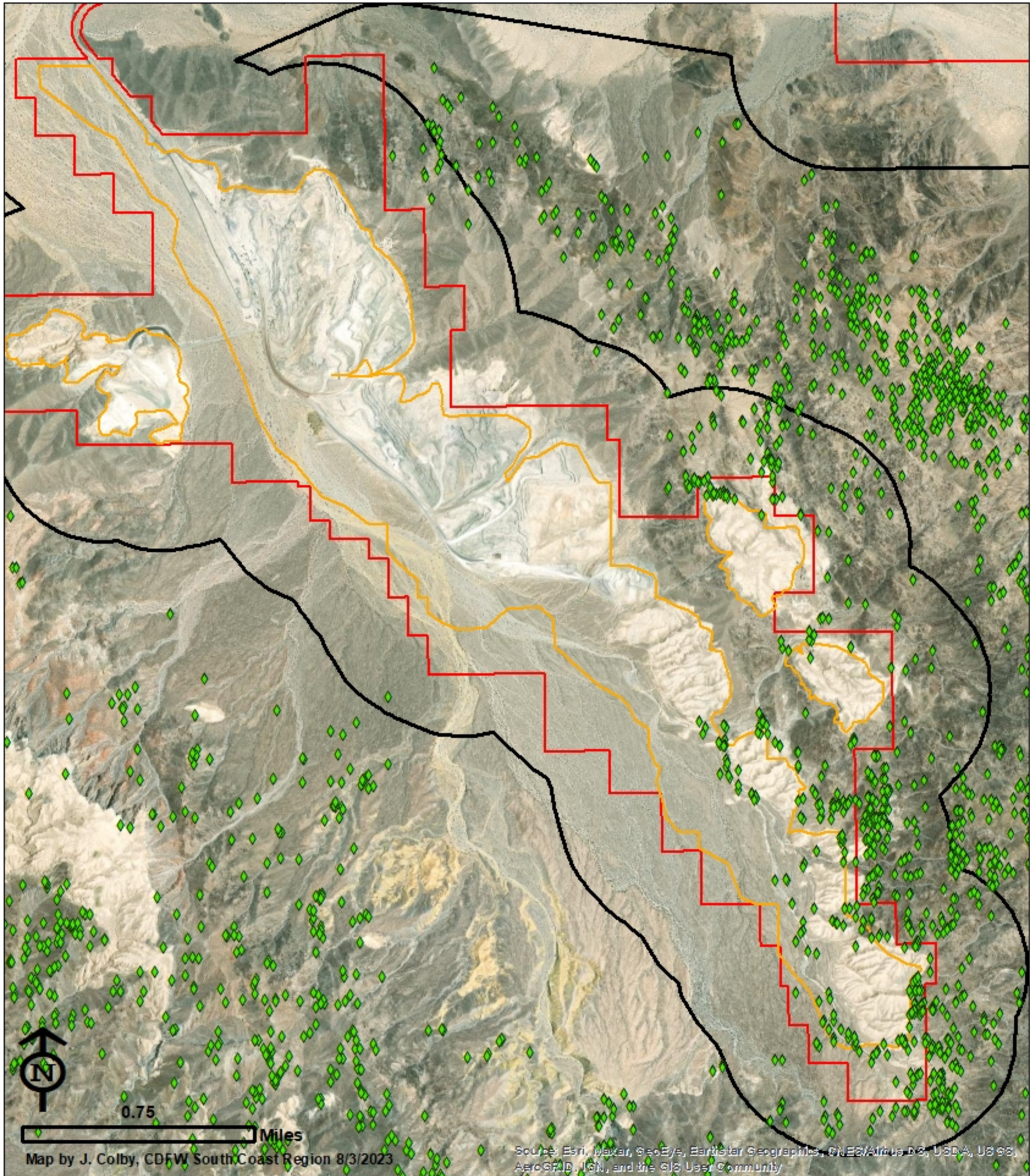
Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data in the Fish Creek Mountain, Imperial County, CA.

- ◆ Radio-collared data for 16 PBS 2015 - 2022
- ▭ Quarry Boundary
- ▭ Plaster City Quarry Project Area
- ▭ Federal Action Area



Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data 2015 - 2022 Fish Creek Mountain, Imperial County, CA.

- Pre-lambing season data for 16 ewes (Sept - Dec)
 - Plaster City Quarry Project Area
- Quarry Boundary
 - Federal Action Area



Peninsular Bighorn Sheep (PBS) Radio-Collar Location Data 2015 - 2022 Fish Creek Mountain, Imperial County, CA.

- ◆ Summer data for 16 ewes (June - August)
 - Plaster City Quarry Project Area
- Quarry Boundary
 - Federal Action Area

APPENDIX D: ASPEN MEMORANDUM: UPDATED SITE CONDITIONS

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August 7, 2023

John Bowsher

United States Gypsum Company
Plaster City Plant
Quarry Manager

Reg. Updated Site Conditions at the U.S. Gypsum Plaster City Quarry.

Dear Mr. Bowsher:

Aspen Environmental Group (Aspen) has been assisting U.S. Gypsum (USG) with permitting of the Plaster City Quarry and various other biological resource tasks. Aspen recently reviewed a comment letter submitted by the California Department of Fish and Wildlife (CDFW) in response to the public comment period for the Draft Subsequent Environmental Impact Report (SEIR) for the USG Plaster City Quarry Expansion and Well No. 3 Project (project). The SEIR prepared by Imperial County is intended to update the project description and acknowledge mitigation measures that were agreed to in a 2008 Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and a 2019 Supplemental EIS (SEIS).

Project Background

The project includes three components including the quarry, quarry well #3, and the new waterline alignment (see Figure 1 in Attachment 1). Biological resources known from the project site were described in a Biological Resources Technical Report (BRTR) prepared by Aspen for the United States Gypsum Company Expansion and Modernization Project (Appendix D of the SEIR). The BRTR compiled all survey results from surveys conducted between 2002 and 2017 for the project and provided the baseline information for the analysis in the SEIR.

The comment letter from CDFW raised concerns over the fact that the "SEIR lacks a recent and complete assessment of biological resources within the project site and surrounding area." This statement is then supported with additional information from CDFW that states "CDFW generally considers biological field assessments for wildlife to be valid for a one-year period." This comment will be addressed in the responses to comments that Imperial County is currently preparing.

Methods

To inform the conclusions in the response from Imperial County and to support the biological resource baseline information and analysis, a site visit was conducted by Aspen senior biologist Justin Wood on June 15, 2023. The purpose of the visit was to evaluate site conditions at the project site and identify any changes from previous surveys or assessments. Mr. Wood also previously visited portions of the project site on November 11, 2022, after heavy monsoonal storms moved through the region, and observations made during that site visit are also incorporated here. During the site visits, Mr. Wood drove all access roads within the quarry and along the new waterline alignment. He also walked through portions of the various phases within the quarry and the quarry well site. Mr. Wood visited the quarry (excluding phases 6BP and 7BP), quarry well site, and new waterline alignment and captured updated photos of the project site conditions which are presented in Attachment 2. Mr. Wood also completed an updated review of available literature to identify special-status species that are known from the region. This included a

review of the California Natural Diversity Database (CNDDDB) for the same 7.5-minute topographic quadrangles (quads) that were quarried for the original literature review including Borrego Mountain SE, Carrizo Mountain NE, Harpers Well, Plaster City NW, Painted Gorge, Plaster City, Coyote Wells, Arroyo Tapiado, Harper Canyon, Yuha Basin, Carrizo Mountain, and In-Ko-Pah Gorge (Attachment 3).

Results

In general, site conditions throughout the project site have remained unchanged since the original biological surveys were completed in support of the BRTR and the SEIR. During the field surveys conducted in late 2022 and June of 2023, no new special-status species were identified within the project site and no new species observations were made. Two loggerhead shrikes (*Lanius ludovicianus*), a CDFW Species of Special Concern, were observed within the quarry in June of 2023. Loggerhead shrikes were previously observed at the quarry and are discussed in Section 4.2 of the SEIR. Vegetation is also largely unchanged and includes creosote bush scrub, creosote bush–white bursage scrub, catclaw acacia thorn scrub, smoke tree woodland, desert fir scrub, allscale scrub, tamarisk thickets, and sparsely vegetated sandy wash as described in Section 4.2.1.3 of the SEIR.

The literature review identified four special-status species that were not previously included in the BRTR or SEIR. These include two plants and two invertebrates. Harwood's eriastrum (*Eriastrum harwoodii*) has a California Rare Plant Rank (CRPR) of 1B.2 and was observed within 1 mile of the quarry well site on March 21, 2017. This was a significant extension of range for this species which is why it wasn't included in the original literature review and SEIR. Aspen biologists surveyed the quarry well site and new waterline alignment on March 30, 2017, and no Harwood's eriastrum was observed within the project area. This was confirmed to be a year in which adequate rainfall fell in the region and plants would have been expected to be found, if present. The habitat 1 mile to the east is much sandier and provides better habitat for Harwood's eriastrum, a species which lives in sand dunes. It is unlikely that Harwood's eriastrum is present in the project site or would be impacted by project construction. Borrego bedstraw (*Galium angustifolium* ssp. *borregoense*) was the second plant species that was identified in the literature review. This species is known from higher elevation mountains to the west and southwest of the project site. The project site is well below the species elevation and geographic range, and it is not expected to be present or to be impacted by the project.

The two additional invertebrates that were identified in the literature review were a miner bee (*Perdita stephanomeriae*) and Knull's metallic wood-boring beetle (*Trichinorhipis knulli*). A miner bee has a rank of S1 and is known from three locations in California, all within sand dunes. Knull's metallic wood-boring beetle has a rank of S1S2 and is known from four locations in California, all more than 15 miles from the project site. Neither of these species are expected to occur within the project site or be impacted by the project.

Conclusions

In response to CDFW's comment letter on the SEIS, Aspen has completed an updated site assessment that shows there has been very little change at the project site since the completion of focused biological surveys that were completed primarily in 2016 and 2017. We have also completed an updated literature review and shown that no additional special-status species are present or expected to be present within the project site. This project memorandum was prepared in support of USG and Imperial County in response to comments received for the SEIR.

Should you need any further information or have any questions, please do not hesitate to contact Justin Wood at (909) 568-5235 or by e-mail at JWood@aspeneq.com.

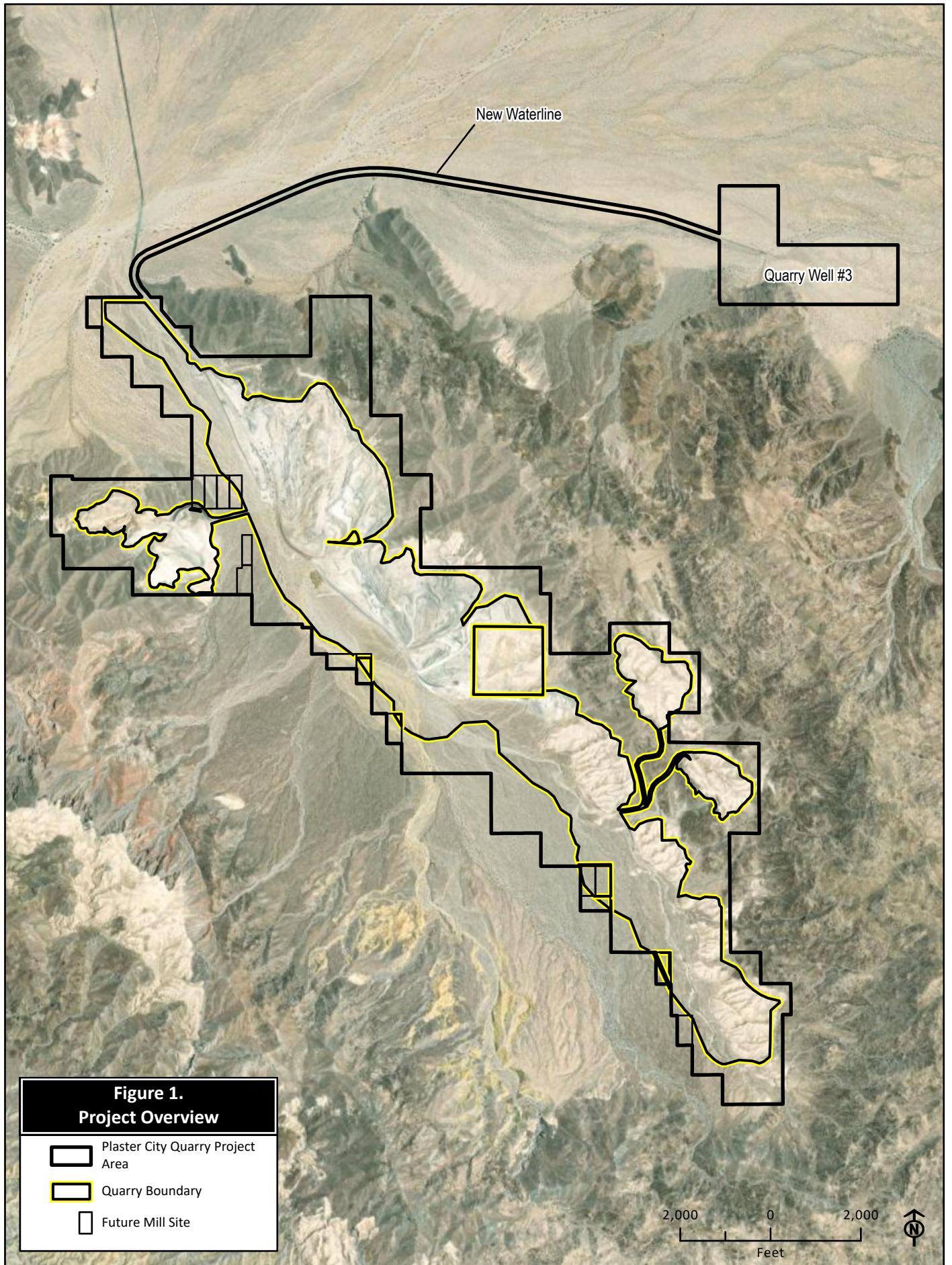
Sincerely,

ASPEN ENVIRONMENTAL GROUP

A handwritten signature in black ink, appearing to read "Justin Wood". The signature is fluid and cursive, with a long, sweeping underline that extends to the left.

Justin Wood, M.S.
Senior Biologist

Attachment 1 – Figure



Attachment 2 – Photo Exhibit

US Gypsum Quarry Site Condition Updates
Attachment 2



Photo 1: Overview of project site from top of Phase S1.



Photo 2: Overview of project site from top of Phase S1.



Photo 3: Southeast facing view of Phase 9, near the upper end of the project site.



Photo 4: Overview of the wash habitat within Phase 8.

US Gypsum Quarry Site Condition Updates
Attachment 2



Photo 5: Overview of incised wash habitat in Phase 8.



Photo 6: Overview of wash habitat within Phase 7.



Photo 7: Overview of additional wash habitat within Phase 8.



Photo 8: Overview of wash habitat within Phase 6.

US Gypsum Quarry Site Condition Updates
Attachment 2



Photo 9: Overview of typical gypsum habitat near Phase 2.



Photo 10: Overview of Phase S1, S2, and S3 across the wash.



Photo 11: Northwest facing view of the new waterline alignment along Split Mountain Road.



Photo 12: Northwest facing view of the new waterline alignment along Split Mountain Road.

US Gypsum Quarry Site Condition Updates
Attachment 2



Photo 13: Southwest facing view of the new waterline alignment along USG railroad tracks.



Photo 14: Southwest facing view of the new waterline alignment along USG railroad tracks.



Photo 15: Overview of typical habitat near the quarry well site.



Photo 16: Overview of wash vegetation observed near the new waterline alignment.

Attachment 3 – CNDDDB Results



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Borrego Mountain SE (3311611) OR Borrego Mountain (3311622) OR Shell Reef (3311621) OR Kane Spring NW (3311528) OR Harpers Well (3311518) OR Harper Canyon (3311612) OR Arroyo Tapiado (3211682) OR Carrizo Mtn. NE (3211681) OR Plaster City NW (3211588))

Table with 7 columns: Species, Element Code, Federal Status, State Status, Global Rank, State Rank, Rare Plant Rank/CDFW SSC or FP. Rows include Active Desert Dunes, Antrozous pallidus, Aquila chrysaetos, Astragalus insularis var. harwoodii, Astragalus magdalenae var. peirsonii, Astragalus sabulorum, Athene cunicularia, Bursera microphylla, Calliandra eriophylla, Chaenactis carphoclinia var. peirsonii, Charadrius montanus, Coleonyx switaki, Crotalus ruber, Cyllindropuntia fosbergii, Cyprinodon macularius, Desert Fan Palm Oasis Woodland, Eriastrum harwoodii, Eumops perotis californicus.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Euphorbia abramsiana</i> Abrams' spurge	PDEUP0D010	None	None	G4	S2	2B.2
<i>Falco mexicanus</i> prairie falcon	ABNKD06090	None	None	G5	S4	WL
<i>Lanius ludovicianus</i> loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
<i>Lithobates yavapaiensis</i> lowland leopard frog	AAABH01250	None	None	G4	SX	SSC
<i>Lupinus albifrons var. medius</i> Mountain Springs bush lupine	PDFAB2B1J5	None	None	G4T2	S2	1B.3
<i>Lycium parishii</i> Parish's desert-thorn	PDSOL0G0D0	None	None	G4	S1	2B.3
<i>Malperia tenuis</i> brown turbans	PDAST67010	None	None	G4?	S2?	2B.3
<i>Mentzelia hirsutissima</i> hairy stickleaf	PDLOA030K0	None	None	G4?	S3	2B.3
Mesquite Bosque Mesquite Bosque	CTT61820CA	None	None	G3	S2.1	
<i>Neotoma albigula venusta</i> Colorado Valley woodrat	AMAFF08031	None	None	G5T3T4	S1S2	
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
<i>Opuntia wigginsii</i> Wiggins' cholla	PDCAC0D1P0	None	None	G3?Q	S1?	3.3
<i>Ovis canadensis nelsoni pop. 2</i> Peninsular bighorn sheep DPS	AMALE04012	Endangered	Threatened	G4T3Q	S2	FP
<i>Perognathus longimembris bangsi</i> Palm Springs pocket mouse	AMAFD01043	None	None	G5T2	S1	SSC
<i>Petalonyx linearis</i> narrow-leaf sandpaper-plant	PDLOA04010	None	None	G4	S3?	2B.3
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	ARACF12040	None	None	G3	S3	SSC
<i>Pilostyles thurberi</i> Thurber's pilostyles	PDRAF01010	None	None	G5	S4	4.3
<i>Selaginella eremophila</i> desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2
Stabilized and Partially Stabilized Desert Dunes Stabilized and Partially Stabilized Desert Dunes	CTT22200CA	None	None	G4	S3.2	
<i>Toxostoma lecontei</i> Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Transmontane Alkali Marsh</i> Transmontane Alkali Marsh	CTT52320CA	None	None	G3	S2.1	
<i>Uma notata</i> Colorado Desert fringe-toed lizard	ARACF15020	None	None	G3	S2	SSC
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	
<i>Xylorhiza orcuttii</i> Orcutt's woody-aster	PDASTA1040	None	None	G3?	S2	1B.2

Record Count: 43

APPENDIX E:
CALIFORNIA DEPARTMENT OF FISH
AND WILDLIFE MITIGATION MONITORING
AND REPORTING PROGRAM
(CDFW Comment Letter 4a: Attachment 1)

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ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Mitigation Measures	Timing and Methods	Responsible Parties
<p>Mitigation Measure BIO-[A]: Assessment of Biological Resources</p> <p>Prior to adoption of the CEQA document and Project construction activities, a complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511), will be completed. Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.</p>	<p>Timing: Prior to adoption of the CEQA document and Project construction activities</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>
<p>Mitigation Measure 3.4-9: Burrowing Owl Avoidance</p> <p>Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 or most recent version) prior to vegetation removal or ground-disturbing activities associated with all Project components (expansion of quarrying activities</p>	<p>Timing: Prior to the start of Project-related activities for focused surveys. No less than 14 days prior to the start of Project-related activities and within 24</p>	<p>Implementation: Project proponent</p> <p>Monitoring and Reporting: Imperial County</p>

<p>into previously undisturbed areas, construction of Well #3 and associated pipeline, and restoration of Viking Ranch) over the lifetime of the Project. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent, in coordination with BLM, shall prepare a Burrowing Owl Plan that shall be submitted to CDFW and U.S. Fish and Wildlife Service (USFWS) for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, monitoring, relocation, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe minimization and relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Project proponent shall implement the Burrowing Owl Plan following CDFW and USFWS review and approval.</p> <p>Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the <i>Staff Report on Burrowing Owl Mitigation</i> (2012 or most recent version). Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the <i>Staff Report on Burrowing Owl Mitigation</i>. If the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance,</p>	<p>hours prior to ground disturbance for preconstruction surveys.</p> <p>Methods: See Mitigation Measure</p>	
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<p>minimization, and mitigation measures to be approved by CDFW and USFWS prior to commencing Project activities.</p>		
<p>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</p> <p>[...]</p> <p>Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities associated with all Project components (the expansion of quarrying activities into previously undisturbed areas, the construction of Well #3 and associated pipeline, and restoration of Viking Ranch) and over the lifetime of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.</p> <p>[...]</p>	<p>Timing: No more than 3 days prior to vegetation removal or ground-disturbing activities for all phases of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>

<p>Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats</p> <p>Prior to the initiation of Project activities within suitable bat roosting habitat, Imperial County shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn re-entry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the Project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be used during all dusk emergence and pre-dawn re-entry surveys.</p> <p>If active hibernacula or maternity roosts are identified in the work area or 500 feet extending from the work area during preconstruction surveys, for maternity roosts, quarry expansion activities into undisturbed habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.</p> <p>A minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, Project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise.</p>	<p>Timing: Prior to grading or vegetation removal activities</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>
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<p>Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of Project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of Project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.</p>		
<p>Mitigation Measure 3.4-8: Wildlife Impact Avoidance and Minimization Measures</p> <p>[...]</p> <p>Throughout the lifetime of the Project, the Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. Imperial County shall ensure that all lighting for the Project is fully shielded, cast downward, reduced in intensity to the greatest extent, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). Imperial County shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.</p> <p>[...]</p>	<p>Timing: Throughout the lifetime of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project proponent and Imperial County</p> <p>Monitoring and Reporting: Imperial County</p>

<p>Mitigation Measure BIO-[C]: Lake and Streambed Alteration Program</p> <p>Prior to construction and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.</p>	<p>Timing: Prior to construction and issuance of any grading permit</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Sponsor</p> <p>Monitoring and Reporting: Imperial County</p>
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APPENDIX F: ASPEN MEMORANDUM: PBS IMPACTS AND MITIGATION

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PROJECT MEMORANDUM

UNITED STATES GYPSUM EXPANSION/MODERNIZATION PROJECT

Date: September 7, 2023
To: Luis Carrazco, Unite States Gypsum
From: Scott D. White
Subject: Peninsular Bighorn Sheep impacts and mitigation

Aspen Environmental Group has reviewed communications from the California Department of Fish and Wildlife (CDFW) to Imperial County, which recommend additional mitigation of potential impacts of the United States Gypsum (USG) Expansion and Modernization Project to Peninsular bighorn sheep (PBS). CDFW's recommendations, if adopted by the County, would expand on mitigation measures already included in the County's Draft Subsequent Environmental Impact Report (SEIR) and required for the project by Bureau of Land Management's (BLM) project approval pursuant to the National Environmental Policy Act (NEPA) and the BLM's consultation with US Fish and Wildlife Service (USFWS) pursuant to the federal Endangered Species Act (ESA). This memorandum summarizes analysis and conclusions regarding potential impacts to PBS, and summarizes mitigation measures included in the Draft SEIR and already required of the project under existing federal approvals. We believe that these mitigation requirements, without further mitigation, would reduce potential Project impacts to PBS to less than significant and that the CDFW recommendations are therefore unwarranted.

FEDERAL AGENCY REVIEW AND CONCLUSIONS

The USFWS concluded in its Biological Opinion (BO, 2019, copy attached) that the project, including Conservation Measures (CMs) 1–12, specified in the BO beginning on page 10, would not jeopardize continued existence of PBS (i.e., a "no jeopardy" opinion). The BO's conclusions, beginning on page 30, state (quoted in full):

- 1. While the proposed Project is adjacent to habitat with resources that support feeding, breeding, and sheltering, and Peninsular bighorn sheep occur within the mountains surrounding the Project site, location data from radio-collared sheep indicate that Peninsular bighorn sheep use the hillsides and slopes rather than the canyon where the Project is located; therefore, most of the resources to support reproduction, numbers, and distribution of the species will be avoided by mining and reclamation activities.*
- 2. Peninsular bighorn sheep continue to use habitat in and around the action area despite active mine operations ongoing since 1921. Because ewe groups adjacent to active mining have become accustomed to some degree to human presence and noise and the Project will be implemented incrementally in phases over the course of 80 years, we expect the increase of noise and human activity would not result in sheep abandoning the hillsides around the Project site and the existing distribution of sheep around the mine will be unaffected.*
- 3. The adverse effects of mine expansion and reclamation activities on reproduction would be avoided and/or minimized by implementation of conservation measures described above in the Description of the Proposed Action section.*
- 4. The rugged mountain habitat on three sides of the Project, which includes critical habitat, would continue to provide necessary resources essential to the conservation of the species.*

5. The potential loss of up to 608.2 acres of designated critical habitat represents a negligible percentage of the designated critical habitat otherwise available to the population in the recovery region, and this potential loss would not disrupt population connectivity or cause other significant impacts to the physical and biological features in the action area. Therefore, the Project would not result in the adverse modification or destruction of critical habitat that would appreciably diminish the value of critical habitat as a whole for the conservation of the species.

The BLM's Record of Decision for the Project (ROD, 2020) specifies that "The Applicant will be required to comply with the BO as a condition of the ROW grants and Mining Plan of Operations."

PBS OCCURRENCE AND HABITAT USAGE IN THE PROJECT VICINITY

The USFWS, BLM, and preparers of the Project's Supplemental Environmental Impact Statement (SEIS, 2019), considered the PBS occurrence and habitat usage in the SEIS analysis (SEIS Section 3.4 and Biological Resources Technical Report [BRTR], Appendix L to the SEIS, copy attached). The BRTR's discussion of PBS appears in Section IV. D. 2., Special-status Wildlife, of the BRTR (pages 26-30). The analysis is based on then-current PBS radio-collar location data in the quarry vicinity, shown in BRTR Figure 5. In summary, these location data show:

- Extensive PBS occurrence upslope from the existing quarry areas and expansion areas
- Infrequent occurrence on the expansion area phases 6Bp, 7Bp, 8, and 9
- Infrequent occurrence in the alluvial wash, west of expansion Phase 9.

The occurrence data provided in the BRTR, forming the basis for the SEIS analysis, are substantially similar to the occurrence data provided by CDFW in its recent communications.

Additionally, research literature supports the interpretation that Nelson's bighorn sheep (the same species as PBS, albeit differing populations) will acclimate to mining activities. And the available location data (both CDFW's updated maps and the data cited above) indicate regular PBS occurrence in the vicinity of the active USG quarry. The following text is excerpted from the BRTR (full literature citations may be found in the BRTR):

There are several research publications on Nelson's bighorn sheep activity in the vicinity of mining operations. None of these papers addresses PBS; however the following three address Nelson's bighorn sheep populations in arid habitats in California or Arizona that are comparable to the Plaster City Quarry site. The summary that follows is based on these three publications, particularly the discussion by Bleich and coauthors (2009), which is the most recent of the three, comparing and contrasting their own study results with the others and with broader Nelson's bighorn sheep literature.

- *Panamint Mountains, California (Oehler et al., 2005)*
- *Silver Bell Mountains, Arizona (Jansen et al., 2007)*
- *San Bernardino Mountains, California (Bleich et al., 2009)*

Bleich and coauthors (2009) state that "the characteristic that best defines mountain sheep habitat is the presence of escape terrain," and that many habitat studies have found that juxtaposition of escape terrain with valuable water or food sources has been important. They identify potential mining-related habitat benefits and deterrents, as follows: Mining can enhance escape terrain by removing vegetation (i.e., improving visibility) and creating steeper topography, especially if the improved escape terrain is near valuable food or water sources. However, mining-related disturbance could outweigh the benefits of improved escape terrain if it causes sheep to avoid the quarry areas. They found that Nelson's bighorn sheep in the San Bernardino Mountains limestone mining areas

generally avoided roads (human disturbance) but did not avoid mined areas and in fact favored them over random locations.

Bleich and coauthors (2009) cite several publications indicating that Nelson's bighorn sheep can habituate to disturbance, and are frequently observed on or near active mines, stating "we speculate that such disturbance is of minimal concern to sheep when it is consistent in nature and occurs in highly predictable locations." In the Panamint Mountains study, Oheler and coauthors found that proximity to active mining did not affect home ranges, diet composition, or demographic indices, and that Nelson's bighorn sheep activity in the mining area was not affected by frequency of blasting or mine productivity.

The combination of PBS habitat usage near the existing quarry and expansion areas, along with the scientific literature summarized above, support the USFWS's conclusion (above), that mining activities are not expected to cause PBS to alter its local distribution.

CDFW MITIGATION RECOMMENDATIONS

The CDFW communications recommend two measures that would expand on mitigation already required under federal approvals, quoted from CDFW email of August 17, 2023:

CDFW recommends that no mining activities occur in the southern section of the quarry boundary during the lambing season or minimally not to occur during the peak of lamb-rearing season (February – April).

and

... mitigation funds should be made available to CDFW for on-going radio-collaring activities and field monitoring studies within the FCM [Fish Creek Mountains]

and in a separate email dated August 24, 2023:

CDFW recommends that this measure is revised to indicate that funding will be provided for the purchase of radio-collars and capture of ten (10) PBS in the Fish Creek Mountains and ten (10) PBS in the Vallecito Mountains, not ten total in both areas. [at total cost of \$590,826]

FEDERAL AGENCY MITIGATION REQUIREMENTS INCLUDED IN THE DRAFT SEIR

1. Disturbance minimization and PBS avoidance during lambing season

Mitigation already required in the BO and ROD addresses the potential for PBS disturbance during lambing season in certain quarry areas (CDFW's first recommendation). Conservation Measure CM 11 (p 14 of the BO) requires that:

Blasting will be minimized during the lambing season (January 1 through June 30) within the Plaster City Quarry Phases 6Bp, 7Bp, 8, and 9 [i.e., the southern and southeastern quarry expansion areas nearest to documented PBS occurrences] by building up a stockpile of material during the other months.

The Designated Biologist or Biological Monitor will be on site during any quarry expansion activities or other new ground disturbing activities, and will walk the perimeter of the expansion area and view surrounding habitat with binoculars, stopping work if Peninsular bighorn sheep are within a 0.25-mile radius of the activity.

If a Peninsular bighorn sheep enters an active work area, all heavy equipment operations will be halted until it leaves. Plaster City Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify the BLM, CDFW, and the Service.

The BLM's Final SEIS (p. 3.4-22) and the County's Draft SEIR (p. 4.2-47) incorporate these measures and expand on them in Mitigation Measure 3.4-12 requiring that "New ground-disturbing activities (i.e., initial Quarry development, Quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within PBS lambing season (January 1 through June 30) as defined in the Recovery Plan, except with prior approval by the wildlife agencies."

These components of CM 11 and MM 3.4-12 are intended to minimize potential disturbance to PBS in the mining expansion areas, taking into account that PBS are expected to acclimate to quarry activities after mining begins in each new expansion area (as documented for other populations and anticipated in USFWS's conclusions in the BO). We note that CDFW asks if this requirement applies only to new ground disturbance, or to continuing activities in already disturbed areas. As clarification, the requirement is intended only to apply to disturbance in previously undisturbed areas (i.e., the establishment phase of quarry expansion areas). As above, the mitigation considers the known PBS behavior and habitat use around quarries.

2. PBS radio collar location monitoring

Additional mitigation already required in the BO and ROD address CDFW's second recommendation, that USG fund its existing PBS radio collar monitoring program in the Fish Creek and Vallecito mountains for the life of the Project. CM 10 (p. 14 of the BO) specifies that USG will fund a 10-year monitoring program, as follows:

... USG will fund the purchase of radio collars and the capture of 10 Peninsular bighorn sheep in the Fish Creek Mountains and Vallecito Mountains ewe group areas, to provide location monitoring data within these ewe groups over a 10-year period. The funding amount will be \$157,115 (per cost estimate provided by CDFW), to be transferred to the CDFW program via a means agreed upon by USG, BLM, and CDFW. The funding agreement will include a requirement that the funding will be specifically targeted to the Fish Creek Mountains and Vallecito Mountains ewe groups, and all resulting data will be available to BLM to support the long-term analysis of Peninsular bighorn sheep activities in the Federal action area.

This measure is included, with slightly different wording, as Mitigation Measure 3.4-11 of the SEIS (p. 3.4-22) and SEIR (p. 4.2-47). Although PBS are expected to acclimate to mining activities, this 10-year monitoring requirement, to be implemented by CDFW, will identify any potential divergence of local PBS behavior from previous studies of other populations around mines. Further, Mitigation Measure 3.4-13 (SEIS p. 3.4-22, SEIR p. 4.2-48) requires BLM, USFWS, and CDFW review of PBS monitoring data prior to new mining activities in the expansion areas nearest the highest PBS occurrences, as follows:

Mitigation Measure 3.4-13. Future Quarry Phasing Notification and Review. USG will notify the BLM, CDFW, and USFWS 90 days prior to initiating future mining activities in the four phases nearest to the highest PBS occurrence and habitat connectivity areas (phases 6Bp, 7Bp, 8, and 9). Upon notification, the agencies will coordinate with USG to review PBS occurrence and activity in the vicinity obtained during the intervening years, as well as relevant documentation of Nelson's bighorn sheep behavior near other mining operations. PBS avoidance and minimization measures may be revised as needed to conform to new information.

While additional PBS location data over the ensuing 70 years may be scientifically valuable, Aspen does not believe it would mitigate any potential Project impact. Neither the BLM, the USFWS, nor the County found it necessary to require continued monitoring of PBS locations for the life of the Project.

The CDFW provides a budget of \$590,826 for a 10-year radio collar monitoring project, contrasting with the \$157,115 identified in the BO and SEIS. The principal difference between the two cost estimates is

that the original (lower) estimate provides for capturing, collaring, and monitoring 10 individual PBS in the Fish Creek and Vallecito mountains. That estimate was provided by CDFW staff to USFWS and BLM staff during the federal Endangered Species Act consultation for the project. CDFW recommends, instead, that USG fund the capture, collaring, and monitoring of 20 total PBS in the same mountain ranges. CDFW notes in its email to the County:

However, the monitoring measure presented in the 2019 (and 2023) document is different from the monitoring proposal CDFW discussed and provided to the U.S. Fish and Wildlife Service and the Bureau of Land Management. CDFW recommends that this measure is revised to indicate that funding will be provided for the purchase of radio-collars and capture of ten (10) PBS in the Fish Creek Mountains and ten (10) PBS in the Vallecito Mountains, not ten total in both areas.

Neither Aspen nor USG were party to CDFW's discussions with the federal agencies, but it is evident that the USFWS and BLM believed that funding for 10 radio-collared PBS was sufficient to support the BO's "no jeopardy" conclusion and issue the ROD approving the project. The CDFW does not include evidence to the contrary, nor does it identify a potential impact that would be mitigated by doubling the scope of the monitoring project (and more than tripling the cost). We note that the existing data set (provided by CDFW) is already significant and the addition of 10 newly collared animals would substantially expand the existing monitoring program. We recognize that cost to capture, collar, and monitor 10 PBS will probably increase due to inflation since 2019, but we do not agree that expanding the project to include 20 PBS, or that expanding it to continue over the life of the project are warranted.

In conclusion, Aspen believes that mitigation already required under existing federal approvals and identified in the Draft SEIR will mitigate potential Project impacts to PBS to a level less than significant under CEQA, and that CDFW's recommended additional mitigation is unneeded.

Finally, Aspen recommends that the County clarify in the Final SEIR that the requirement to conduct federal consultation (Mitigation Measure 3.5-1d of the 2008 EIR/EIS) has been completed. The BLM and USFWS have concluded their ESA consultation, the USFWS has issued a "no jeopardy" BO, and that USG is obligated under its federal authorizations to comply with the CMs and MMs found in the BO and Final SEIS. Additionally, we suggest adding a condition or measure that USG shall comply with all conditions and conservation measures imposed by the BLM and USFWS.

LITERATURE CITED

Aspen (Aspen Environmental Group). 2019. Biological Resources Technical Report: United States Gypsum Company Expansion and Modernization Project. Prepared for Lilburn Corporation, San Bernardino, CA. https://eplanning.blm.gov/public_projects/nepa/103341/20009737/250011396/USG_Final_SEIS_Appendices_L_-_Q.pdf

BLM (Bureau of Land Management). 2019. United States Gypsum Mine Expansion/Modernization Project: Final Supplemental Environmental Impact Statement. El Centro Field Office, El Centro CA. https://eplanning.blm.gov/public_projects/nepa/103341/20009734/250011393/Final_SEIS_November_2019.pdf

BLM (Bureau of Land Management). 2000. Record of Decision: United States Gypsum Mine Expansion/Modernization Project. El Centro Field Office, El Centro CA. https://eplanning.blm.gov/public_projects/nepa/103341/20012100/250016478/US_Gypsum_ROD_508.pdf

USFWS (US Fish and Wildlife Service). 2019. Section 7 Biological Opinion for the United States Gypsum Company Expansion/Modernization Project, Imperial County, California. Memorandum from USFWS Carlsbad Field Office to BLM El Centro Field Office, November 22 2019. https://eplanning.blm.gov/public_projects/nepa/103341/20012159/250016542/Appendix_C_US_Gypsum_Mine_Biological_Opinion.pdf



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008



In Reply Refer to:
FWS-ERIV-11B0345-19F1352

November 22, 2019
Sent by Email

Memorandum

To: Field Manager, Bureau of Land Management, El Centro Field Office
El Centro, California
Attention: Mark Massar

From: Field Supervisor, Carlsbad Fish and Wildlife Office
Carlsbad, California

Subject: Section 7 Biological Opinion for the United States Gypsum Company
Expansion/Modernization Project, Imperial County, California

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the proposed issuance of a right-of-way (ROW) grant by the Bureau of Land Management (BLM) and proposed issuance of an individual permit under section 404 of the Clean Water Act by the U.S. Army Corps of Engineers (Corps) that would authorize construction, operation, and reclamation activities associated with the expansion and modernization of an existing gypsum mine operated by U.S. Gypsum Company (USG, or Applicant) in Imperial County, California. In accordance with the National Environmental Policy Act, the BLM is the lead Federal agency and the Corps is identified as a cooperating agency. This biological opinion analyzes the effects of the gypsum mine expansion on the federally endangered distinct population segment of Nelson bighorn sheep (Peninsular Range DPS; Peninsular bighorn sheep) [*Ovis canadensis nelsoni*] and its designated critical habitat in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*).

Updates to the regulations governing interagency consultation (50 CFR 402) were effective on October 28, 2019 (84 FR 44976). This consultation was pending at that time, and we are applying the updated regulations to the consultation. As the preamble to the final rule adopting the regulations noted, "[t]his final rule does not lower or raise the bar on section 7 consultations, and it does not alter what is required or analyzed during a consultation. Instead, it improves clarity and consistency, streamlines consultations, and codifies existing practice." We have reviewed the information and analyses relied upon to complete this biological opinion in light of the updated regulations and conclude the biological opinion is fully consistent with the updated regulations.

This biological opinion is based on information provided in the following documents and communications: (1) Biological Assessment: United States Gypsum Company Expansion/Modernization Project (BLM 2019a); (2) Imperial County, California, United States

Gypsum Company Expansion/Modernization Project Final Environmental Impact Report/Environmental Impact Statement (Resource Design Technology, Inc. 2008, hereinafter 2008 Final EIR/EIS); (3) United States Gypsum Company Expansion/Modernization Project Imperial County, California, Draft Supplemental Environmental Impact Statement (BLM 2019b, hereinafter 2019 Draft Supplemental EIS), (4) 2018 Revised Plan of Operation (USG 2018); (5) written, telephone, and electronic mail correspondence received during the consultation time period; and (6) pertinent literature contained in our files. The project file for this consultation is located at the Carlsbad Fish and Wildlife Office.

CONSULTATION HISTORY

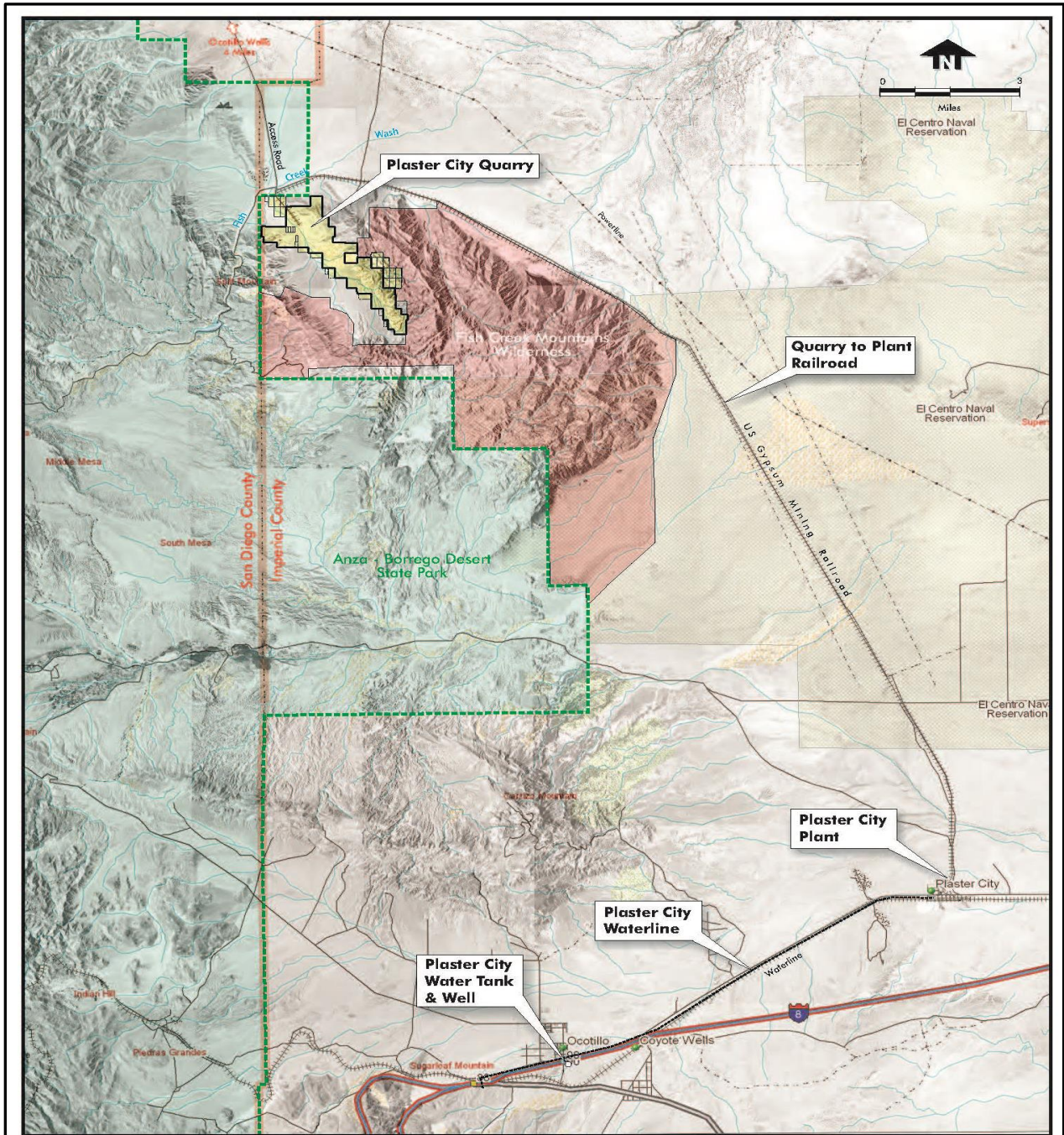
In 2008, the BLM initiated section 7 consultation with the Service to determine if the Gypsum Mine Expansion and Modernization Project (Project) as described in the 2008 Final EIR/EIS would adversely affect the Peninsular bighorn sheep or adversely modify its designated critical habitat. The BLM and the Service did not complete the section 7 consultation and the BLM did not issue a Record of Decision. In 2014, USG requested the BLM issue a Record of Decision for the Project. Coordination between the BLM and the Corps in 2015 led to the determination that a 2019 Supplemental EIS must be prepared to analyze new information and changes to the proposed action that have occurred since the release of the 2008 Final EIR/EIS.

Between February 2015 and August 2019, staff from the Palm Springs Fish and Wildlife Office (PSFWO) worked with the BLM, USG, the Corps, and staff from the California Department of Fish and Wildlife (CDFW) to clarify the project description, Project build-out scenarios, effects to Peninsular bighorn sheep and desert pupfish, and avoidance and minimization measures. The BLM and Corps determined there would be no effect to desert pupfish or its designated critical habitat with implementation of the Project. Their determination is based on information provided in the biological assessment indicating that there is no desert pupfish suitable habitat within Project impact areas and there would be no adverse effects on downstream surface water or groundwater in occupied desert pupfish habitat in San Felipe Creek. Efforts to clarify these issues included participating in site visits and meetings, assessing baseline conditions, and providing comments on the Project's draft biological assessment (BLM 2019a).

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the BLM's issuance of a ROW grant and the Corps issuance of Clean Water Act section 404 individual permit that would authorize construction, operation, and reclamation activities associated with the expansion and modernization of an existing gypsum mine. The ROW grant and individual permit would cover mining and reclamation activities for approximately 80 years, which includes mining and final reclamation (i.e., restoration) activities. The USG mine is located on the lower slopes of the Fish Creek Mountains in western Imperial County, California (Figure 1).



Source: Tiled USGS 1/4 Panel 7.5 min. Quads, 1996.

Project Location

Prepared By:
LILBURN
CORPORATION

United States Gypsum Company - Plaster City Quarry
County of Imperial, California

Figure 1: USG Company Expansion/Modernization Project – Project Component Areas

Mining activities have been ongoing since 1922 and USG has owned and continuously operated the quarry since 1945. Since 1922, the amount of gypsum production has varied based on demand, so mining and processing activities are reduced during times of low gypsum demand, e.g., during economic recessions. Currently, mining operations cover approximately 431 acres (Table 1). The Phases and associated acreage impacts are only for the Plaster City Quarry Expansion Project component.

Table 1. USG Company Plaster City Quarry Expansion Existing and Future Phase Acres

Phase Name	Habitat Condition	Phase Area (Acres)	Designated Critical Habitat (Acres)	Designated Critical Habitat Existing Disturbance (Acres)
Existing Phase 1A	Existing mining	163.3	0	0
Existing Phase 1B	Existing mining	150.1	0	0
Existing Phase S1	Existing mining	32	0	0
Existing Phase S2	Existing mining	24.4	0	0
Existing Phase S3	Existing mining	19	0	0
Processing Area	Existing mining	39.1	0	0
Existing Shoveler Haul Road	Existing mining	3	0	0
Total	Existing mining	430.9	0	0
Phase 2	Partially disturbed by existing mining	87.9	66.7	21.2
Phase 3	Partially disturbed by existing mining	36.4	33.5	2.9
Phase 4	Partially disturbed by existing mining	46.5	31.3	15.2
Phase 5	Partially disturbed by existing mining	31	17.3	0
Phase 6	Partially disturbed by existing mining	71.2	70.5	0.7
Total	Partial disturbance	273	219.3	40
Phase 2p	Undisturbed	5.4	5.4	0
Phase 3p	Undisturbed	10.9	10.9	0
Phase 6Bp	Undisturbed	47.2	47.2	0
Phase 6 Haul Road	Undisturbed	3.6	3.6	0

Phase Name	Habitat Condition	Phase Area (Acres)	Designated Critical Habitat (Acres)	Designated Critical Habitat Existing Disturbance (Acres)
Phase 7	Undisturbed	91.5	91.5	0
Phase 7Bp	Undisturbed	32.4	32.4	0
Phase 7 Haul Road	Undisturbed	1.7	1.7	0
Phase 8	Undisturbed	116.4	116.4	0
Phase 8p	Undisturbed	6.8	6.8	0
Phase 9	Undisturbed	54.3	54.3	0
Phase 10	Undisturbed	13.3	0	0
Phase 10p	Undisturbed	34.5	0	0
Mill Site Claims	Undisturbed	18.7	18.7	0
Total	Undisturbed	436.7	388.9	0
Grand Totals		1,140.6	608.2	40

In addition to the Plaster City Quarry, USG operates a manufacturing plant (USG Plaster City Plant) for wallboard and other gypsum products at Plaster City in southwestern Imperial County, located about 26 miles southeast of the quarry (see Figure 1). The proposed replacement pipeline and canal pipeline as described below would serve the Plaster City Plant. USG also operates a narrow-gauge railroad line to deliver gypsum ore from the Plaster City Quarry to the Plaster City Plant. USG does not propose upgrades or improvements to the narrow-gauge railroad line.

The proposed Project consists of five main components: (1) expansion of the Plaster City Quarry (includes all the partially built and unbuilt Phases shown in Table 1); (2) construction of a new water well, Quarry Well No. 3, and pipeline to supply the Plaster City Quarry (see Figure 2); (3) reclamation activities at the Plaster City Quarry (includes all Phases); (replacement of an existing water pipeline from existing wells and storage tank to supply USG's Plaster City Plant (associated with the Plaster City Plant); and (5) construction of a second new water pipeline (canal pipeline) from the Imperial Irrigation District's (IID) Westside Main Canal to the Plaster City Plant to supplement the water supply (associated with the Plaster City Plant). The Project also contains a series of measures to avoid and minimize the effects of the proposed action on biological resources. The Project components are shown on Figure 1 in the biological assessment (BLM 2019a).

The following sections provide a summary of each of the Project components. A full description of each component can be found in the biological assessment (BLM 2019a).

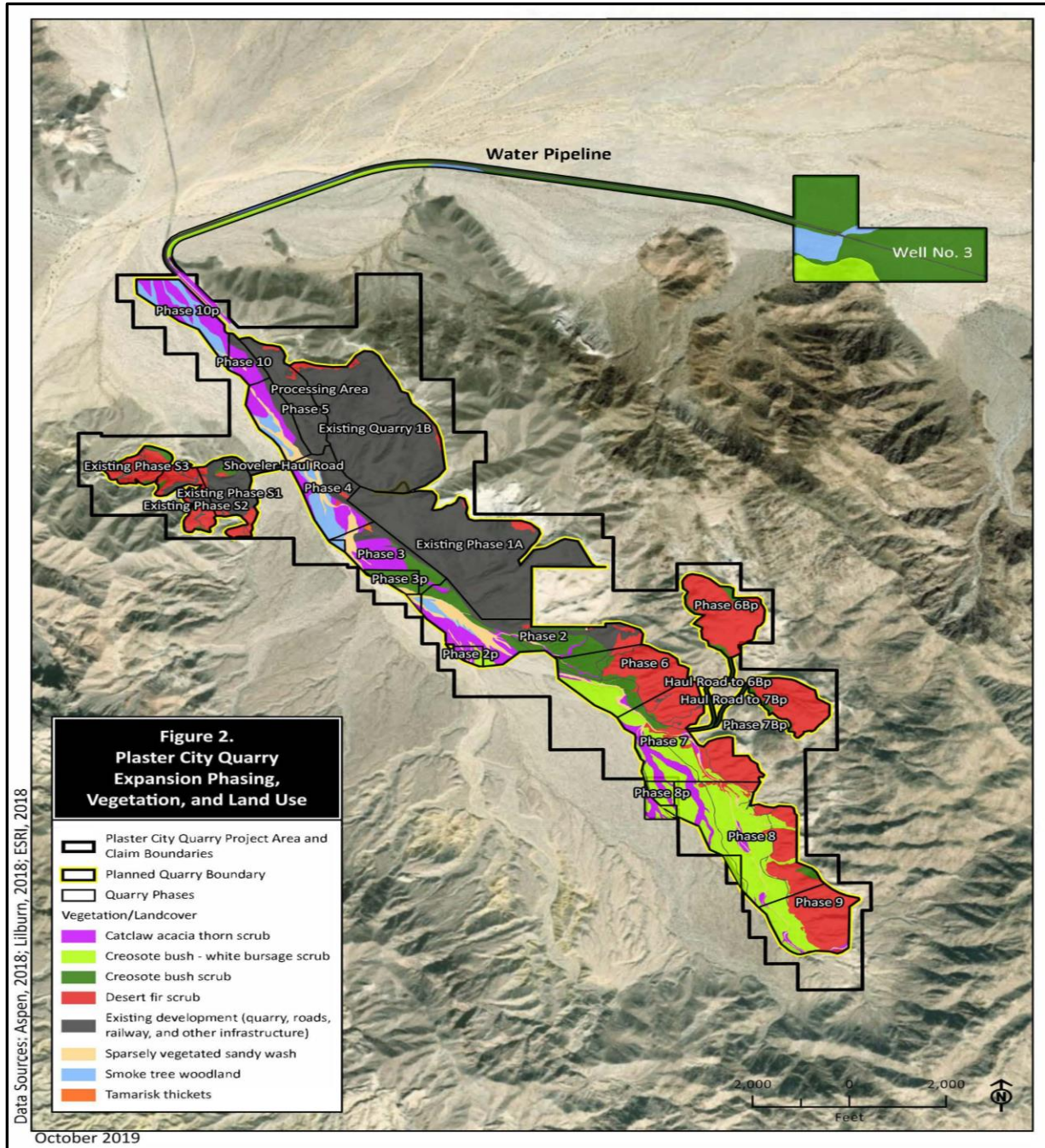


Figure 2: Plaster City Quarry, Expansion Area and Phases

Plaster City Quarry Expansion

The Project consists of a multi-phased quarry plan that would systematically quarry and process approximately 1.92 million tons of gypsum annually over a period of approximately 73 years, plus 7 years to complete reclamation activities (see Figure 2). Mining and reclamation are divided into phases based upon quantity and quality of gypsum and projected market demand. The multi-phased plan includes opening new hillside quarries to remove outcrops of high-grade gypsum. The existing hillside quarry activity along the west-facing slope of the Fish Creek Mountains would be expanded to the south to access the subsurface gypsum deposits. Overburden (sand, gravel, and boulders) would be stripped to a depth of approximately 100 feet and used in reclamation. Quarrying and reclamation operations would take place simultaneously in phases throughout the life of the mine.

The existing disturbance consists of Phases 1A, 1B, the Shoveler Annex (Phases S1, S2, and S3), and processing facilities and access roads. The Project would authorize additional mining disturbance within Phases 2 through 9. All planned new disturbance, as well as quarry areas post-dating the California Surface Mining and Reclamation Act of 1975 (SMARA), are subject to SMARA's reclamation requirements.

Plaster City Quarry expansion activities include site grading, quarrying, pre-milling (primary and secondary crushing and screening), and shipping material via the existing narrow-gauge railroad to the Plaster City Plant for processing. Initial Plaster City Quarry construction (grading) entails a heavy equipment pass over a previously unmined (undisturbed) surface, to remove vegetation and a top layer of alluvium or clay. It includes driving heavy equipment over the undisturbed area, pushing the vegetation and the top few inches of overburden into spoils stockpile areas. Typically, an operator can clear about five acres per day. Quarrying activities also include blasting, which occurs two to four times per month. Each blast results in the fragmentation of an average of 55,000 tons of gypsum. During the period 2015 through 2018, blasting, on average, occurred twice monthly. No modification or expansion of the existing pre-milling facility is proposed. Haul road alignments within the Plaster City Quarry would be changed to accommodate individual quarry phases and the railroad and access roads would continue to be maintained.

As indicated above, the USG mine expansion would take place over the course of about 80 years. USG is currently mining Phases 1A and 1B, and S1 and S2. Expansion into Phases 2, 2P, 3, 3P, as the initial mining activities, would last approximately 29 years. From there, the quarry would expand north and south into adjacent phases as gypsum is extracted and reclamation continues. Timing would be dependent on quantity and quality of recoverable gypsum, blending formulas, plant demand, overburden placement, and reclamation phasing. The logical progression of mining would be into Phase 4 to the north and Phase 6 to the south, then Phase 5 and Phase 7. Total mine life is approximately 73 years at maximum production (Table 2). The logical final phases would be Phases 9 to the south, Phase 10 to the north, and outcrop Phases 6BP and 7BP to the east, but these may vary as outcrop and alluvial deposits are depleted and blending scenarios dictate. Phases may be mined concurrently depending on gypsum quality (Ilburn 2019, pers. comm.).

The train on the narrow-gauge railroad consists of up to 25 bottom dump hopper cars (45-ton capacity) and the train currently makes an average of 950 round trips between the Plaster City Quarry and the Plaster City Plant each year. With the proposed new production, the number of train trips could reach 1,800 round trips annually.

Construction of Plaster City Quarry Water Well and Pipeline

USG proposes to construct and operate a new production water well, Well No. 3 (Figure 2). The original water well was constructed in 1983 and is permitted under Imperial County Conditional Use Permit (CUP) No. 635-83 for a maximum withdrawal of 2,862 acre-feet per year. USG is proposing a replacement well be drilled on USG-owned land. This action was analyzed in the 2008 Final EIR/EIS and approved by Imperial County. A new underground pipeline would deliver water from Well No. 3 to the Plaster City Quarry, and a new electrical service line would provide electrical power to the pump. The power line and water pipeline would be located between the existing railroad alignment and the existing access road. The power line would be located underground from the well head to the Plaster City Quarry gate; within the quarry property it would be installed on either existing overhead power poles or on replacements of the existing poles, if needed. The total length of utility improvements from the well site to the Plaster City Quarry site would be approximately 18,240 linear feet.

Table 2: Projected Life (in Years) of Quarry Phases

Phase	Estimated Life (Years)	Phase	Estimated Life (Years)
1B	0	7BP	1.36
1A	9.72	6	7.39
2	7.68	S3	2.11
2P	0.1	7	8.22
3	4.47	8	11.25
3P North	0	8P	0.19
3P South	0.67	10	0.48
S1	3.9	9	4.44
S2	2.15	5	2.34
10P	1.64	4	1.71
6BP	2.7	Total	72.52

Plaster City Quarry Reclamation

Following the removal of gypsum, the areas disturbed by mining activities would be reclaimed as open space. Reclamation would be conducted concurrently, where feasible, during operations. Details of facilities decommissioning can be found in the 2019 Draft Supplemental EIS, Chapter 2 (Proposed Action and Alternatives). On completion of quarrying, the steepest portion of the hillside quarries would consist of maximum 1:1 slopes along a back-wall with a broad area

excavated to approximately 100 feet deep at the base of the excavations and in the adjacent sparsely vegetated sandy wash (see Figure 2). The benched hillsides would be re-contoured by blasting or bulldozing the benches to soften the topography. Reclamation of the Plaster City Quarry phases would include the following activities:

- Backfilling and grading of phased quarries
- Stabilization of slopes
- Rehabilitation of pre-mining drainages
- Removal, disposal, or utilization of residual equipment, structures, and refuse
- Control and disposal of contaminants
- Treatment of streambeds to control erosion and sedimentation
- Revegetation of phased quarries

Reclamation efforts would follow a series of steps that would likely vary over the life of the mine operation. As new information or techniques become available that could improve the results of the revegetation activities, they would be integrated into revegetation practices. Thus far, revegetation efforts have taken a passive approach by re-contouring portions of quarried areas, allowing them to remain undisturbed, and monitoring the re-establishment of native vegetation. After approximately 5 years, natural vegetation has become established on the re-contoured slopes. USG has successfully re-vegetated 20 acres within Phase 1A using this approach (USG 2018).

Replacement of Existing Plaster City Plant Water Pipeline

The Project would replace the existing water line serving the Plaster City Plant with a new 10-inch line parallel to and within approximately twenty feet of the existing alignment. Water is supplied to the Plaster City Plant by private groundwater wells located approximately 8 miles west of the plant in the community of Ocotillo (Figure 1). The amount of groundwater pumped varies annually to meet plant processing demands; USG currently has the right to pump up to a maximum of 767 acre-feet per year. The groundwater is transmitted to the plant via an 8-inch gravity fed water pipeline, located along Imperial County Route S80 and within the existing road right-of-way.

Construction of New Canal Water Pipeline

The Project may include a new pipeline to deliver IID water from the Westside Main Canal to supplement the Plaster City Plant's water supply if this alternative is selected. The alignment is approximately 5.5 miles long and is proposed to be constructed within the right-of-way of the Union Pacific Rail Line and a minimum of 85 feet from the centerline of the tracks.

Conservation Measures (CM)

The Proposed Action includes a number of avoidance and minimization measures (conservation measures) to reduce adverse effects to natural resources. These include general biological

resources conservation measures as well as measures specifically applicable to avoid and reduce adverse effects to Peninsular bighorn sheep.

- CM 1. **Minimize Temporary Use Areas.** During construction of the Plaster City Quarry water pipeline, the need for temporary use areas will be minimized by using the USG private parcels on either end of the pipeline alignment for staging and equipment and material storage. Materials will be transported to the Project areas as needed, for immediate use.
- CM 2. **Mining and Reclamation.** Mining and reclamation will be conducted only as approved in the Plan of Operation and Mine Reclamation Plan. Reclamation activities will be conducted concurrently with mining and will be initiated within each phase as soon as is feasible. Reclamation will include slope contouring and revegetation with native plant species as specified in the reclamation plan.
- CM 3. **Domestic Animals.** The Project proponent will not allow domestic animals (cattle, sheep, donkeys, dogs, etc.) onto the mine site or any lands under USG control. Training for mine employees will include instructions to report observations of domestic animals to the Quarry Manager. Upon receiving any such reports, the Quarry Manager will contact the appropriate authorities for removal of domestic animals.
- CM 4. **Revegetation (Reclamation).** Consistent with the California Surface Mining and Reclamation Act (SMARA), USG will implement the revegetation plan. In general, revegetation will be designed to restore habitat and cover for wildlife use in conformance with SMARA. Revegetation will be concurrent with closure of individual phases. Wherever ongoing Plaster City Quarry operations may eliminate access to closed upper benches, those benches will be revegetated while access is still available. Due to the continually changing bench configuration and access within the working quarry, revegetation scheduling for each quarry bench will be based on the geotechnical safety of slopes and resources remaining of the gypsum deposit. Wherever possible, USG will begin revegetation of phases to restore native habitat values concurrently or in advance of opening new phases.
- CM 5. **Integrated Weed Management Plan.** USG will prepare and implement an integrated weed management plan to control invasive weeds, including tamarisk and fountain grass, in cooperation with the BLM and Imperial County. The plan will include procedures to help minimize the introduction of new weed species, an assessment of the invasive weed species known within the Project area, and procedures to control their spread on site and to adjacent offsite areas. This plan will be submitted to the BLM and Imperial County for review and approval prior to the start of construction and will be implemented for the life of the Project.
- CM 6. **Mining and Construction Activity Monitoring and Reporting.** Prior to the beginning of any Plaster City Quarry expansion activities, USG will identify a

Designated Biologist and may additionally identify one or more Biological Monitors to support the Designated Biologist. The Designated Biologist and Biological Monitors will be subject to approval by the BLM and Service. The Designated Biologist will be in direct contact with BLM and the Service. The Designated Biologist and Biological Monitors will have the authority and responsibility to halt any Project activities that are in violation of the conservation measures. To avoid and minimize effects to biological resources, the Designated Biologist and/or Biological Monitor will be responsible for the following:

- a. The Designated Biologist will notify BLM's Authorized Officer and the Service at least 14 calendar days before the initiation of Plaster City Quarry expansion of new ground-disturbing activities.
- b. The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys (see CM 8 below) and will be on site during any Plaster City Quarry expansion activities or other new ground disturbing activities (e.g., clearing spoils or stockpile areas) and will be responsible for ensuring that no expansion activities are conducted while Peninsular bighorn sheep are within a 0.25-mile radius of the activity (see CM 11 below).
- c. The Designated Biologist or Biological Monitor will immediately notify BLM's Authorized Officer and the Service in writing if USG does not comply with any conservation measures including, but not limited to, any actual or anticipated failure to implement conservation measures within the periods specified.
- d. The Designated Biologist or Biological Monitor will visit the quarry site periodically (no less than once per month) throughout the life of the Project to administer the Worker Education Awareness Program (CM 7) and ensure compliance with the conservation measures. The Designated Biologist will submit an annual compliance report no later than January 31 of each year to BLM's Authorized Officer throughout the life of the Project documenting the implementation of the following programs and plans, as well as compliance or non-compliance with each conservation measure:
 - Integrated Weed Management Plan
 - Worker Education Awareness Program
 - Reclamation Plan
 - Wildlife Mortality Reporting Program
 - Peninsular Bighorn Sheep Monitoring Plan

CM 7. **Worker Education Awareness Program.** Prior to Project approval, USG will develop a Worker Education Awareness Program (WEAP), to be implemented upon final approval by BLM and the Service. The WEAP will be available in English and Spanish. The WEAP will be presented to all workers on the Project site throughout

the life of the Project. Multiple sessions of the presentation may be given to accommodate training all workers. Wallet-sized cards summarizing the information will be provided to all personnel. The WEAP will be approved by the BLM, Service, and CDFW, and will include the following:

- a. Descriptions of special-status wildlife of the region, including Peninsular bighorn sheep, and including photos and how to identify adult and subadult male and female sheep.
- b. The biology and status of special-status species of the area, including Peninsular bighorn sheep.
- c. A summary of the avoidance and minimization measures and other conservation measures.
- d. An explanation of the Peninsular bighorn sheep observation log (see CM 10), including instruction on correctly filling out data.
- e. An explanation of the flagging or other marking that designates authorized work areas.
- f. Actions and reporting procedures to be used if any wildlife, including Peninsular bighorn sheep, is encountered.

CM 8. **Wildlife Impact Avoidance and Minimization Measures.** USG will implement the following measures throughout the life of the Project.

- a. The Designated Biologist or Biological Monitor will be on site during any quarry expansion activities or other new ground disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no quarry expansion activities are conducted while Peninsular bighorn sheep are within a 0.25-mile radius of the activity. Speed limits along all access roads will not exceed 15 miles per hour.
- b. Night lighting will be avoided or minimized by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.
- c. The boundaries of all areas to be newly disturbed (including quarry expansion areas, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment will be confined to the flagged areas. The Biological Monitor will be on the site to ensure that no ground disturbing activities occur outside the staked area during initial quarry expansion or ground disturbance.

- d. Spoils will be stockpiled only within previously disturbed areas, or areas designated for future disturbance (including spoils areas designated in the Plan of Operations).
- e. No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight to prevent injury to Peninsular bighorn sheep. Any uncovered pitfalls will be excavated to 3:1 slopes at the ends to provide wildlife escape ramps. Pitfalls will be covered completely to prevent access by small mammals or reptiles.
- f. No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the Project site, on off-site Project facilities and activities, or in support of any other Project activities.
- g. All trash and food-related waste will be placed in self-closing coyote-proof containers and removed regularly from the site to prevent overflow. Workers will not feed wildlife.
- h. Water applied to dirt roads and construction areas for dust abatement will use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife such as coyotes and other sheep predators. Pooled rainwater or floodwater within quarries will be removed to avoid attracting wildlife to the active work areas.
- i. Any injured or dead wildlife encountered during Project-related activities will be reported to the Designated Biologist, Biological Monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, including Peninsular bighorn sheep, the Designated Biologist or Biological Monitor will notify the BLM, Service, and/or CDFW, as appropriate, within 24 hours of the discovery.

CM 9. **Minimize Impact to Designated Critical Habitat.** To minimize impacts to Peninsular bighorn sheep designated critical habitat, USG will conduct 1:1 onsite reclamation as specified in the Mining and Reclamation Plan for all Project disturbance areas. Additionally, USG will acquire critical habitat for long-term wildlife habitat conservation to minimize the loss of 14.6 acres of designated critical habitat on public lands within the Plaster City Quarry. USG would provide 29.2 acres of compensation habitat. This compensation land is currently under private USG ownership and would be permanently protected as Peninsular bighorn sheep habitat through a conservation easement or similar instrument, to be developed in coordination with BLM. Any lands proposed for acquisition to minimize the loss of critical habitat will be subject to review and approval by the BLM, CDFW, and the Service.

- CM 10. **Peninsular Bighorn Sheep Monitoring and Reporting.** USG will record and report all onsite Peninsular bighorn sheep observations to BLM, CDFW, and the Service and will support the CDFW Peninsular bighorn sheep monitoring and reporting program within the Fish Creek Mountains and Vallecito Mountains. USG will continue implementing a reporting form (observation log) for all Peninsular bighorn sheep observations, including completing data fields for observer, date and time, number and descriptions of animals observed, and location (to be shown on an aerial view of the quarry area), and will submit completed forms for each observation to the Quarry Manager. In addition, USG will fund the purchase of radio collars and the capture of 10 Peninsular bighorn sheep in the Fish Creek Mountains and Vallecito Mountains ewe group areas, to provide location monitoring data within these ewe groups over a 10-year period. The funding amount will be \$157,115 (per cost estimate provided by CDFW), to be transferred to the CDFW program via a means agreed upon by USG, BLM, and CDFW. The funding agreement will include a requirement that the funding will be specifically targeted to the Fish Creek Mountains and Vallecito Mountains ewe groups, and all resulting data will be available to BLM to support the long-term analysis of Peninsular bighorn sheep activities in the Federal action area.
- CM 11. **Peninsular Bighorn Sheep Avoidance and Minimization Measures.** USG will implement the following measures throughout the life of the Project:
- a. New ground-disturbing activities (i.e., initial quarry development, quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within Peninsular bighorn sheep lambing season (January 1 through June 30) as defined in the Peninsular bighorn sheep recovery plan, except with prior approval by the Service and CDFW.
 - b. Blasting will be minimized during the lambing season (January 1 through June 30) within the Plaster City Quarry Phases 6Bp, 7Bp, 8, and 9 by building up a stockpile of material during the other months.
 - c. The Designated Biologist or Biological Monitor will be on site during any quarry expansion activities or other new ground disturbing activities, and will walk the perimeter of the expansion area and view surrounding habitat with binoculars, stopping work if Peninsular bighorn sheep are within a 0.25-mile radius of the activity.
 - d. If a Peninsular bighorn sheep enters an active work area, all heavy equipment operations will be halted until it leaves. Plaster City Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify the BLM, CDFW, and the Service.

- e. Fencing installed anywhere within the Plaster City Quarry area will be standard temporary construction fencing, silt fencing, or chain-link fence at least 8 feet tall. Any proposed permanent fencing design will be submitted for BLM, CDFW, and the Service review and approval to confirm that the fence design is not likely to pose a threat to Peninsular bighorn sheep.
- f. When mobile or stationary equipment at the quarry is replaced, upgraded, or relocated, any feasible opportunities to reduce noise levels will be implemented (e.g., quieter designs for new equipment will be used if feasible).
- g. Quarrying procedures such as loading and unloading rock will be modified wherever practicable to minimize noise (e.g., by unloading rock into the crusher bin while it is partially full).
- h. In consultation with BLM, CDFW, and the Service, USG may construct and maintain a supplemental water source to ensure water availability to Peninsular bighorn sheep in the Fish Creek Mountains ewe group during summer drought.

CM 12. **Future Plaster City Quarry Phasing Notification and Review.** USG will notify the BLM, CDFW, and the Service 90 days prior to initiating future mining activities in the four phases nearest to the highest Peninsular bighorn sheep occurrence and habitat connectivity areas (i.e., Phases 6BP, 7BP, 8, and 9). Upon notification, the agencies will coordinate with USG to review Peninsular bighorn sheep occurrence and activity in the vicinity obtained during the intervening years. Peninsular bighorn sheep avoidance and minimization measures may be revised as needed to conform to new information.

Action Area

The implementing regulations to section 7(a)(2) of the Act describe the action area as all areas affected directly or indirectly by the Federal action and not merely the immediate area affected by the proposed project (50 CFR §402.02). Analyses of the environmental baseline, effects of the action on the species and designated critical habitat, cumulative effects, and the impacts of the incidental taking, are based upon the action area as determined by the Service (Service and NMFS 1998).

The action area for the Project includes all suitable Peninsular bighorn sheep habitat within the Vallecito Mountains/Fish Creek Mountains recovery region (recovery region 8; 173,978 acres), which includes the quarry expansion area and the new water well and pipeline alignment (Figure 3). We have identified the recovery region as the action area because ewe groups within recovery regions are connected via ram movements and rarer dispersal by ewes; therefore, the Peninsular bighorn sheep population is comprised of a metapopulation structure (Service 2000). Effects to one ewe group in a recovery region will have consequences to other ewe groups within that same recovery region.

ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the rangewide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which are all consequences to listed species caused by the proposed action that are reasonably certain to occur; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

As such, in accordance with policy and regulation, the jeopardy determination is made by evaluating the aforementioned components to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild by reducing the reproduction, numbers, and distribution.

Adverse Modification Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat of listed species. “Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species” (50 CFR 402.02).

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the status of critical habitat, which describes the rangewide condition of designated critical habitat for the Peninsular bighorn sheep in terms of its physical and biological features, the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the environmental baseline, which analyzes the condition of the designated critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the effects of the action, which analyze all consequences to critical habitat caused by the proposed action that are reasonably certain to occur and their influence on the recovery role of the affected designated critical habitat units; and (4) cumulative effects, which evaluates the effects of future non-Federal activities in the action area on the physical and biological features of critical habitat and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the designated critical habitat of the Peninsular bighorn sheep are evaluated in the context of the rangewide condition of the critical habitat, taking into account any cumulative effects, to determine if the consequences of the proposed action are likely to appreciably reduce the value of critical habitat for the conservation of the species.

STATUS OF THE SPECIES AND CRITICAL HABITAT

The following discussion briefly summarizes information about Peninsular bighorn sheep relative to its legal status and biology, as discussed in the Service's (1) 5-year review for the species (Service 2011a); (2) recovery plan (Service 2000); and (3) revised designated critical habitat (Service 2009a). Please refer to these documents for more detailed information.

The Service listed the Peninsular bighorn sheep as a distinct population segment (DPS) of the species *Ovis canadensis* on March 18, 1998 (63 FR 13134). The Service revised this listing on April 14, 2009, to identify the listed unit as an endangered DPS of the subspecies (*Ovis canadensis nelsoni*) (74 FR 17288).

Reproduction

Peninsular bighorn sheep reproduction begins during the rut when adult bighorn sheep, who tend to loosely segregate during much of the year, intermingle from August through October (Rubin *et al.* 2000). Gestation time is approximately 174 days (Shackleton *et al.* 1984) and lambs are born between January and August; however, most lambs are born between February and April. Failure to acquire sufficient nutrients during the last 2 months of gestation (typically December and January) and during nursing can adversely affect the survival of newborns (Thorne *et al.* 1976, Holl *et al.* 1979), and the time period surrounding lambing and nursing is very demanding in terms of the energy and protein required by ewes. Therefore, access to food resources with sufficient nutrients can influence reproductive success (Etchberger and Krausman 1999).

In the Peninsular Ranges, ewes estimated to be between 2 and 16 years of age have been documented to produce lambs (Rubin *et al.* 2000; Ostermann *et al.* 2001). As parturition (the act of giving birth) approaches, ewes seek isolated sites with shelter and unobstructed views (Turner and Hansen 1980), and seclude themselves from other females while finding sites to give birth (lambing sites). When ewes are ready to give birth, they will typically seek out the steepest terrain, where they and their lambs will be safest (Geist 1971). Lamb and yearling age classes experience higher mortality rates relative to adult bighorn sheep. After reaching adulthood at 2 years of age, Peninsular bighorn sheep survival rate is high, generally above 70 percent (Service 2000).

Numbers

In 1974, the Peninsular bighorn sheep population was estimated at 1,171 (Weaver 1975), but by 1996 the rangewide population estimate had declined to 276 adult sheep (Service 2000); since that time the population has steadily increased. Currently, the population is considered stable

with an estimated 884 adult bighorn sheep in the Peninsular Ranges (Colby and Botta 2017). In 2016, the rangewide ewe population estimate was 552 with more than 25 ewes in each of the 9 recovery regions. Criteria for downlisting Peninsular bighorn sheep from endangered to threatened include, among other things, the occurrence of at least 25 ewes in each recovery region. No rangewide population surveys have been conducted since 2016 so current rangewide population numbers are not available.

Distribution

Within the United States, the range of Peninsular bighorn sheep extends along the Peninsular Ranges from the San Jacinto Mountains in Riverside County, California, south to the U.S.-Mexico border in Imperial County, California. Peninsular bighorn sheep habitat in the Peninsular Ranges is restricted to the east facing, lower elevation slopes that are typically below 4,600 feet and located along the northwestern edge of the Colorado Division of the Sonoran Desert, commonly referred to as the Colorado Desert. Peninsular bighorn sheep regularly use steep, open slopes and ridgelines that offer unobstructed views of wide areas within these mountain ranges. These types of terrain are a crucial component of Peninsular bighorn sheep habitat as it is used for escape from predators (escape terrain), lambing areas, and shelter in both excessive heat and severe storms (Service 2000, Bleich *et al.* 2009).

Designated Critical Habitat

The Service designated approximately 844,897 acres of critical habitat on February 1, 2001 (66 FR 8650) based largely on information from the Peninsular bighorn sheep recovery plan (Service 2000). Following a challenge in court and a review of the best scientific information available at the time, the Service re-designated approximately 376,938 acres of revised designated critical habitat on April 14, 2009 (74 FR 17288).

The Peninsular bighorn sheep revised designated critical habitat rule identifies physical and biological features that are essential to the conservation of the species. As identified in the final revised critical habitat rule (74 FR 17288), the physical and biological features are:

1. Moderate to steep, open slopes (20 to 60 percent) and canyons, with canopy cover of 30 percent or less below 4,600 feet elevation in the Peninsular Ranges that provide space for breeding, feeding, and sheltering and movement within and between ewe groups.
2. Valley floors, foothills, and alluvial fans and washes with productive soils that support a variety of forage plants to meet the annual and drought-related variations in forage quality and availability.
3. Steep, rugged slopes (60 percent slope or greater) below 4,600 feet elevation that provide secluded space for lambing as well as terrain for predator evasion.
4. Alluvial fans and washes that maintain habitat connectivity by serving as travel routes between and within ewe groups, adjacent mountain ranges, and important resource areas, such as foraging areas.
5. Intermittent and permanent water sources within the Peninsular Ranges.

Since 2009, there have been temporary disturbances to approximately 12,000 acres of designated critical habitat consisting of transmission line construction and wildland fires (Service 2009b, Service 2019). This is approximately 3 percent of the area under designated critical habitat. We do not have information to indicate that these disturbances are adversely affecting the physical and biological features that are essential to the conservation of the species. Also, a majority of the lands under the critical habitat designation are included in Federal or State lands with conservation mandates such as the Santa Rosa and San Jacinto Mountains National Monument and Anza Borrego Desert State Park. In addition, the Peninsular bighorn sheep is a species covered by the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), which includes designated critical habitat within its Santa Rosa and San Jacinto Mountains Conservation Area. Lastly, based on land use information contained in California's Farmland Mapping and Monitoring Program (FMMP 2016), there has been no significant changes in land use from open space to urban uses between 2010 and 2016 in areas of designated critical habitat.

Recovery

There are nine recovery regions identified within the Peninsular Ranges, including: (1) San Jacinto Mountains, (2) Northern Santa Rosa Mountains, (3) Central Santa Rosa Mountains, (4) Southern Santa Rosa Mountains, (5) Coyote Canyon, (6) Northern San Ysidro Mountains, (7) Southern San Ysidro Mountains, (8) Vallecito Mountains/Fish Creek Mountains, and (9) Carrizo Canyon (Service 2000). The recovery strategy for Peninsular bighorn sheep, as outlined in the recovery plan (Service 2000), included three delisting criteria:

1. At least 25 ewes must be present in each of the nine regions described in the recovery plan, during each of 12 consecutive years, without continued population augmentation.
2. The rangewide population must average 750 individuals (adults and yearlings) with a stable or increasing population trend over 12 consecutive years.
3. Regulatory mechanisms and land management commitments have been established that provide for long-term protection of Peninsular bighorn sheep and all suitable habitat. In addition, connectivity among all portions of habitat must be established and assured through land management commitments such that bighorn sheep are able to move freely throughout the Peninsular Ranges

Challenges to the recovery of Peninsular bighorn sheep within these regions were identified as habitat fragmentation, degradation, and loss due to urban and commercial development; disease; predation coinciding with low population numbers; response to human disturbance; insufficient lamb recruitment; and prolonged drought. Since the time of listing, threats from habitat loss in the Northern Peninsular Ranges (Recovery Regions 1, 2, 3, and 4) have declined due to the CVMSHCP, a large regional conservation plan that facilitates the purchase and conservation of suitable habitat within these recovery regions (Service 2011a).

Although not identified as threats at listing, invasive nonnative plants, fire suppression, and catastrophic fire impact Peninsular bighorn sheep habitat rangewide (Service 2011a). Impacts of

both fire suppression at the higher elevations and more frequent wildfires at lower elevations (due to nonnative plant cover) have increased the magnitude of this threat throughout the range since listing (Service 2011a). It is unknown whether fire caused any mortality of Peninsular bighorn sheep, but large wildfires may threaten individuals in the future. However, Peninsular bighorn sheep have been documented foraging in burned areas at high elevation, suggesting a potential, if transient, benefit (Service 2011a). Lastly, changes in climate, including higher temperatures, drought, and longer time intervals between heavy rainfall events, affect the amount of water available to Peninsular bighorn sheep rangewide, and pose challenges to recovery (Service 2011a).

Since listing, Peninsular bighorn sheep population growth has increased significantly in all recovery regions, with the exception of the San Jacinto Mountains. As stated above, the 2016 rangewide ewe population estimate was 552 with more than 25 ewes in each of the 9 recovery regions, which meets one of the criteria for downlisting the species. While the number of adults in most all of the recovery regions continues to improve, low lamb recruitment continues to be documented in several recovery regions (Colby and Botta 2018).

ENVIRONMENTAL BASELINE

Revised regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action (Project). The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

The action area occurs at the west margin of the Salton Basin in Imperial and San Diego Counties within the Peninsular Ranges. Summer temperatures are hot, generally above 100 degrees Fahrenheit. Total annual precipitation averages about 5 inches per year, with most precipitation falling in the winter months, but some precipitation also occurs in the summer months during irregular summer thunderstorms. USG's existing quarry and quarry expansion area is located in a broad alluvial fan canyon at the base of the Fish Creek Mountains to the east and Split Mountain (part of the larger Vallecito Mountain chain) to the west. The Project is bounded by the Anza Borrego Desert State Park on the west and northwest, and the Fish Creek Mountains Wilderness Area on the east and south within public lands administered by the BLM (Figure 1). Existing approvals authorize mining activities on 464 acres (all on private lands), of which approximately 431 of these authorized acres have been disturbed by previous and ongoing mining activities and approximately 20 of these acres have been restored. Under the proposed action, new mining would occur on a total of approximately 709.7 acres, 608.2 of which are Peninsular bighorn sheep designated critical habitat (Table 1).

Past Consultations within the Action Area

The Service issued a programmatic biological opinion evaluating the effects of the California Desert Conservation Area Plan, as amended, on Peninsular Bighorn Sheep, Riverside and Imperial Counties, California (Service 2010). The Service found the BLM's plan guidance was not likely to jeopardize the continued existence of Peninsular bighorn sheep or adversely modify designated critical habitat. Our 2010 programmatic biological opinion concluded that effects to Peninsular bighorn sheep related to the USG mine expansion was the subject of an ongoing section 7 consultation and effects of the mine expansion were not analyzed in that biological opinion.

Status of the Species in the Action Area

The action area encompasses the Peninsular bighorn sheep Vallecito Mountains/Fish Creek Mountains recovery region, which contains about 173,978 acres of Peninsular bighorn sheep habitat. This recovery region supports the Lizard Wash, Sunset, Vallecito Mountains, and Fish Creek Mountains ewe groups (Colby and Botta 2017), as shown below in Figure 3. Over a 5-year period from 2012-2016, the Peninsular bighorn sheep ewe survival rate in this recovery region was very high, above 90 percent (Colby and Botta 2017). During the 2017-2018 reporting period, there were six documented radio-collared sheep mortalities (five ewes, one ram) in the recovery region, all of which were likely due to mountain lion predation (Colby and Botta 2018). Lamb survival and recruitment are not documented in this recovery region (Colby and Botta 2017).

The estimated population abundance of Peninsular bighorn sheep in this recovery region increased during the period from 1998 to 2016. The region had an estimated population of 45 animals in 1998 and an estimated population of 163 animals (ewes, rams, and yearlings) in 2016 (Colby and Botta 2017). Current population estimates for the recovery region are not available, but we have no information to indicate any reasons for a significant drop in population numbers. To date, past mining activities do not appear to have had an adverse effect on numbers of Peninsular bighorn sheep in the recovery region.

The CDFW radio-collar location data in the action area indicate there are two ewe groups, Vallecito Mountains and Fish Creek Mountains that use the mountain slopes and foothills surrounding the Plaster City Quarry and will occasionally use alluvial fans in the canyon areas south of the actively mined areas (Figure 4). Ewes with lambs have been reported within about one mile of the active mining areas. Rams have also been documented on the Project site. Based on the observation log records maintained by USG since 2008, there have been six Peninsular bighorn sheep seen within the active mining areas (White 2019, pers. comm.). Recent Peninsular bighorn sheep sightings include one ewe on September 9, 2019, and one ram on October 21, 2019; neither animal was injured and both were allowed to wander off the mining area of their own accord (Massar 2019, pers. comm.).

The distribution of Peninsular bighorn sheep in the recovery region has not changed significantly since active monitoring began in 1992 (Colby and Botta 2018) and the available acres that

support resource needs have not significantly declined since most of the habitat is within areas protected from development (see Recovery section below). Wildland fires have burned about 3,464 acres or about 2 percent of the habitat within the recovery region. There are only a few known water sources within the Vallecito Mountains/Fish Creek Mountains recovery region, all of which are small, water-filled depressions in rocks, referred to as a tinajas. Based on the biological assessment (BLM 2019a), as of 2017, numerous tinajas in the Fish Creek Mountains have been dry for the past few years (prior to above-average rainfall in 2019).

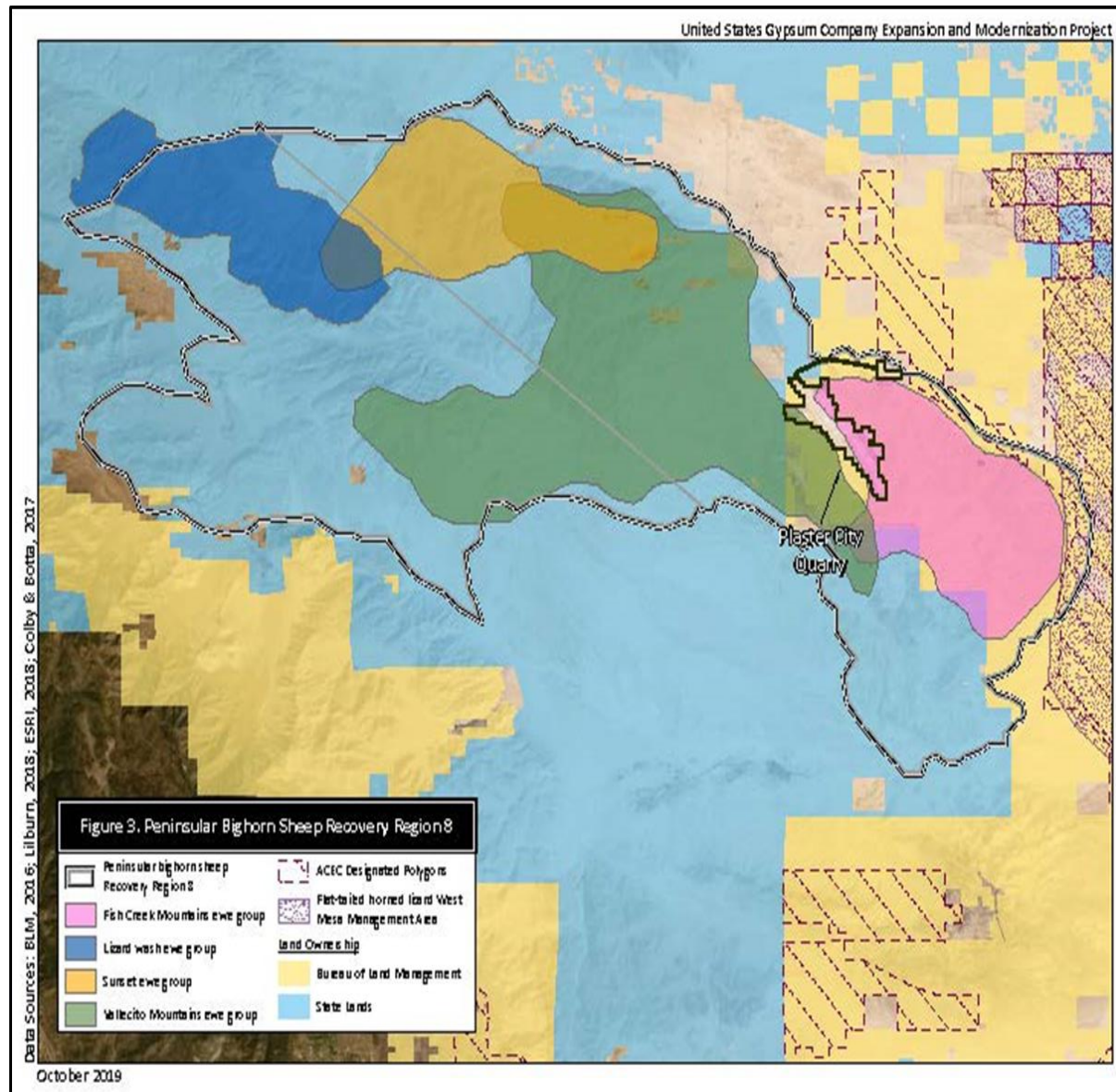


Figure 3. USG Mine Expansion and Modernization Project.

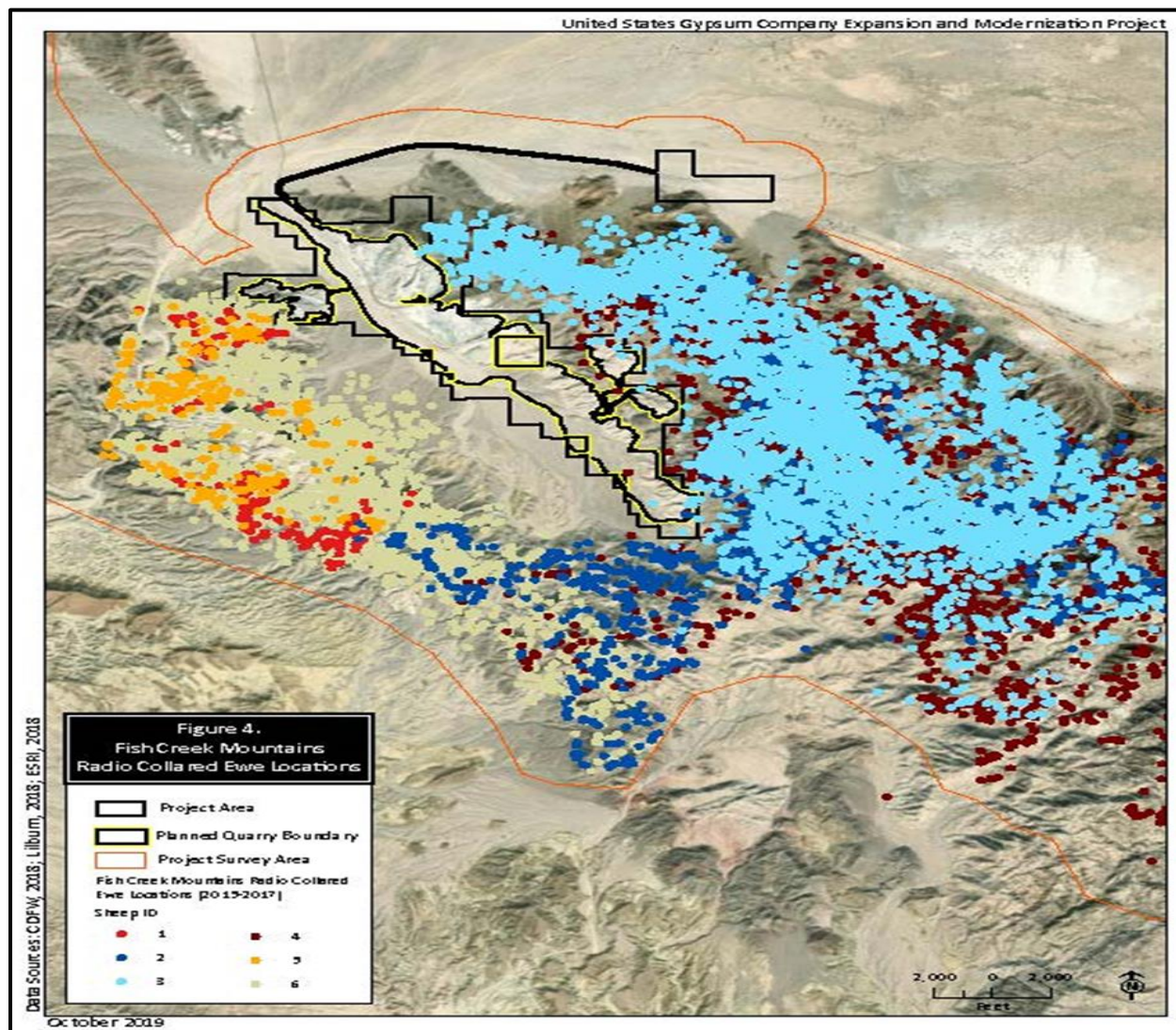


Figure 4. Radio-collared Peninsular Bighorn Sheep Locations 2015-2017

Status of Designated Critical Habitat in the Action Area

The action area is within unit 2B, the Southern Santa Rosa Mountains south to Vallecito Mountains, of Peninsular bighorn sheep designated critical habitat. This unit includes about 248,021 acres of habitat that support the physical and biological features essential to the conservation of Peninsular bighorn sheep. The action area includes about 97,077 acres of designated critical habitat. The final Peninsular bighorn sheep critical habitat rule excluded most of the existing USG mine areas from the critical habitat designation because active mining pits do not generally provide suitable habitat or suitable conditions for the Peninsular bighorn sheep (Service 2009a). However, 608.2 acres of designated critical habitat are within the planned quarry expansion area. This represents about 0.63 percent of the critical habitat within the action area and a negligible percentage of the entire designated critical habitat rangewide. Designated critical habitat in the action area contains moderate to steep rugged slopes, foothills, water sources, and alluvial fans and washes, which are the physical and biological features

essential to the conservation of the species. There have been no disturbances due to wildland fires or urban development in the action area since the 2009 designation that would degrade or eliminate these physical and biological features. In addition, a majority of the acres within designated critical habitat are protected from development (see below). The undisturbed alluvial fans, washes, and foothills located in the Project's quarry expansion areas provide a high diversity of food plants that support the physical and biological features needed to meet the annual and drought-related variations in forage quality and availability and areas to maintain habitat connectivity (Service 2009a). Based on radio-collared individuals, Peninsular bighorn sheep most frequently use the habitat areas associated with the steep slopes and ridges, rather than the alluvial fans in the canyon. However, washes and alluvial fans play an important role in providing Peninsular bighorn sheep quality forage during the heat of summer months and through times of drought (Service 2009a).

Recovery

As stated above, challenges to Peninsular bighorn sheep recovery include habitat fragmentation, degradation, and loss due to urban and commercial development; disease; predation coinciding with low population numbers; response to human disturbance; insufficient lamb recruitment; and prolonged drought. Based on information in CDFW's most current Peninsular bighorn sheep monitoring report, habitat loss and lack of water sources are impediments to recovery in the Vallecito Mountains/Fish Creek Mountains recovery region (Colby and Botta 2018). The Fish Creek Mountains ewe group is more vulnerable to human disturbance since it resides adjacent to the Project's expansion areas to the west, and off-road vehicle use and target shooting on BLM lands to the east (Colby and Botta 2018). However, about 93 percent of the lands within the recovery region are protected from development since they are either within the Anza Borrego Desert State Park (ABDSP) or BLM wilderness areas (Table 3). Therefore, it is unlikely the recovery region is vulnerable to habitat fragmentation and loss due to urban and commercial development.

Table 3. Land Management Designations – Recovery region 8

Land Management	Acres
Anza Borrego Desert State Park	142,273
BLM Wilderness Area	18,969
BLM	5,947
Private	5,367
California State Lands Commission	1,154
San Felipe Valley Wildlife Area	266
Vallecito County Park and Stage Station, San Diego County	21
Total	173,998

For over 30 years, staff from ABDSP has maintained numerous guzzlers within the Vallecito Mountains and sheep have become dependent upon their use. Due to drought conditions, there has been insufficient rain to fill most of the guzzlers. Currently, ABDSP and CDFW are working

together to develop a long-term maintenance plan for guzzlers and access to water sources throughout ABDSP to assure year-round water availability. A few recovery actions identified in the recovery plan have been implemented in the Vallecito Mountains/Fish Creek Mountains recovery region, including providing and maintaining water sources, and securing funds and methods to monitor ewe groups.

In 2016, the estimated number of ewes in the Vallecito Mountains/Fish Creek Mountains recovery region was 101 ± 28 (Colby and Botta 2017), which exceeds one of the recovery criteria for 25 ewes necessary for downlisting. Therefore, as of the 2016 count, this recovery unit is exceeding that recovery goal. As explained in the Peninsular bighorn sheep recovery plan, these ewe groups are considered subpopulations in a metapopulation context; thus their recovery and persistence depend upon maintaining habitat connections between the ewe groups. Based on radio-collared sheep location data, Peninsular bighorn sheep are currently moving among ewe groups in the recovery region and will occasionally move to adjacent recovery regions (Colby and Botta 2018) so habitat connections appear to be suitable for movement. Wildland fires have burned about 3,464 acres or about 2 percent of the habitat within the recovery region. Long-term drought, mountain lion predation, and disease episodes are the natural factors most likely to affect the population numbers in the future.

EFFECTS OF THE ACTION

Revised regulations implementing the Act (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see § 402.17).

The replacement of the existing Plaster City Plant water pipeline and canal pipeline components of the Project are not expected to have adverse effects on Peninsular bighorn sheep because they would not be located in or near occupied Peninsular bighorn sheep habitat or designated critical habitat. Therefore, only the Plaster City Quarry expansion, Well No. 3 and water pipeline construction, and reclamation components of the Project are evaluated in this section.

Effects to the Species

Quarry Expansion and Operation

As mentioned in the Environmental Baseline section above, the mountains surrounding the Plaster City Quarry support four ewe groups. The number of ewes within each of these groups is unknown but the action area supported about 163 animals in 2016, about 101 of which were ewes (Colby and Botta 2017). Of these four ewe groups, the Vallecito Mountains and Fish Creek Mountains ewe groups use the mountains and foothills adjacent to the USG quarry. As such, the ewes and rams within these groups will be exposed to the activity and noise associated with the Project. These activities include site grading, quarrying, pre-milling (primary and secondary

crushing and screening), reclamation, well and water pipeline construction, and transporting material via the existing narrow-gauge railroad to the Plaster City Plant for finish processing. Expansion and operation could adversely affect the Peninsular bighorn sheep that occupy these hillsides by (1) loss of suitable habitat due to vegetation removal and heavy grading, and behavioral avoidance of the mine site and adjacent habitat; (2) disrupting reproduction or lambing activities; and (3) limiting movement among ewe groups. The two ewe groups, Fish Creek Mountains and Vallecito Mountains, occurring in the mountains adjacent to the mine would be most affected by expansion activities. Direct individual injury or fatality from active mining activities is not expected to occur, for reasons explained below.

The Project would result in the loss of 608.2 acres of suitable habitat over the course of 80 years (Table 1). The loss of habitat would be incremental over that time and quarrying and reclamation activities would take place simultaneously in phases throughout the life of the mine. In general, expansion activities would proceed from currently active quarry areas in the north part of the Project site to future quarry areas (phases) in the south. Because the Project would be implemented in phases, not all 608.2 acres would be unavailable to Peninsular bighorn sheep at the same time. Since the expansion phases are located in the alluvial canyon, loss of habitat would generally result in the elimination of habitat used for foraging. Loss of forage habitat would be minimized by limiting habitat disturbance (CM 1), restoring mined sites (CM 2), and acquiring lands for long-term habitat conservation in the action area (CM 9).

Human presence, lighting, dust, blasting, and noise and vibrations from construction and heavy equipment may alter Peninsular bighorn sheep behavior in the mine vicinity. Based on a site specific noise study, as the mine expands south, noise levels will increase from faint to moderately loud, with loud to very loud level short-duration noise, such as blasting (Urban Crossroads 2018). A number of studies have been conducted to evaluate bighorn sheep responses to human activities and the general conclusion is that bighorn sheep increase their distance away from humans, especially when they are approached by people and dogs. There is evidence that under some circumstances bighorn sheep may habituate to predictable human activity through learning in response to predictable, localized, and avoidable disturbance, including highway traffic, hiking, and aircraft (Service 2000, 2011a). However, even in otherwise optimal habitat, sheep are known to abandon areas either temporarily or permanently, when the limit of their tolerance to disturbance is exceeded (Service 2000, 2011a). Based on radio-collar location data, Peninsular bighorn ewes currently use the hillsides directly above actively mined sites (Figure 4). Furthermore, studies conducted looking specifically at mining effects on other Nelson's bighorn sheep populations indicate that sheep acclimate to ongoing mining activities (Oehler *et al.* 2005, Jansen *et al.* 2007, Bleich *et al.* 2009). Based on these studies, an increase in noise activity may cause Peninsular bighorn sheep to temporarily avoid habitat adjacent to the mine they currently use as escape terrain, foraging, or movement among local ewe groups. However, we anticipate they will also acclimate to future noise and activity over time and will not abandon the hillsides adjacent to future mining activities.

As mentioned in the Environmental Baseline Section above, Peninsular bighorn sheep occupy the Fish Creek Mountains year-round so it is also likely that lambing activity (i.e., birth and nursing) occurs in the Fish Creek Mountains and Vallecito Mountains surrounding the mine site.

Ewes are particularly sensitive to disturbance during the lambing season. The CDFW recommends buffer distances between 400- to 600-yards to avoid disturbance to ewes during lambing activity (Service 2011b). Within the Fish Creek Mountains, location data from radio-collared sheep suggest the most likely lambing activity areas are located in the north-south trending canyon east of the quarry (see Figure 7 in the biological assessment). Future quarry phases 6BP, 7BP, 8, and 9 are nearest to, and are within 600 yards of, this lambing habitat, so the human disturbance and noise associated with mining activity could disrupt reproduction. However, to avoid and/or minimize adverse effects to reproduction or lambing activities, new ground-disturbing activities (i.e., initial quarry development) and blasting would not take place during lambing season (January 1– June 30), except with the approval of the Service and CDFW (CM 11). Also, no ground disturbing activities will be conducted while Peninsular bighorn sheep are within a 0.25-mile radius (440 yards) of the activity (CM 8).

Of the 608.2 acres affected by Project activities, about 368 acres include alluvial fan habitat (see Table 3 in the biological assessment) that sustains forage plant resources with sufficient nutrients to support successful reproduction. Loss of these food resources could adversely affect future reproduction success. However, this loss will occur over the course of 80 years, so not all the acres supporting forage resources will be unavailable simultaneously. Also, about 287 acres of alluvial fan habitat will remain in the canyon. Lastly, based on radio-collared location data, sheep activity is confined to the steep slopes and ridges, rather than in the canyon, so ewes in the action area likely forage outside of the canyon and closer to escape terrain.

Based on Peninsular bighorn sheep radio-collar data, at least six ewes use the mountains, foothills, and alluvial fans surrounding the USG mine. Truck and train traffic and blasting have occurred on the site since 1921, with continuous operation since 1945 and no Peninsular bighorn sheep deaths have been reported due to mining activities. Given the apparent avoidance of active quarry areas by Peninsular bighorn sheep (see Figure 4), the probability of injury or death as the mine is expanded is unlikely. In addition, USG has an active monitoring program (observation log) that entails shutting down operations once a Peninsular bighorn sheep is seen near mining activities. The animals are then monitored until they are out of harm's way. The Project includes conservation measures that will continue this active monitoring program (CM 10 and CM 11).

Expanding quarry operations would likely inhibit sheep from crossing the active quarry areas. Future mining in the southern end of the quarry expansion (Phases 8 and 9) is adjacent to habitat that currently facilitates movement and connectivity between ewe groups on either side of the canyon. Therefore, once construction starts in those phases, connectivity among ewe groups could be compromised. Based on radio-collar location data, Peninsular bighorn sheep regularly use habitat immediately adjacent to the active quarrying Phases 1A, 1B, S1, S2, and S3 (Figure 4). Based on these activity patterns, Peninsular bighorn sheep are expected to continue to occupy the foothills south of Phases 8 and 9 and movement between ewe groups would continue along those areas. Quarry areas undergoing restoration would also be accessible to Peninsular bighorn sheep, although their localized behavioral response to the disturbance involved with previously active quarry areas is unknown. However, as mentioned above, studies evaluating sheep response to mining activities in other parts of Nelson's bighorn sheep range indicate that mining

activities have a minor influence on distribution. Therefore, we anticipate insignificant effects on movement and connectivity with implementation of the Project.

To summarize, loss of suitable habitat, disruption of reproduction or lambing activities, and limiting movement will be minimized, offset, or reduced over time primarily through implementation of the Project's conservation measures. These measures include minimizing habitat disturbance (CM 1), restoring mined sites (CM 2), training workers to avoid adverse effects (CM 7), implementing avoidance buffers (CM 8), acquiring lands for long-term habitat conservation (CM 9), avoiding new ground-disturbing activities during lambing season (CM 11), and notification of new quarry activities in active use areas (CM 12). Implementation of these measures, the gradually phased nature of the Project, and the ability of Peninsular bighorn sheep to acclimate to human activity would help to ensure that mine expansion does not lead to an appreciable (measurable) reduction in reproduction, numbers, and distribution of Peninsular bighorn sheep.

Reclamation (Restoration)

Reclamation activities would entail re-contouring hillsides post-mining and would be conducted by blasting or bulldozing the benches created by mining to soften the topography. Effects to Peninsular bighorn sheep would be similar to those for mine expansion activities with increased human presence, lighting, dust, blasting, and noise and vibrations from heavy equipment. Noise or disturbance effects may cause Peninsular bighorn sheep to avoid habitat they currently use as escape terrain, foraging, or movement among local ewe groups. However, the restoration activities will result in reclaiming disturbed areas that will eventually support habitat for Peninsular bighorn sheep, mainly forage resources. Additionally, Project conservation measures will minimize potential adverse effects by minimizing habitat disturbance (CM 1), training workers to avoid adverse effects to Peninsular bighorn sheep (CM 7), implementing avoidance buffers (CM 8), avoiding new ground-disturbing activities during lambing season (CM 11), and future notification of new quarry activities in active Peninsular bighorn sheep use areas (CM 12).

Based on the gradually phased nature of the project, the ability of Peninsular bighorn sheep to acclimate to human activity, and implementation of the conservation measures, the adverse effects to Peninsular bighorn sheep associated with the reclamation activities will be avoided and/or minimized. Therefore, reclamation activities are not likely to appreciably reduce the reproduction, numbers, and distribution of Peninsular bighorn sheep in the action area.

Effects to Critical Habitat

Mining activities will result in loss of 608.2 acres of designated critical habitat in Unit 2B. Unit 2B is 248,021 acres in size, of which 97,077 acres occurs in the action area. Loss of these 608.2 acres of critical habitat represents 0.63 percent of the critical habitat in the action area, 0.25 percent of the critical habitat in Unit 2B, and 0.16 percent of the total amount of critical habitat rangewide. Habitat lost through Project activities will no longer provide suitable habitat or suitable conditions for the Peninsular bighorn sheep until they are restored. Also, the almost constant presence of workers and machinery may reduce or prevent Peninsular bighorn sheep

from using the active mine site for many years, thus rendering 608.2 acres of designated critical habitat unavailable to Peninsular bighorn sheep. As mentioned above, Peninsular bighorn sheep designated critical habitat in the action area provides space for breeding, feeding, and sheltering and movement among ewe groups. The mine expansion will eliminate alluvial fans and wash areas with productive soils that support annual forage areas and maintain habitat connectivity. However, based on radio-collared sheep movement, a majority of the Peninsular bighorn sheep use area is along the foothills and higher up the slopes, with occasional forays into the alluvial fans and wash areas.

Adverse effects to designated critical habitat impacts would also be minimized, offset, or reduced over time primarily through implementation of the conservation measures. These measures include minimizing habitat disturbance (CM 1), restoring mined sites (CM 2), training workers to avoid adverse effects (CM 7), implementing avoidance buffers (CM 8), avoiding new ground-disturbing activities during lambing season (CM 11), and notification of new quarry activities in active use areas (CM 12). The Project applicant will also conserve lands to minimize the loss of designated critical habitat on public lands within the Plaster City Quarry (CM 9) and conduct 1:1 onsite reclamation (restoration) for all Project disturbance areas. Based on implementation of the conservation measures and the small loss of designated critical habitat, the action area will retain the physical and biological features essential to the conservation of Peninsular bighorn sheep and the Project will not appreciably diminish the value of critical habitat as a whole for the conservation of Peninsular bighorn sheep.

Effects to Recovery

As described in the Environmental Baseline section, the number of Peninsular bighorn sheep in the action area has increased, adult survival rates are high, and movement among ewe groups is occurring. A recovery plan for the species was issued in 2000 and actions by several agencies and a regional habitat conservation plan are taking Peninsular bighorn sheep conservation into account. Population estimates derived during the 2016 survey indicate the number of ewes in the recovery region exceed the number needed for downlisting, which demonstrates a major milestone towards recovery (delisting). This increase in the population has occurred during active mining operations at the Project site.

The loss of 608.2 acres of available habitat within the recovery region and the noise that may lead to temporary abandonment of suitable habitat or a disruption in reproduction or lambing activities will be mitigated with implementation of conservation measures. These include minimizing habitat disturbance (CM 1), restoring mined sites (CM 2), implementing avoidance buffers (CM 8), acquiring lands for long-term habitat conservation (CM 9), avoiding new ground-disturbing activities during lambing season (CM 11), and notification of new quarry activities in active use areas (CM 12). The conservation measures provided by the Applicant are commensurate to the likely Project impacts considering the species status and threats. In this context, they appropriately minimize effects of the proposed project and adequately mitigate its net, residual effects, such that it is not likely to cause significant impairment of recovery efforts for the species. Therefore, we do not anticipate the Project will lead to a significant decline in reproduction, numbers, or distribution and we do not anticipate adverse effects to recovery.

Cumulative Effects

Cumulative effects include the effects of future State, local, private, or certain tribal actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service has no information regarding any future State, local, private, or certain tribal actions that are reasonably certain to occur in the action area that would have an adverse effect on Peninsular bighorn sheep that would result in a loss to reproduction, numbers, and distribution in the action area.

Conclusion

After reviewing the status, environmental baseline for the action area, effects of the proposed action, and cumulative effects, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of the Peninsular bighorn sheep or destroy or adversely modify, as a whole, designated critical habitat. We base this decision on the following:

1. While the proposed Project is adjacent to habitat with resources that support feeding, breeding, and sheltering, and Peninsular bighorn sheep occur within the mountains surrounding the Project site, location data from radio-collared sheep indicate that Peninsular bighorn sheep use the hillsides and slopes rather than the canyon where the Project is located; therefore, most of the resources to support reproduction, numbers, and distribution of the species will be avoided by mining and reclamation activities.
2. Peninsular bighorn sheep continue to use habitat in and around the action area despite active mine operations ongoing since 1921. Because ewe groups adjacent to active mining have become accustomed to some degree to human presence and noise and the Project will be implemented incrementally in phases over the course of 80 years, we expect the increase of noise and human activity would not result in sheep abandoning the hillsides around the Project site and the existing distribution of sheep around the mine will be unaffected.
3. The adverse effects of mine expansion and reclamation activities on reproduction would be avoided and/or minimized by implementation of conservation measures described above in the Description of the Proposed Action section.
4. The rugged mountain habitat on three sides of the Project, which includes critical habitat, would continue to provide necessary resources essential to the conservation of the species.
5. The potential loss of up to 608.2 acres of designated critical habitat represents a negligible percentage of the designated critical habitat otherwise available to the population in the recovery region, and this potential loss would not disrupt population connectivity or cause other significant impacts to the physical and biological features in the action area. Therefore, the Project would not result in the adverse modification or

destruction of critical habitat that would appreciably diminish the value of critical habitat as a whole for the conservation of the species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below for Peninsular bighorn sheep are non-discretionary and must be undertaken by the BLM and the Corps as binding conditions of any grant or permit issued to the Applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM and the Corps have a continuing duty to regulate the activity covered by this incidental take statement. If the BLM or the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the Applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM and the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

AMOUNT AND EXTENT OF TAKE

Based on information from the mine site, existing mining and reclamation have caused no direct death or injury to Peninsular bighorn sheep. We anticipate that implementation of the Project will not result in death or injury to any Peninsular bighorn sheep. However, we do anticipate that Peninsular bighorn sheep inhabiting the area within and adjacent to future mine phases will alter their behavior to some extent until they habituate to the new mining activity. While we know there are at least six ewes that use the habitat around the mine, we cannot quantify the exact numbers inhabiting the two ewe groups adjacent to the mine. Nonetheless, all the sheep inhabiting these ewe groups will experience the effects of the mine expansion and may temporarily abandon areas they currently use for feeding, breeding, and sheltering, as discussed in the effects section. Therefore, we anticipate some harm to those individuals due to loss or abandonment of habitat, and we use habitat loss and disturbance as surrogates to assess take and set a clear standard for determining when the amount or extent of the taking has been exceeded. Because we cannot quantify the number of individuals, take to sheep will be exempted based on the amount of habitat that will be mined over the life of the project. Therefore, take of Peninsular bighorn sheep is anticipated and exempted as follows:

1. The loss of up to 608.2 acres of habitat from construction, operation, and reclamation activities.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy or adversely modify or destroy critical habitat for Peninsular bighorn sheep.

REASONABLE AND PRUDENT MEASURES

The Service's evaluation of the Project's effects in this biological opinion includes consideration of the conservation measures developed by the BLM and USG to reduce the adverse effects of the proposed Project on Peninsular bighorn sheep. Any subsequent changes in the conservation measures proposed by the BLM, Corps, or USG or in the conditions under which these activities will occur may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR § 402.16. These reasonable and prudent measures are intended to supplement the conservation measures that were proposed by the BLM, Corps, and USG as part of the proposed action, and are necessary and appropriate to minimize the impact of the taking on Peninsular bighorn sheep.

1. The BLM, Corps, and USG shall fully implement the conservation measures for this Project as part of the proposed action to minimize the taking of Peninsular bighorn sheep.
2. The BLM, Corps, and USG shall monitor and report the level of incidental take of Peninsular bighorn sheep to the Service throughout the life of the Project and report on the effectiveness of the Project's conservation measures to reduce the impact of incidental take.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, BLM, the Corps, and USG, and their agents and contractors, must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and are intended to minimize the impact of the incidental taking. These terms and conditions are non-discretionary (see section 7(o)(2)).

The following terms and conditions implement the reasonable and prudent measures above:

1. To implement reasonable and prudent measure number 1, the BLM, Corps, and USG, including all of their agents/contractors, shall fully implement all Project specifications and conservation measures outlined in this biological opinion as they relate to Peninsular bighorn sheep.
2. To implement reasonable and prudent measure number 2, the BLM, Corps, and USG shall report on compliance with and effectiveness of the Project's conservation

measures, and compliance with the established take threshold for Peninsular bighorn sheep. To do this, USG shall prepare and provide to the Service, BLM, and Corps an annual report by January 31 of each year of the Project. The annual report shall document but not be limited to the following:

- a. Any activities determined by the Designated Biologist and Biological Monitors to be out of compliance with Project-specifications and conservation measures outlined in this biological opinion and the corrective measures implemented to bring the Project back into compliance.
- b. The total amount and location of Peninsular bighorn sheep habitat, including designated critical habitat, disturbed by construction activities and restored by reclamation activities during the reporting year.

DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS

Pursuant to 50 CFR § 402.14(i)(1)(v), the BLM must notify the Service immediately at 760-322-2070 (Palm Spring Fish and Wildlife Office) if any Peninsular bighorn sheep are found sick, injured, or dead in the action area. Immediate notification means verbal (if possible) and written notice within 1 workday, and must include the date, time, location, and photograph of the sick or injured animal or carcass, and any other pertinent information. Care must be taken in handling sick or injured individuals to ensure effective treatment, and care in handling dead specimens to preserve biological material in the best possible state.

The BLM must also notify the Service immediately at 760-320-2070 if any endangered or threatened species not addressed in this biological opinion is found dead or injured in the Project footprint during the life of the Project. The same reporting requirements also shall pertain to any healthy individual(s) of any threatened or endangered species found in the action area and handled to remove the animal to a more secure location. Refer to the Terms and Conditions section above for details on reporting procedures.

REINITIATION NOTICE

This concludes formal consultation on the proposed Project for the Peninsular bighorn sheep. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may lapse and any further take may be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending re-initiation.

If you have any questions regarding this document, please contact Felicia Sirchia of the Palm Springs Fish and Wildlife Office at 760-322-2070, extension 405; or felicia_sirchia@fws.gov.

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BIOLOGICAL RESOURCES TECHNICAL REPORT

United States Gypsum Company

Expansion and Modernization Project

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March 2019

BIOLOGICAL RESOURCES TECHNICAL REPORT: United States Gypsum Company Expansion and Modernization Project

ASPEN ENVIRONMENTAL GROUP
March 2019

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BIOLOGICAL RESOURCES TECHNICAL REPORT: United States Gypsum Company Expansion and Modernization Project

ASPEN ENVIRONMENTAL GROUP
March 2019

I. Executive Summary

This Biological Resources Technical Report (BRTR) was prepared under contract to the Lilburn Corporation to support National Environmental Protection Act (NEPA) review of the proposed United States Gypsum (USG) Expansion and Modernization Project. This report describes biological resources present at USG's Plaster City Quarry (quarry) and along two proposed water lines. This report incorporates and updates biological resources described in a Final Environmental Impact Report/ Environmental Impact Statement and attachments, published in 2008, by Imperial County and Bureau of Land Management (CEQA and NEPA lead agencies, respectively).

New biological field surveys were conducted in 2014, 2016, and 2017. This report provides updates mapping of vegetation and habitat; quantifies as well as updated reviews of potential occurrences for special-status species known from the region.

Special-status plants: No state or federally listed threatened or endangered plants, and no BLM-designated Sensitive Plants, have been recorded on the quarry site or pipeline routes. Three special-status plants (California Rare Plant Rank [CRPR] 2B) have been recorded in or around the proposed quarry expansion areas: annual rock-nettle, brown turbans, and narrow-leaf sandpaper-plant. In addition, four plants recognized as "watch-list" species (CRPR 4) have been recorded in or around the quarry area. Potential occurrence for all other special-status plants (not observed during surveys) is summarized in Table 3.

Special-status wildlife: One state and federally listed wildlife species, Peninsular bighorn sheep, occurs in and around the existing and proposed future quarrying areas. In addition, the state and federally listed desert pupfish occurs in the watershed, several miles north of the existing and proposed project facilities. Burrowing owl, a BLM-designated Sensitive Species was observed during Fall of 2014, but no burrowing owls were observed during field surveys conducted during breeding season. Two other BLM Sensitive Species, golden eagle and flat-tailed horned lizard, could occur in or around the project facilities, although they were not observed during field surveys. Other special-status wildlife species observed during field surveys were loggerhead shrike and black-tailed gnatcatcher. Potential occurrence for all other special-status wildlife (not observed during surveys) is summarized in Table 4.

This report briefly summarizes expected project impacts to biological resources, and recommends several mitigation measures to avoid, minimize, or offset those impacts.

II. Project and Property Description

This BRTR describes biological resources at USG's Plaster City Quarry (quarry) and along two proposed water lines to support a Supplemental Environmental Impact Statement (SEIS) in preparation for the USG Quarry Expansion and Modernization Project. The SEIS will supplement a Final Environmental Impact Report / Environmental Impact Statement (EIR/EIS) prepared by the County of Imperial and Bureau of

Land Management in 2008, and subsequently approved by the County. The project is briefly summarized here and shown on Figure 1 (Project Overview); a more complete project description may be found in the 2008 Final EIR/EIS and in Chapter 2 of the SEIS (in preparation). All proposed project activities and facilities would be located in Imperial County, California. The Proposed Action consists of:

- A replacement water line from USG's wells in Ocotillo to the existing Plaster City plant
- A new water line to serve the Plaster City Quarry
- Continuing and expanded quarrying operations at the Plaster City Quarry, including quarry reclamation

Replacement water line. The replacement water line route originates at a well field just south of the Interstate 8 (I-8) freeway in Ocotillo at about 375 feet elevation. It crosses beneath the freeway, and parallels Imperial County Route S80 to the north and east to Plaster City. Along the remainder of its length, the water line is within the existing road right-of-way, on the south side of the road. The eastern five miles of the water line are at the boundary of the BLM Plaster City Open Area for off-highway vehicles (OHVs) (BLM, 1998), and a designated OHV staging area is on the north side of Route S80 west of the Plaster City Plant. The Proposed Action would replace the existing water line by installing a larger line within approximately twenty feet of the existing alignment.

New water line. The proposed new quarry water line would originate at Quarry Well Number 3 and follow an existing narrow-gauge rail line to the quarry itself (Figure 1, Project Overview). The narrow-gauge line is owned and operated by USG to deliver raw materials from the Plaster City Quarry to the Plaster City Plant. The proposed pipeline route is within the narrow-gauge railroad right-of-way, originating at the well site and paralleling the railway to the quarry site. Habitat at the proposed well site and pipeline alignment is relatively stable sandy desert bajada supporting desert shrubland dominated by creosote bush.

Quarry location and operations. The USG Plaster City Quarry is located in the Fish Creek Mountains, about 26 miles northwest of the plant site, on the lower slopes of the Fish Creek Mountains (Figure 1, Project Overview and Figure 2, Plaster City Quarry Vegetation and Landcover). The Proposed Action includes expansion of the quarry areas on a series of mining claims to the south and southeast of the existing quarries. The existing and proposed quarry would be located primarily on private lands, but also would include new disturbance within mining claims on public lands managed by the Bureau of Land Management (BLM). The total acreage of USG's claims on public lands is 73.2 acres, and planned disturbance would be limited to 18.1 acres within them.

The area proposed for continuing and future quarrying is on middle and lower slopes and a broad alluvial wash. Elevation ranges from about 300 feet in the northwest corner to 1,041 feet at a small peak near the eastern boundary of the study area. Undisturbed upland slopes are composed of two parent materials: gypsum outcrops and metamorphosed sedimentary rock overlying older granitic rock. Both rock types support very sparse desert shrublands dominated by pygmy cedar (*Peucephyllum schottii*) on the gypsum and creosote bush (*Larrea tridentata*) on the metamorphic sedimentary material. The alluvial wash has a series of braided channels that evidently are scoured and redirected by infrequent flash flooding. Alluvial soils throughout the wash area support desert shrublands composed primarily of creosote bush, with stands of smoke tree (*Psoralea spinosa*) and catclaw acacia (*Senegalia [Acacia] greggii*) in the main channels. Quarrying activities would take place on the slopes and on the alluvial wash (to reach below-grade gypsum deposits, as shown in EIS Figure 2-10).

The primary wash and several of its tributaries are shown as ephemeral streams on the U.S. Geological Survey (USGS) topographic maps. Runoff from the project site drains to the north into Fish Creek Wash and then to the Salton Sea, an intrastate lake.

III. Methods

Justin Wood of Aspen Environmental Group reviewed available literature to identify special-status plants, wildlife, or plant communities known from the project vicinity. We reviewed the California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife [CDFW] 2018) for USGS 7.5-minute topographic quadrangles (quads) on which the Plaster City plant, rail line, water line, or quarry expansion areas occur (Borrogo Mountain SE, Carrizo Mountain NE, Harpers Well, Plaster City NW, Painted Gorge, Plaster City, and Coyote Wells) and several adjacent quads (Arroyo Tapiado, Harper Canyon, Yuha Basin, Carrizo Mountain, and In-Ko-Pah Gorge).

We also reviewed the California Native Plant Society (CNPS) *On-line Electronic Inventory* (CNPS 2018, for the quads listed above), and searched the Consortium of California Herbaria (2018) for records of special-status plants known from the area. Several special-status species occur only in specialized native habitats that are absent from the project site or occur at higher elevations that were included during the CNDDDB search. These plants and animals are listed in Attachment 5, but are not addressed further in this report. All special-status plants and animals known from comparable habitats within the region are identified in Table 3 (plants) and Table 4 (wildlife), which summarize their habitat, distribution, conservation status, and probability of occurrence on the Project site.

This report incorporates the results of biological field surveys by White and Leatherman BioServices conducted in 2002 to support the previous CEQA and NEPA analysis, as follows: Scott White and Brian Leatherman drove the narrow-gauge rail line alignment on 23 April 2002; White drove the length of the replacement water line of 19 June 2002; White and Leatherman drove the replacement water line on 24 July 2002; White and Leatherman surveyed uplands within the quarry expansion area on 23 April 2002; Leatherman conducted surveys on the quarry from 27 to 29 March 2002.

Biological surveys to support the current NEPA review were conducted during October of 2014, April and October of 2016, and March and April of 2017 by Justin Wood (JW), Brian Leatherman (BL), Sandy Leatherman (SL), Greg Stratton (GS), Chez Brungraber (CB), and Michelle Cloud-Hughes (MC) as shown in Table 1. Members of the survey team have extensive experience with the special-status plants from the region, including the State and Federally listed species. They also have experience of the special-status wildlife species of the area.

Table 1. Survey Personnel and Dates

Personnel	Survey Dates	Area Surveyed
JW and SL	October 28-29, 2014	Quarry
JW, BL, GS, CB, and MC	April 4-5, 2016	Quarry
JW, SL, GS, CB, and MC	April 6-7, 2016	Quarry and proposed new pipeline
JW, SL, GS, and CB	April 11-13, 2016	Quarry and proposed replacement pipeline
JW, SL, GS, and MC	October 26-28, 2016	Quarry, both proposed pipelines
SL and CB	March 30-31, 2017	Both proposed pipelines

Surveys were conducted throughout the survey area which included all phases of the planned quarry expansion, the proposed new pipeline alignment, new well location, and existing Ocotillo water line alignment (proposed replacement pipeline). Surveys were conducted using the complete coverage method as described in the Survey Protocols for Special Status Plants which has been developed by BLM-California (BLM, 2009). This method was developed to survey for special status plants on projects that must comply with BLM policy, the National Environmental Policy Act (NEPA), and the Endangered Species

Act (ESA). The spacing between transects was typically ten meters but increased as the topography changed making ten meters spacing impracticable. The ten-meter spacing was intended to allow surveyors to locate small non-descript special-status annual plants. During the survey all special-status plants with a California Rare Plant Rank (CRPR) of 1 or 2 were recorded with a GPS unit. Following the surveys, a CNDDDB form was completed for all occurrences separated by more than 0.25 miles.

In conformance with California Department of Fish and Wildlife guidelines (CDFG, 2009), botanical surveys were (a) conducted during flowering seasons for the special-status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the sites, and (e) well documented, by this report, photos that will be uploaded to CalPhotos (BSCIT, 2018), and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden and other herbaria. Documenting the flora with photos and vouchered specimens allows others to verify the identifications of species found within the survey area and can also be used by researchers and scientists to determine what plants have been found in the survey area.

During the field surveys, all plant and wildlife species noted were recorded in field notes. Plants of uncertain identity were collected and identified later using keys, descriptions, and illustrations in Baldwin et al. (2012), the Jepson eFlora database of California plants (Jepson Flora Project, 2018), and other regional references. All plant species observed during the surveys are listed in Attachment 4. All special-status plant locations within or immediately adjacent to the survey area will be reported to the CNDDDB.

During the surveys Wood mapped vegetation within the Project area by drawing vegetation transitions on aerial images. These field maps were then digitizing into GIS shapefiles using ArcGIS (version 10.4) and one-foot pixel aerial imagery on a 22" diagonal flat screen monitor at the office. Vegetation was named using the names and descriptions in *A Manual of California Vegetation* (Sawyer et al 2009), when possible. The smallest mapping unit mapped was approximately 0.10 acres and most mapped vegetation boundaries are accurate to within approximately 10 feet. The small scale PDF vegetation map provided with this report was generated from ArcGIS shapefiles; the shapefiles were used to calculate areas of each vegetation type and may be viewed at larger scale for management or analysis purposes, if needed. Any vegetation map is subject to imprecision for several reasons:

- Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
- Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
- Vegetation types tend to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

IV. Results

IV. A. Vegetation

The quarry area is characterized by broad sandy wash and adjacent upland slopes and mountains. The wash slopes gently toward the northwest and is fed by several canyons in the Fish Creek Mountains (on the north-east) and Split Mountain (on the southwest). The wash is vegetated by several types of wash shrubland and

woodland as described below. The uplands are also vegetated by a variety of shrubland types. A total of seven vegetation types were mapped within the Project site. Other land cover types including sparsely vegetated sandy wash and existing development were also mapped within the Project area. Vegetation and cover types within the Project area are described in the following paragraphs and mapped on Figure 2 (Plaster City Quarry Vegetation and Landcover). Acreages of each vegetation and cover type within the Project site are shown in Table 2.

Creosote bush scrub (*Larrea tridentata* Shrubland Alliance). Creosote bush scrub is an upland vegetation type that is characterized by creosote bush (*Larrea tridentata*) which is the dominant shrub. Other species such as dyebush (*Psoralea argemone*), desert straw (*Stephanomeria pauciflora*), and indigo bush (*Psoralea schottii*) are also present but in much lower numbers. It is most common in the uplands along the northwest portion of the Project site.

Creosote bush–white bursage scrub (*Larrea tridentata*–*Ambrosia dumosa* Shrubland Alliance). Creosote bush–white bursage scrub is an upland vegetation that is characterized by creosote bush and white bursage (*Ambrosia dumosa*) which co-dominate these areas. Several other species are present in these areas including (*Condea emoryi*), desert straw, ocotillo (*Fouquieria splendens*), and three species of cholla (*Cylindropuntia* spp.). Scattered catclaw (*Senegalia greggii*) are also present in some of the smaller upland swales that originate in these areas and eventually change to catclaw acacia thorn scrub further downstream.

Catclaw acacia thorn scrub (*Acacia greggii* Shrubland Alliance). Catclaw acacia thorn scrub is a wash vegetation that is dominated by catclaw. Other species such as desert lavender, smoke tree (*Psoralea argemone*), cheesebrush (*Ambrosia salsola*), and sweetbush (*Bebbia juncea*). It is most common in the upper washes and in more isolated portions of the main wash that are slightly protected from scouring flows.

Smoke tree woodland (*Psoralea argemone* Woodland Alliance). Smoke tree woodland is a wash vegetation that is dominated by smoke tree. Other species such as desert lavender, indigo bush, catclaw, desert willow (*Chilopsis linearis*), and cheesebrush (*Ambrosia salsola*) are also present. Several desert ironwood (*Olneya tesota*) were also present within the smoke tree woodlands along the Ocotillo pipeline alignment. It is most common in the large wash that flows through the lower elevations within the Project site. It grows in the most active portion of the wash that is frequently scoured. Some areas mapped as smoke tree woodland have very little vegetative cover, primarily because of scouring floods that hit the area in 2014. Many of the dominate trees and shrubs survived but were buried or knocked over and are continuing to recover. Smoke tree woodland is ranked by CDFW as a sensitive natural community (CDFW 2010).

Desert fir scrub (*Peucephyllum schottii* Shrubland Alliance). Desert fir scrub is an upland vegetation type that grows on the gypsum outcrops within the Project site. It is dominated by desert fir (*Peucephyllum schottii*) with other species such as flat-topped buckwheat (*Eriogonum plumatella*), and creosote bush also present but in much lower numbers. The areas mapped as this vegetation type do not match any of the vegetation types named or described in *A Manual of California Vegetation* (Sawyer et al. 2009). Therefore, we have named it to best match the naming convention used in Sawyer et al (2009). It is a very sparse vegetation type that is made up of three species including desert fir,

Allscale scrub (*Atriplex polycarpa* Shrubland Alliance). Allscale scrub is a dominated by allscale (*Atriplex polycarpa*) and is present along the Ocotillo pipeline alignment. It grows on fine sandy soils and old playa-like habitats near the community of Ocotillo. Other species such as cheesebrush, dyebush, creosote bush, white bursage, and big galleta (*Hilaria rigida*). Fine wind-blown sands are present at several areas along the Ocotillo pipeline.

Tamarisk thickets (*Tamarix* spp. Shrubland Semi-Natural Alliance). Tamarisk thickets was used to map one patch of vegetation dominated by saltcedar (*Tamarix ramosissima*) and athel tamarisk (*Tamarix aphylla*).

Tamarisk thickets are present in a single location within the Project area where flood waters in 2014 ponded and allowed these species to flourish.

Sparsely vegetated sandy wash. Sparsely vegetated sandy washes are present within the quarry, the northern pipeline alignments and along the Ocotillo pipeline alignment. It is used to map areas that are largely unvegetated washes with scattered shrubs such as sweetbush and cheesebrush. Seedling trees such as smoke tree and desert ironwood may be present but in very low numbers. These washes have a high abundance of spring annuals.

Table 2. Vegetation and Land Cover Types by Acreage

Project Component	Vegetation and Land Cover Types							
	Creosote bush scrub	Creosote bush – white bursage scrub	Catclaw acacia thorn scrub	Desert fir scrub	Sparsely vegetated sandy wash	Smoketree Woodland	Tamarisk Thickets	Disturbed/Developed
Existing Phase 1A	0	0	0	2.3	0	0	0	161.4
Existing Quarry 1B	0	0	0	4.1	0	0	0	146.0
Existing Phase S1	2.6	0	0	6.9	0	0	0	22.5
Existing Phase S2	0.8	0	0	16.9	0	0	0	6.7
Existing Phase S3	2.0	0	0	15.4	0	0	0	1.6
Existing Shoveler Haul Rd	0	0	0	0	0	0	0	3.0
Phase 2	28.2	1.4	17.5	4.7	12.7	3.2	0	20.2
Phase 2p	0	1.8	3.0	0	0.6	0	0	0
Phase 3	7.9	0	15.7	0	3.9	0.6	0.4	7.9
Phase 3p	8.8	0	0	0	1.0	1.1	0	0
Phase 4	0	0	9.4	0.9	7.2	12.8	0.05	16.2
Phase 5	0	0	10.4	0	6.7	4.5	0	9.4
Phase 6	18.6	13.1	1.8	32.6	2.7	0	0	2.4
Phase 6Bp	4.3	0	0	42.9	0	0	0	0.02
Phase 6 Haul Rd	3.3	0	0	0.1	0	0	0	0.2
Phase 7	2.8	25.0	11.3	46.1	2.7	0	0	3.6
Phase 7Bp	1.8	0	0	30.5	0	0	0	0.05
Phase 7 Haul Rd	1.7	0	0	0	0	0	0	0
Phase 8	1.9	70.4	8.0	30.5	2.8	0	0	2.8
Phase 8p	0	4.6	2.0	0	0	0	0	0.2
Phase 9	0	15.6	1.5	36.1	1.0	0	0	0.1
Phase 10	0	0	8.2	0	0.6	0.3	0	4.2
Phase 10p	0	0	19.6	0	0.4	14.2	0	0.3
Mill site claims (multiple)	0.3	10.5	3.1	0	2.3	1.5	0	1.0

Table 2. Vegetation and Land Cover Types by Acreage

Project Component	Vegetation and Land Cover Types							
	Creosote bush scrub	Creosote bush – white bursage scrub	Catclaw acacia thorn scrub	Desert fir scrub	Sparsely vegetated sandy wash	Smoketree Woodland	Tamarisk Thickets	Disturbed/Developed
Processing Area	0	0	0	1.3	0	0	0	37.8
Total	85.0	142.4	111.5	271.3	44.6	38.2	0.45	447.6

Note that acreage total (1,141) varies slightly from Plan of Operations (1,145) due to rounding error and minor digitizing discrepancies.

Existing development (quarry, roads, railway, and other infrastructure). This cover type was used to map areas that are active quarry, roads (paved and unpaved), railroad, and other developed areas. These areas have a very limited amount of vegetation.

IV. B. Wildlife Habitat

The term *habitat* refers to the environment and ecological conditions where a species is found. Wildlife habitat is often described in terms of vegetation, though a more thorough explanation encompasses further detail such as availability or proximity to water, suitable nesting or denning sites, shade, foraging perches, cover sites to escape from predators, soils that are suitable for burrowing or hiding, proximity of noise and disturbance, and other factors that are unique to each species. For many wildlife species, vegetation reflects important components of habitat, including regional climate, physical structure, and biological productivity and food resources. Thus, the vegetation descriptions in Section IV.A. are useful overarching descriptors for wildlife habitat. The predominant vegetation types in the project area correspond to habitats identified as desert wash (described in Section IV.A., above, as smoke tree woodland and catclaw acacia thorn scrub), desert scrub (described above as creosote bush scrub and creosote bush–white bursage scrub) and alkali desert scrub (described above as allscale scrub) as classified by the California Wildlife Habitat Relationships (Mayer and Laudenslayer, 1988).

Where additional details of habitat suitability are necessary to this analysis, they are provided in the discussion of special-status wildlife species. Examples include the availability of steep slopes and water sources for Peninsular bighorn sheep. The following paragraphs summarize wildlife habitat and list a few of the wildlife species that either have been observed or are expected to occur in the habitat types found within the project site and surrounding area.

Plaster City Quarry. The existing quarry and proposed quarry expansion area is in an elongated valley along an unnamed wash and on the lower hillsides of the northeastern Fish Creek Mountains. The dominant landforms are a broad alluvial wash and adjacent toeslopes and mountainsides. The planned quarry expansion area is on middle and lower slopes and the adjacent part of the alluvial wash. Undisturbed upland slopes are composed of two parent materials: gypsum outcrops and metamorphosed sedimentary rock overlying older granitic rock. Both rock types support very sparse desert shrublands dominated by creosote bush on the igneous material and by pygmy cedar on the gypsum. The

mountainsides are very steep (average slopes are about 20 percent) and rocky with frequent areas of exposed bedrock and actively eroding talus. Exposed ridgetops have thin soil overlying bedrock.

The alluvial wash slopes gently (about 2 percent), generally toward the northwest. It drains slopes of the Fish Creek Mountains (on the northeast) and Split Mountain (on the southwest) via unnamed washes and smaller tributaries, and by sheet flow. Surface runoff drains to the north across the alluvial fan into Fish Creek Wash, through a system of braided tributaries across the bajada to San Felipe Creek and San Sebastian Marsh, and then to the Salton Sea. The alluvial wash has a series of braided channels that evidently are scoured and redirected by infrequent flash flooding. In some areas, the channels are deeply incised, reaching bedrock. Alluvial soils throughout the wash are poorly developed and consist of sands with high rock content (primarily cobbles in the 3- to 10-inch range, but also larger rocks and boulders). Eroded channel banks show similar high rock content in the subsurface layers. These soils present a poor substrate for burrowing wildlife. The alluvial soils support desert shrublands composed primarily of creosote bush, with stands of smoke tree and catclaw acacia in the main channels.

Gypsum deposits are found on a north-south trend for about 4.5 miles along the northern portion of the Fish Creek Mountains. Contiguous gypsum outcrops range in elevation from 920 feet above mean sea level (MSL) at the southernmost limit of the deposit to about 325 feet MSL at the northernmost exposures. Outlying deposits of gypsum occur east of the main deposit at elevations of 700 to 1,000 feet MSL.

The quarry and adjacent mountains evidently have no permanent or long-lasting seasonal water sources (based on field observations and absence of mapped springs or perennial streams on USGS topographic maps). However, there is a series of natural rock tinajas¹ located about 1.8 miles southeast of the quarry area. The tinajas have been reported as holding water for much of the year, although a volunteer checked the site in November 2017 and found it to be dry. Several additional water sources are located west of the quarry area, within Anza Borrego Desert State Park. These tinajas appear to supply a dependable water source throughout much of the year for wildlife.

A few of the characteristic wildlife species observed in the quarry expansion area are: desert horned lizard (*Phrynosoma platyrhinos*), zebra-tailed lizard (*Callisaurus draconoides*), desert iguana (*Dipsosaurus dorsalis*), mourning dove (*Zenaida macroura*), Costa's hummingbird (*Calypte costae*), verdin (*Auriparus flavipes*), common raven (*Corvus corax*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*) and desert woodrat (*Neotoma lepida*). A full list of wildlife species observed at the quarry expansion area is included in Attachment 4.

New water line. The proposed new water line route crosses open desert shrubland on the alluvial slope and immediately adjacent toeslopes northward from the existing quarry, and along the desert bajada to the proposed well site. Soils are generally a mix of rocky coarse-textured alluvium overlain in some areas by windblown sand. The water line route is expected to support common desert wildlife species such as those identified for the quarry expansion area, as well as animals such as flat-tailed horned lizard, with specialized adaptations for windblown sands.

Replacement water line. The replacement water line route crosses the desert floor within open desert shrublands and, often, barren areas along roadways. The route is expected to support common desert wildlife species such as those identified for the quarry expansion area, as well as animals such as flat-tailed horned lizard, with specialized adaptations for windblown sands, and opportunistic wildlife species

¹ A tinaja is a natural cistern-like basin which fills during rainstorms and retains water for an extended period. They are often created by erosional processes in intermittent stream channels, and can serve as water sources for wildlife in otherwise dry landscapes.

commonly seen in disturbed, ruderal, and non-vegetated areas. Examples include common ravens which frequently perch or nest near roadways and feed opportunistically on road-killed animals. Coyotes may also take advantage of these habitats.

Wildlife Movement. In many regions, land development and linear structures such as roadways, railroads, and canals have converted once-contiguous habitat into scattered patches separated by barriers, so that individual animals and entire populations are now isolated in remnant habitat “fragments.” Depending on their size and other characteristics, these fragments may not support viable populations of some animals. For example, certain bird populations become locally extinct when their habitat is fragmented by urban development. The Quarry site is in an area that has not been significantly fragmented. Much of the surrounding land is either public open space managed by the BLM or California State Parks, or privately owned undeveloped land. Adequate habitat is available for wildlife movement throughout the general area, especially along ridgelines to the northeast and southwest and in large open areas to the south. In the immediate area, no true barriers to wildlife movement exist, but several man-made deterrents to wildlife movement include active mining and associated facilities, access roads and haul roads. The two pipeline routes are adjacent to existing linear facilities which also may deter wildlife movement to some extent.

IV. C. Climate

Average rainfall in Borrego Springs, approximately 18 miles northwest of the Project area is 5.32 inches (U.S. Climate Data 2018). The rainfall total for the 2015-2016 rainfall year (July-June) in Borrego Springs was 2.18 inches, approximately 41% of the average (U.S. Climate Data 2018). The rainfall total for the 2016-2017 rainfall year in Borrego Springs was 4.43 inches, approximately 83% of the average (U.S. Climate Data 2018). Average rainfall in El Centro, approximately 17 miles east of the existing pipeline is 2.87 inches (U.S. Climate Data 2018). The rainfall total for the 2015-2016 rainfall year in El Centro was 1.89 inches, approximately 66% of the average (U.S. Climate Data 2018). The rainfall total for the 2016-2017 rainfall year was 2.72 inches, approximately 94% of the average (U.S. Climate Data 2018).

IV. D. Special-Status Species

Plants or wildlife may be ranked as special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. Certain species have been listed as threatened or endangered under state or federal Endangered Species Acts. Others have not been listed, but declining populations or habitat availability cause concern for their long-term viability. These appear on lists compiled by resource agencies or private conservation organizations. In this report, “special-status species” is used to include all plants and animals listed as threatened or endangered, recognized by the BLM sensitive, or identified by the California Department of Fish and Wildlife. Table 3 represents all special-status species and their potential to occur on the Project site.

IV. D. 1. Special-status Plants

Table 3 and Attachment 5 list the special-status plant species reported within the USGS 7.5-minute quads surrounding the Project area. No State or federally listed plants were observed during the surveys or have potential to be present. Five special-status plant species (Wolf’s opuntia, CRPR 4; winged cryptantha, CRPR 4; annual rock nettle, CRPR 2B; Coulter’s lyrepod, CRPR 2B; brown turbans, CRPR 4) were observed and are discussed below. Annual rock nettle was observed at locations shown on Figure 3 (Biological Resources). The other species locations were not mapped due to either widespread occurrences (brown turbans) or low-priority conservation status (Wolf’s opuntia, winged cryptantha, and Coulter’s lyrepod).

Listed Threatened or Endangered Plants

One State and federally listed endangered plant species, San Diego button-celery (*Eryngium aristulatum* var. *parishii*), has been reported from the USGS 7.5-minute quads surrounding the Project area (CDFW, 2018). This plant occurs only in vernal pools in San Diego, Orange, and Riverside counties, inland as far as the In-Ko-Pah Gorge area. It is considered absent from the Project area due to lack of any suitable vernal pool habitat. No other State or federally listed plants have potential to be present or were identified during the literature review.

BLM Sensitive Plants

Six plants recognized by the BLM as sensitive have at least some potential to be present within the Project area. Of these, none were observed and only two species have at least a moderate potential to be present and are discussed below (text continues following the tables).

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Abronia villosa</i> var. <i>aurita</i> Chaparral sand verbena	Annual or perennial herb; sand, about 250–5300 ft. elev.; San Jacinto Mtns, Inland Empire, adj. Colorado Des, Orange & San Diego cos; mostly alluvial fans and benches in western Riverside Co; dunes in deserts; not rare in the deserts	Feb-Jul	FED: none BLM: S CA: S2 CRPR: 1B.1	Low: marginally suitable habitat present.	Low: marginally suitable habitat present.	Moderate: suitable habitat present.
<i>Acmispon haydonii</i> (<i>Lotus haydonii</i>) Pygmy lotus	Perennial herb; rocky places in desert scrub, pinyon juniper woodland; about 1700–4000 ft. elev.; San Diego and Imperial Cos., Baja	Jan-Jun	FED: none BLM: S CA: S3 CRPR: 1B.3	Low: marginally suitable habitat present.	Low: marginally suitable habitat present.	Low: marginally suitable habitat present.
<i>Astragalus crotalariae</i> Salton milk-vetch	Perennial herb; sandy flats and alluvial fans; below about 1000 ft. elev.; Sonoran Desert, to Arizona and Baja	Jan-Apr	FED: none BLM: none CA: S4 CRPR: 4.3	Low: marginally suitable habitat present.	Low: marginally suitable habitat present.	High: Suitable habitat present; records from within 1 mile of Project area.
<i>Astragalus insularis</i> var. <i>harwoodii</i> Harwood's milk vetch	Annual herb; sand, mainly dunes, also washes and slopes; below about 1200 ft. elev.; SE Calif. to Ariz., Baja and Sonora (Mexico)	Jan-May	FED: none BLM: none CA: S2 CRPR: 2B.2	High: suitable habitat throughout survey area.	High: suitable habitat throughout survey area.	High: suitable habitat throughout survey area.
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	Annual herb; windblown or stabilized dune sand; below about 800 ft. elev.; E Mojave and S Sonoran deserts, Ariz., Baja, Sonora (Mexico);	Feb-May	FED: none BLM: none CA: S4 CRPR: 4.3	Minimal: no suitable windblown sand habitat.	Low: marginally suitable windblown sand habitat.	Low: marginally suitable windblown sand habitat.
<i>Astragalus sabulorum</i> Gravel milk-vetch	Annual/perennial herb; sandy or gravelly soil in flats, washes, roadsides in desert dunes, Mojavean desert scrub, Sonoran Desert scrub; 200–3050 ft. elev.; Imperial, Inyo, Riv., and San Diego Cos.	Feb-Jun	FED: none BLM: none CA: S2 CRPR: 2B.2	Low: marginally suitable habitat, at edge of geographic range.	Low: marginally suitable habitat, at edge of geographic range.	Low: marginally suitable habitat, at edge of geographic range.
<i>Bursera microphylla</i> Little-leaf elephant tree	Drought deciduous tree; rocky slopes, about 600–2300 ft. elev.; scattered occurrences in Imperial, Riverside, San Diego counties to Ariz., Baja, and mainland Mexico	Jun-Jul	FED: none BLM: none CA: S2 CRPR: 2B.3	Low: known from just north of survey area.	Minimal: marginally suitable habitat, not known from within 5 miles of survey area.	Low: known from just northwest of survey area.

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Calliandra eriophylla</i> Pink fairy-duster	Perennial deciduous shrub; sandy or rocky areas in Sonoran Desert Scrub; 400–4900 ft. elev.; SW U.S. and Baja, Imperial, Riv., and San Diego Cos.	Jan-Mar	FED: none BLM: none CA: S3 CRPR: 2B.3	Low: suitable habitat present, nearest known population more than 5 miles west of Project area.	Low: suitable habitat present, nearest known population more than 5 miles west of Project area.	Low: suitable habitat present, nearest known population more than 5 miles west of Project area.
<i>Castela emoryi</i> Crucifixion thorn	Perennial shrub; fine sand or silt, slopes, washes, plains, non-saline bottomlands, about 350–2100 ft. elev.; widespread but rare, Calif. deserts to Ariz., Baja and Sonora;	Jun-Jul	FED: none BLM: none CA: S2S3 CRPR: 2B.2	Minimal: suitable habitat present, no record within 10 miles.	Low: suitable habitat present,	Minimal: suitable habitat present, no record within 10 miles.
<i>Chaenactis carphoclinia</i> var. <i>piersonii</i> Pierson's pincushion	Annual herb; open desert vegetation; about sea level to 1700 ft. elev.; lower slopes of Santa Rosa Mtns, San Diego, Riv. and Imperial Cos;	Mar-Apr	FED: none BLM: S CA: S2 CRPR: 1B.3	Low: suitable habitat present,	Minimal: suitable habitat present, well outside of geographic range.	Low: suitable habitat present,
<i>Chylismia arenaria</i> (<i>Camissonia arenaria</i>) Sand evening-primrose	Annual or perennial herb; desert shrublands, sandy or rocky washes or slopes below about 3000 ft. elev.; Imperial Co., eastern margins of Riv. Co., to Ariz. and Baja Calif.	Mar-May	FED: none BLM: none CA: S2S3 CRPR: 2B.2	Low: suitable habitat present, not known from within 10 miles,	Minimal: suitable habitat present, outside of geographic range.	Low: suitable habitat present, not known from within 10 miles,
<i>Cryptantha costata</i> Ribbed cryptantha	Annual herb; windblown and stabilized sand, desert shrublands; below about 1650 ft. elev.; Calif., E Mojave and Sonoran deserts, to Ariz. and Baja	Feb-May	FED: none BLM: none CA: S4 CRPR: 4.3	Low: marginally suitable habitat in washes.	Moderate: suitable habitat in survey area.	Low: marginally suitable habitat in washes.
<i>Cryptantha holoptera</i> Winged cryptantha	Annual herb; desert shrublands; about 100–4000 ft. elev.; E Mojave Desert, Sonoran Desert, to W Ariz. and Nevada (widely scattered)	Mar-Apr	FED: none BLM: none CA: S4 CRPR: 4.3	Present: numerous plants observed within several phases of the quarry.	Moderate: suitable habitat in survey area.	Moderate: suitable habitat in survey area.
<i>Cylindropuntia</i> (<i>Opuntia</i>) <i>wigginsii</i> Wiggin's cholla	Cactus; sandy soils in Sonoran Desert scrub; about 100–2900 ft. elev.; known from six localities in San Diego, Imperial, and San Bernardino Cos. A sporadic hybrid of <i>Cylindropuntia ramosissima</i> and <i>C. echinocarpa</i> , generally not considered a valid species.	Mar	FED: none BLM: none CA: S1? CRPR: 3.3	Low: not seen during field surveys, suitable habitat is present	Low: not seen during field surveys, suitable habitat is present	Low: not seen during field surveys, suitable habitat is present

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Cylindropuntia wolfii</i> Wolf's opuntia	Cactus; Sonoran Desert scrub; about 330–4000 ft. elev.; restricted to Imperial and San Diego Cos. In California and south into Baja	Mar-May	FED: none BLM: none CA: S3 CRPR: 4.3	Present: dozens of plants observed growing in the southern phases of the quarry.	Low: marginally suitable habitat in survey area.	Moderate: suitable habitat in survey area.
<i>Ditaxis serrata</i> var. <i>californica</i> California ditaxis	Perennial herb; sandy washes and canyons, low desert and adj. mtns.; about 100–3250 ft. elev.; La Quinta E to Desert Center, also Anza-Borrego	Mar-Dec	FED: none BLM: none CA: S2? CRPR: 3.2	Moderate: suitable habitat present.	Minimal: outside of geographic range.	Moderate: suitable habitat present.
<i>Eucnide rupestris</i> Annual rock-nettle	Annual herb; rock crevices & cliffs; Sonoran Desert shrubland, about 1600–2000 ft. elev.; Imperial and San Diego cos, Ariz., Baja & mainland Mexico	Dec-Apr	FED: none BLM: none CA: S1 CRPR: 2B.2	Present: dozens of plants present within the southern phases of the quarry.	Low: marginally suitable habitat present.	Low: marginally suitable habitat present.
<i>Euphorbia abramsiana</i> (<i>Chamaesyce abramsiana</i>) Abrams' spurge	Annual herb; sandy flats; about sea level to 3,000 ft. elev.; East Mojave Desert, Joshua tree NP, and low desert, to Ariz. and Mexico	Aug-Nov	FED: none BLM: none CA: S2 CRPR: 2B.2	Low: marginally suitable habitat.	Low: marginally suitable habitat.	Low: marginally suitable habitat.
<i>Euphorbia arizonica</i> (<i>Chamaesyce arizonica</i>) Arizona spurge	Perennial herb; creosote bush scrub, stabilized sandy flats (in Calif.); below about 1000 ft. elev.; Palm Springs and Borrego Valley areas E to Texas and mainl. Mexico, S to central Baja	Mar-Apr	FED: none BLM: none CA: S3 CRPR: 2B.3	Low: marginally suitable habitat.	Low: marginally suitable habitat.	Low: marginally suitable habitat.
<i>Euphorbia platysperma</i> Flat-seeded spurge	Annual herb; sandy soils in desert dunes and Sonoran Desert scrub; 200–330 ft. elev.; Calif., Ariz., Sonora Mex.; Imperial, Riv., San Bern. (?), San Diego Cos.	Feb-Sep	FED: none BLM: S CA: S1 CRPR: 1B.2	Low: marginally suitable habitat.	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Funastrum utahense</i> (<i>Cynanchum utahense</i>) Utah vine milkweed	Climbing perennial herb; sandy or gravelly soils; about 500–4700 ft. elev.; E and S Mojave Desert through Joshua Tree NP and Anza-Borrego regions, to S Nevada, NW Ariz., and SW Utah	Apr-Jun	FED: none BLM: none CA: S4 CRPR: 4.2	Low: marginally suitable habitat.	Low: marginally suitable habitat	Moderate: suitable habitat

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Horsfordia alata</i> Pink velvet-mallow	Perennial shrub; Sonoran Desert shrublands, rocky canyons or sandy washes; below about 1700 ft. elev.; Riv. and Imperial Cos., Ariz., Baja, and Sonora, Mexico	Winter or spring	FED: none BLM: none CA: S4 CRPR: 4.3	Low: marginally suitable habitat	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Horsfordia newberryi</i> Newberry velvet-mallow	Rocky places, Sonoran Desert shrublands; below about 2600 ft. elev.; Riv., San Diego, Imperial Cos., Ariz., Baja, and Sonora, Mexico	Winter or spring	FED: none BLM: none CA: S4 CRPR: 4.3	Low: marginally suitable habitat	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Ipomopsis tenuifolia</i> Slender-leaved ipomopsis	Perennial herb; rocky or gravelly soils in chaparral, desert shrublands, pinyon juniper woodlands; about 300–4000 ft. elev.; San Diego and Imperial Cos., Baja	Mar-May	FED: none BLM: none CA: S2 CRPR: 2B.3	Low: marginally suitable habitat	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Lupinus excubitus</i> var. <i>medius</i> Mountain Springs bush lupine	Shrub; desert shrubland, pinyon juniper woodland; about 1400–4500 ft. elev.; San Diego and Imperial Cos., Baja	Mar-May	FED: none BLM: S CA: S2 CRPR: 1B.3	Minimal: suitable habitat present, outside of geographic range.	Low: marginally suitable habitat present, known from just west of alignment.	Minimal: suitable habitat present, outside of geographic range.
<i>Lycium parishii</i> Parish's desert thorn	Perennial shrub; arid slopes and sand flats; below about 3300 ft. elev.; W low desert (Riv., Imperial, and San Diego Cos.) and (historically) interior valleys (Riv. Co.), disjunct to Ariz. and Sonora, Mexico	Mar-Apr	FED: none BLM: none CA: S1 CRPR: 2B.3	Low: marginally suitable habitat present.	Moderate: suitable habitat, known from just east of the alignment.	Low: minimally suitable habitat
<i>Lyrocarpa coulteri</i> Coulter's (Palmer's) lyrepod	Annual; rocky slopes, washes, gravelly flats, Sonoran Desert shrubland; about 400–2600 ft. elev.; San Diego, Imperial, Riv. Cos., N and central Baja	Dec-Apr	FED: none BLM: none CA: S4 CRPR: 4.3	Present: Very few (<5) plants observed within the quarry (see text).	Moderate: marginally suitable habitat, known from just south of the alignment.	Low: marginally suitable habitat
<i>Malperia tenuis</i> Brown turbans	Annual; sandy soils in desert shrublands; about sea level to 1100 ft. elev.; Sonoran Desert, few locations in Calif. (incl. Split Mtn); N Baja	Mar-Apr	FED: none BLM: none CA: S2 CRPR: 2B.3	Present: dozens of plants observed at several phases of the quarry expansion.	High: suitable habitat present, known from within 0.5 miles of the alignment.	Present: a few plants observed along the alignment near the quarry gate.

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Mentzelia hirsutissima</i> Hairy stickleaf	Annual; desert washes, alluvial fans, talus slopes; below about 2000 ft. elev.; scattered Sonoran Desert locations in California and Baja	Mar-Apr	FED: none BLM: none CA: S3 CRPR: 2B.3	Moderate: suitable habitat present; known from within about 2 miles of the quarry.	Moderate: suitable habitat is present; known from within about 5 miles of the alignment.	High: suitable habitat is present; known from within about 1 mile of the alignment.
<i>Mirabilis tenuiloba</i> Slender-lobed four o'clock	Perennial herb; rocky slopes in Sonoran Desert shrublands; about 1000–3600 ft. elev.; Riv., San Diego, Imperial Cos., Ariz., Baja, Sonora, Mexico	Mar-May	FED: none BLM: none CA: S4 CRPR: 4.3	Moderate: suitable habitat is present	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Nemacaulis denudata</i> var. <i>gracilis</i> Slender woolly-heads	Annual herb; coastal and desert dunes, desert shrubland; below about 2600 ft. elev.; Coachella Valley and (disjunct) San Diego Co. coast, Ariz., Baja, Sonora, Mexico	Mar-May	FED: none BLM: none CA: S2 CRPR: 2B.2	Minimal: no suitable windblown sand habitat.	Low: marginally suitable windblown sand habitat.	Low: marginally suitable windblown sand habitat.
<i>Petalonyx linearis</i> Narrow-leaf sandpaper-plant	Perennial shrub; sandy and rocky canyons in Sonoran and Mojavean Desert scrubs; below about 4,000 ft. elev.; Riv., San Diego, Imperial Cos., Ariz., Baja, Sonora, Mexico	Mar-May	FED: none BLM: none CA: S2S3 CRPR: 2B.3	High; reported from the quarry in 2005. Suitable habitat is present.	Low: marginally suitable habitat.	High; suitable habitat present; known from within about 1 miles of the alignment.
<i>Pholistoma auritum</i> var. <i>arizonicum</i> Arizona pholistoma	Annual herb; Mojavean Desert scrub; 900–2740 ft. elev.; Calif., Ariz., Baja and Sonora Mexico	Mar	FED: none BLM: none CA: S3 CRPR: 2B.3	Low: suitable habitat present; more than 10 miles from nearest record.	Low: suitable habitat present; not observed during surveys; more than 10 miles from nearest record.	Low: suitable habitat present; not observed during surveys; more than 10 miles from nearest record.
<i>Pilostyles thurberi</i> Thurber's pilostyles	Internal stem parasite on <i>Psoralea</i> , esp. <i>P. emoryi</i> ; usually windblown or stabilized sand; below about 1000 ft. elev.; Colorado Desert through SW states and Sonora, Mexico	Jan	FED: none BLM: none CA: S4 CRPR: 4.3	Moderate: suitable habitat present	High: suitable habitat is present and <i>Psoralea emoryi</i> is common along the alignment.	Present: approximately ten plants observed on the northern pipeline alignment.

Table 3. Special-Status Plant Occurrence Probabilities in the Project Area.

Special-Status Plant Species	Habitat and Distribution	Flower Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Proboscidea althaeifolia</i> Desert unicorn-plant	Perennial herb; generally sandy soils, desert shrubland, about 500–3300 ft. elev.; Sonoran Desert to Arizona and Mexico	May-Aug	FED: none BLM: none CA: S4 CRPR: 4.3	Low: marginally suitable habitat present	Low: marginally suitable habitat present	Low: marginally suitable habitat present
<i>Selaginella eremophila</i> Desert spike-moss	Perennial herb; mountainous or hillside rock outcrops and crevices, about 600–3000 ft. elev.; lower desert-facing slopes of San Jacinto Mtns and adj. desert, to Texas and Baja	May-Jul	FED: none BLM: none CA: S2S3 CRPR: 2B.2	Low: marginally suitable habitat present.	Minimal: no suitable habitat present	Minimal: no suitable habitat present.
<i>Senna covesii</i> Coves's cassia	Low-growing, mostly herbaceous perennial; desert washes; 740–4250 ft. elev.; Colorado Desert to Nevada, Arizona and Baja Calif.	Apr-Jun	FED: none BLM: none CA: S3 CRPR: 2B.2	Low: marginally suitable habitat present	Minimal: well below the elevation range.	Minimal: well below the elevation range.
<i>Teucrium cubense</i> ssp. <i>depressum</i> Dwarf germander	Annual or perennial herb; sandy alluvium, washes, etc., below about 1300 ft. elev.; scattered Sonoran Desert locations, to Texas and Baja Calif.	Mar-May	FED: none BLM: none CA: S2 CRPR: 2B.2	Low: marginally suitable habitat	Low: marginally suitable habitat	Low: marginally suitable habitat
<i>Xylorhiza orcuttii</i> (<i>Machaeranthera orcuttii</i>) Orcutt's woody aster	Perennial herb; gen. on gypsum soils; canyons or lower slopes, desert shrublands; sea level to about 1200 ft. elev.; Riv., Imperial, and San Diego Cos., N Baja	Mar-Apr	FED: none BLM: S CA: S2 CRPR: 1B.2	Moderate: suitable habitat present, known from numerous occurrences in the vicinity	Moderate: suitable habitat present, known from numerous occurrences in the vicinity	Moderate: suitable habitat present, known from numerous occurrences in the vicinity

General references: Baldwin et al., 2012; BLM, 2010; CDFW, 2018; CNPS, 2018; CCH, 2018.

Federal designations (Fed): (federal ESA, USFWS).

END: Federally listed, endangered.

THR: Federally listed, threatened.

Candidate: Sufficient data are available to support federal listing, but not yet listed.

Proposed: Formally proposed for the federal status shown.

BGEPA: Bald and golden eagle protection act.

BCC: Birds of conservation concern.

Bureau of Land Management (BLM)

Sensitive: Species recognized by the BLM as sensitive.

State designations (CA): (CESA, CDFW)

END: State listed, endangered.

THR: State listed, threatened.

RARE: State listed as rare (applied only to certain plants).

CSC: California Species of Special Concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.

WL: Species that were either previously listed as SC and have not been state listed under CESA; or were previously state or federally listed and now are on neither list; or are on the list of "Fully Protected" species.

FP: Fully protected. May not be taken or possessed without permit from CDFG.

SA: Special animal. Tracked by the CNDDDB as species of conservation concern.

CDFW Natural Diversity Data Base Designations: Applied to special-status species; where correct category is uncertain, CDFW uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.

S1.1: Very threatened

S1.2: Threatened

S1.3: No current threats known

S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above).

S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above).

S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.

S5: Demonstrably secure or ineradicable in California. No threat rank.

SH: All California occurrences historical (i.e., no records in > 20 years).

SX: Presumed extirpated in California.

California Rare Plant Rank designations. Note: According to the California Native Plant Society (<http://www.cnps.org/cnps/rareplants/ranking.php>), plants ranked as CRPR 1A, 1B, and 2 meet definitions as threatened or endangered and are eligible for state listing. That interpretation of the state Endangered Species Act is not in general use.

1A: Plants presumed extinct in California.

1B: Plants rare and endangered in California and throughout their range.

2A: Plants presumed extinct in California but more common elsewhere in their range.

2B: Plants rare, threatened or endangered in California but more common elsewhere in their range.

3: Plants about which we need more information; a review list.

4: Plants of limited distribution; a watch list.

California Rare Plant Rank Threat designation extensions:

.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 or no current threats known)

Definitions of occurrence probability: Estimated occurrence probabilities are based on literature sources cited earlier, field surveys, and habitat analyses reported here.

Present: Observed on the site by qualified biologists.

High: Habitat is a type often utilized by the species and the site is within the known range of the species.

Moderate: Site is within the known range of the species and habitat on the site is a type occasionally used.

Low: Site is within the species' known range but habitat is rarely used, or the species was not detected during focused survey(s) covering less than 100% of potential habitat or completed in marginal seasons.

Minimal: No suitable habitat on the site; or well outside the species' known elevational or geographic ranges; or the species was not detected during focused survey(s) covering 100% of all suitable habitat, completed during the appropriate season and during a year of appropriate rainfall.

Absent: No suitable habitat on the site and these has no potential to be present.

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
FISHES						
<i>Cyprinodon macularius</i> Desert pupfish	Desert ponds, springs, marshes, and creeks in southern California. Restricted to tributaries of the Salton Sea (i.e. Salt Creek and San Felipe Creek) and several refuge populations.	Year-around	FED: END BLM: none CA: END, S1	Absent: no aquatic habitat within the Project area. Known from approx. 9.5 miles to the NE.	Absent: no aquatic habitat within the Project area. No record near the pipeline alignment.	Absent: no aquatic habitat within the Project area. Known from approx. 7 miles to the NE
REPTILES						
<i>Coleonyx switaki</i> Barefoot banded gecko	Massive rock outcrops and boulders; below about 2000 ft. elev.; Anza-Borrego Desert State Park through much of NE Baja	Spring-Summer	FED: none BLM: S CA: THR, S1	Low: no suitable habitat on gypsum outcrops or alluvial wash; marginally suitable habitat on adjacent metamorphic outcrops; not found during field surveys.	Minimal: no suitable habitat.	Minimal: no suitable habitat.
<i>Phrynosoma mcalli</i> Flat-tailed horned lizard	Open, sand flats and dunes; below about 850 ft. elev. Coachella Valley southward to N Baja	Spring-Summer	FED: none BLM: S CA: SSC, S2	Minimal: marginally suitable habitat.	Moderate: suitable habitat present; heavy off-road vehicle use reduces likelihood of occurrence.	High: suitable habitat present; known from two recent records along alignment.
<i>Uma notata</i> Colorado Desert fringe-toed lizard	Fine, loose, windblown sand; sparse desert scrub, desert dunes, dry lakebeds, desert wash, sandy beach or riverbank; below 590 ft. elev.; Colorado and Sonoran deserts south of Salton Sea in Imperial and San Diego Cos.	Mar-Oct	FED: none BLM: S CA: SSC, S2	Minimal: marginally suitable habitat.	Minimal: marginally suitable habitat; heavy off-road vehicle use reduces likelihood of occurrence.	Moderate: suitable habitat; no records in vicinity.

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
BIRDS						
<i>Accipiter striatus</i> Sharp-shinned hawk	Nests and hunts in forest & woodland mainly north of S Calif. (may breed in S Calif. mtn woodlands); also forages in open areas; regularly winters in S Calif.	Spring-early Summer	FED: none BLM: none CA: WL, S4	Minimal (Nesting): no suitable nesting trees. Low (Wintering): marginal foraging habitat present.	Minimal (Nesting): no suitable nesting trees. Low (Wintering): marginal foraging habitat present.	Minimal (Nesting): no suitable nesting trees. Low (Wintering): marginal foraging habitat present.
<i>Aquila chrysaetos</i> Golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	FED: BGEPA, BCC BLM: S CA: FP, WL, S3	Low (Nesting): no nests observed, marginally suitable nesting habitat. High (Foraging): suitable foraging habitat throughout.	Absent (Nesting): no nesting habitat, High (Foraging): suitable foraging habitat throughout.	Absent (Nesting): no nesting habitat, High (Foraging): suitable foraging habitat throughout
<i>Athene cunicularia</i> Burrowing owl	Nests mainly in rodent burrows, usually in open grassland or shrubland; forages in open habitat; increasingly uncommon in S Calif.; occurs through W US and Mexico; sparse in desert scrub	Year-around	FED: BCC BLM: S CA: SSC, S3	Moderate (Nesting): suitable nesting habitat present; not observed during nesting season. Present (Wintering): one occupied burrow observed during surveys.	Moderate (Nesting): suitable nesting habitat present; not observed during nesting season. High (Wintering): suitable foraging habitat throughout.	Moderate (Nesting): suitable nesting habitat present; not observed during nesting season. High (Wintering): suitable foraging habitat throughout.
<i>Buteo regalis</i> Ferruginous hawk	Forages over grassland and shrubland; winters in W and SW N Amer.; breeds in Great Basin and N plains.	Winter	FED: BCC BLM: none CA: WL, S3S4	Absent (Nesting): does not breed within region. High (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. High (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. High (Winter): foraging habitat present throughout.

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Buteo swainsoni</i> Swainson's hawk	Forages in open grasslands, agricultural areas, sparse shrublands, and small open woodlands. Nests in Western Antelope, San Joaquin, and Owens Valleys in scattered trees within grasslands, shrublands, or agricultural landscapes.	Spring and Fall	FED: none BLM: S CA: THR, S3	Absent (Nesting): does not breed within region. High (Migration): foraging habitat present, known to migrate through region.	Absent (Nesting): does not breed within region. High (Migration): foraging habitat present, known to migrate through region.	Absent (Nesting): does not breed within region. High (Migration): foraging habitat present, known to migrate through region.
<i>Chondestes grammacus</i> Lark sparrow	Lowlands, foothills; brushy habitats with scattered trees or shrubs; much of Calif.	Year-around	FED: none BLM: none CA: SA, S4S5	Low: suitable habitat present; not observed during surveys.	Low: suitable habitat present; not observed during surveys.	Low: suitable habitat present; not observed during surveys.
<i>Circus cyaneus</i> Northern harrier	Breeds colonially in grasslands and wetlands; forages over open terrain; throughout N America	Winter; rare in Summer	FED: none BLM: none CA: SSC, S3	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.
<i>Falco columbarius</i> Merlin	Uncommon in winter in S Calif. desert and valleys; breeds in northern N America	Winter	FED: none BLM: none CA: WL, S3S4	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.	Absent (Nesting): does not breed within region. Moderate (Winter): foraging habitat present throughout.
<i>Falco mexicanus</i> Prairie falcon	Nests on high cliffs, forages primarily over open lands; occurs throughout arid western US and Mexico	Year-around	FED: none BLM: none CA: WL, S4	Moderate (Nesting): no nests observed, suitable nesting habitat present. High (Foraging): suitable foraging habitat throughout.	Absent (Nesting): no nesting habitat, High (Foraging): suitable foraging habitat throughout.	Absent (Nesting): no nesting habitat, High (Foraging): suitable foraging habitat throughout

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Lanius ludovicianus</i> Loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; not dense forest; widespread in N America (declining significantly in midwest); valley floors to about 7000 ft. elev.	Year-around	FED: none BLM: none CA: SSC, S4	Present: observed during surveys.	High: suitable habitat is present throughout.	High: suitable habitat is present throughout.
<i>Poliophtila melanura</i> Black-tailed gnatcatcher	Desert shrublands, gen. thickets of mesquite, palo verde, or acacia, occas. in open shrubland (mostly winter); Calif. deserts thru S Texas, Baja, and arid mainl. Mexico	Year-around	FED: none BLM: none CA: WL, S3S4	Present: observed nesting during surveys.	Low: marginally suitable habitat within alignment.	Moderate: suitable habitat within alignment; not observed.
<i>Toxostoma lecontei</i> LeConte's thrasher	Open shrubland, often sandy or alkaline flats; Mojave and Colorado deserts, SW Central Val. & Owens Valley, east to Nevada, Utah, Arizona;	Year-around	FED: BCC BLM: none CA: SA, S3	Low: suitable habitat present; not observed during surveys.	Low: suitable habitat present; not observed during surveys.	Low: suitable habitat present; not observed during surveys.
MAMMALS						
<i>Macrotus californicus</i> (<i>M. waterhousii</i>) California leaf-nosed bat	Desert shrublands and arid lowlands, W San Diego Co. to W Ariz., Baja and Sonora, Mexico; gen. roosts in mineshafts, forages over open shrublands	Year-around	FED: none BLM: S CA: SSC, S3	Minimal (Roosting): marginally suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.
<i>Antrozous pallidus</i> Pallid bat	Rock outcrops in shrublands, mostly below about 6000 ft. elev.; Calif, SW N Amer. through interior Oregon and Washington; hibernates in winter	Warm season	FED: none BLM: S CA: SSC, S3	Low (Roosting): marginally suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Corynorhinus (Plecotus) townsendii</i> Townsend's big-eared bat (incl. "pale," "western," and other subspecies)	Many habitats throughout Calif and W N Amer., scattered populations in E; day roosts in caves, tunnels, mines; feeds primarily on moths	Year-around	FED: none BLM: S CA: SSC, S2	Minimal (Roosting): marginally suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.
<i>Euderma maculatum</i> Spotted bat	Desert (cool seasons) to pine forest (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds on moths captured over open water	Unknown	FED: none BLM: S CA: SSC, S3	Minimal (Roosting): marginally suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.
<i>Eumops perotis californicus</i> Western mastiff bat	Lowlands (with rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roosts in deep rock crevices, forages over wide area	Year-around	FED: none BLM: S CA: SSC, S3S4	High (Roosting): roosts just west of the Project area, suitable roosting habitat present. High (Foraging): suitable foraging habitat throughout	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.
<i>Nyctinomops femorosaccus (Tadarida femorosaccus)</i> Pocketed free-tailed bat	Deserts and arid lowlands, E Riv. and San Diego Cos. Thru SW US, Baja, mainland Mexico; roosts mainly in crevices of high cliffs; forages over water and open shrubland	Year-around	FED: none BLM: none CA: SSC, S3	High (Roosting): known to roost on sandstone cliffs just west of the Project area, suitable roosting habitat present. High (Foraging): suitable foraging habitat throughout	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.	Absent (Roosting): no suitable roosting habitat. High (Foraging): suitable foraging habitat present, known from region.

Table 4. Special-Status Wildlife Occurrence Probabilities in the Project Areas.

Special-Status Wildlife Species	Habitat and Distribution	Activity Season	Conservation Status	Project Component		
				Quarry	Proposed Replacement Pipeline	Proposed New Pipeline
<i>Chaetodipus fallax pallidus</i> Pallid San Diego pocket mouse	Desert scrub, desert succulent scrub, pinyon and juniper woodland; prefers sandy, herbaceous areas, usually in association with boulders, rocks or coarse gravel.	Year-around	FED: none BLM: none CA: SSC, S3S4	Low: At eastern edge of range; suitable habitat present.	Minimal: At eastern edge of range; marginally suitable habitat.	Low: At eastern edge of range; suitable habitat present.
<i>Neotoma albigula venusta</i> Colorado Valley woodrat	Desert shrublands; SE Calif., SW Ariz., adj. Mexico, and southernmost Nevada; closely associated with beavertail or mesquite thickets	Year-around	FED: none BLM: none CA: SA, S1S2	Low: At edge of range; suitable habitat present.	Minimal: At edge of range; marginally suitable habitat.	Low: At edge of range; suitable habitat present.
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	Mainly desert scrub, also chaparral, coastal scrub, riparian, and other habitats; Mojave Desert and southern Central Valley of Calif.	Year-around	FED: none BLM: none CA: SSC, S3	Low: suitable habitat present; not captured during mammal trapping, no records within 5 miles.	Low: suitable habitat present; not captured during mammal trapping, no records within 5 miles.	Low: suitable habitat present; not captured during mammal trapping, no records within 5 miles.
<i>Taxidea taxus</i> American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer.	Year-around	FED: none BLM: none CA: SSC, S3	High: suitable habitat present; no sign observed during surveys.	Moderate: suitable habitat present; heavy disturbance in area, no sign observed during surveys.	High: suitable habitat present; no sign observed during surveys.
<i>Ovis canadensis nelsoni</i> pop. 2 (<i>O. c. cremnobates</i>) Peninsular bighorn sheep Distinct Population Segment	Desert shrublands to conifer forest, gen. remote mountains; scattered populations in Peninsular Ranges, Riv. Co. to N Baja	Year-around	FED: END BLM: none CA: THR, FP, S2	Present: observed during surveys.	Minimal: marginally suitable habitat and isolated from nearby mountains by a busy highway.	Low: marginally suitable habitat and isolated from nearby mountains by a railway.
<i>Vulpes macrotis arsipus</i> Desert kit fox	Arid areas with grasslands, agricultural lands, or scrub areas with scattered shrubby vegetation. Requires open, level areas with loose-textured, sandy loamy soils for digging dens. SW US and N Mex.	Year-around	FED: none BLM: CA: FP	High: no sign observed during surveys, suitable habitat present throughout.	Moderate: no sign observed during surveys, marginally suitable habitat present.	High: no sign observed during surveys, suitable habitat present throughout.

References: American Ornithologists Union, 1998 (including supplements through 2013); Barbour and Davis, 1969; BLM, 2010; CDFW, 2018; Feldhammer et al., 2003; Garrett and Dunn, 1981; Hall, 1981; Jennings and Hayes, 1994; Stebbins, 2003; Wilson and Ruff, 1999.
 Conservation Status and Occurrence Probability defined in footnote to Table 3.

Chaparral sand verbena (*Abronia villosa* var. *aurita*). Chaparral sand verbena is a BLM sensitive species and has a CRPR of 1B.1. It is a perennial herb in the four o'clock (Nyctaginaceae) family. It grows in the western Sonoran Desert, San Jacinto Mountains, and coastal sides of southern California mountains (CNPS, 2018). In the desert, it is found in desert shrublands on dunes, sandfields, and sandy washes. Chaparral sand-verbena is an annual or perennial herb that tends to integrate with the common desert sand-verbena (*A. villosa* var. *villosa*). Its distribution and identification are unclear in published reference works, including Murdock (2012), CNPS (2018), and CNDDB (CDFW, 2018). The conservation concern is primarily for chaparral sand-verbena occurrences in western Riverside County and other locations outside the desert where the variety is considered rare (Roberts et al. 2004).

Chaparral sand verbena was not observed within the Project area during focused surveys, which were conducted during two years with below average rainfall. It has a moderate potential to be present along the northern pipeline alignment following a year with higher than average rainfall.

Orcutt's aster (*Xylorhiza orcuttii*). Orcutt's aster is a BLM sensitive species and has a CRPR of 1B.2. It is a woody perennial in the aster (Asteraceae) family that blooms from March to April (CNPS, 2018). It grows in the western Sonoran Desert from the Salton Sea in the east to Anza Borrego State Park in the west, north to near Salton City and south to near Interstate 8. It is a woody perennial that is present year-round and flowers in the spring (CNPS, 2018). It is most commonly found in arid canyons and nearly barren slopes in areas vegetated by creosote-bush scrub (Baldwin et al. 2012). Several of the records also note that it grows on sandy, clay, alkali, and gypsum substrates (CDFW, 2018).

Orcutt's aster was not observed during focused surveys of the Project area. It has a moderate potential to be present within all three components of the Project area as a waif from upstream populations that are known to occur within 0.75 miles of the Project area.

Other Special-status Plants

Several other special-status plant species ranked by CNPS and CDFW has at least a moderate potential to be present. These include several plants ranked a CRPR 2 species and CRPR 4 species. These species, with at least a moderate potential to be present are described below.

Harwood's milk vetch (*Astragalus insularis* var. *harwoodii*). Harwood's milk vetch has a CRPR of 2B.2. It is an annual herb in the pea (Fabaceae) family that blooms from March to April (CNPS, 2018). It grows in sandy, windblown soils throughout much of the western Sonoran Desert from near Anza Borrego State Park in the south, to the Whipple Mountains in the north and east into Arizona (CDFW, 2018). It is an annual that requires adequate rainfall to trigger germination. It is known from several records in the immediate vicinity of the existing pipeline near Plaster City, and was documented in 2017 within about 0.5 miles of the proposed pipeline alignment (CCH, 2018 and Calflora, 2018).

Harwood's milk vetch was not observed during focused surveys of the Project area, which were conducted during two years with below average rainfall. It has a high potential to be present in fine sand accumulations within all three components of the Project area in a year with higher than average rainfall.

Annual rock-nettle (*Eucnide rupestris*). Annual rock-nettle has a CRPR of 2B.2. It is an annual herb in the stick-leaf (Loasaceae) family and blooms from December through April. It is found in Sonoran Desert scrub at elevations from about 400 to 2,000 feet in California (Imperial and San Diego counties), Arizona, and northern Mexico. In California, it has been documented growing on gypsum soils. However, further south into Mexico it does not seem to show any soil affinity and has been observed on volcanic soils as well as more typical granitic substrates (SEINET, 2018).

Annual rock-nettle was observed within the Project area during focused surveys. Dozens of plants were growing on eroded gypsum cliffs, in adjacent gypsum bedrock, and downstream in sandy washes. All observations were in the southeastern phases of the quarry including Phases 6 through 9. Additional plants are not expected in other portions of the Project area.

Parish's desert thorn (*Lycium parishii*). Parish's desert thorn has a CRPR of 2B.3. It is a shrub in the nightshade (Solanaceae) family and blooms in the Spring (CNPS, 2018). It is found in a number of isolated locations throughout southern California with the largest concentration in Anza Borrego State Park (CCH, 2018). It is historically known from within about 1 mile of the existing pipeline near Plaster City.

Parish's desert thorn was not observed during the focused surveys of the Project area. It has a moderate potential to be present along the existing pipeline near Plaster City.

Brown turbans (*Malperia tenuis*). Brown turbans has a CRPR of 2B.3. It is an annual herb in the aster (Asteraceae) family and blooms from February through April (CNPS, 2018). It is found in sandy or gravelly areas of Sonoran Desert scrub at elevations from about 50 to 1,100 feet in California (Imperial and San Diego counties) and Baja California, Mexico. It is known from numerous locations in the vicinity of the Project area (CCH, 2018).

Dozens of plants were observed within Phases 7 through 9, primarily on rocky slopes and flats adjacent to the sandy washes. Several plants were also observed along the proposed pipeline near the entrance gate to the quarry. Additional plants are likely to be present in similar habitats within the Project area in a year with higher than average rainfall. It also has a high potential to be present along the existing pipeline although it was not observed during the surveys.

Hairy blazingstar (*Mentzelia hirsutissima*). Hairy blazingstar has a CRPR of 2B.3. It is an annual herb in the stick-leaf (Loasaceae) family and blooms from March to May (CNPS, 2018). It is found on rocky substrates and talus in the Sonoran Desert at elevations up to about 2,000 feet in California (Imperial and San Diego counties) and in Baja California, Mexico. It was documented in 2017 within about 0.5 miles of the proposed pipeline alignment (CCH, 2018 and Calflora, 2018).

Hairy blazingstar was not observed during the focused surveys of the Project area, which were conducted during two years with below average rainfall. It has a high potential to be present within the quarry and along the proposed pipeline alignment in a year with higher than average rainfall.

Narrow-leaf sandpaper-plant (*Petalonyx linearis*). Narrow-leaf sandpaper-plant has a CRPR of 2B.3. It is a shrub in the stick-leaf (Loasaceae) family and blooms from March to May (CNPS, 2018). It is found on sandy and rocky substrates in a variety of habitats throughout the Sonoran Desert. It was documented on gypsum soil in 2015 just south of the Project area. Narrow-leaf sandpaper-plant was reported from the Project area in an earlier report (White and Leatherman, 2005) although it was not observed during the recent surveys and may no longer be present. It has a high potential to be present in the quarry and has a moderate potential to be present within the proposed pipeline alignment.

California Rare Plant Rank 4 Species. Four special-status plants with a CRPR of 4 were observed during the surveys: winged cryptantha (*Cryptantha holoptera*), Wolf's opuntia (*Cylindropuntia wolfii*), Thurber's pilostyles (*Pilostyles thurberi*), and Coulter's lyrepod (*Lyrocarpa coulteri*). Winged cryptantha and Coulter's lyrepod were both observed at several locations in the upper wash within Phases 6 through 9. Dozens of Wolf's opuntia were observed on upland terraces within Phases 7 through 9. Thurber's pilostyles were observed growing on dyebush along the proposed pipeline.

Four special-status plants with a CRPR of 4 have at least a moderate potential to be present: Salton milk-vetch (*Astragalus crotalariae*), ribbed cryptantha (*Cryptantha costata*), Utah vine milkweed (*Funastrum utahense*), and slender-lobed four o'clock (*Mirabilis tenuiloba*). These plants are ranked as CRPR 4 species (i.e., a "watch list," not indicating rarity) and none are listed as threatened or endangered.

IV. D. 2. Special-status Wildlife

Table 4 and Attachment 5 list the special-status wildlife species reported within the USGS 7.5-minute quads surrounding the Project site. The State and federally listed Peninsular bighorn sheep is present in the area. Two candidates for State listing, flat-tailed horned lizard and Townsend's big-eared bat, may also occur. Loggerhead shrike, San Diego desert woodrat, and burrowing owl, all California Species of Special Concern, have been observed on the Project site. The locations of field observations of burrowing owl and peninsular bighorn sheep remains are shown on Figure 3 (Biological Resources). Several other special-status wildlife species could also be present (see Table 4); those species with at least a moderate potential to be present are described below.

Listed Threatened or Endangered Wildlife

Peninsular bighorn sheep (*Ovis canadensis nelsoni* DPS). The Peninsular bighorn sheep (PBS) is federally listed as endangered, State-listed as threatened and designated as a "fully protected animal" by the California Fish and Game Code. Under the federal Endangered Species Act listing (USFWS, 2009) "Peninsular bighorn sheep" refers to the regional Distinct Population Segment (DPS) of desert bighorn sheep (or Nelson's bighorn sheep). Under the 1971 California Endangered Species Act listing, Peninsular bighorn sheep refers to the subspecies *Ovis canadensis cremnobates*, although that subspecies is no longer recognized in more recent literature. Regardless of nomenclature, both listing designations refer to the same animals: the bighorn sheep population found in the Peninsular Ranges of southern California and southward into Baja California. This population is recognized as genetically isolated from other populations located farther to the north and east. PBS inhabit the desert slopes of the Peninsular ranges from Riverside County south to Baja California, Mexico, including the Fish Creek Mountains, where the Plaster City Quarry is located. PBS biology, life history, and conservation status are described by the US Fish and Wildlife Service (USFWS 2011a) in its 5-year review. A few key aspects of its life history are seasonal movements and habitat use, reliance on surface water availability, and metapopulation geography.

The decline of PBS is attributed to combined effects of disease and parasitism; low lamb recruitment; habitat loss, degradation, and fragmentation; non-adaptive behavioral responses associated with residential and commercial development; and high predation rates.

The USFWS (2000) has prepared a Recovery Plan for PBS, identifying 9 Recovery Regions, extending from the northernmost Recovery Region 1 on the desert-facing slopes of the San Jacinto Mountains (about 50 miles north of the Plaster City Quarry), to the southernmost Recovery Region 9 extending from the Coyote Mountains (about 10 miles south of the quarry expansion area) south to the international border (the range of the animals within Recovery Region 9 extends southward through the Coyote Mountains, across Interstate 8, and across the international border into Mexico). The Plaster City Quarry is located within Recovery Region 8 (Vallecito Mountains). The estimated numbers of Peninsular bighorn sheep in Recovery Regions 8 and 9 increased during the period from 1998 to 2016 (USFWS, 2011a; Colby and Botta, 2017). CDFW (Colby and Botta, 2017) estimated the Region 8 and Region 9 populations at 163 and 256 animals respectively.

The behavioral response of desert bighorn sheep (including PBS) to human activity is considered to be highly variable and dependent upon many factors, including: (1) the type of activity, (2) an animal's previous experience with humans, (3) size or composition of the bighorn sheep group, (4) location of the bighorn sheep relative to elevation of the activity, (5) distance to escape terrain, and (6) distance to the activity (USFWS 2011a, p. 14). Responses can range from cautious curiosity to immediate flight or abandonment of habitat, as well as disruption of normal social patterns and resource use. In some cases, Nelson's bighorn sheep have become acclimated to quarrying activities. For example, in local resident Nelson's bighorn sheep the northern San Bernardino Mountains have become acclimated to limestone quarrying and make regular use of inactive quarries and even active quarries during inactive hours (personal observations and communications with quarry staff by Scott D. White).

There are several research publications on Nelson's bighorn sheep activity in the vicinity of mining operations. None of these papers addresses PBS; however the following three address Nelson's bighorn sheep populations in arid habitats in California or Arizona that are comparable to the Plaster City Quarry site. The summary that follows is based on these three publications, particularly the discussion by Bleich and coauthors (2009), which is the most recent of the three, comparing and contrasting their own study results with the others and with broader Nelson's bighorn sheep literature.

- Panamint Mountains, California (Oehler et al., 2005)
- Silver Bell Mountains, Arizona (Jansen et al., 2007)
- San Bernardino Mountains, California (Bleich et al., 2009)

Bleich and coauthors (2009) state that "the characteristic that best defines mountain sheep habitat is the presence of escape terrain," and that many habitat studies have found that juxtaposition of escape terrain with valuable water or food sources has been important. They identify potential mining-related habitat benefits and deterrents, as follows: Mining can enhance escape terrain by removing vegetation (i.e., improving visibility) and creating steeper topography, especially if the improved escape terrain is near valuable food or water sources. However, mining-related disturbance could outweigh the benefits of improved escape terrain if it causes sheep to avoid the quarry areas. They found that Nelson's bighorn sheep in the San Bernardino Mountains limestone mining areas generally avoided roads (human disturbance) but did not avoid mined areas and in fact favored them over random locations.

Bleich and coauthors (2009) cite several publications indicating that Nelson's bighorn sheep can habituate to disturbance, and are frequently observed on or near active mines, stating "we speculate that such disturbance is of minimal concern to sheep when it is consistent in nature and occurs in highly predictable locations." In the Panamint Mountains study, Oehler and coauthors found that proximity to active mining did not affect home ranges, diet composition, or demographic indices, and that Nelson's bighorn sheep activity in the mining area was not affected by frequency of blasting or mine productivity.

The USFWS designated critical habitat for PBS in 2009. Much of the proposed quarry expansion area, as well as the southern and western currently active quarry areas, are within designated critical habitat (see Figure 4, Peninsular Bighorn Sheep Critical Habitat). In its critical habitat designation (2009), the USFWS described "primary constituent elements" (PCEs) essential to the conservation of Peninsular bighorn sheep. The 5 PCEs are paraphrased below:

- Moderate to steep, open slopes and canyons, that provide space for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups;
- Presence of a variety of forage plants, including shrubs that provide a primary food source year-round, grasses, and cacti that provide a source of forage in the fall, and forbs that provide a source of forage in the spring;

- Steep, rugged, slopes (60 percent slope or greater) that provide secluded space for lambing and terrain for predator evasion;
- Alluvial fans, washes, and valley bottoms that provide important foraging areas where nutritious and digestible plants can be more readily found during times of drought and lactation, and that provide and maintain habitat connectivity by serving as travel routes between and within ewe groups, adjacent mountain ranges, and important resource areas (e.g., foraging areas and escape terrain); and
- Intermittent and permanent water sources that are available during extended dry periods and provide relatively nutritious plants and drinking water.

On the whole, the USG claims and the surrounding slopes and canyon provide all PCEs identified above. Intermittent or permanent water is available from a natural rock tinaja water source located in the Fish Creek Mountains south of the quarry area. Several additional water sources are located about one to three miles west of the quarry area, within Anza Borrego Desert State Park (Colby and Botta, 2017). Open slopes and canyons, as well as steep rugged slopes, are largely found above or in between the active quarry areas and the gypsum deposits proposed for future quarrying. Alluvial fans and washes, recognized as important foraging areas, are found throughout the area, including the large unnamed alluvial wash where below-grade quarrying would occur.

The Plaster City Quarry expansion would take place on two landforms: gypsum outcrops located above the level of the alluvial wash, and below-grade gypsum deposits, located beneath the alluvial wash. The planned expansion areas are located within larger claims, which also include more extensive upland and alluvial topography. In terms of the PCEs, the gypsum outcrops provide limited habitat value because of their sparse vegetation cover and minimal plant species diversity (predominantly desert fir, which is not identified as a PBS food plant). In addition, the surfaces of the undisturbed outcrops are covered by a crusted clay material that collapses underfoot, possibly affecting its habitat value for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups (the first PCE).

The existing alluvial wash habitat located in the expansion areas planned for below-grade mining provides the high diversity of food plants identified in the second and fourth PCEs and may provide habitat connectivity within the canyon (per the fourth PCE), although most evidence of PBS movement in the area is found on the steep slopes and ridges, rather than in the canyon.

CDFW conducts regular monitoring of radio-collared Peninsular bighorn sheep throughout the area. The annual reports identify several “ewe groups” within each Recovery Region; each ewe group comprises a few adult female Peninsular bighorn sheep and their offspring. There are four identified ewe groups in Recovery Region 8 (Colby and Botta, 2017). The Plaster City Quarry is located between the mapped home ranges of Vallecito Mountains ewe group and the Fish Creek Mountains ewe group. Suitable and occupied PBS habitat occurs to the west, northwest, south, and east of the USG Quarry site, but not to the north. CDFW radio collar data provided by R. Botta (see Figure 5, Fish Creek Mountains Radio Collared Ewe Locations) show numerous PBS occurrences around the Plaster City Quarry, around Split Mountain (west of the quarry) and the Fish Creek Mountains (east, south, and southeast of the quarry). Ewes with young lambs have been reported within about 1 mile of the project area.

The existing quarry and planned expansion areas are located along the eastern (Phases 1 through 10) and western (Phases S1, S2, and S3) slopes above a broad alluvial wash between the home ranges of two ewe groups whose core ranges are in the steeper mountains to the east and west. The two home ranges are in steep topography above the active quarry and planned expansion areas. At the narrowest point the overlap where the two ewe groups share territories (and, thus, biological connectivity) is about 4,000 feet wide, ranging in elevation between about 800 and 1,800 feet above MSL, with a few peaks above 2,100

feet above MSL. The existing quarry and planned expansion may limit potential east-west movement across the canyon, although the animals seem to avoid the canyon floor (even to the south of the active quarry area). Proposed quarry development would not prevent continued geographic contact between the two ewe groups south of the planned quarry areas.

Peninsular bighorn sheep give birth mainly in late winter through early spring (February - April). Lambing is the period from one month before birth until weaning (at about 4 to 6 months of age). Births can occur over much of the winter or spring, so lambing activity can extend from January through August, but lambing season is generally identified as the period from 1 January through 30 May. During pregnancy and lactation, ewes require high-protein forage, as found on deeper more productive soils of alluvial fans and canyon bottoms but retreat to better escape terrain late in pregnancy and to give birth. Lambing areas are associated with ridge benches or canyon rims adjacent to steep slopes or escarpments. The Fish Creek Mountains surrounding the Project site provide suitable habitat components for lambing habitat and appear to be used by radio-collared females (ewes) during lambing season.

Peninsular bighorn sheep also occasionally move across valleys (not generally considered suitable habitat for most activities) between disjunct habitat areas. These movements can supplement small sub-populations with new members and provide for gene flow among multiple small groups. This pattern of partially-isolated sub-populations with occasional demographic and genetic movement among them is known as a metapopulation. The proposed project would not prevent long-distance movement among distant sub-populations.

Peninsular bighorn sheep have been observed, albeit infrequently, at the existing quarry site and the proposed quarry expansion areas. During biological surveys conducted for this report, Peninsular bighorn sheep sign such as tracks, scat (feces), and “beds” (i.e., cleared areas for resting or sleeping) were commonly observed on upland slopes above the proposed quarry expansion areas, especially near the southern end of the proposed quarry areas, and less often observed in the unnamed alluvial wash. Skeletal remains of an apparent bighorn sheep were also observed near the southern end of the proposed quarry areas (Figure 3). Peninsular bighorn sheep tracks were also observed commonly near the active quarry area in 2014, following a year of heavy rainfall and subsequent ponding within the quarry. Due to the ponding, USG pumped water from the quarry, and multiple sheep tracks indicated the animals had repeatedly crossed the wide wash (from the west) to reach the water discharge. California Department of Parks and Recreation unpublished data also include Peninsular bighorn sheep occurrences in the Project area: sign was observed in the Shoveler claims area on the west part of the Project site, and at the narrow-gauge rail line where a sheep evidently crossed from west to east north of the USG processing area, and went into the Fish Creek Mountains above the existing Quarry. Finally, a Peninsular bighorn sheep was documented on the USG Project site in 2006. In early August, quarry staff saw an animal in the Shoveler claims area at the west part of the Project site; over the next few days, it was seen twice more near the processing area (though the workers did not get good views). Finally, on August 7, 2006, the remains of a dead immature male Peninsular bighorn sheep were found at the Shoveler claims area. The USG Quarry Manager contacted Anza-Borrego Desert State Park. A Park officer investigated the site and disposed of the remains. There was no evidence of predation (e.g., by mountain lion) or major injury and the cause of death is unknown.

The CDFW has only recently begun to understand ewe group structure and seasonal movements within the Fish Creek Mountains (FCM). CDFW observed 15 PBS, including 1 lamb, 1 yearling ewe, 6 ewes and 4 rams in the FCM during the 2016 aerial survey. However, during more recent ground telemetry monitoring upwards of 30 sheep have been observed.

There is no abundance estimate for the FCM ewe group alone. Because PBS move between the Fish Creek Mountains and Vallecito Mountains by way of Split Mountain, CDFW's surveys of the two mountain ranges are combined. For the 2016 aerial survey the total Vallecito and FCM adult ewe estimate was 79, the adult ewe/yearling ewe estimate was 101 and the adult and yearling ewe and ram estimate was 163. Given the increase in the PBS population over the last 10+ years and CDFW's improved understanding of ewe group structure, CDFW hopes to estimate PBS abundance by individual ewe groups. Doing so will depend on funding availability.

To date, CDFW has data from 3 GPS-collared ewes. Thus far, the core use area is in a large north-south running drainage on the eastern side of the Fish Creek Mountains (east of the ridgeline above the USG quarry). As of 2017 the distribution and movement patterns had not changed significantly in the Vallecito and FCM ewe groups.

There are only a few known water sources within the Fish Creek Mountains, including the north/south trending canyon at the northeast end of the FCM ewe group's home range. In summer 2016, the lower tinaja was checked and found to be dry; however, CDFW GPS data show this canyon to be the most heavily used during the summer months. As of 2017, numerous tinajas in the FCM have been dry for the past few years (prior to above-average rainfall in 2019). If recurring drought conditions continue these water sources may no longer meet the needs of PBS within FCM and water enhancement projects may be warranted.

In summary, CDFW's monitoring efforts indicate two potential mitigation opportunities proposed action. First, additional funding for the monitoring project could lead to a more complete understanding of the FCM ewe group's numbers, habitat usage, and relationship to USG quarry activities. Second, a supplemental water source could improve habitat conditions during recurring drought years.

Swainson's hawk (*Buteo swainsoni*). Swainson's hawk is listed as Threatened by CDFW and is recognized as sensitive by the BLM. It is a hawk that preys on small mammals, birds, large insects, reptiles, and amphibians. Swainson's hawks usually hunt from perches such as fence posts and low trees, or from vantage points on the ground. This species is most commonly found over open plains and prairies in the Great Plains and relatively arid areas of western North America. It builds rather flimsy nests in shrubs and trees along wetlands and drainages and in windbreaks in fields and around farmsteads. They nest in the San Joaquin, Owens, and western Antelope Valleys of California. The primary wintering grounds for this species is in Argentina. They migrate through southern California every spring and fall. Suitable foraging habitat for this species is present throughout the Project area.

Barefoot banded gecko (*Coleonyx switaki*). This summary is based on reviews by Stebbins (2003) and CDFG (2005). The barefoot banded gecko is a state-listed threatened species and a BLM sensitive species. It is not listed under the federal ESA. Its documented geographic range extends from San Diego and Imperial counties south to central Baja California, Mexico. It occurs in rock outcrops and boulder-strewn slopes and canyons. It is rarely observed because of its steep, poorly accessible habitat, and because it spends most of its time in rock crevices or below ground. Due to its behavior and inaccessible habitats, its range in southern California may be more extensive than shown by documented occurrences. For example, Stebbins (2003) reported it as far north as State Highway 74 in the Santa Rosa Mountains, Riverside County. The nearest known occurrences to the USG Project Site are within Anza Borrego Desert State Park and in the Coyote Mountains. The principle threats to barefoot banded gecko appear to be collecting live animals for the reptile hobbyist trade, and consequent habitat destruction (e.g., prying rock crevices apart). Barefoot banded gecko is unlikely to occur on the quarry site or pipeline alignments. The gypsum outcrops do not provide suitable boulders or crevices. The surrounding metamorphic rock outcrops and perhaps the alluvial wash may offer marginal habitat such as boulders and crevices. There is no suitable

habitat on any of the pipeline project components. Barefoot banded geckos were not found during field surveys conducted or the 2008 Final EIR/EIS or during recent field surveys in a portion of the gypsum quarry conducted in compliance with Mitigation Measure 3.5-1e of the 2008 EIR/EIS (see Section V. B. 1. Adopted Biological Resource Mitigation Measures) and current CDFW survey protocol (CDFG, 2011).

Desert pupfish (*Cyprinodon macularius*). Desert pupfish are absent from the proposed Project site due to the absence of perennial surface water. However, desert pupfish occurs lower in the watershed, several miles downstream from the quarry. Critical habitat at San Felipe Creek, Carrizo Wash, and Fish Creek Wash and occupied habitat at San Sebastian Marsh are located about 7 miles northeast of proposed Quarry Well No. 3, 11 miles northeast of the Quarry, about 20 miles north of the Plaster City Plant, and about 24 miles north of the proposed wells near Ocotillo.

Historically, desert pupfish were widespread and common in shallow water of stream margins, marshes, springs, and slow-flowing reaches of major rivers in the lower Gila River and Colorado River watersheds in Arizona, California, Baja California, and Sonora Mexico. They are exceptionally hardy, surviving in a broad range of water chemistry and temperature regimes, but they are vulnerable to competition and predation by non-native species. The desert pupfish is endangered due to habitat loss and the introduction of non-native competitors and predators (e.g., *Tilapia*) into its habitat (Minckley et al. 1991; USFWS 1986; Moyle 2002). Dam construction on several of its river and tributary habitats in Arizona and on the Colorado River inundated some occurrences and dewatered others. Surface water diversions have eliminated habitat in some areas, and lowered water tables due to groundwater pumping and groundwater use by invasive shrubs (*Tamarix ramosissima*) have eliminated other occurrences (USFWS 1986, 1993; CDFG 2005). Agricultural pollution may threaten some occurrences. In California, desert pupfish populations persist in native populations, at San Sebastian Marsh and upstream in San Felipe Creek and tributaries (Imperial County), at Salt Creek (Riverside County), and in shoreline pools and irrigation ditches around the Salton Sea (USFWS 1993). They also persist in irrigation canals near the Salton Sea and in a few introduced “refugia” sites, including three in Anza Borrego Desert State Park.

The USFWS designated critical habitat for desert pupfish at San Sebastian Marsh and along portions of its tributaries, San Felipe Creek, Carrizo Wash, and Fish Creek Wash in Imperial County (USFWS 1986). In the critical habitat designation, the USFWS listed several activities that could adversely modify critical habitat, including withdrawal of water, either directly or indirectly, from San Sebastian Marsh. In addition, the USFWS (1993) published a Desert Pupfish Recovery Plan with recommendations for land management and recovery.

BLM Sensitive Species

Flat-tailed horned lizard (*Phrynosoma mcalli*). The flat-tailed horned lizard is recognized as a sensitive species by the BLM and is a CDFW Species of Special Concern. The flat-tailed horned lizard has been proposed for federal listing several times but in each case the USFWS determined that listing was not warranted (USFWS, 2011b). Although not federally listed, an interagency management strategy and conservation agreement for the flat-tailed horned lizard was established in 1997 and remains in place (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003); its signatory agencies include the Bureau of Land Management and El Centro Naval Air Command. Together, these agencies manage several large reserves, including the West Mesa Management Area. A portion of the existing narrow-gauge rail line crosses the West Mesa Management Area (see Figure 1, Project Overview), but none of the project areas identified in this BRTR are located within it. The West Mesa Management Area is located approximately 2 miles north of the proposed replacement pipeline alignment and about 5 miles east of the proposed new pipeline alignment (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003).

The flat-tailed horned lizard’s historic range extends throughout much of southeastern California, southwestern Arizona, northwestern Sonora and northeastern Baja California, Mexico. Populations are becoming isolated from one another by development. They occur almost exclusively in windblown sand dunes and partially stabilized sand flats. They overwinter by burying themselves in loose sand at depths to 8 inches (20 cm). They also bury themselves in sand to escape predators and to escape extreme high temperatures during their summer activity period (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003)

Flat-tailed horned lizard was not observed during the surveys. They were observed in the immediate vicinity of the proposed pipeline alignment in 2016 and 2017 (inaturalist 2018). They have a high potential to be present along both pipeline alignments and only a moderate potential to be present in the washes at the downstream end of the quarry.

The USFWS (2011b) determined that flat-tailed horned lizard populations within Management Areas are not low or declining and that most populations (with the exception of occurrences in the Coachella Valley) are not likely to become endangered in the foreseeable future. The USFWS evaluated the conservation efforts implemented under the Rangewide Management Strategy and recognized that these efforts reduce threats and “promote actions that benefit the flat-tailed horned lizard throughout its range.” The USFWS states that “there is no information to suggest that the flat-tailed horned lizard population is declining or is in danger of becoming an endangered species in the foreseeable future.”

Colorado Desert fringe-toed lizard (*Uma notata*). Colorado Desert fringe-toed lizard is recognized as a sensitive species by the BLM and is a CDFW Species of Special Concern. It lives in fine, loose, wind-blown sand, primarily in desert dunes and sandy washes. Their range in California includes the Sonoran Desert from Anza Borrego State Park to the Arizona and Mexico borders in Imperial and San Diego counties. Suitable windblown habitat is present along both pipeline alignments. There are recent records of Colorado Desert fringe-toed lizard within about 5 miles of the proposed pipeline (inaturalist 2018). It has the highest potential for occurrence along the proposed pipeline where the habitat is intact and has relatively little disturbance. There is minimal suitable habitat and very few records near the existing pipeline, therefore it has a low potential to be present. No suitable habitat is present within quarry.

Golden eagle (*Aquila chrysaetos*). Golden eagle is federally protected under the Bald and Golden Eagle Protection Act (BGEPA), recognized as sensitive species by the BLM, and considered a fully protected species by CDFW. They are year-round residents throughout most of their range in the western U.S. In the southwest, they are more common during Winter when eagles that nest in Canada migrate south into the region. They breed from late January through August, mainly during late Winter and early Spring in the California deserts. In the desert, they generally nest in steep, rugged terrain, often on sites with overhanging ledges, cliffs, or large trees that are used as cover. Golden eagles are wide-ranging predators, especially outside of the nesting season, when they have no need to return daily to tend eggs or young at their nests. Foraging habitat consists of open terrain including grasslands, deserts, savanna, and early successional forest and shrubland habitats. They prey primarily on rabbits and rodents, but will take other mammals, birds, reptiles, and some carrion.

Golden eagle home ranges in the Mojave Desert ranged from 1.7 to 1,369 square miles, and averaged 119 square miles (Braham et al., 2015). In any given year, eagles may initiate nesting behavior at one nest, without any activity at the other nests. Eagles may complete breeding by laying eggs and raising chicks, or may abandon the nest without successfully raising young. In any given year, all or most nests in a territory may be inactive, but eagles may return in future years to nest at previously inactive sites.

Marginally suitable nesting habitat is present within the Project area and there is a low potential for nesting. Numerous cliffs were observed within 0.5 miles of the Project area, and are likely to provide suitable nesting habitat. Suitable foraging habitat is present throughout the Project area and there is a high potential to golden eagles to forage throughout.

Burrowing owl (*Athene cunicularia*). Burrowing owl is a CDFW Species of Special Concern and recognized as sensitive by the BLM. It inhabits arid lands throughout much of the western U.S. and southern interior of western Canada (Poulin et al., 2011). In this portion of its range, some owls are migratory, while some are year-round residents. Burrowing owls prefer flat, open annual or perennial grassland or gentle slopes and sparse shrub or tree cover. However, they are routinely found in desert shrub communities, including those that are present in the Project area. Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering habitats. Burrowing owls often return to burrows used in previous years, especially if they were successful at reproducing there in previous years (Gervais et al., 2008). The breeding season in southern California generally occurs from February to August with peak breeding activity from April through July (Poulin et al., 2011).

A single burrowing owl was observed during surveys of the Project area in October 2014. Given the timing of the survey and that the owl was unpaired, this was likely a dispersing or wintering individual. Subsequent surveys of the Project area conducted during the breeding season did not detect any burrowing owls. However, suitable burrowing owl nesting habitat and foraging habitat is present throughout the Project area. This species is considered to have moderate potential to nest in the Project area.

Bats. Five special-status bat species recognized as sensitive by the BLM have at least a moderate potential to forage over the Project area: California leaf-nosed bat (*Macrotus californicus*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and Western mastiff bat (*Eumops perotis californicus*). Pocketed free-tailed bat (*Nyctinomops femorosaccus*) also has at least a moderate potential to be present but is not recognized by the BLM as sensitive but is recognized as a CDFW Species of Special Concern. The pallid bat, Western mastiff bat, and California leaf-nosed bat forage in open areas over grasslands, agricultural areas, and other shrublands and roost in a variety of habitats including buildings, rock crevices, and caves (Harvey et. al., 2011). Townsend's big-eared bat roosts primarily in caves and abandoned mines (Harvey et. al., 2011). The spotted bat forages on moths in the desert during winter months and roosts in deep crevices in cliffs (CDFW 2018). The gypsum cliffs and other cliffs and outcrops immediately adjacent to the quarry provide suitable roosting habitat for most of these species. In addition, the entire Project area provides suitable foraging habitat for these bats.

Other Special-status Wildlife

Loggerhead shrike (*Lanius ludovicianus*). The loggerhead shrike is a CDFW Species of Special Concern. It is a widespread species in the United States and throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. It most often occurs in open-canopied forest and woodland habitats. It nests in well-concealed microsites in densely foliated trees or shrubs (Miller, 1931; Bent, 1950). It feeds on large insects, but will also take small birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. Loggerhead shrikes often impale their prey on thorns, barbed wire, or other sharp objects. Loggerhead shrike was present within the quarry during nesting season and likely nested there. It has a high potential to be present along the pipeline alignments.

Black-tailed gnatcatcher (*Polioptila melanura*). The black-tailed gnatcatcher is recognized as a watch list species by CDFW. It is a small song bird that nests in desert shrublands, typically in areas with thickets of mesquites, palo verdes, or acacias. They occur from the deserts of southern California east through Texas and south into Mexico. Black-tailed gnatcatchers were observed nesting within the quarry during surveys in the spring of 2016. They were nesting in habitat mapped as catclaw acacia thorn scrub. Suitable nesting habitat is present throughout the Project area with the highest potential for occurrence within the quarry and along the proposed pipeline.

American badger (*Taxidea taxus*). American badger is a CDFW Species of Special Concern. Badger natural history is summarized by Brehme et al. (2012). They were once widespread throughout open grassland habitats of California. They are now uncommon, permanent residents throughout most of the State. They are found in open shrubland, forest, and herbaceous habitats with friable soils. In the southwest, badgers are typically associated with creosote bush and sagebrush shrublands. Badgers are fossorial, digging large burrows in dry, friable soils and use multiple dens and cover burrows within their home range. Badgers move among burrows daily, although they can use a den for a few days at a time. Badger home range sizes are dependent upon prey availability and other habitat characteristics. In general, home ranges are several hundred acres in size. They feed mainly on small mammals, especially ground squirrels, pocket gophers, rats, mice, and chipmunks. Badgers also prey on birds, eggs, reptiles, invertebrates, and carrion. The diet shifts seasonally and yearly depending upon prey availability.

The gypsum outcrops and the alluvial areas of the planned quarry expansion areas provide unsuitable or poorly suitable habitat for digging and burrowing (the gypsum outcrops consist of bedrock overlain by relatively thin layers of weathered, clay-like gypsum material; the alluvium has very high rock content). The two pipeline routes provide suitable burrowing substrates, although their proximity to roads, OHV activity, and the narrow-gauge rail line may dissuade badgers from using those areas. No American badger or its sign was observed during the surveys. Suitable foraging habitat is present throughout the Project area and badgers have a moderate to high potential to occur occasionally, but relatively low probability of denning in the Project area.

Desert kit fox (*Vulpes macrotis arsipus*). Desert kit fox is protected under Title 14, Section 460, California Code of Regulations, as well as the California Fish and Game Code (Sections 4000-4012), which defines kit fox as a protected furbearing mammal. Both regulations prohibit take of the species. Desert kit fox is an uncommon to rare permanent resident of arid regions of southern California. Kit fox occur in annual grasslands, or grassy open, arid stages of vegetation dominated by scattered herbaceous species. Kit fox prey on rabbits, ground squirrels, kangaroo rats, and various species of insects, lizards, and birds (Zeiner et al., 1990). Desert kit fox is primarily nocturnal, and inhabits open, flat areas with patchy shrubs. Friable soils are necessary for the construction of dens, which are used throughout the year for cover, thermo-regulation, water conservation, and pup rearing.

No kit fox or kit fox sign was observed during the surveys. As described above for American badger, suitable foraging habitat is present throughout the Project area and kit foxes have a moderate to high potential to occur occasionally, but relatively low probability of denning in the Project area.

Prairie falcon (*Falco mexicanus*). Prairie falcon is a watch list species in California. It breeds throughout much of arid western North America. They prey on a variety of small mammals, birds, reptiles, and some large insects. They nest almost exclusively on ledges of cliffs and rock escarpments or, occasionally, in stick nests built on the ledges by ravens or other raptors. There are a few regional breeding records (e.g., at Anza-Borrego Desert State Park [Unitt, 1984]) and nesting prairie falcons may forage over very wide ranges (Johnsgard, 1990). Almost all prairie falcon sightings in the region are made during winter or

migration seasons. Suitable nesting habitat is present in the Project area and they have a moderate potential to utilize the habitat. They are likely to occasionally forage within the Project area.

Other Raptors: Several special-status birds of prey are found seasonally in the region, especially during winter and migration: sharp-shinned hawk (*Accipiter striatus*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), and merlin (*Falco columbarius*). Suitable winter or migratory season foraging habitat for these raptors is widely available throughout the region. These species, if present, may forage within the Project area but would not nest because of a lack of suitable habitat.

Native birds. Most birds, including their nestlings and eggs, are protected under the California Fish and Game Code Sections 3503, 3503.5, and 3513, and the federal Migratory Bird Treaty Act. Most of these species have no other special conservation status. Fifteen bird species have been recorded on the site during field surveys (see Attachment 4). Suitable foraging and nesting habitat for protected bird species, as well as “stopover” habitat for migratory songbirds, is found throughout the project area.

V. Conclusions and Recommendations

V. A. Summary of Biological Resources Impacts

The proposed project would directly affect vegetation, habitat, and common species within the project footprint areas, and may directly affect special-status plants or animals. In addition, the project may indirectly affect biological resources in the vicinity of the project footprint, through noise, lighting, disturbance, dust, or other indirect effects. The following paragraphs briefly summarize the expected impacts to biological resources, and several mitigation measures are recommended in the sections that follow.

V. A. 1. Vegetation and Habitat Impacts

Expanded quarrying activities would result in permanent and long-term impacts to native vegetation and habitat (see Table 2). Pipeline construction would affect additional acreage. During quarrying or pipeline construction activities, most wildlife are expected to avoid the project footprint area and immediate vicinity due to unsuitable habitat conditions and human disturbance. After the completion of quarrying or construction activities, vegetation and habitat will remain in a disturbed state for many years, although removal of the disturbance and subsequent recovery (through reclamation) will ultimately replace some habitat components. Quarry phasing and on-site reclamation as specified in the Imperial County authorization would reduce the habitat impacts over time, and measures recommended below would minimize the project footprint area. In addition, habitat effects could be offset through any habitat compensation that may result from permitting for jurisdictional waters impacts through the US Army Corps of Engineers or CDFW, or federal ESA consultation with the USFWS. Project activities could lead to the spread of invasive weeds or introduction of new weed species in the area.

Mitigation measures to avoid or minimize general vegetation and habitat impacts are listed below. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas
- EIR-2. Mining and Reclamation
- EIR 3.5-1a. Revegetation
- EIR 3.5-1b. Phasing of Quarry development and closure
- BIO-1. Integrated Weed Management Plan

- BIO-2. Mining Activity Monitoring and Reporting
- BIO-3. Worker Education Awareness Program

V. A. 2. Special-status Plant Impacts

No State or federally listed plants and no BLM Sensitive Plants were observed during the surveys or have potential to be present. Several special-status plants with a CRPR 2B (rare in California but more common elsewhere) or CRPR 4 (watch list) were observed in the quarry expansion areas or new pipeline route. The proposed project would probably take small occurrences of Thurber's pilostyles, brown turbans, Coulter's lyrepod, and annual rock-nettle. Based on the distribution and conservation status of these species and extensive undisturbed and protected habitat in the surrounding area, this impact would be relatively minor and no mitigation is recommended.

V. A. 3. General Wildlife Impacts

Most wildlife would avoid moving equipment, and equipment operators would avoid clearly visible wildlife (such as large mammals). However, quarrying or pipeline construction could cause mortality of small mammals and reptiles within the project footprint area, particularly during initial grading or site clearing work. Food or water could attract wildlife into the work area, putting animals at risk of injury. Domestic or feral dogs, if present on the site, could prey on native wildlife, or cause injury or mortality by chasing animals. Other potential hazards include vehicle strikes or wildlife entrapment within bores, trenches, or materials (e.g., pipes). The project footprint and surrounding area provide suitable nesting habitat for numerous resident and migratory birds, which may be vulnerable to project activities. Most adult birds would flee from equipment during initial vegetation clearing; however, nestlings and eggs would be vulnerable to mortality during initial site clearing construction, and are also protected by the MBTA and Fish and Game Code. These potential impacts can be minimized or avoided through scheduling initial site disturbance outside the nesting season. One special-status bird species, the burrowing owl, is unlikely to flee the site during construction, due to its characteristic behavior of taking cover in burrows. An avoidance and mitigation strategy for burrowing owl is recommended. In addition, certain bird species can become entrapped in vertical or horizontal open pipes with diameters from 1 to 10 inches. Cavity-nesting species such as Say's phoebes, owls, woodpeckers, kestrels, and ash-throated flycatchers are particularly vulnerable. Several avoidance and minimization measures, as well as pre-construction clearance surveys and clearly-delineated work areas are recommended below to minimize or avoid these potential impacts.

The quarry expansion and pipeline construction could affect local wildlife movement patterns. Quarrying and construction operations would tend to dissuade most terrestrial animals from crossing the site due to the removal of vegetation and soil which would otherwise provide food, shade, burrowing substrate, and most other native habitat elements. Indirect impacts, including light, noise, and equipment traffic, could also tend to reduce wildlife dispersal across the property. But surrounding undeveloped open space would continue to provide adequate travel routes around the existing and proposed quarry operations, and the short-term nature of pipeline construction would have only minimal effects to local wildlife movement. Potential impacts to wildlife movement would be minor and no mitigation specific to wildlife movement is recommended, although avoidance and minimization measures recommended below would serve to minimize potential impacts to local wildlife movement.

Mitigation measures to avoid or minimize general wildlife and habitat impacts are listed below. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas
- EIR-2. Mining and Reclamation
- EIR-4. Domestic Animals
- BIO-2. Mining Activity Monitoring and Reporting
- BIO-3. Worker Education Awareness Program
- BIO-4. Wildlife Impact Avoidance and Minimization Measures

V. A. 4. Special-status Wildlife Impacts

The proposed project could directly or indirectly affect special-status wildlife through injury or mortality or through habitat loss or degradation described above. With implementation of avoidance measures recommended below, the project is not expected to take² Peninsular bighorn sheep, desert kit fox, America badger, barefoot banded gecko, nesting birds (including burrowing owl) or other special-status wildlife. The planned quarry expansion areas are within designated PBS critical habitat, and the project would directly affect critical habitat, although the planned expansion areas show little evidence of PBS usage. Initial site clearing activities could cause take of special-status reptile (e.g., flat-tailed horned lizard), bird (e.g., burrowing owl), or mammal (e.g., American badger) species if the animals or their active nests or dens are present during the clearing; however, avoidance measures identified below would prevent take. A hydrology analysis indicates that the project would not affect off-site desert pupfish habitat (Bookman-Edmonston 2002a, 2002b). Pre-construction clearance surveys and clearly-delineated work areas are recommended below to minimize or avoid direct impacts. In addition, habitat effects could be offset through any habitat compensation that may result from federal ESA consultation with the USFWS. Note that any habitat compensation for PBS may also provide suitable nesting or foraging habitat for one or more other special-status species of the area, depending on specific habitat characteristics. Potential impacts are described further for each special-status species in the paragraphs that follow.

Peninsular bighorn sheep. Potential project impacts to PBS are categorized below, into habitat impacts, potential for injury or mortality, disruption of behavior, interruption of access to foraging areas, reproduction and lambing activities, and habitat fragmentation and connectivity.

The project would affect suitable and occupied PBS habitat located adjacent to the existing disturbance area and would occur in phases over the 73-year mining authorization (80-year estimate for mining and final reclamation). In general, mining will proceed from currently active quarry areas in the north toward future phases in the south. Site-specific mining will depend on multiple factors such as gypsum characteristics in various parts of the quarry, blending needs for production, and market conditions. This total habitat effect is diminished because (1) quarry areas would be reclaimed after completion of mining in each area, so that the previously mined areas would be under reclamation as new areas are developed and mined; (2) former quarry areas, even without reclamation, can serve several habitat values for PBS, including escape terrain, sheltering, and bedding; (3) the habitat value of upland gypsum outcrops appears to be relatively low, based on PBS location data (Figure 5), probably due to minimal forage availability and

² Under the California Fish and Game Code, “ ‘take’ means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” As a state-designated Fully Protected species, no project-related take of Peninsular bighorn sheep is permitted under California law. Under the federal Endangered Species Act, “the term ‘take’ means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” ‘Harass’ and ‘harm’ (not included in the state definition) are further defined in federal regulations as activities, including significant habitat impacts, that are likely to kill or injure wildlife by significantly disrupting or impairing normal behavior patterns such as breeding, feeding, and sheltering. The US Fish and Wildlife Service may authorize take of a federally listed wildlife species through Endangered Species Act Section 7 consultation with BLM.

crusted clay surface; and (4) excluding the gypsum outcrops, habitat (e.g., topography and vegetation) in the planned quarry expansion area is similar to habitat throughout Recovery Region 8 (USFWS 2000b); there are no known special habitat resources such as surface water sources or lambing areas within the active planned quarry expansion areas.

Future quarrying would directly affect two habitat types: upland gypsum outcrops and alluvial wash. The upland gypsum outcrops appear to have minimal habitat value, based on vegetation, topography, soil conditions, and PBS location data. The alluvial wash habitat likely supports higher-quality PBS forage, although it is mostly not adjacent to escape terrain due to presence of gypsum outcrops located between the alluvial wash and the upslope escape terrain. PBS locations indicate only infrequent occurrence in the alluvial wash areas. Mining activities would remove forage plants and other habitat components from the alluvial mining areas, and would significantly alter the outcrop quarry areas, possibly creating steep slopes and benches that may serve as escape terrain (Bleich et al., 2009). The total area of planned disturbance to the alluvial wash is approximately 400 acres, mapped primarily as creosote bush scrub, creosote bush – white bursage scrub, catclaw acacia thorn scrub, and smoketree woodland. Upon completion of mining, each below-grade quarry area will be reclaimed to a condition suitable for use as foraging. The new pipeline construction and pipeline replacement components of the Proposed Action are not expected to affect PBS habitat.

The potential PBS direct habitat impacts would be minimized, offset, or reduced over time primarily through implementation of the following measures. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas.
- EIR-2. Mining and Reclamation.
- BIO-1. Integrated Weed Management Plan
- PBS-1. Peninsular Bighorn Sheep Habitat Mitigation

Mining and reclamation have little potential for causing direct injury or mortality to PBS. There exists a possibility of transportation accidents (truck and train) as well as blasting accidents. Truck and train traffic and blasting have occurred on the site since 1921 (the mine has been in continuous operation by USG since 1945) and these activities are visible to PBS from sufficient distances to allow avoidance by PBS. Given the apparent avoidance of active quarry areas by PBS, the probability of injury or death is small. In addition, if the project were to attract or introduce domestic livestock or feral dogs to the site, those animals could either transmit livestock diseases to PBS, or prey on PBS.

The potential for injury or mortality would be minimized or avoided primarily through implementation of the following measures. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-3. PBS Avoidance, Worker Training.
- EIR-4. Domestic Animals.
- BIO-2. Mining Activity Monitoring and Reporting
- BIO-3. Worker Education Awareness Program
- BIO-4. Wildlife Impact Avoidance and Minimization Measures (including 15 mph speed limit)
- PBS-2. Peninsular Bighorn Sheep Monitoring and Reporting
- PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures

Human presence, lighting, dust, construction noise, blasting, noise and vibrations from heavy equipment, may affect PBS behavior in the quarry vicinity. Quarry noise or disturbance impacts may cause PBS to avoid upland habitat adjacent to the planned mining areas that PBS currently use as escape terrain, foraging, or movement among local ewe groups. A number of studies have been conducted to evaluate

bighorn sheep responses to human activities (e.g., Hicks and Elder 1979; Keller and Bender 2007; Papouchis et al. 2001) and generally conclude that bighorn sheep increase their distance to humans, especially when they are approached, but the effects of disturbance are temporary. Additionally, PBS appear to acclimate to ongoing activities such as mining (Bleich, 2009 and references cited therein) and fluctuating levels of mining activity, including blasting, did not appear to affect Nelson's bighorn sheep in the Panamint Mountains (Oehler et al. 2005; Bleich et al. 2009).

Urban Crossroads (2018) prepared a study of quarrying noise at the USG Plaster City Quarry, consisting of long-term (one-hour) measurements from several locations in the existing and planned quarry areas, short-duration noise levels within short distances of quarrying equipment, and short-duration measurement of blasting noise. Urban Crossroads recorded operational levels ranging from 30.8 dBA³ near the southern end of the planned quarry expansion (about 2 miles from the current activity) to 47.7 dBA in the vicinity of ongoing operations where background noise sources include electrical equipment, people talking, truck engines starting, truck movements, and truck horns sounding for safety purposes. These correspond to faint (below 40 dBA) or moderately loud (above 40 dBA) levels. Short-duration measurement of equipment noise, such as truck pass-by, truck unloading, and crusher activity ranged from 67.7 dBA to 88.2dBA at 50-foot distances, corresponding to loud or very noisy levels. Blasting measured over a 1-second duration registered 128.7 dBZ⁴ at a distance of 425 feet, corresponding to 134.9 dBZ at a standard 50-foot distance.

The most likely behavioral response by PBS will be to temporarily avoid active quarrying or materials processing areas, including nearby undisturbed habitat. PBS location data include many data points in the immediate vicinity of the active quarry area, consistent with literature reports indicating acclimation to quarrying activities including blasting. Under the Proposed Action, quarry production and quarrying activities may increase. The Urban Crossroads analysis indicates only a minimal increase in overall noise levels from increased quarry production. Consistent with the behavior of Nelson's bighorn sheep as quarry production increased and decreased in the Panamint Mountains (Oehler et al. 2005; Bleich et al. 2009), the level of overall disturbance to PBS is not expected to change. The new pipeline construction is unlikely to affect PBS behavior due to the location along the existing narrow-gauge rail line, where PBS occurrence is rare. If PBS are in the vicinity during construction, then the construction activities would likely affect PBS behavior as described above for quarry activities. The pipeline replacement and canal pipeline components of the Proposed Action are not expected to affect PBS behavior because they would not be located in PBS occupied habitat.

The potential to disrupt PBS behavior would be minimized primarily through implementation of the following measures. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas.
- EIR-2. Mining and Reclamation.
- EIR-3. PBS Avoidance, Worker Training.
- EIR-4. Domestic Animals.
- BIO-2. Mining Activity Monitoring and Reporting
- BIO-3. Worker Education Awareness Program
- BIO-4. Wildlife Impact Avoidance and Minimization Measures
- PBS-2. Peninsular Bighorn Sheep Monitoring and Reporting
- PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures

³ A-weighted sound level, from one-hour recording periods (Urban Crossroads, 2018).

⁴ Non-weighted sound level (Urban Crossroads, 2018).

Mining and reclamation will disrupt portions of the site for at least 80 years, causing habitat loss, disturbance, and potential behavioral effects described above. Mining-related disturbance may cause PBS to avoid accessing foraging habitat within the alluvial wash, if the disturbance is located between regularly-used slope habitat and the alluvial foraging area. Nonetheless, extensive upland and alluvial habitat are available in the surrounding area. The potential extent of interrupted access to foraging areas in the vicinity of the quarry cannot be quantified. The new pipeline construction and pipeline replacement components of the Proposed Action are not expected to affect PBS access for foraging habitat.

The potential to interrupt PBS access to foraging habitat would be minimized primarily through implementation of the following measures. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas.
- EIR-2. Mining and Reclamation.
- EIR-3. PBS Avoidance, Worker Training.
- EIR-4. Domestic Animals.
- BIO-2. Mining Activity Monitoring and Reporting
- BIO-3. Worker Education Awareness Program
- BIO-4. Wildlife Impact Avoidance and Minimization Measures
- PBS-2. Peninsular Bighorn Sheep Monitoring and Reporting
- PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures

Peninsular bighorn sheep lambs and yearlings have been observed in the Fish Creek Mountains east of the quarry. Based on data indicating year-round PBS occupancy, lambing activity (i.e., birth and nursing) presumably occur in the Fish Creek Mountains. GPS location data suggest the most likely lambing area is the north-south trending canyon east of the quarry. Future quarry phases 6Bp, 7Bp, 8, and 9 are nearest to the presumed lambing habitat.

Although there are no expected impacts to reproduction and lambing activities, the project includes a requirement that new ground-disturbing activities (i.e., initial quarry development) and blasting may not take place during lambing season (Jan 1- May 30), except with the approval of USFWS and CDFW. This requirement is identified in:

- PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures

Continuing and expanded quarry operations would tend to dissuade most terrestrial animals, including PBS, from crossing the active quarry areas. Future mining in the southern end of the planned quarry expansion areas (Phases 8 and 9) is near a habitat linkage between occupied habitat to the east and west of the planned quarry expansion area. This linkage is about 4,000 feet wide. Based on location data, PBS regularly use habitat immediately adjacent to the active quarrying areas (Phases 1A, 1B, S1, S2, and S3). Based on these activity patterns, PBS are expected to continue to occupy the upland slopes south of Phases 8 and 9. Quarry areas undergoing reclamation would be accessible to PBS, although their localized behavioral response to the previously active quarry areas is unknown. Nelson's bighorn sheep populations in other areas regularly use inactive quarries for routine activities (Bleich, 2009; San Bernardino National Forest, 2014 and citations therein). Throughout the life of the project, surrounding undeveloped open space would continue to provide access to PBS throughout nearly all of the habitat currently in use by PBS. The new pipeline construction and pipeline replacement components are not expected to affect biological connectivity for PBS. Pipeline construction activities may temporarily dissuade terrestrial animals from using the area. But surrounding undeveloped open space would continue to provide adequate travel routes around the existing and proposed plant operations.

The potential to affect biological connectivity would be minimized primarily through implementation of the following measures. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR-1. Minimize Temporary Use Areas
- EIR-2. Mining and Reclamation
- EIR-3. PBS Avoidance, Worker Training
- BIO-4. Wildlife Impact Avoidance and Minimization Measures
- PBS-2. Peninsular Bighorn Sheep Monitoring and Reporting
- PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures

Desert pupfish. The project would not directly affect suitable aquatic habitat for desert pupfish. Desert pupfish occurs at San Sebastian Marsh, which is lower in the Fish Creek watershed, about 7 miles northeast of the nearest USG facilities. Potential effects of the project on desert pupfish, if any, would be indirect impact to surface water availability in off-site desert pupfish habitat.

Groundwater extraction was identified as a threat in the desert pupfish listing (USFWS, 1986) and in the recovery plan (USFWS, 1993). It is still considered a threat; especially at occurrences outside California (USFWS, 2010). The potential link between groundwater extraction and off-site aquatic habitat availability to desert pupfish depends on the rate or volume of extraction and groundwater passage within the affected basin or basins. Reduced groundwater level at a given well location could lead to reduced surface water at a spring or seep, depending on the amount of draw-down and the hydrologic link between the well site and the aquatic habitat.

Hydrologic studies prepared by Bookman-Edmonson (2002a; 2002b) and Dudek (2018) addressed the quarry area and proposed Quarry Well No. 3, indicating that neither component of the project would affect occupied pupfish habitat. These studies are described in the following paragraphs.

Hydrologists preparing the analysis have concluded that no impacts will occur to basin water supplies or to San Felipe Creek. The analysis shows a drainage area contributing to the San Felipe Creek of 965,388 acres with a volume calculated on annual average precipitation of 583,883 acre-feet of water. The Quarry, including the planned expansion area, contributes 396 acre-feet of water to the basin (0.07 percent by volume). This surface drainage would continue uninterrupted with all drainage from the Quarry directed to the wash.

Hydrogeologists also addressed the possible impacts of withdrawing approximately 26 acre-feet per year of well water from the same basin for use at the Quarry. A calculated draw down of the proposed well at maximum capacity would have a draw down at Fish Creek and San Felipe Creek Springs of approximately 1 millimeter. This is a conservative estimate because values produced by the Theis equation are for drawdowns in confined aquifers. However, the aquifer in the well area is unconfined, and drawdowns will be much less than those for a confined aquifer. Pumping 26 acre-feet per year from an unconfined aquifer will not produce drawdowns that are noticeable at distances of 1,000 feet or less. Additionally, the location of the San Jacinto Fault, a probable groundwater barrier between the well and Fish Creek and San Felipe Creek Springs, would most likely prevent a cone of depression extending beyond the fault. Thus, the extraction of water from the well at capacity will not have a detectable impact directly or cumulatively on habitat supporting the desert pupfish.

Additionally, recent significant loss of surface water in the occupied habitat is believed to be linked to seismic activity (Poff, 2017) or cessation of nearby irrigation due to conversion of agricultural lands to a solar facility (Todd Groundwater, 2018).

Barefoot banded gecko. The barefoot banded gecko is not expected to occur on the site. However, due to its cryptic nature and inaccessible habitats, it may be more widespread than currently understood. If barefoot banded gecko were to occur on a future mining site, potential impacts would be similar to those described for general wildlife (above), especially the potential for injury or mortality by vehicle crushing. Most potential impacts would be minimized through measures identified for general wildlife impacts (above). Due to its status as a CESA-listed threatened species and a BLM sensitive species, the following additional mitigation measure was included in the 2008 Final EIR/EIS. The full text of the measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- BIO-4. Wildlife Impact Avoidance and Minimization Measures
- EIR 3.5-1e. Barefoot banded gecko

Flat-tailed horned lizard. Suitable habitat for flat-tailed horned lizard is present along several parts of the planned pipeline routes. Potential impacts would be similar to those described for general wildlife (above), especially the potential for injury or mortality by vehicle crushing. Although not state or federally listed, an interagency management strategy and conservation agreement for the flat-tailed horned lizard was established in 1997 and remains in place (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003). In order to minimize potential impacts to flat-tailed horned lizard, Mitigation Measure EIR 3.5-2 was included in the 2008 Final EIR/EIS, and additional Mitigation Measure FTHL-1 is recommended. The full text of the measures may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR 3.5-2. Flat-tailed Horned Lizard Rangeland Management Strategy
- BIO-4. Wildlife Impact Avoidance and Minimization Measures
- FTHL-1. Flat-tailed Horned Lizard Mitigation

Special-status bats. Several special-status bats could forage over the site or possibly roost in rock crevices within planned quarry expansion areas. Impacts to foraging habitat would be minimal and would be mitigated through measures identified above under Vegetation and Habitat Impacts. Potential impacts to roosts could cause injury or mortality to special-status bats. This potential impact would be avoided or minimized through Mitigation Measure BIO-4 (Wildlife Impact Avoidance and Minimization Measures). The full text of BIO-4 may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

Desert kit fox and American badger. Both species could use the quarry or pipeline project areas, although they were not observed during field surveys. Potential direct impacts to American badger and desert kit fox include mechanical crushing of individuals or burrows by vehicles and construction equipment, habitat loss, and noise and disturbance to surrounding habitat. Mitigation measures identified under general wildlife impacts would minimize this potential impact.

Nesting birds including burrowing owl. Native birds are protected under the California Fish and Game Code and federal Migratory Bird Treaty Act. Special-status birds of the region are addressed in Section IV. D. but most protected bird species have no special conservation status. The entire Project site and surrounding area provides suitable nesting habitat for numerous resident and migratory bird species. Bird nests including eggs and nestlings are vulnerable to Project construction activities that may disrupt nesting behavior or damage nests, birds, or eggs. Burrowing owls reside in burrows year-round and may retreat into their burrows if threatened by human activities; therefore, burrowing owl avoidance requires pre-construction surveys and avoidance measure for occupied burrows at any time of year. Mitigation measures identified under general wildlife impacts, in combination with the measures identified below, would minimize potential impacts to nesting birds. The full text of each measure may be found in Section V.B (Existing and Recommended Biological Resource Mitigation Measures).

- EIR 3.5-1c. Migratory birds
- BO-1. Burrowing owl avoidance
- BIO-4. Wildlife Impact Avoidance and Minimization Measures

V. B. Existing and Recommended Biological Resource Mitigation Measures

The proposed project includes quarry reclamation in compliance with the California Surface Mining and Reclamation Act (SMARA). In addition, the Imperial County project authorization includes eleven measures to mitigate biological resources impacts, quoted in Section V.B.1. below. Aspen recommends several additional measures in Sections V.B.2. and V.B.3. to mitigate biological resource impacts, including several general avoidance and minimization measures and several additional measures for specific resources.

V. B. 1. Adopted Biological Resource Mitigation Measures

The following eleven measures are identified in the 2008 Final EIR/EIS and included as project requirements under the Imperial County authorization. These measures are still applicable and would reduce adverse effects identified herein. Additional mitigation measures are recommended in Sections V.B.2. and V.B.3. to supplement these adopted measures and further reduce biological resources impacts.

EIR-1. Minimize Temporary Use Areas. During pipeline construction the need for temporary use areas would be minimized by using the USG private parcels on either end of the alignment for staging and equipment and material storage. Materials would be transported to the project areas as needed, for immediate use.

EIR-2. Mining and Reclamation. Mining and reclamation shall be conducted only as approved in the Plan of Operation and Mine Reclamation Plan. Reclamation shall be conducted concurrently with mining and it shall be initiated within each phase as soon as is feasible. Reclamation shall include slope contouring and revegetation with native plant species as specified in the reclamation plan.

EIR-3. PBS Avoidance, Worker Training. The project proponent shall instruct employees and other visitors to the mine to avoid Peninsular bighorn sheep. Access to undisturbed lands by humans on foot shall be restricted, and usually would include only biologists and mining personnel. The project proponent shall establish a training program, including new-employee orientation and annual refreshers, to educate employees regarding bighorn sheep and the importance of avoidance.

EIR-4. Domestic Animals. The project proponent shall not allow domestic animals (cattle, sheep, donkeys, dogs, etc.) onto the mine site or any lands under USG control. Training for mine employees shall include instructions to report observations of domestic animals to the environmental manager. Upon receiving any such reports, the environmental manager shall contact the appropriate authorities for removal of domestic animals.

EIR 3.5-1a. Revegetation. Consistent with the California Surface Mining and Reclamation Act (SMARA), USG shall implement the revegetation plan. In general, revegetation should be designed to restore habitat and cover for wildlife use in conformance with SMARA. Revegetation should be concurrent with closure of individual Quarry areas; wherever ongoing Quarry operation may eliminate access to closed upper Quarry benches, those benches should be revegetated while access is still available.

EIR 3.5-1b. Phasing of Quarry development and closure. Wherever possible, USG shall begin revegetation of Quarry areas to restore native habitat values concurrently or in advance of opening new Quarry areas.

EIR 3.5-1c. Migratory birds. In order to avoid potentially fatal impacts on birds protected under the Migratory Bird Treaty Act and the California Fish and Game Code, USG shall survey the area prior to grading and brush removal of previously undisturbed habitat.

EIR 3.5-1d. Peninsular bighorn sheep. USG, in coordination with the BLM, shall initiate formal consultation with the US Fish and Wildlife Service under Section 7 of the Federal Endangered Species Act and implement the terms and conditions of the incidental take statement authorizing the project. The consultation process will result in the development of a Biological Opinion by the USFWS that will: (1) provide a statement about whether the proposed project is “likely or not likely to jeopardize” the continued existence of the species, or result in the adverse modification of critical habitat; (2) provide an incidental take statement that authorizes the project; and (3) identifies mandatory reasonable and prudent measures to minimize incidental take, along with terms and conditions that implement them.

EIR 3.5-1e. Barefoot banded gecko. Suitable habitat occurs throughout much of the Quarry area. Prior to expanding existing quarries or developing new quarries, focused barefoot banded gecko surveys shall be conducted to determine whether the species is present or absent from any proposed new disturbance areas. Surveys would be carried out in cooperation with the CDFG [now CDFW] and field biologists would be required to hold Memoranda of Understanding with the CDFG to search for this species. If the species is present, then consultation with CDFG under Section 2081 of CESA to “take” barefoot banded gecko must be completed prior to land disturbance.

EIR 3.5-1f. Agency contacts for impacts to streambeds. Prior to any new disturbances on the alluvial wash portion of the project area, USG shall contact the CDFG and the US Army Corps of Engineers to determine whether either agency holds jurisdiction over the wash through Sections 1601-3 of the California Fish and Game Code or Section 404 of the Federal Clean Water Act, respectively.

EIR 3.5-2. Flat-tailed Horned Lizard Rangewide Management Strategy. USG will comply with the FTHL Rangewide Management Strategy, as revised, Standard Mitigation Measures when constructing Quarry Well #3 and the Quarry pipelines.

V. B. 2. Recommended General Avoidance and Minimization Measures

BIO-1. Integrated Weed Management Plan. USG will prepare and implement an integrated weed management plan to control invasive weeds including tamarisk and fountain grass in cooperation with the BLM and County of Imperial. The plan will include procedures to help minimize the introduction of new weed species, an assessment of the invasive weed species known within the project area, and procedures to control their spread on site and to adjacent offsite areas. This plan will be submitted to the BLM and County of Imperial for review and approval prior to the start of construction and will be implemented for the life of the project.

BIO-2. Mining and Construction Activity Monitoring and Reporting. Prior to the beginning of any quarry expansion activities, USG will identify a Designated Biologist and may additionally identify one or more Biological Monitors to support the Designated Biologist. The Designated Biologist and Biological Monitors will be subject to approval by the BLM and USFWS. The Designated Biologist will be in direct contact with BLM and USFWS.

The Designated Biologist or Biological Monitor will have the authority and responsibility to halt any project activities that are in violation of the conservation measures. To avoid and minimize effects to biological resources, the Designated Biologist and/or Biological Monitor will be responsible for the following:

- The Designated Biologist will notify BLM's Authorized Officer and Service at least 14 calendar days before the initiation of quarry expansion of new ground-disturbing activities.
- The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys (see BIO-4, below) and will be on-site during any quarry expansion activities or other new ground disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no quarry expansion activities are conducted while Peninsular bighorn sheep are within a 0.25-mile radius of the activity (see PBS-3, below).
- The Designated Biologist or Biological Monitor will immediately notify BLM's Authorized Officer and Service in writing if USG does not comply with any conservation measures including, but not limited to, any actual or anticipated failure to implement conservation measures within the periods specified.
- The Designated Biologist or Biological Monitor will visit the quarry site periodically (no less than once per month) throughout the life of the project to administer the WEAP and ensure compliance with the Impact Avoidance and Minimization Measures listed below, and
- The Designated Biologist will submit an annual compliance report no later than January 31 of each year to BLM's Authorized Officer throughout the life of the project documenting the implementation of the following programs/plans as well as compliance/non-compliance with each conservation measure:
 - Integrated Weed Management Plan
 - Worker Education Awareness Program
 - Reclamation Plan
 - Wildlife Mortality Reporting Program
 - Peninsular Bighorn Sheep Monitoring Plan

BIO-3. Worker Education Awareness Program. This measure supplements measure EIR-4, above, by expanding on the worker training program. Prior to project approval, USG will develop a worker education awareness program (WEAP), to be implemented upon final approval by BLM and USFWS. The WEAP will be available in English and Spanish. The WEAP will be presented to all workers on the project site throughout the life of the project. Multiple sessions of the presentation may be given to accommodate training all workers. Wallet-sized cards summarizing the information will be provided to all construction and O&M personnel. The WEAP will be approved by the BLM, Service, and CDFG, and will include the following:

- Descriptions of special-status wildlife of the region, including Peninsular bighorn sheep, and including photos and how to identify adult and subadult male and female PBS.
- The biology and status of special-status species of the area, including Peninsular bighorn sheep.
- A summary of the avoidance and minimization measures and other conservation measures.
- An explanation of the PBS observation log (see PBS-2), including instruction on correctly filing data.
- An explanation of the flagging or other marking that designates authorized work areas.
- Actions and reporting procedures to be used if any wildlife, including Peninsular bighorn sheep is encountered.

BIO-4. Wildlife Impact Avoidance and Minimization Measures. USG will implement the following measures throughout the life of the project.

- To the extent feasible, initial site clearing for quarry expansion, pipeline construction, or other activities (e.g., clearing spoils stockpile areas) should be conducted outside the nesting season (January 1 through August 31) to avoid potential take of nesting birds or eggs.

- The Designated Biologist or Biological Monitor will conduct pre-construction clearance surveys no more than seven (7) days prior to initial site clearing for quarry expansion or pipeline construction. To the extent feasible, special-status wildlife (e.g., reptiles) will be removed from “harm’s way” prior to site clearing. If an active bird nest, including active burrowing owl burrows are present, the biologist will mark a suitable buffer area around the nest and project activities will not proceed within the buffer area until the nest is no longer active. If potential special-status bat roosting habitat is present (e.g., rock crevices) the biologist will check to see if bats are present. If an occupied bat roost is present, USG will confer with a bat specialist to determine if avoidance or pre-disturbance eviction is feasible or necessary.
- For project activities in windblown sand habitats on pipeline routes, the Designated Biologist or Biological Monitor shall be present in each area of active surface disturbance throughout the work day. the Designated Biologist or Biological Monitor will survey work areas immediately prior to ground-disturbing activities and will examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85°F) for the presence of FTHL or Colorado fringe-toed lizard. In addition, all potential wildlife hazards (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of FTHL or Colorado fringe-toed lizard prior to backfilling.
- The Designated Biologist or Biological Monitor will be on-site during any quarry expansion activities or other new ground disturbing activities (e.g., clearing spoils stockpile areas) and will be responsible for ensuring that no quarry expansion activities are conducted while Peninsular bighorn sheep are within a 0.25-mile radius of the activity.
- Speed limits along all access roads will not exceed 15 miles per hour.
- Avoid or minimize night lighting by using shielded directional lighting pointed downward, thereby avoiding illumination of adjacent natural areas and the night sky.
- The boundaries of all areas to be newly disturbed (including quarry expansion areas, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment will be confined to the flagged areas. The Biological Monitor will be on the site to ensure that no ground disturbing activities occur outside the staked area during initial quarry expansion or ground disturbance.
- Spoils will be stockpiled only within previously disturbed areas, or areas designated for future disturbance (including spoils areas designated in the Plan of Operations).
- No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight. Any uncovered pitfalls will be excavated to 3:1 slopes at the ends to provide wildlife escape ramps. Covered pitfalls will be covered completely to prevent access by small mammals or reptiles.
- To avoid wildlife entrapment (including birds) all pipes or other construction materials or supplies will be covered or capped in storage or laydown area, and at the end of each work day in construction, quarrying and processing/handling areas. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently.
- No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the Project site, on off-site project facilities and activities, or in support of any other Project activities.
- Avoid wildlife attractants. All trash and food-related waste shall be placed in self-closing raven-proof containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife. Pooled rainwater or floodwater within quarries will be removed to avoid attracting wildlife to the active work areas.

- Any injured or dead wildlife encountered during project-related activities shall be reported to the Designated Biologist, Biological Monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, the Designated Biologist or Biological Monitor shall notify the BLM, USFWS, and/or CDFW, as appropriate, within 24 hours of the discovery.

In addition to these measures, Aspen recommends incorporating measures for noise management, dust control, hazardous materials management, erosion control, and water quality in the appropriate sections of the SEIS, to avoid or minimize potential effects of these environmental issues to biological resources.

V. B. 3. Recommended Species-specific Avoidance and Minimization Measures

The following additional measures are recommended to avoid, minimize, or offset project impacts to burrowing owl (BO) and Peninsular bighorn sheep (PBS).

BO-1. Burrowing owl avoidance. If an active burrowing owl burrow is observed within a work area at any time of year, the Designated Biologist or Biological Monitor, in coordination with BLM, will designate and flag an appropriate buffer area around the burrow where Project activities will not be permitted. The buffer area will be based on the nature of Project activity and burrowing owl activity (i.e., nesting vs. wintering). The Designated Biologist or Biological Monitor will continue to monitor the site until it is confirmed that the burrowing owl(s) is no longer present. If avoidance of quarrying or pipeline construction within the buffer area is infeasible, burrowing owls may be excluded from an active wintering season burrow in coordination with CDFW and in accordance with CDFW guidelines, including provision of replacement burrows prior to the exclusion.

FTHL-1. Flat-tailed Horned Lizard Mitigation. This measure supplements EIR Mitigation Measure 3.5-2, above. In addition to implementing standard mitigation measures contained within the Rangeland Management Strategy (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003) while constructing Quarry Well #3 and the Quarry pipelines (specified in Mitigation Measure 3.5-2), USG will implement those standard measures during ground-disturbing activities on the Replacement Pipeline Route or other project activities located in windblown sand habitat.

PBS-1. Peninsular Bighorn Sheep Habitat Mitigation. Mitigation of Peninsular bighorn sheep habitat impacts will include 1:1 on-site reclamation as specified in the Mining and Reclamation Plan and Mitigation Measure EIR-2 (above, from the 2008 Final EIR/EIS). Additionally, mitigation may include habitat compensation that may result from federal ESA consultation with the USFWS. Potential compensation lands may include claim areas that are not disturbed by the mining project. Any lands proposed for acquisition as compensation habitat will be subject to review and approval by the BLM and Wildlife Agencies.

PBS-2. Peninsular Bighorn Sheep Monitoring and Reporting. USG will record and report all on-site PBS observations to CDFW and BLM and will support the CDFW PBS monitoring and reporting program within the Fish Creek and Vallecito Mountains. USG will develop a reporting form for all PBS observations, including data fields for observer, date and time, number and descriptions of animals observed, and location (to be shown on an aerial view of the quarry area), and will submit completed forms for each observation. In addition USG will fund the purchase of radio collars and the capture of ten (10) PBS in the Fish Creek and Vallecito Mountains Ewe Group areas, to provide location monitoring data within these ewe groups over a ten-year period. The funding amount will be \$157,115 (cost provided by CDFW), to be

transferred to the CDFW program via a means agreed up by USG, BLM, and CDFW. The funding agreement will include a requirement that the funding will be specifically targeted to the Fish Creek and Vallecito Mountains Ewe Groups, and all resulting data will be available to BLM to support the long-term analysis of PBS activities in the federal action area.

PBS-3. Peninsular Bighorn Sheep Avoidance and Minimization Measures. USG will implement the following measures throughout the life of the project.

- New ground-disturbing activities (i.e., initial quarry development, quarry expansion, clearing for spoils deposition, or road construction in previously undisturbed areas) in designated critical habitat will not occur within Peninsular bighorn sheep lambing season (January 1 through May 30) as defined in the Recovery Plan, except with prior approval by USFWS and CDFW (the Wildlife Agencies).
- Minimize blasting during the lambing season (January 1 through May 30) within Quarry Phases 6Bp, 7Bp, 8, and 9 by building up a stockpile of material during the other months.
- The Designated Biologist or Biological Monitor will be on-site during any quarry expansion activities or other new ground disturbing activities and will walk the perimeter of the expansion area and view surrounding habitat with binoculars, stopping work if PBS are within a 0.25-mile radius of the activity.
- If a bighorn sheep enters an active work area, all heavy equipment operations will be halted until it leaves. Quarry staff may not approach the animal. If the animal appears to be injured or sick, USG will immediately notify USFWS and BLM.
- Fencing installed anywhere within the Plaster City Quarry area will be standard temporary construction fencing, silt fencing, or chain-link fence at least 7 feet tall. Any proposed permanent fencing design will be submitted for BLM and USFWS review and approval to confirm that the fence design is not likely to pose a threat to Peninsular bighorn sheep.
- When mobile or stationary equipment at the quarry is replaced, upgraded, or relocated, any feasible opportunities to reduce noise levels will be implemented (e.g., quieter designs for new equipment will be used if feasible).
- Quarrying procedures such as loading and unloading rock will be modified wherever practicable to minimize noise (e.g., by unloading rock into the crusher bin while it is partially full).

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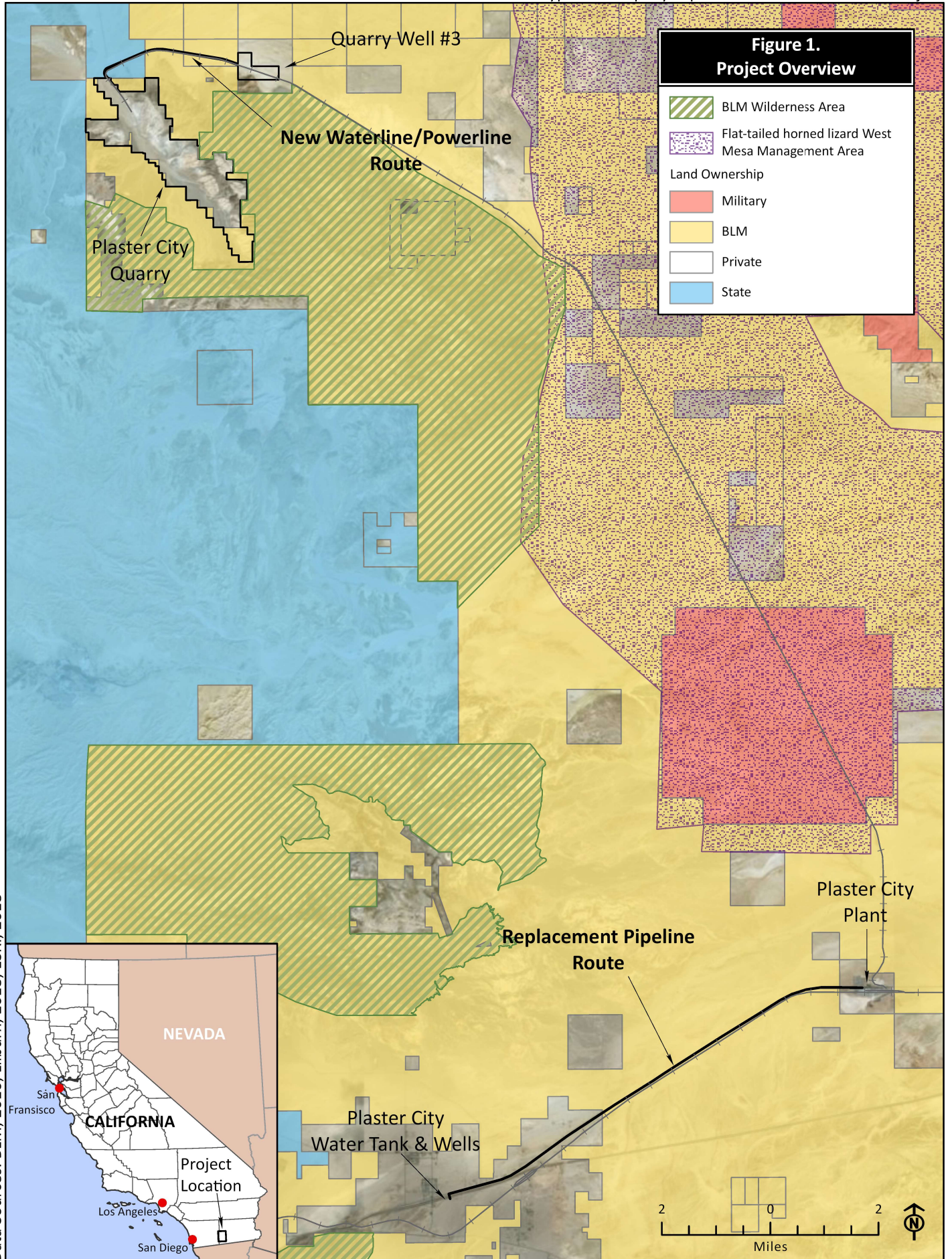
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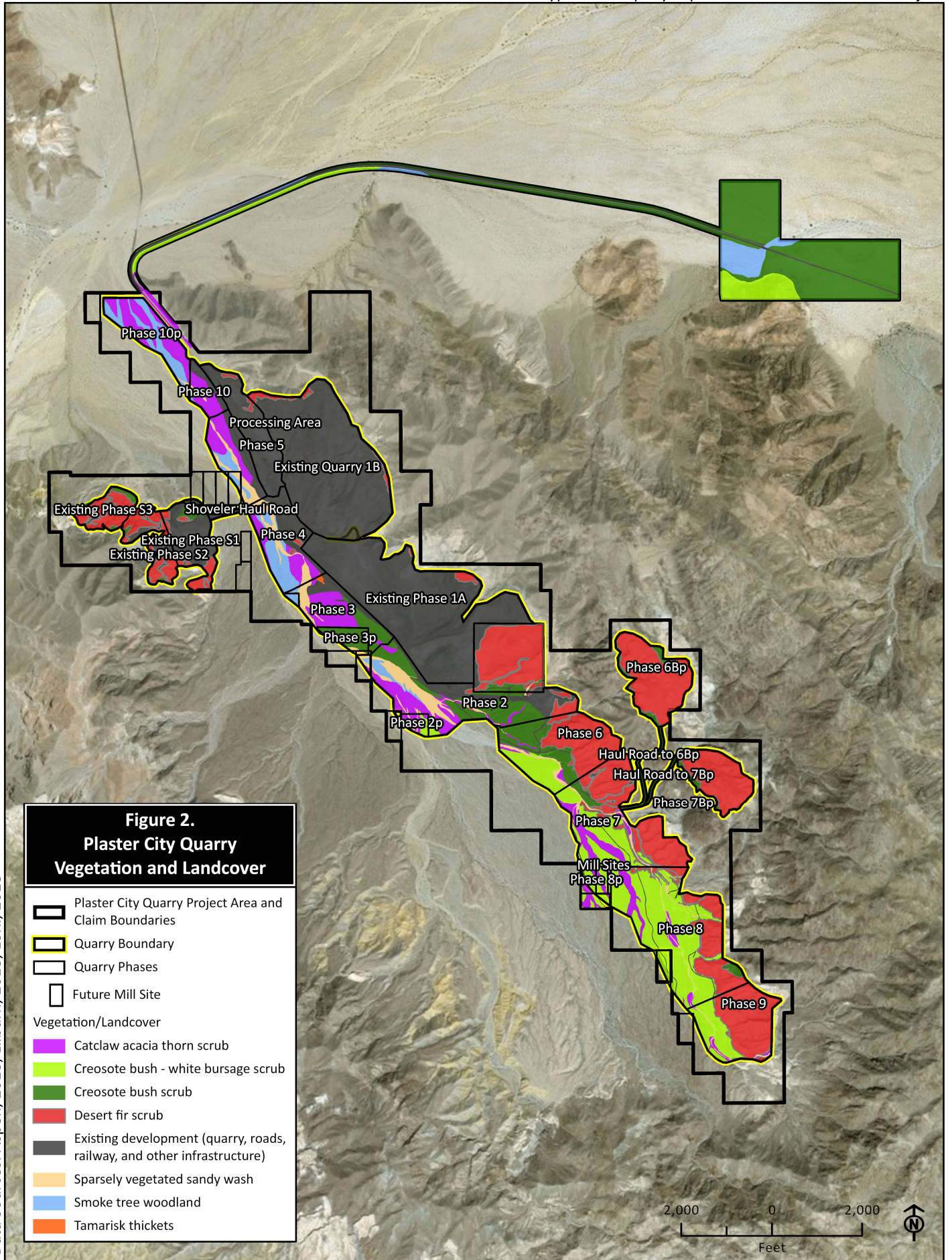
Attachments

Attachment 1
Figures



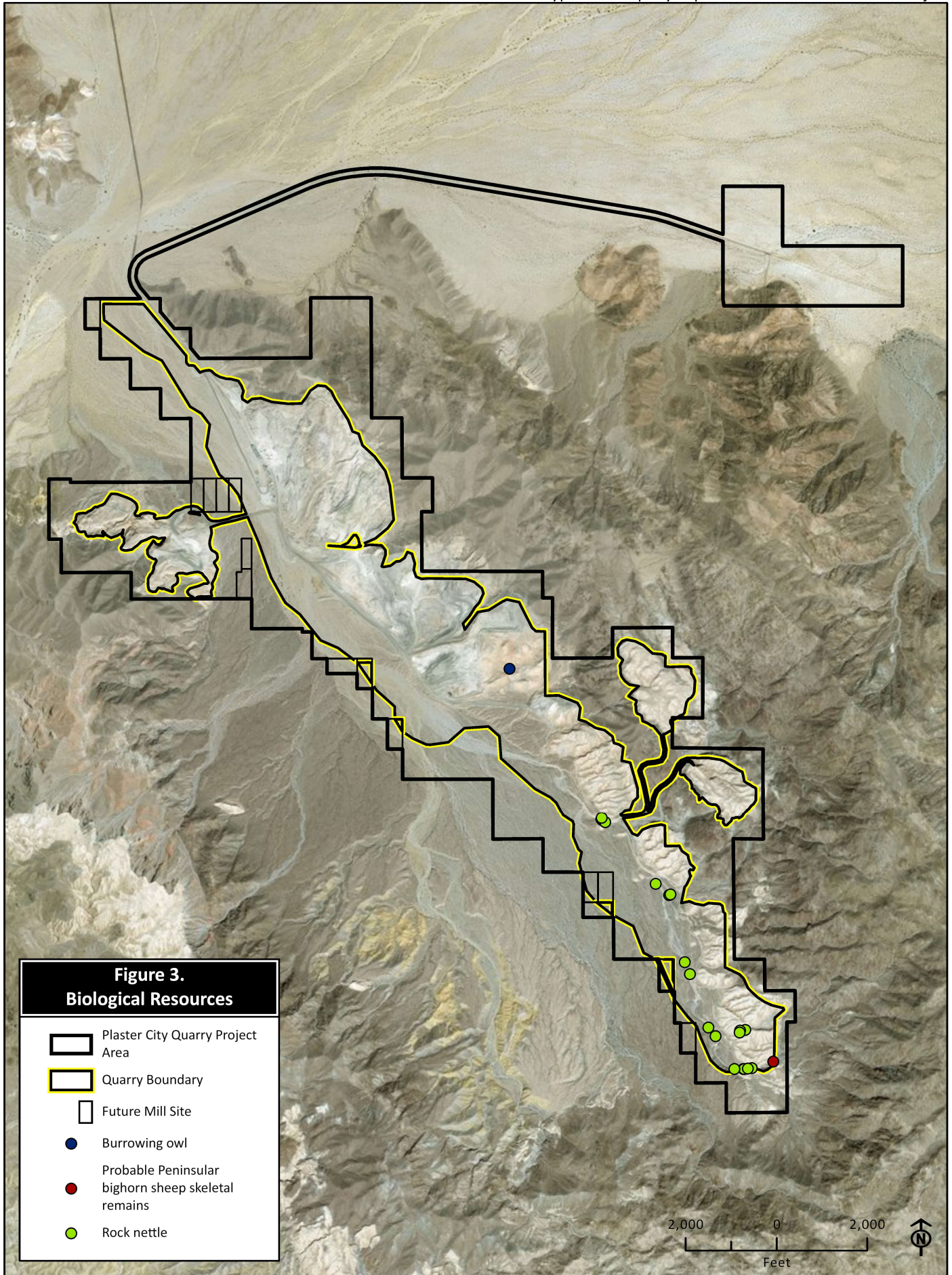
Data Sources: BLM, 2016; Lilburn, 2018; ESRI, 2018

April 2018



Data Sources: Aspen, 2018; Lilburn, 2018; ESRI, 2018

April 2018



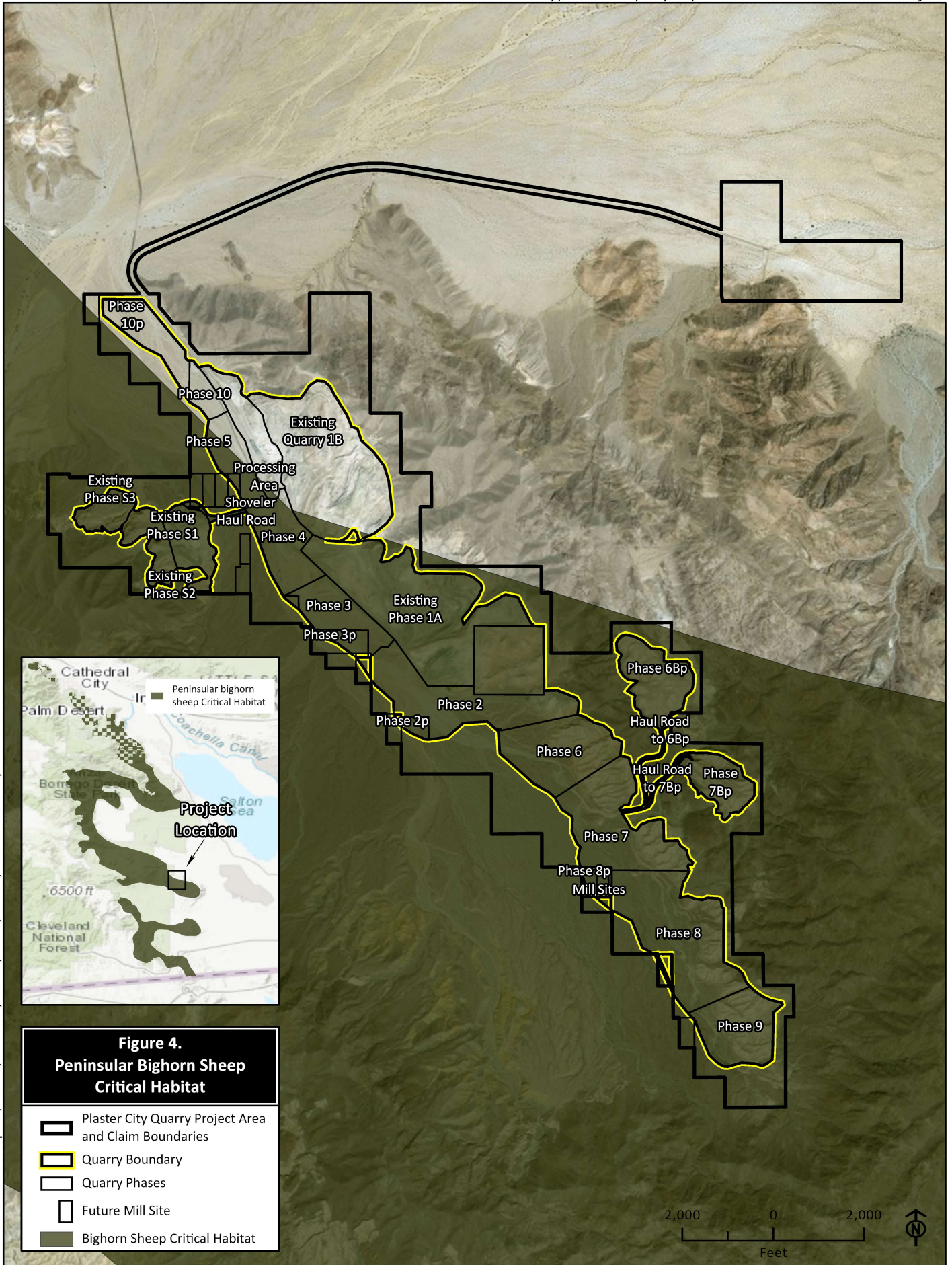


Figure 4.
Peninsular Bighorn Sheep
Critical Habitat

- Plaster City Quarry Project Area and Claim Boundaries
- Quarry Boundary
- Quarry Phases
- Future Mill Site
- Bighorn Sheep Critical Habitat

Data Sources: Aspen, 2018; Lilburn, 2018; ESRI, 2018; USFWS 2017, CNDDDB 2018

April 2018

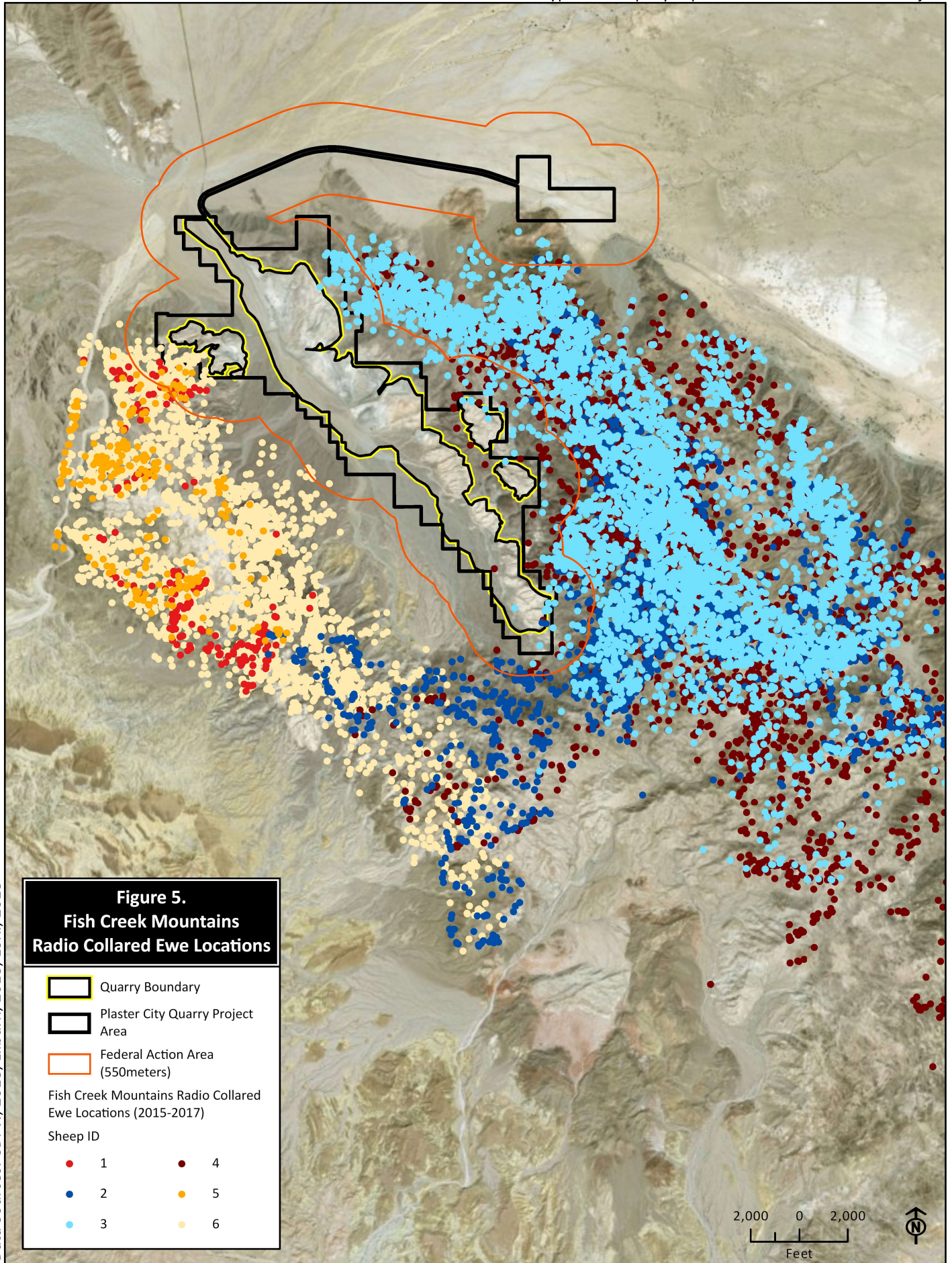











Figure 5.
Fish Creek Mountains
Radio Collared Ewe Locations

-  Quarry Boundary
-  Plaster City Quarry Project Area
-  Federal Action Area (550meters)

Fish Creek Mountains Radio Collared Ewe Locations (2015-2017)

Sheep ID

- | | |
|---|---|
|  1 |  4 |
|  2 |  5 |
|  3 |  6 |

Data Sources: CDFW, 2018; Lilburn, 2018; ESRI, 2018

March 2018

Attachment 2
Photo Exhibits



Photo 1: View of typical creosote bush scrub within the quarry expansion area.



Photo 2: View of typical creosote bush – white bursage scrub within the quarry expansion area.



Photo 3: View of catclaw acacia thorn scrub within the wash of the quarry expansion area.



Photo 4: View of smoke tree woodland within the wash of the quarry expansion area.



Photo 5: View of the sparse desert fir scrub growing on gypsum within the quarry expansion area.



Photo 6: View of tamarisk thickets mapped within the wash of the quarry expansion area.



Photo 7: Overview of a portion of the active quarry.



Photo 8: Wind-blown sand habitat along the proposed replacement pipeline alignment.



Photo 9: Wind-blown sand habitat along the proposed new pipeline alignment.



Photo 10: Annual rock-nettle on gypsum within the quarry expansion area.



Photo 11: Brown turbans identified within the quarry expansion area.



Photo 12: Wolf's opuntia (right) growing alongside silver cholla (left) within the quarry expansion area.



Photo 13: Coulter's lyrepod within the quarry expansion area.



Photo 14: Thurber's pilostyles growing along the proposed new pipeline alignment.



Photo 15: Peninsular bighorn sheep tracks observed within the quarry expansion area.



Photo 16: Apparent Peninsular bighorn sheep skeletal remains observed within the quarry expansion area (see Figure 3).



Photo 17: Burrowing owl observed within the quarry expansion area (non-breeding season).



Photo 18: Black-tailed gnatcatcher nest observed within the quarry expansion area.

Attachment 3
CNDDDB Query Results



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS OR Borrego Mountain SE (3311611) OR Harpers Well (3311518) OR Arroyo Tapiado (3211682) OR Carrizo Mtn. NE (3211681) OR Plaster City NW (3211588) OR Carrizo Mtn. (3211671) OR Painted Gorge (3211578) OR Plaster City (3211577) OR Yuha Basin (3211567) OR Coyote Wells (3211568) OR In-ko-pah Gorge (3211661)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Acmispon haydonii</i> pygmy lotus	PDFAB2A0H0	None	None	G3	S3	1B.3
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Arizona elegans occidentalis</i> California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
<i>Astragalus douglasii</i> var. <i>perstrictus</i> Jacumba milk-vetch	PDFAB0F303	None	None	G5T3?	S2S3	1B.2
<i>Astragalus insularis</i> var. <i>harwoodii</i> Harwood's milk-vetch	PDFAB0F491	None	None	G5T4	S2	2B.2
<i>Astragalus sabulorum</i> gravel milk-vetch	PDFAB0F7R0	None	None	G4G5	S2	2B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Bursera microphylla</i> little-leaf elephant tree	PDBUR01020	None	None	G4	S2	2B.3
<i>Calliandra eriophylla</i> pink fairy-duster	PDFAB0N040	None	None	G5	S3	2B.3
<i>Castela emoryi</i> Emory's crucifixion-thorn	PDSIM03030	None	None	G3G4	S2S3	2B.2
<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i> Peirson's pincushion	PDAST20042	None	None	G5T2	S2	1B.3
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	AMAFD05032	None	None	G5T34	S3S4	SSC
<i>Coleonyx switaki</i> barefoot gecko	ARACD01040	None	Threatened	G4	S1	
<i>Crotalus ruber</i> red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
<i>Croton wigginsii</i> Wiggins' croton	PDEUP0H140	None	Rare	G2G3	S2	2B.2
<i>Crucifixion Thorn Woodland</i> Crucifixion Thorn Woodland	CTT75200CA	None	None	G3	S1.2	
<i>Cylindropuntia fosbergii</i> pink teddy-bear cholla	PDCAC0D2U0	None	None	G2	S2	1B.3



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Cyprinodon macularius</i> desert pupfish	AFCNB02060	Endangered	Endangered	G1	S1	
<i>Desert Fan Palm Oasis Woodland</i> Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
<i>Eryngium aristulatum var. parishii</i> San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
<i>Eucnide rupestris</i> annual rock-nettle	PDLOA02020	None	None	G3	S1	2B.2
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<i>Euphorbia abramsiana</i> Abrams' spurge	PDEUP0D010	None	None	G4	S2	2B.2
<i>Euphorbia arizonica</i> Arizona spurge	PDEUP0D060	None	None	G5	S3	2B.3
<i>Falco mexicanus</i> prairie falcon	ABNKD06090	None	None	G5	S4	WL
<i>Geraea viscida</i> sticky geraea	PDAST42020	None	None	G2G3	S2	2B.2
<i>Gopherus agassizii</i> desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2S3	
<i>Herissantia crispa</i> curly herissantia	PDMAL0F010	None	None	G5	S1	2B.3
<i>Hulsea mexicana</i> Mexican hulsea	PDAST4Z050	None	None	G3G4	S1	2B.3
<i>Ipomopsis effusa</i> Baja California ipomopsis	PDPLM060U0	None	None	G3?	SH	2B.1
<i>Ipomopsis tenuifolia</i> slender-leaved ipomopsis	PDPLM060J0	None	None	G3	S2	2B.3
<i>Lanius ludovicianus</i> loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Linanthus maculatus ssp. emaculatus</i> Jacumba Mountains linanthus	PDPLM041Y2	None	None	G2T1	S1	1B.1
<i>Lithobates yavapaiensis</i> lowland leopard frog	AAABH01250	None	None	G4	SX	SSC
<i>Lupinus albifrons var. medius</i> Mountain Springs bush lupine	PDFAB2B1J5	None	None	G4T3	S2	1B.3
<i>Lycium parishii</i> Parish's desert-thorn	PDSOL0G0D0	None	None	G3?	S1	2B.3
<i>Malperia tenuis</i> brown turbans	PDAST67010	None	None	G4?	S2?	2B.3



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Matelea parvifolia</i> spear-leaf matelea	PDASC0A0J0	None	None	G5	S3	2B.3
<i>Mentzelia hirsutissima</i> hairy stickleaf	PDLOA030K0	None	None	G4	S3	2B.3
<i>Mentzelia tricuspis</i> spiny-hair blazing star	PDLOA031T0	None	None	G4	S2	2B.1
Mesquite Bosque Mesquite Bosque	CTT61820CA	None	None	G3	S2.1	
<i>Nama stenocarpa</i> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<i>Nemacaulis denudata var. gracilis</i> slender cottonheads	PDPGN0G012	None	None	G3G4T3?	S2	2B.2
<i>Neotoma albigula venusta</i> Colorado Valley woodrat	AMAFF08031	None	None	G5T3T4	S1S2	
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
<i>Onychomys torridus ramona</i> southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
<i>Opuntia wigginsii</i> Wiggins' cholla	PDCAC0D1P0	None	None	G3?Q	S1?	3.3
<i>Ovis canadensis nelsoni pop. 2</i> Peninsular bighorn sheep DPS	AMALE04012	Endangered	Threatened	G4T3Q	S1	FP
<i>Panicum hirticaule ssp. hirticaule</i> roughstalk witch grass	PMPOA4K170	None	None	G5T5	S2	2B.1
<i>Petalonyx linearis</i> narrow-leaf sandpaper-plant	PDLOA04010	None	None	G4	S3?	2B.3
<i>Pholistoma auritum var. arizonicum</i> Arizona pholistoma	PDHYD0D011	None	None	G5T4?	S3	2B.3
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	ARACF12040	None	None	G3	S2	SSC
<i>Pilostyles thurberi</i> Thurber's pilostyles	PDRAF01010	None	None	G5	S4	4.3
<i>Polioptila melanura</i> black-tailed gnatcatcher	ABPBJ08030	None	None	G5	S3S4	WL
<i>Pseudorontium cyathiferum</i> Deep Canyon snapdragon	PDSCR2R010	None	None	G4G5	S1	2B.3
<i>Selaginella eremophila</i> desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Sigmodon hispidus eremicus</i> Yuma hispid cotton rat	AMAFF07013	None	None	G5T2T3	S2	SSC
<i>Streptanthus campestris</i> southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
<i>Symphotrichum defoliatum</i> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Teucrium cubense ssp. depressum</i> dwarf germander	PDLAM20032	None	None	G4G5T3T4	S2	2B.2
<i>Toxostoma lecontei</i> Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Transmontane Alkali Marsh Transmontane Alkali Marsh	CTT52320CA	None	None	G3	S2.1	
<i>Uma notata</i> Colorado Desert fringe-toed lizard	ARACF15020	None	None	G3	S2	SSC
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
<i>Xylorhiza orcuttii</i> Orcutt's woody-aster	PDASTA1040	None	None	G3?	S2	1B.2

Record Count: 70

Attachment 4
Observed Species List

Scientific Name	Common Name	Project Component		
		Quarry Expansion Area	Replacement pipeline route	New pipeline route
Filicales	Fern families			
<i>Cheilanthes parryi</i>	Parry's lip fern	x		
Dicotyledons				
ACANTHACEAE	ACANTHUS FAMILY			
<i>Justicia californica</i>	Chuparosa			x
AMARANTHACEAE	AMARANTH FAMILY			
<i>Amaranthus fimbriatus</i>	Fringed amaranth	x		
<i>Tidestromia suffruticosa</i> var. <i>oblongifolia</i>	Honeysweet	x	x	x
APOCYNACEAE	DOGBANE FAMILY			
<i>Asclepias albicans</i>	White-stemmed milkweed	x		
<i>Asclepias subulata</i>	rush milkweed	x		
<i>Funastrum hirtellum</i>	trailing townula	x	x	
APODANTHACEAE	STEMSUCKER FAMILY			
** <i>Pilostyles thurberi</i>	Thurber's pilostyles		x	
ASTERACEAE	ASTER FAMILY			
<i>Adenophyllum porophylloides</i> (<i>Dyssodia poryphyloides</i>)	San Felipe dyssochia	x		
<i>Ambrosia dumosa</i>	White bur-sage, burrobush	x	x	x
<i>Ambrosia salsola</i> (<i>Hymenoclea salsola</i>)	Common burrobush, cheesebush	x	x	x
<i>Baileya pleniradiata</i>	Woolly desert-marigold		x	
<i>Bebbia juncea</i> var. <i>aspera</i>	Sweetbush	x	x	
<i>Calycoseris wrightii</i>	white tackstem	x		
<i>Chaenactis carphoclinia</i>	Pebble pincushion	x	x	
<i>Chaenactis stevioides</i> (?)	Desert pincushion	x		
<i>Dicoria canescens</i>	Desert dicoria	x	x	
<i>Encelia farinosa</i>	Brittlebush	x		x
<i>Encelia frutescens</i>	Rayless encelia	x	x	x
<i>Geraea canescens</i>	Hairy desert sunflower	x	x	x
<i>Gutierrezia</i> sp.	Unid. matchweed	x		
<i>Isocoma acradenia</i> var. <i>eremophila</i>	Alkali goldenbush		x	x
* <i>Lactuca serriola</i>	Prickly lettuce	x		x
<i>Malacothrix glabrata</i>	Desert dandelion	x		
** <i>Malperia tenuis</i>	Brown turbans	x	x	
<i>Monoptilon bellioides</i>	Desert star	x		
<i>Palafoxia arida</i> var. <i>arida</i>	Spanish needles	x	x	x
<i>Pectis papposa</i> var. <i>papposa</i>	Chinch-weed	x		
<i>Perityle emoryi</i>	Emory's rock daisy	x	x	
<i>Peucephyllum schottii</i>	Pygmy-cedar	x		
<i>Pleurocoronis pluriseta</i>	Arrowleaf	x		
<i>Pluchea sericea</i>	Arrowweed	x		x
<i>Prenanthes exiguus</i>	Brightwhite	x		

<i>Psathrotes ramosissima</i>	Turtleback	x	x	
<i>Rafinesquia neomexicana</i>	Desert chicory	x		
<i>Senecio mohavensis</i>	Mojave ragwort groundsel	x		
* <i>Sonchus oleraceus</i>	Common sow thistle	x		
<i>Stephanomeria pauciflora</i> var. <i>pauciflora</i>	Wire-lettuce, desert straw	x	x	x
<i>Stylocline micropoides</i>	Desert neststraw	x		
<i>Trichoptilium incisum</i>	Yellow head	x		
BIGNONIACEAE	TRUMPET-CREEPER FAMILY			
<i>Chilopsis linearis</i> ssp. <i>arcuata</i>	Desert-willow	x	x	
BORAGINACEAE	BORAGE FAMILY			
<i>Cryptantha angustifolia</i>	Panamint cryptantha	x	x	x
<i>Cryptantha barbiger</i>	Bearded cryptantha	x		
** <i>Cryptantha holoptera</i>	Winged cryptantha	x		
<i>Cryptantha maritima</i>	Guadalupe cryptantha	x	x	
<i>Cryptantha</i> sp.	Unid. annual cryptantha	x		
<i>Emmenanthe penduliflora</i>	Whispering bells	x		
<i>Pectocarya heterocarpa</i>	Mixed-nut pectocarya	x		
<i>Pectocarya platycarpa</i>	Wide-toothed pectocarya	x		
<i>Pectocarya recurvata</i>	Arched-nut pectocarya	x		
<i>Phacelia crenulata</i>	Cleftleaf phacelia	x		
<i>Phacelia crenulata</i> var. <i>minutiflora</i>	Cleftleaf wildheliotrope	x		
<i>Phacelia distans</i>	Distant phacelia	x		
<i>Phacelia pedicellata</i>	Specter phacelia	x		
<i>Phacelia</i> sp.	Unid. phacelia		x	
<i>Tiquilia palmeri</i>	Palmer's tiquilia	x	x	x
<i>Tiquilia plicata</i>	Fanleaf crinklemat	x	x	x
BRASSICACEAE	MUSTARD FAMILY			
* <i>Brassica tournefortii</i>	Sahara mustard	x	x	x
<i>Caulanthus lasiophyllus</i>	California mustard	x		
<i>Draba cuneifolia</i>	Sonora draba	x		
<i>Lepidium lasiocarpum</i>	Shaggyfruit pepperweed	x	x	
** <i>Lyrocarpa coulteri</i> var. <i>palmeri</i>	Coulter's lyrepod	x		
CACTACEAE	CACTUS FAMILY			
<i>Cylindropuntia echinocarpa</i>	Silver cholla	x	x	x
<i>Cylindropuntia ramosissima</i>	Pencil cholla	x		
** <i>Cylindropuntia wolfii</i>	Wolf's cholla	x		
<i>Ferocactus cylindraceus</i>	California barrel cactus	x	x	
<i>Mammillaria tetrancistra</i>	Fishhook cactus	x		
<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus	x		
CAMPANULACEAE	BELLFLOWER FAMILY			
<i>Nemacladus tenuis</i>	Desert nemacladus	x		
CARYOPHYLLACEAE	PINK FAMILY			
<i>Achyronychia cooperi</i>	Onyx flower		x	
CHENOPODIACEAE	GOOSEFOOT FAMILY			
<i>Atriplex canescens</i>	Four-wing saltbush			x
<i>Atriplex hymenelytra</i>	Desert holly			x
<i>Atriplex polycarpa</i>	Allscale saltbush			x

<i>Salsola tragus</i>	Russian thistle		x	
<i>Suaeda nigra</i>	Bush seepweed	x		x
CONVOLVULACEAE	MORNING-GLORY FAMILY			
<i>Cuscuta</i> sp.	Dodder	x		
CUCURBITACEAE	CUCUMBER FAMILY			
<i>Cucurbita palmata</i>	Coyote melon	x		x
EPHEDRACEAE	EPHEDRA FAMILY			
<i>Ephedra aspera</i>	Rough jointfir	x	x	x
<i>Ephedra californica</i> (?)	Desert tea, California ephedra		x	
EUPHORBIACEAE	SPURGE FAMILY			
<i>Croton californicus</i>	California croton		x	
<i>Ditaxis lanceolata</i>	Narrow-leaved ditaxis	x		x
<i>Ditaxis neomexicana</i>	Common ditaxis	x		
<i>Euphorbia polycarpa</i>	Smallseed sandmat	x	x	x
<i>Euphorbia setiloba</i>	Yuma sandmat, Yuma spurge	x	x	x
<i>Stillingia spinulosa</i>	Annual stillingia	x	x	x
FABACEAE	LEGUME FAMILY			
<i>Acmispon strigosus</i>	Strigose lotus	x		
<i>Dalea mollissima</i>	Rust dalea	x		x
<i>Hoffmannseggia microphylla</i>	Small-leaved caesalpinia	x	x	x
<i>Lupinus arizonicus</i>	Arizona lupine	x		
<i>Parkinsonia aculeata</i>	Mexican palo verde			x
<i>Parkinsonia florida</i>	Blue palo verde	x		
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey mesquite, mesquite	x		x
<i>Psoralethamnus emoryi</i>	Emory indigo-bush, dye-weed	x	x	x
<i>Psoralethamnus schottii</i>	Indigo-bush	x	x	x
<i>Psoralethamnus spinosus</i>	Smoke tree	x	x	x
<i>Senegalia greggii</i> (<i>Acacia greggii</i>)	Catclaw, catclaw acacia	x	x	x
FOUQUIERIACEAE	OCOTILLO FAMILY			
<i>Fouquieria splendens</i> ssp. <i>splendens</i>	Ocotillo	x	x	x
KRAMERIACEAE	RHATANY FAMILY			
<i>Krameria bicolor</i> (<i>K. grayi</i>)	White rhatany	x	x	x
LAMIACEAE	MINT FAMILY			
<i>Condea emoryi</i> (<i>Hyptis emoryi</i>)	Desert lavender	x	x	
LOASACEAE	LOASA FAMILY, STICK-LEAF FAMILY			
<i>Eucnide rupestris</i>	Rock nettle	x		
<i>Mentzelia involucrata</i>	Sand blazing star	x	x	
<i>Mentzelia</i> sp.	Unid. annual	x		
** <i>Petalonyx linearis</i>	Narrow leaved sandpaper-plant	x		
<i>Petalonyx thurberi</i> ssp. <i>thurberi</i>	Sandpaper-plant	x	x	x
MALVACEAE	MALLOW FAMILY			
<i>Eremalche rotundifolia</i>	Desert fivespot	x		
<i>Hibiscus denudatus</i>	Paleface	x		

<i>Sphaeralcea ambigua</i>	Apricot mallow	x		
NYCTAGINACEAE	FOUR O'CLOCK FAMILY			
<i>Abronia villosa</i> var. <i>villosa</i>	Sand verbena	x	x	
<i>Allionia incarnata</i> var. <i>villosa</i>	Trailing windmills	x		x
<i>Boerhavia coccinea</i> (?)	Scarlet spiderling, red ringstem	x		
<i>Boerhavia wrightii</i>	Wright's boerhavia	x		
<i>Mirabilis laevis</i>	Desert wishbone bush	x		
ONAGRACEAE	EVENING-PRIMROSE FAMILY			
<i>Chylismia brevipes</i> ssp. <i>brevipes</i> (<i>Camissonia brevipes</i>)	Desert primrose		x	
<i>Chylismia cardiophylla</i> (<i>Camissonia cardiophylla</i>)	Heart-leaved camissonia	x		
<i>Chylismia claviformis</i> (<i>Camissonia claviformis</i>)	Clavate evening primrose	x		
<i>Chylismia claviformis</i> ssp. <i>peirsonii</i> (<i>Camissonia claviformis</i> var. <i>peirsonii</i>)	Peirson's yellow evening primrose	x	x	
<i>Eremothera boothii</i> ssp. <i>condensata</i> (<i>Camissonia boothii</i> ssp. <i>condensata</i>)	Desert lantern	x	x	
<i>Eremothera refracta</i> (<i>Camissonia refracta</i>)	Refracted desert primrose	x		
<i>Eulobus californica</i> (<i>Camissonia californica</i>)	California false mustard	x		
<i>Oenothera deltooides</i>	Birdcage evening primrose	x		
PAPAVERACEAE	POPPY FAMILY			
<i>Argemone munita</i>	Chicalote, prickly poppy	x	x	
<i>Eschscholzia glyptosperma</i>	Desert poppy	x	x	
<i>Eschscholzia minutiflora</i>	Pygmy poppy	x	x	
<i>Eschscholzia parishii</i>	Parish's gold poppy	x		
PLANTAGINACEAE	PLANTAIN FAMILY			
<i>Mimulus bigelovii</i>	Bigelow's monkeyflower	x		
<i>Mohavea confertiflora</i>	Ghost flower	x		
<i>Plantago ovata</i>	Desert plantain	x	x	x
POLEMONIACEAE	PHLOX FAMILY			
<i>Aliciella latifolia</i>	Broadleaf gilja	x	x	
<i>Gilja</i> sp.	Gilja	x		
<i>Langloisia setosissima</i> var. <i>setosissima</i>	Great Basin langloisia	x	x	
<i>Loeseliastrum matthewsii</i>	Desert calico	x	x	
<i>Loeseliastrum schottii</i>	Schott's langloisia	x	x	
POLYGONACEAE	BUCKWHEAT FAMILY			
<i>Chorizanthe brevicornu</i>	Brittle spineflower	x	x	
<i>Chorizanthe corrugata</i>	Wrinkled spineflower	x	x	
<i>Chorizanthe rigida</i>	Devil's spineflower	x	x	x
<i>Eriogonum deflexum</i> var. <i>deflexum</i>	Skeleton weed	x	x	

<i>Eriogonum deflexum</i> var. <i>rectum</i>	Flat-crowned buckwheat	x		
<i>Eriogonum inflatum</i>	Desert trumpet	x	x	
<i>Eriogonum thomasii</i>	Thomas' wild buckwheat	x	x	
<i>Eriogonum trichopes</i>	Little desert trumpet	x		
RESEDACEAE	MIGNONETTE FAMILY			
<i>Oligomeris linifolia</i>	Narrowleaf oligomeris	x	x	
SOLANACEAE	NIGHTSHADE FAMILY			
<i>Datura discolor</i>	Jimsonweed	x	x	
<i>Datura wrightii</i>	Jimsonweed, tolgua			x
<i>Lycium andersonii</i>	Boxthorn	x		
<i>Nicotiana obtusifolia</i>	Desert tobacco	x		x
<i>Physalis crassifolia</i>	Thick-leaf ground-cherry	x	x	
TAMARICACEAE	TAMARISK FAMILY			
* <i>Tamarix aphylla</i>	Athel	x		x
* <i>Tamarix ramosissima</i>	Saltcedar, tamarisk	x		x
VISCACEAE	MISTLETOE FAMILY			
<i>Phoradendron californicum</i>	Desert mistletoe	x		
ZYGOPHYLLACEAE	CALTROP FAMILY			
<i>Fagonia laevis</i>	Smooth-stem fagonia	x		
<i>Fagonia pachyacantha</i>	Glandular fagonia	x	x	x
<i>Kallstroemia californica</i>	California caltrop			x
<i>Larrea tridentata</i>	Creosote bush	x	x	x
Monocotyledons				
AGAVACEAE	CENTURY PLANT FAMILY			
<i>Agave deserti</i>	Desert agave	x		x
<i>Hesperocallis undulata</i>	Desert lily		x	
POACEAE	GRASS FAMILY			
<i>Aristida adscensionis</i>	Sixweeks three-awn grass	x	x	x
<i>Aristida purpurea</i>	Three-awn grass	x		
<i>Bouteloua aristidoides</i> var. <i>aristidoides</i>	Needle grama	x		
<i>Bouteloua barbata</i> var. <i>barbata</i>	Sixweeks grama	x		
* <i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome	x		
<i>Cynodon dactylon</i>	Bermuda grass			x
<i>Dasyochloa pulchella</i>	Low fluffgrass	x		
* <i>Festuca myuros</i>	Rattail sixweeks grass	x		
<i>Hilaria rigida</i>	Big galleta	x	x	x
<i>Schismus barbatus</i>	Mediterranean grass	x	x	x
* <i>Sorghum bicolor</i>	Sorghum	x		
* <i>Sorghum halepense</i>	Johnson grass	x		
<i>Stipa speciosa</i>	Desert needle grass		x	
TYPHACEAE	CATTAIL FAMILY			
<i>Typha</i> sp.	cattails			x

Scientific Name	Common Name	Project Component		
		Quarry Expansion Area	Replacement pipeline route	New pipeline route
VERTEBRATE ANIMALS				
REPTILIA	REPTILES	X	X	X
IGUANIDAE	IGUANID LIZARDS	X	X	X
<i>Dipsosaurus dorsalis</i>	Desert iguana	X	X	X
<i>Callisaurus draconoides</i>	Zebra-tailed lizard	X	X	
<i>Uta stansburiana</i>	Side-blotched lizard	X	X	X
<i>Phrynosoma platyrhinos</i>	Desert horned lizard		X	
TEIIDAE	WHIPTAILS	X	X	
<i>Aspidoscelis tigris tigris</i>	Great Basin whiptail	X	X	
VIPERIDAE	VIPERS		X	
<i>Crotalus cerastes</i>	Sidewinder		X	
AVES	BIRDS		X	
COLUMBIDAE	PIGEONS AND DOVES		X	
* <i>Streptopelia decaocto</i>	Eurasian collared dove		X	
<i>Zenaida macroura</i>	Mourning dove	X	X	
STRIGIDAE	TYPICAL OWLS	X		
<i>Bubo virginianus</i>	Great horned owl	X		
** <i>Speotyto cunicularia</i>	Burrowing owl	X		
TROCHILIDAE	HUMMINGBIRDS	X		
<i>Calypte anna</i>	Anna's hummingbird	X		
<i>Calypte costae</i>	Costa's hummingbird	X		
TYRANNIDAE	TYRANT FLYCATCHERS		X	
<i>Sayornis saya</i>	Say's phoebe		X	
<i>Myiarchus cinerascens</i>	Ash-throated flycatcher		X	
CORVIDAE	CROWS AND JAYS		X	
<i>Corvus corax</i>	Common raven		X	
REMIZIDAE	VERDINS	X	X	X
<i>Auriparus flavipes</i>	Verdin	X	X	X
TROGLODYTIDAE	WRENS			
<i>Salpinctes obsoletus</i>	Rock wren	X		
MUSCICAPIDAE	THRUSHES AND ALLIES	X		
** <i>Poliophtila melanura</i>	Black-tailed gnatcatcher	X		
PTILOGONATIDAE	SILKY FLYCATCHERS	X		
<i>Phainopepla nitens</i>	Phainopepla	X		
LANIIDAE	SHRIKES	X		
** <i>Lanius ludovicianus</i>	Loggerhead shrike	X		
FRINGILLIDAE	FINCHES	X	X	X
<i>Carpodacus mexicanus</i>	House finch	X	X	X
MAMMALIA	MAMMALS	X		
LEPORIDAE	HARES AND RABBITS	X		
<i>Lepus californicus</i>	Black-tailed hare	X		
HETEROMYIDAE	POCKET MICE	X		
<i>Dipodomys sp.</i>	Kangaroo rat	X		

CRICETIDAE	RATS AND MICE	x
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	x
CANIDAE	FOXES, WOLVES AND COYOTES	
<i>Canis latrans</i>	Coyote	x
FELIDAE	CATS	x
<i>Lynx rufus</i>	Bobcat	x
BOVIDAE	SHEEP AND GOATS	x
<i>Ovis canadensis nelsoni</i>	Peninsular bighorn sheep	x

This list includes species observed or detected on the project site. Non-native species are indicated by an asterisk. Special Status species indicated by two asterisks. Other species may have been overlooked or inactive/absent because of the season (amphibians are active during rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate etc.). Taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Jones et al. (1992) for mammals.

Attachment 5
Special-Status Species Not Addressed

Attachment 5. Special-status Species Not Addressed in the Report.

Scientific Name	Common Name	Reason for Exclusion
PLANTS		
<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milk-vetch	Below elevation range
<i>Astragalus pachypus</i> var. <i>jaegeri</i>	Jaeger's milk-vetch	Well outside of geographic range.
<i>Ayenia compacta</i>	Ayenia	Well outside of geographic range.
<i>Colubrina californica</i>	Las Animas colubrina	Well outside of geographic range.
<i>Condalia globosa</i> var. <i>pubescens</i>	Spiny abrojo	Well outside of geographic range.
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	Well outside of geographic range.
<i>Croton wigginsii</i>	Wiggins' croton	Well outside of geographic range.
<i>Cylindropuntia fosbergii</i>	Pink teddy-bear cholla	Well outside of geographic range.
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Colorado Desert larkspur	Well below elevation range
<i>Ditaxis claryana</i>	Glandular ditaxis	Well outside of geographic range.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	No suitable vernal pool habitat
<i>Geraea viscida</i>	Sticky geraea	No suitable habitat and below elevation range
<i>Herissantia crispera</i>	Curly herissantia	Locally rare, below elevation range
<i>Hulsea mexicana</i>	Mexican hulsea	No suitable habitat
<i>Ipomopsis effusa</i>	Baja California ipomopsis	Well outside of geographic range.
<i>Linanthus maculatus</i> ssp. <i>emaculatus</i>	Jacumba Mountains linanthus	Well outside of geographic range.
<i>Matelea parvifolia</i>	Spear-leaf matelea	Well below elevation range.
<i>Mentzelia tricuspidis</i>	Spiny-hair blazing star	Well outside of geographic range, most records in vicinity are misidentified <i>M. hirsutissima</i> .
<i>Nama stenocarpa</i>	Mud nama	No suitable aquatic habitat.
<i>Opuntia wigginsii</i>	Wiggins cholla	Margin of geographic range
<i>Panicum hirticaule</i> ssp. <i>hirticaule</i>	Roughstalk witch grass	Well outside of geographic range.
<i>Penstemon clevelandii</i> var. <i>connatus</i>	San Jacinto Mountain penstemon	Well below elevation range.
<i>Penstemon thurberi</i>	Thurber's beardtongue	Well below elevation range.
<i>Pseudorontium cyathiferum</i> (<i>Antirrhinum cyathiferum</i>)	Deep Canyon snapdragon	Well outside of geographic range.
<i>Rhus aromatica</i> var. <i>simplicifolia</i> (<i>Rhus trilobata</i> var. <i>simplicifolius</i>)	Single-leaved skunkbrush	Well below elevation range.
<i>Salvia eremostachya</i>	Desert sage	Below elevation range, margin of geographic range
<i>Salvia greatae</i>	Orocopia sage	Well outside of geographic range.
<i>Stemodia durantifolia</i>	Purple stemodia	No suitable habitat
<i>Streptanthus campestris</i>	Southern jewelflower	Well below elevation range and no suitable habitat.
<i>Symphotrichum defoliatum</i>	San Bernardino aster	No suitable wetland or marsh habitat.
AMPHIBIANS		
<i>Lithobates yavapaiensis</i>	Lowland leopard frog	No suitable aquatic habitat
REPTILES		

Scientific Name	Common Name	Reason for Exclusion
<i>Arizona elegans occidentalis</i>	California glossy snake	Outside of geographic range. This is a coastal subspecies that reaches In-ko-pah Gorge where it integrates within the desert subspecies (<i>A. e. eburnata</i>).
<i>Crotalus ruber ruber</i>	Northern red diamond rattlesnake	East of geographic range.
<i>Gopherus agassizii</i>	Desert tortoise	Well outside of geographic range
<i>Phrynosoma blainvillii</i>	Coast horned lizard	Well outside of geographic range
BIRDS		
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	No suitable riparian habitat
<i>Laterallus jamaicensis coturniculus</i>	California black rail	No suitable wetland habitat
<i>Pyrocephalus rubinus</i>	Vermilion flycatcher	No suitable riparian habitat.
<i>Toxostoma crissale</i>	Crissal thrasher	No suitable riparian habitat.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	No suitable riparian habitat
<i>Junco hyemalis caniceps</i>	California gray-headed junco	Well outside of geographic range, no suitable habitat.
MAMMALS		
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	Well outside of geographic range.
<i>Sigmodon hispidus eremicus</i>	Yuma hispid cotton rat	No suitable wetland or grassland habitat.

Attachment 6
CNDDDB Data Forms

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/05/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Eucnide rupestris*

Common Name: Annual rock-nettle

Species Found? Yes No _____ If not found, why?

Total No. Individuals: 28 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____ No Unk.
Yes, Occ. # _____

Collection? If yes: 5667 RSA
Number Museum / Herbarium

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneeg.com

Phone: (909) 568-5235

Plant Information

Phenology:
25 75
% vegetative % flowering % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, gypsum deposits southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Carizzo Mountain NE, Borrego Mountain SE Elevation: 590-800 ft.

T 13S R 9E Sec 33, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T 14S R 9E Sec 4, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 587470.46 mE, 3652023.18 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Plants growing on north-facing slopes of gypsum outcrops. Growing on nearly vertical canyon walls and sporadic plants also observed in wash downstream. Total of 28 plants observed at approximately 15 locations in the upper wash, GPS point is for the downstream-most plants

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): Baldwin et al, 2012
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/05/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Malperia tenuis

Common Name: Brown turbans

Species Found? Yes No _____
If not found, why?

Total No. Individuals: >30 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: 5656 RSA
Number Museum / Herbarium

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneg.com

Phone: (909) 568-5235

Plant Information

Phenology:
_____ 100 _____
% vegetative % flowering % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Borrego Mountain SE Elevation: 590 ft.

T 13S R 9E Sec 33, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 587835.94 m E, 3652121.92 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Scattered plants growing on alluvium in upper wash from the GPS point provided, south into upper wash.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): Baldwin et al, 2012
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/05/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Cryptantha holoptera

Common Name: Winged cryptantha

Species Found? Yes No _____
If not found, why?

Total No. Individuals: -12 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: 5665
Number Museum / Herbarium

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneq.com

Phone: (909) 568-5235

Plant Information

Phenology:
_____ 100 _____
% vegetative % flowering % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Borrego Mountain SE Elevation: 520 ft.

T 13S R 9E Sec 33, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 587217.92 m E, 3652213.39 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Scattered plants growing on sandy alluvium in upper wash from the GPS point provided, south into upper wash.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): Baldwin et al, 2012
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

Mail to:
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California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/06/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Cylindropuntia wolfii

Common Name: Wolf's opuntia

Species Found? Yes No _____
If not found, why?

Total No. Individuals: >50 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: 515 (Michelle Cloud-Hughes)
Number Museum / Herbarium

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneg.com

Phone: (909) 568-5235

Plant Information

Phenology:
100
% vegetative % flowering % fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Carrizo Mountain NE Elevation: 750 ft.

T 14S R 9E Sec 4, ___ 1/4 of ___ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T ___ R ___ Sec ___, ___ 1/4 of ___ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 588327.12 m E, 3650406.25 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Large population of plants in the upper end of the wash, primarily on alluvial terraces and benches.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): Michelle Cloud-Hughes
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

Mail to:
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Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 10/26/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Lyrocarpa coulteri

Common Name: Coulter's lyrepod

Species Found? Yes No _____
If not found, why?

Total No. Individuals: 1 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneg.com

Phone: (909) 568-5235

Plant Information

Phenology:
100
% vegetative % flowering % fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, narrow side canyon that flows from mountains to the east. Southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Borrego Mountain SE Elevation: 600 ft.

T 13S R 9E Sec 33, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 587872.29 m E, 3652241.62 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Single plant growing in sandy substate at the base of a large bedrock outcrop on south side of canyon.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): Baldwin et al, 2012
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

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1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/07/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Pilostyles thurberi

Common Name: Thurber's pilostyles

Species Found? Yes No _____
If not found, why?

Total No. Individuals: -5 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: 5653 RSA
Number Museum / Herbarium

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspenege.com

Phone: (909) 568-5235

Plant Information

Phenology:
_____ 100 _____
% vegetative % flowering % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Lower Borrego Valley, south of Fish Creek Wash, along north side of US Gypsum railroad and unpaved road.

County: Imperial Landowner / Mgr: Unknown

Quad Name: Borrego Mountain SE Elevation: 80 ft.

T 13S R 9E Sec 16, SE 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 588226.11 m E, 3655951.59 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Small patch of plants growing on Psorothamnus emoryi in sandy substrates.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Natural lands to north, railroad and unpaved road to south.

Visible disturbances: Shooting and offroad vehicles use in area.

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): Baldwin et al, 2012
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 10/26/2016

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Ovis canadensis nelsoni

Common Name: Peninsular bighorn sheep

Species Found? Yes No _____
If not found, why? _____

Total No. Individuals: 1 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # _____ No Unk.

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Justin M. Wood

Address: 615 N. Benson Ave., Upland, CA 91786

E-mail Address: Jwood@aspeneq.com

Phone: (909) 568-5235

Plant Information

Phenology:
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

adults _____ # juveniles 1 # larvae _____ # egg masses _____ # unknown _____
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Carrizo Mountain NE Elevation: 770 ft.

T 14S R 9E Sec 4, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 588629.00 m E, 3650409.00 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Skeletal remains of a possible juvenile bighorn sheep observed in upper wash, near where wash turns to an easterly direction. Bighorn sheep tracks abundant throughout upper wash. No evidence of bighorn sheep using gypsum outcrops but evidence of moderate use of washes. Bighorn sheep tracks also observed further down the wash in 2014 when sheep were observed drinking water from a quarry pit that filled with water following significant floods in the area. The water has since dried up and sheep are no longer observed in the quarry pit.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

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California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 10/30/2014

California Native Species Field Survey Form

Clear Form Print Form

Scientific Name: *Athene cunicularia*

Common Name: Burrowing owl

Species Found? Yes No If not found, why?

Total No. Individuals: 1 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? No Unk. Yes, Occ. #

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Justin M. Wood
Address: 615 N. Benson Ave., Upland, CA 91786
E-mail Address: Jwood@aspeneg.com
Phone: (909) 568-5235

Plant Information

Phenology: _____
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

1
adults # juveniles # larvae # egg masses # unknown

wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
Fish Creek Mountains, gypsum outcrops just southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private

Quad Name: Borrego Mountain SE Elevation: 580 ft.

T 13S R 9E Sec 29, ___ 1/4 of ___ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T ___ R ___ Sec ___, ___ 1/4 of ___ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 586847.00 m E, 3653026.00 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:
Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

A single wintering burrowing owl observed on a gypsum deposit. No burrow observed at the location of the owl but suitable burrows are present in the vicinity.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Gypsum quarry to northwest

Visible disturbances: None

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

Keyed (cite reference): _____

Compared with specimen housed at: _____

Compared with photo / drawing in: _____

By another person (name): _____

Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

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Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): **04/07/2016**

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: **Lanius ludovicianus**

Common Name: **Loggerhead shrike**

Species Found? Yes No _____
If not found, why?

Total No. Individuals: 2 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: **Justin M. Wood**

Address: **615 N. Benson Ave., Upland, CA 91786**

E-mail Address: **Jwood@aspeneq.com**

Phone: **(909) 568-5235**

Plant Information

Phenology:
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

2
adults # juveniles # larvae # egg masses # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: **Imperial** Landowner / Mgr: **Private**

Quad Name: **Carrizo Mountain NE** Elevation: **625 ft.**

T **13S** R **9E** Sec **33**, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): **GPS**

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: **Trimble Juno**

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: **587621.39 m E, 3651698.92 m N**

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Two loggerhead shrikes observed in broad alluvial wash. No nest observed but probable in the area.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: **Gypsum quarry to northwest**

Visible disturbances: **None**

Threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

- | | | | |
|--------------------|--------------------------|--------------------------|--------------------------|
| | Slide | Print | Digital |
| Plant / animal | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Habitat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Diagnostic feature | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

May we obtain duplicates at our expense? yes no

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Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

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Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/07/2016

Clear Form **California Native Species Field Survey Form** **Print Form**

Scientific Name: *Poliophtila melanura*

Common Name: Black-tailed gnatcatcher

Species Found? Yes No _____ If not found, why? _____
Total No. Individuals: 6 Subsequent Visit? Yes No
Is this an existing NDDDB occurrence? _____ No Unk.
Collection? If yes: _____ Yes, Occ. # _____
Number _____ Museum / Herbarium _____

Reporter: Justin M. Wood
Address: 615 N. Benson Ave., Upland, CA 91786
E-mail Address: Jwood@aspeneq.com
Phone: (909) 568-5235

Plant Information Phenology: % vegetative _____ % flowering _____ % fruiting _____	Animal Information # adults <u>2</u> # juveniles <u>4</u> # larvae _____ # egg masses _____ # unknown _____ <input type="checkbox"/> wintering <input type="checkbox"/> breeding <input type="checkbox"/> nesting <input type="checkbox"/> rookery <input type="checkbox"/> burrow site <input type="checkbox"/> lek <input checked="" type="checkbox"/> other
---	---

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
Fish Creek Mountains, broad alluvial wash southeast of US Gypsum Quarry.

County: Imperial Landowner / Mgr: Private
Quad Name: Carrizo Mountain NE Elevation: 625 ft.
T 13S R 9E Sec 33, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS
T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Juno
DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: _____ meters/feet
Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)
Coordinates: 587693.61 m E, 3651483.41 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:
Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):
Nest with four juvenile birds observed in a desert lavender (*Condea emoryi*) shrub in small wash just west of the main wash. Both adults were in the area and scolded the biologist upon approaching the nest.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor
Immediate AND surrounding land use: Gypsum quarry to northwest
Visible disturbances: None
Threats: _____
Comments: _____

Determination: (check one or more, and fill in blanks) <input type="checkbox"/> Keyed (cite reference): _____ <input type="checkbox"/> Compared with specimen housed at: _____ <input type="checkbox"/> Compared with photo / drawing in: _____ <input type="checkbox"/> By another person (name): _____ <input type="checkbox"/> Other: _____	Photographs: (check one or more) Plant / animal <input type="checkbox"/> Slide <input type="checkbox"/> Print <input checked="" type="checkbox"/> Digital Habitat <input type="checkbox"/> Slide <input type="checkbox"/> Print <input checked="" type="checkbox"/> Digital Diagnostic feature <input type="checkbox"/> Slide <input type="checkbox"/> Print <input type="checkbox"/> Digital May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no
--	---

APPENDIX G: ALTERNATIVE PRELIMINARY PRACTICALITY DETERMINATION

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EXHIBIT 1

PROJECT ALTERNATIVES PRELIMINARY PRACTICALITY DETERMINATION

Alternative 2: Lower Quarry Watershed Reduced Mining Footprint

Under Alternative 2, Phase 10 would not be mined to its full capacity while Phase 10P would be eliminated entirely. Phase 5 would continue to be mined at full capacity. Approximately 5.4 million tons less gypsum would be mined than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce the projected mine life by 2.81 years compared with the proposed project. Under this alternative, permanent impacts to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed project to 117.62 acres, resulting in a 16.01-acre decrease in impacts to waters of the United States. The need for a flood protection berm along the west perimeter of Phase 10P would be eliminated. Eliminating Phase 10P would eliminate its direct impacts on the arroyo wash and would avoid the downstream impacts on Fish Creek.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 2 is constructible and would not present substantial logistical issues. It can be implemented without exposing mining personnel to human health and safety risks while following a balanced mining approach. However, it fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 5.4 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 2 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 3: Lower Quarry Watershed Reduced Mining Footprint

Alternative 3 proposes to reconfigure the mining footprint along the western boundaries of Phases 4 and 5 where Annex Mill Site No. 4 encroaches into the ephemeral wash to reduce impacts to waters of the United States. The mining boundaries of Phases 4 and 5 were selected for reconfiguration because of their close proximity to existing administrative/office facilities, where blasting is not ideal on account of the noise, and the depth of overburden needing to be stripped in order to access and extract the gypsum ore. Approximately 11.87 million tons less ore would be mined under this alternative than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 6.18 years compared to the proposed project. Under this alternative, permanent impacts

to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed project to 125.43 acres, resulting in an 8.20-acre reduction.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 3 is constructible and would not present substantial logistical issues. However, it fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 11.87 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 3 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 4: Middle Quarry Watershed Phase Elimination

Under Alternative 4, Phases 2P, 3P (North) and 3P (South) would be eliminated from the proposed mining plan, resulting in a reduction in impacts to waters of the United States from 133.63 acres under the proposed Project to 126.78 acres. This equates to a 6.85-acre reduction in impacts compared to the proposed Project. Approximately 2.33 million tons less gypsum would be mined under this alternative than under the proposed project. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 1.21 years compared with the proposed project. While there would be a reduction in impacts to waters of the United States under this alternative, the removal of these three phases would realign the proposed stormwater berm such that it would be nearly perpendicular to flow in the main channel along three significant sections where the phases are proposed for removal (from approximately 300 to 1,300 feet long). The shift in berm orientation along these three sections would likely lead to increased scouring potential and would require additional engineering to prevent failure (e.g., berm would need to be anchored to a wider berm footing set deeper in the channel).

Based on the evaluation of logistics and constructability criteria and environmental impacts, while Alternative 4 is constructible it suffers from logistical issues in that eliminating phases from the middle watershed will disrupt the balanced mining approach and sequencing critical to cost and time efficient gypsum ore extraction. Additionally, from an environmental impacts perspective, impacts to waters of the United States are equal to or greater than the proposed project because the waters proposed for preservation under this alternative would incur greater indirect impacts due to a severing of hydrology. Further, Alternative 4 fails to meet the overall Project purpose, because the loss of 2.33 million tons of gypsum would adversely affect USG's ability to reliably supply gypsum products at levels consistent with current and projected demand. Therefore, Alternative 4 was not selected to be the Least Environmentally Damaging Practicable Alternative.

Alternative 5: Upper Quarry Watershed Reduced Mining Footprint

Alternative 5 represents a reduced project alternative focusing exclusively on Phases 7 and 8 in the upper Quarry watershed. Under Alternative 5, the mining boundaries of Phases 7 and 8 would be reconfigured to reduce impacts to waters of the United States. Initially, the elimination of mining Phases 9, 8, 7, and 6 was considered but was determined to be infeasible for the following reasons: (1) Phases 8 and 9 are at the southernmost terminus of the upper Quarry watershed where the channels are deeply incised and a substantive reduction in impacts to waters of the United States is not anticipated, and (2) the potential elimination of either Phase 6 or 7 was considered but, similar to issues in the middle Quarry watershed, the elimination of either of these phases would result in an increase in indirect effects to waters of the United States and a loss of functions and services resulting from the isolation and fragmentation of these resources.

Under Alternative 5, the mining boundaries of Phases 7 and 8 would be moved east into the proposed quarry operations and would align parallel with the existing drainage. Impacts to waters of the United States associated with the mine development plan would be reduced from 133.63 acres under the proposed Project to 122.35 acres, resulting in an 11.28-acre reduction in impacts to waters of the United States. The overall mining footprint would also be reduced by 34 acres, thereby decreasing potential mining beneath the valley alluvium where gypsum ore has determined to be most prevalent. Approximately 13.04 million tons less gypsum would be mined under this alternative than under the Proposed Action. At a maximum permitted production of 1.92 million tons per year, this alternative would reduce projected mine life by 6.79 years compared to the proposed project.

Based on the evaluation of logistics and constructability criteria and environmental impacts, Alternative 5 is constructible and would not present substantial logistical issues. Further, this alternative would incur the greatest reduction in impacts to waters of the United States compared to the proposed project. However, despite reporting lesser environmental impacts, Alternative 5 fails to meet the overall project purpose due to considerable estimates of gypsum loss (i.e., 13.04 million tons), which would adversely affect USG's ability to provide a continuous, reliable supply of gypsum rock to meet current and projected demands. Therefore, Alternative 5 was not selected to be the Least Environmentally Damaging Practicable Alternative.

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APPENDIX H: ERRATA TABLE

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EXHIBIT 4
SPECIFIC COMMENTS AND ERRATA

Page	Section/Text	Comment
ix	Table of Contents, Appendix D: Biological Resource Reports	Suggest including the following as additional reports in this section: 1) Approved Jurisdictional Determination issued by the U.S. Army Corps of Engineers on February 8, 2021 (see Exhibit 1); and 2) Jurisdictional aquatic resources delineation for the Old Kane Spring Road Site prepared by Dudek in April 2022 (see Exhibit 4).
ES-5	Executive Summary, Project Objectives	Consider revising the final bullet with the following modification: <i>“Provide compensatory mitigation for potential impacts to waters of the state as a result of project implementation in compliance with State of California Fish & Game Code Section 1600 and the Port-Cologne <u>Porter-Cologne Water Quality Control Act (Porter-Cologne Act).</u>”</i>
ES-7	First paragraph - Summary of alternatives	Consider revising the second sentence, as follows: <i>“The following alternatives, <u>which were evaluated in the 2019 SEIS,</u> were selected and analyzed/compared to the project and are evaluated in the SEIR.”</i>
ES-7 through ES-9	Executive Summary, Summary of Alternatives	On February 8, 2021 the USACE issued an Approved Jurisdictional Determination (see Exhibit 1) confirming that there are no waters of the United States subject to regulation under Section 404 of the Clean Water Act in the project area. As such, all references to “waters of the United States” should be removed and replaced with “waters of the State.”
ES-23	Impact 4.2-4, Impact 4.2-5	Significance after mitigation is blank. Insert “LTS.”
ES-28	Impact 4.6-4	Replace “rom” with “from.”
1-1	Introduction	In the first sentence, change “Condition Use Permit” to “Conditional Use Permit.”
1-1	Section 1.1 (Purpose of a Subsequent Environmental Impact Report)	In the second paragraph, eliminate references to waters of the United States. Consider using the following modified text: <i>“The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of waters of the United States <u>aquatic resources</u> at the Quarry by restoring, enhancing, and reserving aquatic resources at a property where aquatic functions are similar to the impacted functions. “</i>
1-4	Section 1.2 (Summary of the Proposed Project)	Eliminate references to waters of the United States and replace with waters of the state.
1-6	Section 1.5 (Responsible Agencies)	Under “Federal Agencies” the USACE is identified as a federal agency to coordinate with for the issuance of a Section 404 permit. However, as previously indicated, the USACE issued an Approved Jurisdictional Determination on February 8, 2021 confirming the absence of waters of the United States in the project area. Therefore, a Section 404 permit is no longer required. Please revise accordingly.
1-6	Section 1.5 (Responsible Agencies)	Under “State” agencies the Colorado River RWQCB is identified as issuing a 401 Certification. However, this is incorrect as the aquatic features in the project area are not subject to Clean Water Act jurisdiction. Please revise to state that the RWQCB will be issuing Waste Discharge Requirements for the project in accordance with the Porter-Cologne Act.
1-6	Section 1.5 (Responsible Agencies)	Under “State” agencies, add the California Department of Parks and Recreation (California State Parks). Implementation of the Viking Ranch Restoration Project involves removal via grading of an agricultural diversion ditch and diversion berms and related activities to re-establish hydrology and normal floodplain functions and control weeds. These activities will occur in part on adjacent lands owned by California State Parks and the Anza Borrego Foundation.

Page	Section/Text	Comment
		Approval by California State Parks is required through the issuance of an encroachment permit to implement the mitigation project.
1-6	Section 1.5 (Responsible Agencies)	Under “Regional and Local Agencies” it is unclear why the Colorado River RWQCB is identified as both a state agency and as a regional and local agency. Please correct or clarify as needed.
2-2	Section 2.2 (Project Background, Mitigation Sites)	Remove references to “waters of the United States” and replace with “waters of the State.”
2-7	Figure 2-2b	To avoid confusion, the parcel numbers on this figure should be revised to reflect the correct format for San Diego County (i.e., “xxx-xxx-xx-xx), as correctly indicated in Table 2.1 on page 2-12.
2-12.	Table 2-1	Under “San Diego County,” the table identifies parcel number 140-030-01-00, and the ownership of this parcel is not identified. However, this parcel number is incorrect. The parcel number should be changed to 140-090-01-00, and the ownership should be identified as “State Park.”
2.25	Section 2.6 (Proposed Project Elements – Viking Ranch Restoration)	Figure 2-6 should be referenced in the first paragraph.
2-26	Baseline Conditions, first bullet	Note that plastic oil containers have been removed from the site.
2-28	Section 2.6 (Following Viking Ranch Mitigation Description)	Consider adding a description for the preservation and long-term resource management of Old Kane Springs Road site, which is currently missing from Section 2.6. The description should reference Figure 2-4.
2-31	Section 2.7.1	For greater clarity, consider adding the following phrase to the end of last sentence: “for Viking Ranch.”
2-31	Section 2.7.2	For the reason stated above, add “California Department of Parks and Recreation” as an agency whose approval may be required for the project.
3-5	Section 3.3.3 (Statutory and Regulatory SEIR Provisions)	Revise the third sentence of the last paragraph as follows: <i>“The 2019 Final SEIS included mitigation to offset the impacts to 139 acres of waters of the United States (WoUS) aquatic resources at the Quarry by restoring, enhancing, and preserving aquatic resources at a property where aquatic functions are similar to the impacted functions.”</i>
4.1-21	Section 4.1.4.4 (Old Kane Springs Road Preservation Site)	Revise the first sentence as follows: <i>“Emissions associated with preservation of the Old Kane Springs Preservation Site would be limited to regular maintenance infrequent truck trips for periodic site monitoring and would be negligible.”</i>
4.2-1	Section 4.2 (Biological Resources) - Introductory Section	Consider adding the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (see Exhibit 1) as an additional literature source.
4.2-12, 4.2-23, and 4.2-52	Biological Resources	It should be noted in the FSEIR that Peninsular bighorn sheep is a fully protected under the Fish and Game Code and that no “take” of this species is required or will be sought by USG in connection with the Project.

Page	Section/Text	Comment
4.2-26	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Delete the reference to non-wetland waters of the United States and replace with non-wetland waters of the State.
4.2-27	Section 4.2.1.3 (Biological Resource Conditions at Present, Well No. 3 Site and Pipeline)	Revise the following statement as indicated: <i>“According to the 2019 SEIS, there are no jurisdictional wetlands present within the proposed pipeline alignment. However, there are a few drainage courses along the alignment that would likely meet criteria as state jurisdictional ephemeral stream channels, subject to permitting under Section 16013 1602 of the Fish and Game Code, and possibly as waters of the US State subject to permitting under the Porter-Cologne Act Section 404 of the Federal Clean Water Act (Imperial County 2019).”</i>
4.2-30	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Consider revising the following statement as indicated: <i>“Pursuant to the federal Clean Water Act, ACOE and RWQCB, Porter-Cologne Act, RWQCB jurisdictional areas include those supporting all three wetlands criteria <u>consistent with and as identified in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation.</u> Areas regulated by the RWQCB are generally coincident with the ACOE but can also include waters of the state that may be regulated, pursuant to the state Porter-Cologne Act.”</i>
4.2-30 through 4.2-31	Section 4.2.1.3 (Biological Resource Conditions at Present, Aquatic Jurisdictional Resources)	Remove references to “waters of the United States” and replace with “waters of the State.”
4.2-34	Table 4.2-4 - Jurisdictional Resources within the Old Kane Springs Road Preservation Site	Remove “ACOE” as a jurisdictional agency from the “Total” line.
4.2-49	Section 4.2.4.3 (Substantial Project Changes - New Information)	The second paragraph of this Section (top of page 4.2-49) should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1).
4.2-63	Impact 4.2-3 (Quarry, Well No. 3 Site and Pipeline Alignment)	This discussion should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1). Among other things, consider revising the text as follows: <i>“The 2008 EIR/EIS determined that Quarry expansion activities would impact existing streambeds which could be under the jurisdiction of CDFG through Sections 1601-3 of the California Fish and Game Code or the US Army Corps of Engineers through Section 404 of the Federal Clean Water Act. <u>However, since that time, the USACE issued an Approved Jurisdictional Determination confirming there are no waters of the United States subject to regulation under Section 404 of the federal Clean Water Act in the project area. However, the RWQCB maintains jurisdiction over the aquatic resources in the project area under the Porter-Cologne Act.</u>”</i>
4.6-9	Section 4.6.1.3 (Viking Ranch Restoration Site-Floodplain)	The first sentence should be revised as follows: <i>“The floodplain on the Viking Ranch site is shown on Figure 2-4, “Old Kane Springs Road Preservation Site <u>Figure 2-3, Viking Ranch Restoration Site.</u>”</i>

Page	Section/Text	Comment
4.6-22	Section 4.6.4.3 (Substantial Project Changes - New Information)	This discussion should be updated and revised as needed in light of the Approved Jurisdictional Determination issued by the USACE on February 8, 2021 (Exhibit 1).
4.6-24	Section 4.6.4.4 (Viking Ranch Restoration Site)	The first paragraph is not relevant to the Viking Ranch Restoration Site and should be deleted.
4.7-1	Section 4.7.1.1 (Land Use and Planning – Well No. 3 and Associated Pipeline)	The last sentence (“No development was present in 2008”) is incorrect. Disturbance on the private parcel and the pipeline alignment was present prior to 2008. Wells are present on the private parcel, and the pipeline alignment/tramway has an active railroad line in place with a dirt access road paralleling the tramway along its entire length.
4.7-2	Section 4.7.1.2 (Land Use Conditions at Present – Well No. 3 Site and Pipeline Alignment)	The second sentence (“Both the well site and pipeline alignment remain undeveloped with no structures or other improvements”) is incorrect. Disturbance on the private parcel and the pipeline alignment was present prior to 2008. Wells are present on the private parcel, and the pipeline alignment/tramway has an active railroad line in place with a dirt access road paralleling the tramway along its entire length.
4.7-13	Section 4.7.4.3 (Impact 4.7-1)	Revised the second sentence as follows: <i>“There are no established communities adjacent <u>to</u> the Quarry ...”</i>
4.8-5	Section 4.8.3.1 (Significance Criteria – CEQA Appendix G Significance Criteria)	The CEQA Appendix G Significance Criteria are listed for cultural resources but not for Tribal Cultural Resources. Consider adding the criteria listed below for Tribal Cultural Resources from the CEQA Guidelines (Appendix G, Section XVIII), which were used in the subsequent environmental analysis in Section 4.8.4.4: <i>“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: a) 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 b) 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.”</i>
5-16	Section 5.3.5 (Greenhouse Gas Emissions – Project Impacts)	Revise the first sentence as follows: <i>“Project impacts pertaining to geology, soils, and paleontological resources <u>greenhouse gas emissions</u>, as described in Section 4.4 <u>4-5</u>, are as follows:”</i>
5-17	Section 5.3.6 (Hydrology and Water Quality – Project Impacts)	Revise the first sentence as follows: <i>“Project impacts pertaining to geology, soils, and paleontological resources <u>hydrology and water quality</u>, as described in Section 4.4 <u>4-6</u>, are as follows:”</i>

APPENDIX I:
CALIFORNIA DEPARTMENT OF FISH
AND WILDLIFE MITIGATION MONITORING
AND REPORTING PROGRAM
(CDFW Comment Letter 4e: Attachment 1)

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ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Mitigation Measures	Timing and Methods	Responsible Parties
<p>Mitigation Measure 3.4-11: PBS Monitoring and Reporting.</p> <p>USG will support the CDFW PBS monitoring and reporting program within the federal action area by providing funding to maintain a combination of radio and VHF collars on ten (10) PBS in the Fish Creek and ten (10) PBS in the Vallecito Mountains Ewe Group areas for the life of the mining Project. Evaluation of collar numbers, capture hours, and funding allocation shall be made every 10 years throughout the life of the Project in coordination with CDFW.</p>	<p>Timing: Throughout the life of the Project.</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Proponent and County of Imperial</p> <p>Monitoring and Reporting: County of Imperial</p>
<p>Mitigation Measure BIO-[B]: Surveys for Daytime, Nighttime, Wintering (Hibernacula), and Maternity Roosting Sites for Bats</p> <p>Prior to the initiation of quarrying activities into previously undisturbed areas, construction of Well No. 3 and associated pipeline, and restoration of the Viking Ranch Restoration Site within suitable special-status bat roosting habitat, the Applicant shall retain a qualified biologist to conduct focused surveys to determine presence of daytime, nighttime, wintering (hibernacula), and maternity special-status bat species roost sites. Two spring surveys (April through June) and two winter surveys (November through January) shall be performed by qualified biologists. Surveys shall be conducted during favorable weather conditions only. Each survey shall consist of one dusk emergence survey (start one hour before sunset and last for three hours), followed by one pre-dawn reentry survey (start one hour before sunrise and last for two hours), and one daytime visual inspection of all potential roosting habitat on the project site. Surveys shall be conducted within one 24-hour period. Visual inspections shall focus on the identification of special-status bat sign (i.e., individuals, guano, urine staining, corpses, feeding remains, scratch marks and bats squeaking and chattering). Bat detectors, bat call analysis, and visual observation shall be</p>	<p>Timing: Prior to initiation of quarrying activities into previously undisturbed areas throughout the life of the Project</p> <p>Methods: See Mitigation Measure</p>	<p>Implementation: Project Proponent and County of Imperial</p> <p>Monitoring and Reporting: County of Imperial</p>

<p>used during all dusk emergence and pre-dawn re-entry surveys. If active hibernacula or maternity roosts of special-status bat species are identified in the work area or 500 feet extending from the work area during preconstruction surveys, the following requirements will apply:</p> <ul style="list-style-type: none">• For special-status bat species maternity roosts, quarry expansion activities into undisturbed and occupied habitat will be initiated between October 1 and February 28, outside of the maternity roosting season when young bats are present but are not yet ready to fly out of the roost. Maternity roosts shall not be evicted, excluded, removed, or disturbed.• For special-status bat hibernacula, a minimum 500-foot no-work buffer shall be provided around hibernacula. The buffer shall not be reduced except as specified herein. Project-related construction and activities shall not occur within 500 feet of or directly under or adjacent to hibernacula. Buffers shall be left in place until a qualified bat biologist determines that the hibernacula are no longer active. Within this buffer, project-related activities shall not occur between 30 minutes before sunset and 30 minutes after sunrise. Hibernacula roosts shall not be evicted, excluded, removed, or disturbed. If avoidance of a hibernacula is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernacula and provide for construction of an alternative bat roost outside of the work area. A bat roost relocation plan shall be submitted for CDFW review prior to initiation of project-related activities. The qualified biologist will implement the relocation plan and new roost sites shall be in place before the commencement of any ground-disturbing activities that will occur within 500 feet of the hibernacula. New roost sites shall be in place prior to the initiation of project-related activities to allow enough time for bats to relocate. Removal of roosts will be guided by accepted exclusion and deterrent techniques. Imperial County shall compensate no less than 2:1 for permanent impacts to roosting habitat.		
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