Rosemont Copper Project EIS
Cooperating Agency Coordination Meeting 07/15/2010
FINAL Agenda

Location: Federal Building, 300 West Congress, Tucson, Arizona, Room 4B
Facilitator: Teresa Ann Ciapusci, Cooperating Agency Liaison

AGENDA

09:30 – 09.45	**Welcome**	**Ciapusci**
09:45 – 10:30	**DEIS Draft Alternatives for Detailed Study**	**Everson**
10:30 – 11:00	**Mitigation Lands Concept**	**Cheniae**
11:00 – 11:15	**BREAK**	
11:15 – 12:00	**DEIS Chapter 1 Internal Review Instructions**	**Ciapusci**

INVITED COOPERATING AGENCIES

Tribes:	Tohono O'odham Nation
Federal:	Air Force, Army COE, BLM, Smithsonian Whipple Observatory
State of Arizona:	AZDEQ, AZMMR, AZDWR, AZGF, AZGS, AZSMI, AZSLD, AZSP, ADOT
Local:	Pima County, City of Tucson, Town of Sahuarita

INVITED GUESTS

Consultants:
Cheniae & Associates
Gordon Cheniae
Rosemont Copper Company
Gordon Cheniae

Rosemont Copper Project EIS
Cooperating Agency Coordination Meeting 07/15/2010
Meeting Notes

Welcoming Remarks	**Teresa Ann Ciapusci**
⇨ Teresa Ann, Forest Service Cooperating Agency Liaison, informed the cooperating agencies of her job transfer. She indicated that cooperating agencies may use the Acting Deputy Forest Supervisor, Dan Montez, as their primary point of contact until a new Cooperating Agency Liaison is named by the Forest Service. Agencies may contact Dan Montez at dmontez@fs.fed.us via electronic mail or (520) 388-8323 via telephone. Alternately, agencies may also continue to contact the Forest Supervisor's Special Assistant for the Rosemont Copper Project, Mindee Roth, at mroth@fs.fed.us via electronic mail or (520) 388-8319 via telephone if Dan Montez is unavailable.	
DEIS Alternatives Analyzed in Detail in the DEIS	**Bev Everson**
Discussion:	
⇨ PPT: Alternatives Analyzed in Detail in the DEIS	
⇨ Interdisciplinary Team Leader provided an overview of components and drivers for the four (4) alternatives to the proposed action selected by the Forest Service responsible official (Forest Supervisor) for detailed effects analysis in the Draft Environmental Impact Statement	
⇨ Question and Answer period provided clarifications about components in some alternatives	
⇨ Question and Answer period	
Mitigation Lands	**Brian Lindenlaub (WestLand Resources) on behalf of Rosemont Copper Company**
Discussion:	
⇨ PPT: Mitigation Lands	
⇨ WestLand Resources described a suite of concepts Rosemont Copper Company is exploring to provide mitigation for impacts to Waters of the United States	
DEIS Chapter 1 Pre-publication Internal Review Instructions	**Reta Laford**
Discussion:	
⇨ Handout: Draft Cover Letter Handout: Pre-publication Internal Review Draft of DEIS Chapter 1	
⇨ The Acting Forest Supervisor, Reta Laford, provided cooperating agencies with hard copies of review documents and described review instructions and parameters. She informed the agencies that official review copies and instructions would be mailed this week.	

Rosemont Copper Project
Cooperating Agency Meeting
July 15, 2010

Attendance Record

Cooperating Agencies	Participant(s)
Tohono O'odham Nation	Addison Smith
Air Force, 162d Fighter Airwing	
Army Corps of Engineers	Unavailable – advance notice
USDI BLM	
Smithsonian Institution	
AZ Dept of Environmental Quality	D L Turner
AZ Dept of Mines and Mineral Resources	Unavailable – advance notice

Cooperating Agencies	Participant(s)
AZ Department of Transportation	
AZ Dept of Water Resources	Unavailable – advance notice
AZ Game and Fish Department	Mike Demlong
AZ Geological Survey	JON SPENCER
AZ State Land Department	Daniel James
AZ State Mine Inspector	Garrett Fleming
AZ State Parks	
City of Tucson	

Cooperating Agencies	Participant(s)
Pima County	Nicole Fyffe Lay Neff
Town of Sahuarita	Joe Marquez Orlanthia Henderson

Guests	Affiliation
	G.L. Cheniae and Associates
	Rosemont Copper Company (Westland Resources)

Tom Furgason SWCA

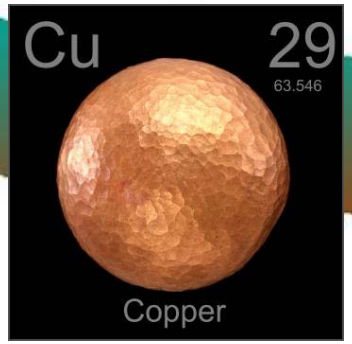
Rosemont Copper Project
Cooperating Agency Meeting
July 15, 2010

Attendance Record

Cooperating Agencies	Participant(s)
Tohono O'odham Nation	Addison Smith
Air Force, 162d Fighter Airwing	Unavailable – advance notice
Army Corps of Engineers	Unavailable – advance notice
USDI BLM	Dan Moore
Smithsonian Institution	Dan Brocious
AZ Dept of Environmental Quality	Dennis L. Turner
AZ Dept of Mines and Mineral Resources	Unavailable – advance notice
AZ Department of Transportation	
AZ Dept of Water Resources	Unavailable – advance notice
AZ Game and Fish Department	Mike Demlong
AZ Geological Survey	Jon Spencer
AZ State Land Department	David Jacobs
AZ State Mine Inspector	Garrett Fleming
AZ State Parks	
City of Tucson	
Pima County	Nicole Fyffe Loy Neff Neva Connolly
Town of Sahuarita	Joe Marques Orlanthia Henderson

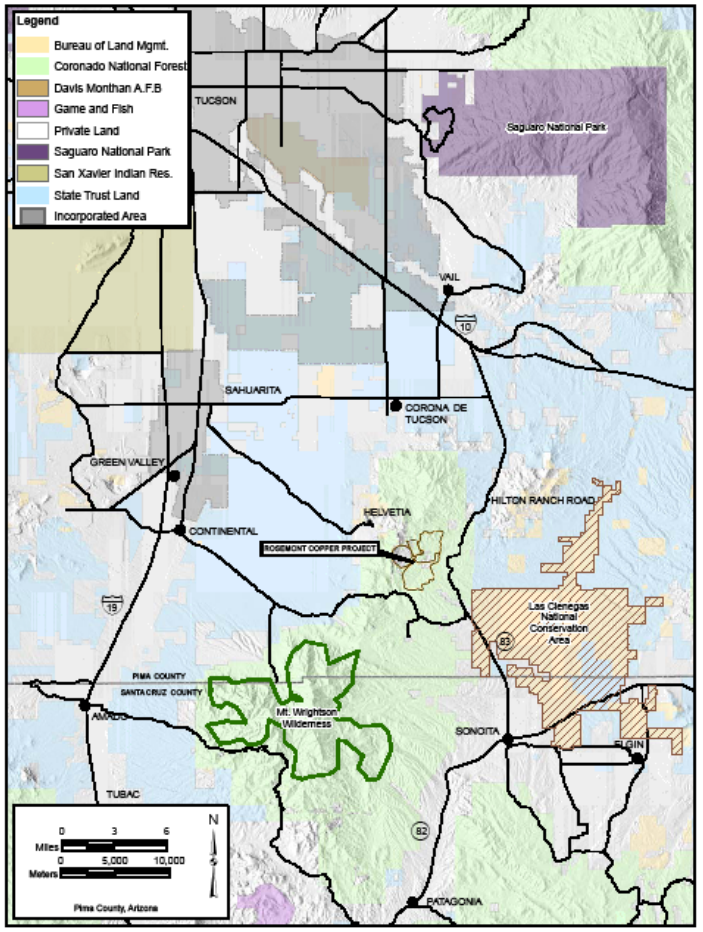
Guests	Affiliation
G.L. Cheniae	GL. Cheniae and Associates
Brian Lindenlaub	Westland Resources
Tom Furgason	SWCA Environmental Consultants

Rosemont Copper Project



Rosemont Copper Project Alternatives
Presentation to Cooperating Agencies
July 15, 2010

Project Location



Vicinity Map

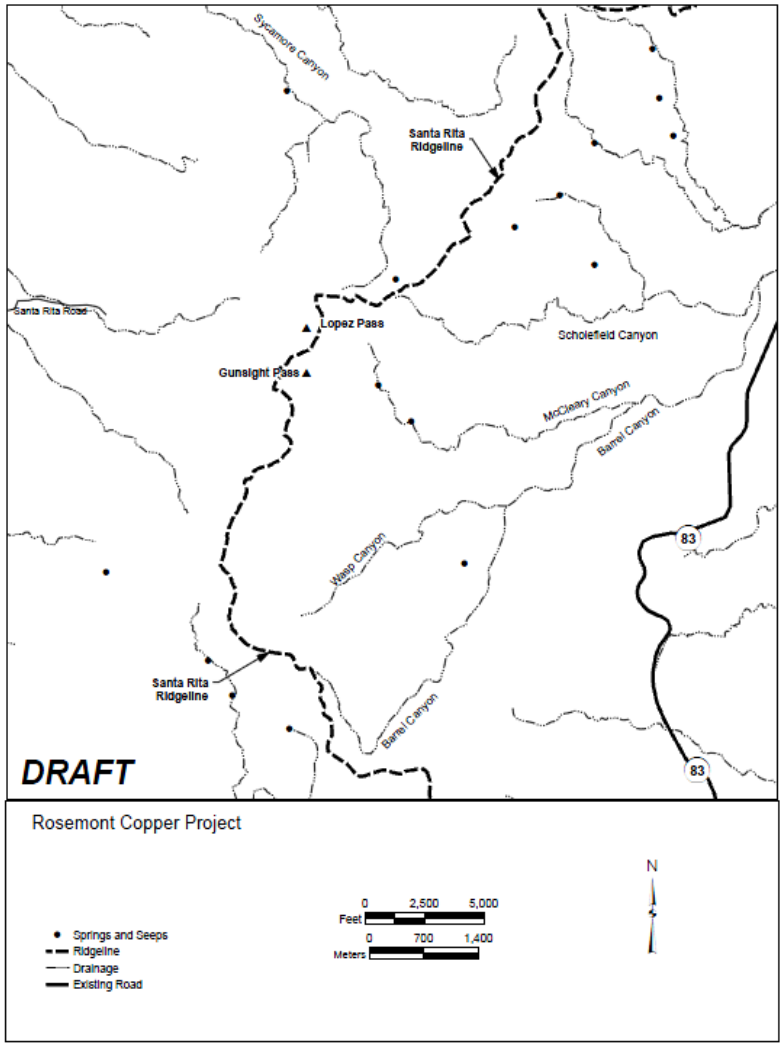
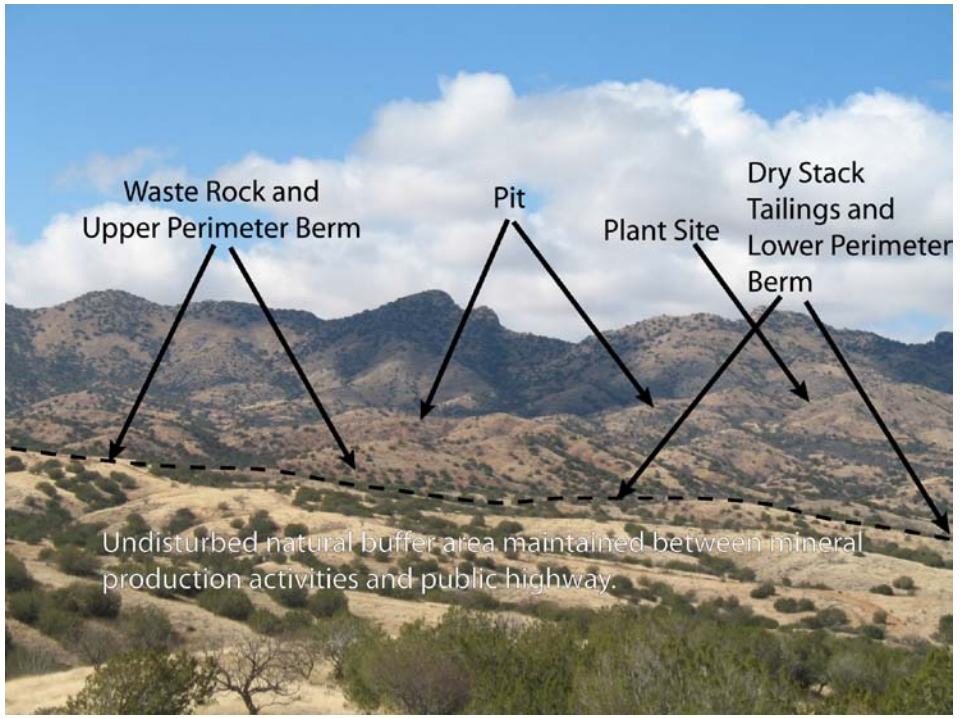


Figure x. No action.

No Action Alternative

Proposed Action Overview

- **Mining of copper, molybdenum, silver and gold in a 1.2 mile diameter open pit**
- **Ore concentrating and metal recovery in mill and solvent extraction electrowinning plant**
- **Waste rock and dry stack tailings facilities with 3 by 1 mile footprint**



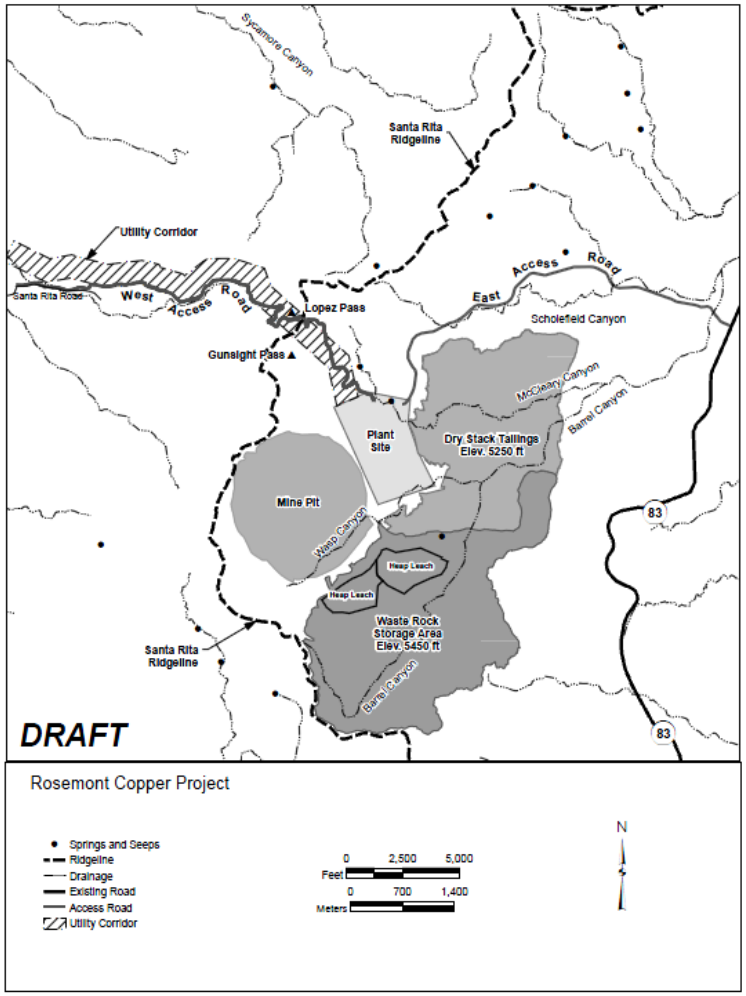


Figure x. Proposed action.

Proposed Action Facilities Design

Draft Environmental Impact Statement Alternatives

- Proposed Action
- No Action
- Phased Tailings
- Scholefield
- Barrel Only (Landforming)

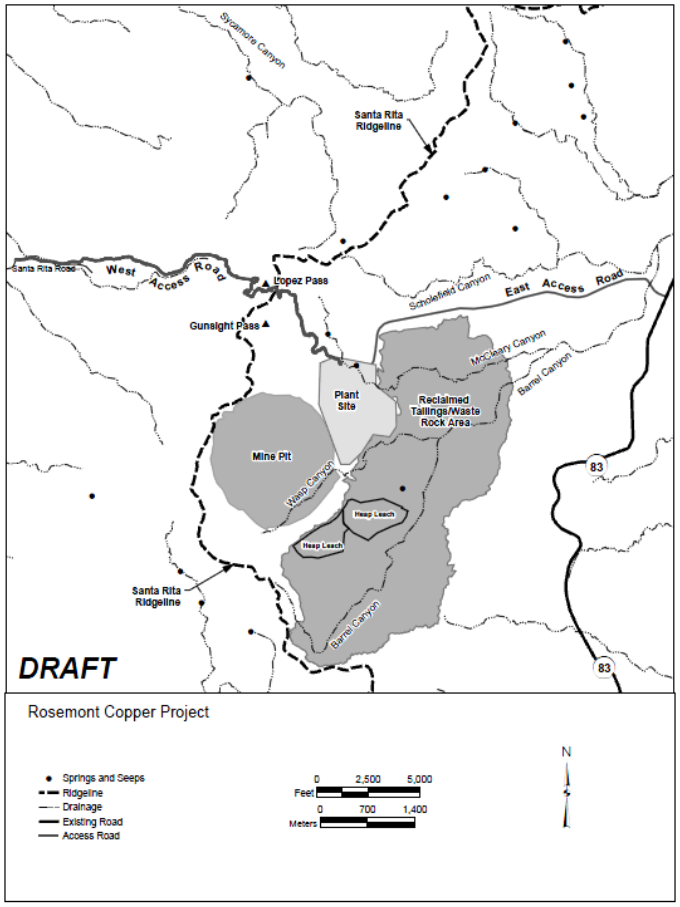


Figure x. Phased tailings alternative.

Phased Tailings Alternative Facilities Design

Scholefield Facilities Design

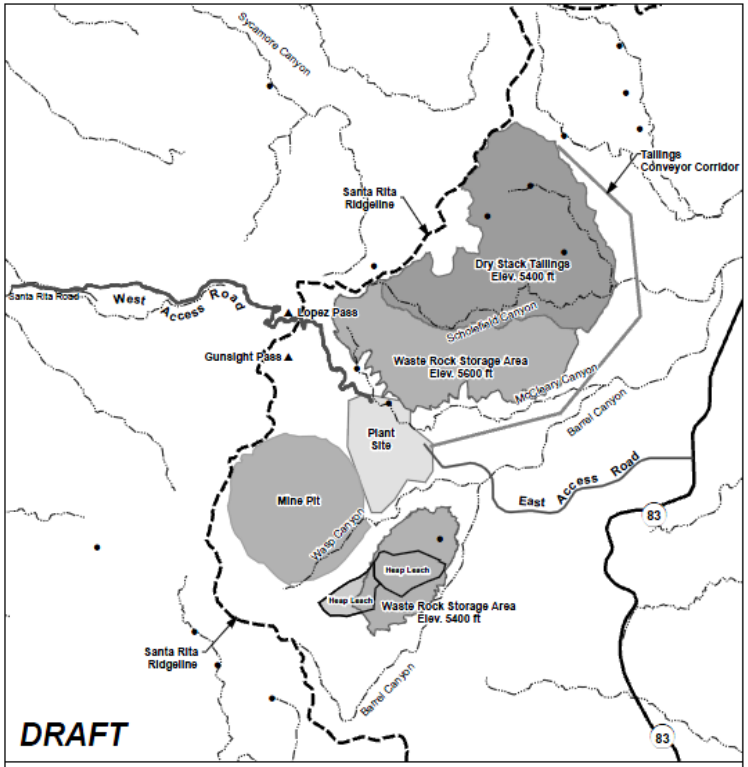
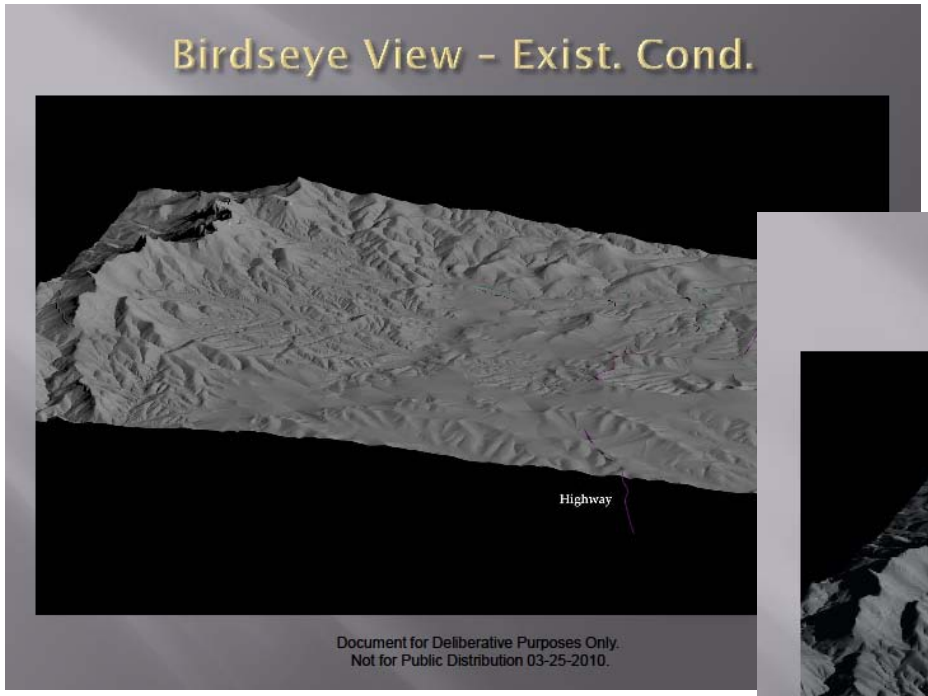
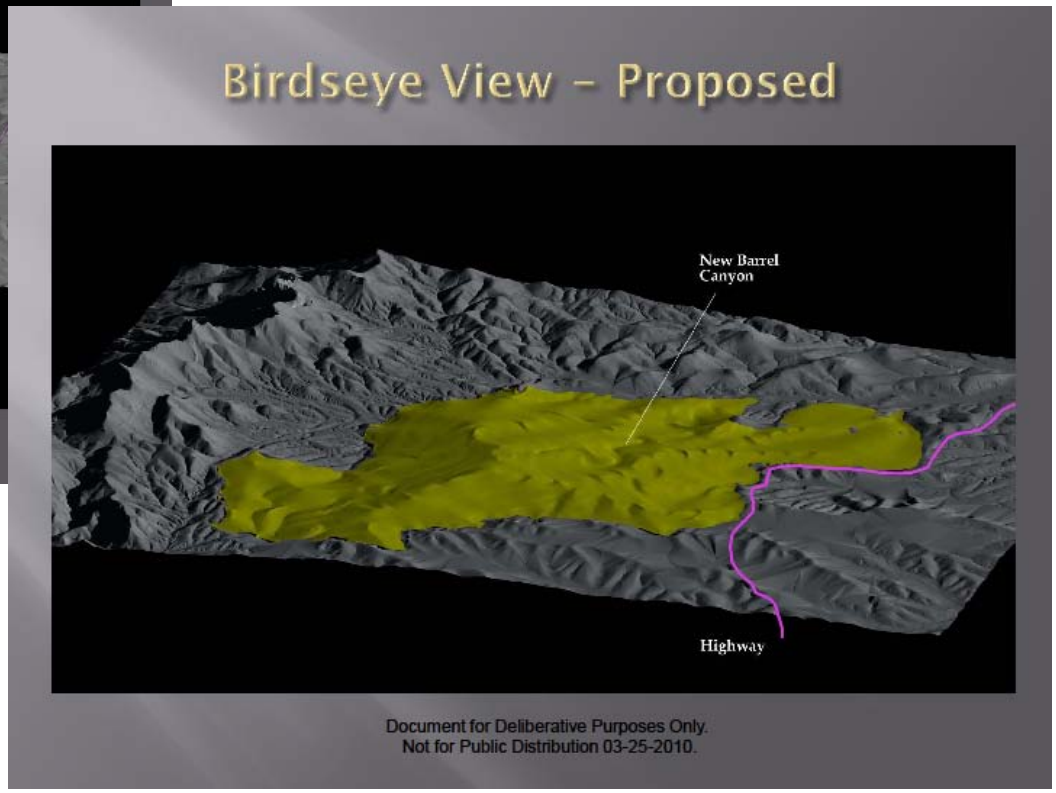


Figure x. Scholefield alternative.

Traditional Tailings and Waste Rock Topography

Barrel Only Landforming Alternative
Reproducing Natural Landscape Topography





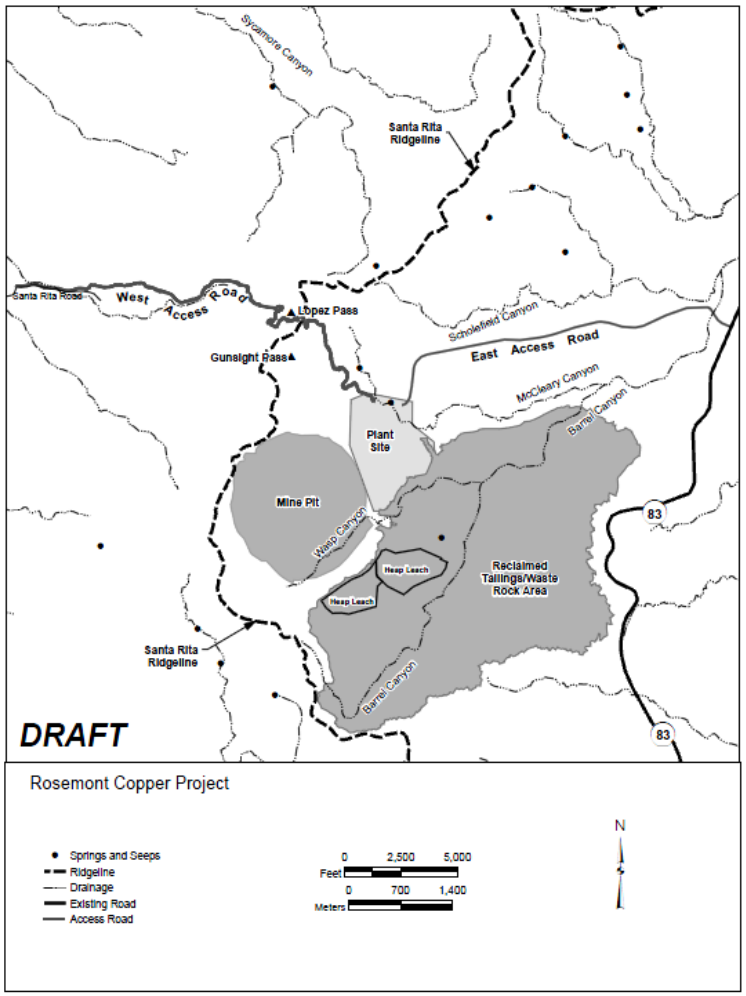


Figure x. Barrel alternative.

Barrel Only (Landforming) Alternative Facilities Design

Rosemont Copper Project
Mitigation Lands

July 2010

DRAFT

Rosemont Copper Project Mitigation Concept

- Focus on onsite mitigation
  - Onsite habitat improvements
  - Placement of restrictive covenants on Rosemont ranch lands
  - Placement of restrictive covenants on patented claims
- Offsite mitigation to supplement onsite mitigation efforts
  - Placement of conservation easements or restrictive covenants on new lands
  - Provision of access across new lands
  - Acquisition of new lands
  - In-lieu fee payment to third party project (e.g. Audubon Society)

Relevant Mitigation Agencies or Entities

- Regulatory mitigation obligation
  - U.S. Army Corps of Engineers (ACOE)
  - U.S. Fish and Wildlife Service (USFWS)
- Mitigation policy or interest
  - Arizona Department of Mines and Mineral Resources (DMMR)
  - Arizona Game and Fish Department (AGFD)
  - Arizona State Parks
  - Bureau of Land Management (BLM)
  - Coronado National Forest (CNF)
  - Pima County
  - Tribal entities (Tohono O'odham, et al)

11 Issues Being Analyzed in the EIS

- Land Stability and Soil Productivity
- Air Quality
- Water Resources
- Springs, Seeps, and Riparian Habitats
- Plants and Animals
- Visual Resources
- Recreation
- Public Safety
- Dark Skies and Astronomy
- Heritage Resources
- Socioeconomics

Agencies' Priority Issues for Mitigation

Issue	ACOE	USFWS	BLM	AGFD	Tribes	DMMR	State Parks	Pima Co.	Consensus Priorities
Land Stability and Soil Productivity									
Air Quality									
Water Resources	X	X						X	
Springs, Seeps, and Riparian Habitats	X	X		X	X			X	
Plants and Animals		X	X	X	X			X	
Visual Resources									
Recreation			X	X			X		
Public Safety									
Dark Skies and Astronomy									
Heritage Resources			X		X			X	
Socioeconomics						X			

X = Agency priority (Regulatory obligation) X = Agency priority (Policy or Interest)

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Engineering and Environmental Consultants
Tucson • Phoenix

Mitigation Lands

- The focus of the mitigation lands effort will be on the five issues most commonly identified as a priority (or assumed to be a priority) for agencies or entities with a mitigation obligation or interest.

Agencies' Priority Issues for Mitigation

Issue	ACOE	USFWS	BLM	AGFD	Tribes	DMMR	State Parks	Pima Co.	Consensus Priorities
Land Stability and Soil Productivity									
Air Quality									
Water Resources	X	X						X	
Springs, Seeps, and Riparian Habitats	X	X		X	X			X	
Plants and Animals		X	X	X	X			X	
Visual Resources									
Recreation			X	X			X		
Public Safety									
Dark Skies and Astronomy									
Heritage Resources			X		X			X	
Socioeconomics						X			

X = Agency priority (Regulatory obligation) X = Agency priority (Policy or Interest)

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Engineering and Environmental Consultants
Tucson • Phoenix

Agencies' Priority Issues for Mitigation

Issue	ACOE	USFWS	BLM	AGFD	Tribes	DMMR	State Parks	Pima Co.	Consensus Priorities
Land Stability and Soil Productivity									
Air Quality									
Water Resources	X	X						X	X
Springs, Seeps, and Riparian Habitats	X	X		X	X			X	X
Plants and Animals		X	X	X	X			X	X
Visual Resources									
Recreation			X	X			X		X
Public Safety									
Dark Skies and Astronomy									
Heritage Resources			X		X			X	X
Socioeconomics						X			

X = Agency priority (Regulatory obligation) X = Agency priority (Policy or Interest)

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Mitigation Lands

- Mitigation for the Rosemont Project will focus first on onsite mitigation efforts
- Offsite mitigation will be accomplished through a hierarchical series of mechanisms.

Conservation Easements/Restrictive Covenants

- Recordation of Conservation Easements or Restrictive Covenants on existing lands

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Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement/Restrictive Covenant	Existing			200 acres of PPC habitat	2,000 acres CLOP	40 acres near Helvetia

Conservation Easements/Restrictive Covenants

- Recordation of Conservation Easements or Restrictive Covenants on new lands

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Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement/Restrictive Covenant	Existing			200 acres of PPC habitat	2,000 acres CLOP	40 acres near Helvetia
	New		Unknown acres of riparian habitat (TBD)			2 other TCP (TBD)

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Access

- Provision of access to resources across new lands

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Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement/Restrictive Covenant	Existing			200 acres of PPC habitat	2,000 acres CLOP	40 acres near Helvetia
	New		Unknown acres of riparian habitat (TBD)			2 other TCP (TBD)
Access					3 new access points	4 access points to resource collection or sacred sites

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Engineering and Environmental Consultants
Tucson • Phoenix

Acquisition

- Acquisition of new lands

Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement/Restrictive Covenant	Existing			200 acres of PPC habitat	2,000 acres CLOP	40 acres near Helvetia
	New		Unknown acres of riparian habitat (TBD)			2 other TCP (TBD)
Access					3 new access points	4 access points to resource collection or sacred sites
Acquisition	Known		40 acres of habitat on east side of Santa Rita Mountains	400 acres of suitable agave habitat on east side of Santa Rita Mountains	700 acres of habitat suitable for hunting on west side of Santa Rita Mountains	
	Unknown	Unknown acres of waters of the U.S. (TBD)		Unknown acres of additional habitat in support of AGFD (TBD)		

In-lieu Fee

- Payment in-lieu to a third party interest

Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement/Restrictive Covenant	Existing			200 acres of PPC habitat	2,000 acres CLOP	40 acres near Helvetia
	New		Unknown acres of riparian habitat (TBD)			2 other TCP (TBD)
Access					3 new access points	4 access points to resource collection or sacred sites
Acquisition	Known		40 acres of habitat on east side of Santa Rita Mountains	400 acres of suitable agave habitat on east side of Santa Rita Mountains	700 acres of habitat suitable for hunting on west side of Santa Rita Mountains	
	Unknown	Unknown acres of waters of the U.S. (TBD)		Unknown acres of additional habitat in support of AGFD (TBD)		
In-lieu		In-lieu fee for lost waters of the U.S. – approximately 40 acres of waters, mitigated at 3x	20 wells	20 guzzlers 3 protected bat roosts	20 guzzlers	

United States Department of Agriculture | Forest Service | Coronado National Forest Supervisor's Office | 300 W. Congress
Tucson, Arizona 85701
Phone (520) 388-8300
FAX (520) 388-8305
Deaf & Hearing Impaired 711

File Code:
Date:

[ADDRESS LINE 1]
[ADDRESS LINE 2]
[ADDRESS LINE 3]
[ADDRESS LINE 4]

CERTIFIED MAIL – RETURN RECEIPT REQUESTED
NUMBER:

[SALUTATION]

Enclosed is a draft, deliberative, internal work product for review by the proponent Rosemont Copper Company and cooperating agencies – the 7/15/10 draft Chapter 1 for the *Rosemont Copper Project Draft Environmental Impact Statement*.

I am providing this draft product for internal review pursuant to conditions established in Memoranda of Understanding with the Coronado National Forest. Pursuant to the Memoranda of Understanding, I am requesting that each cooperating agency limit review comments to correct factual errors and provide missing information within their jurisdiction and/or special expertise. Do not provide editorial comments pertaining to items such as format, grammar, or spelling as these items will be independently addressed after comments are considered and appropriately incorporated into a subsequent draft product.

Review comments need to be: 1) submitted on official letterhead to my Special Assistant, Ms. Mindee Roth, at the Forest address on the top of this letter, 2) cross-referenced to the line numbers on the enclosed draft product, and 3) provided by August 6, 2010.

If you determine that no changes are necessary to accommodate your agency's needs, please send a written reply to that effect.

Thank you for your assistance.

Sincerely,

[SIGNATURE BLOCK]

Enclosure

Chapter 1

Purpose of and Need for Action

INTRODUCTION

Land managers for the Coronado National Forest (Coronado), an administrative unit of the U.S. Department of Agriculture's Forest Service (Forest Service), prepared this Draft Environmental Impact Statement (DEIS) in response to a Proposed Plan of Operations (PPO) submitted by Augusta Resource Corporation, the parent company of Rosemont Copper Company (Rosemont Copper) for development of the Rosemont mineral deposit. The same PPO was also submitted to the U.S Department of Interior, Bureau of Land Management (BLM) for concurrent consideration. The PPO presented in this document accounts for activity proposed on both Forest Service-administered and BLM-administered lands, for which federal decisions are required. The DEIS relies on the work of the Coronado's Interdisciplinary Team and consultants, as well as Rosemont Copper's technical experts.

Rosemont Copper's PPO is for construction, operation/reclamation, and closure of an open-pit mine to extract locatable minerals such as copper, molybdenum, and silver. The PPO also includes associated infrastructure and ancillary facilities. Associated infrastructure consists of haul and access roads, ore transportation systems, ore processing facilities, waste rock and mill tailings areas, leach facilities, and electrical and water transmission lines. Ancillary facilities consist of various buildings integral to the operations (i.e., administration building, employee change house, warehouse, analytical laboratory, vehicle servicing facilities, storage facilities, guard house, and truck scale).

The proposed mine site is located on the east side of the Santa Rita Mountains of the Nogales Ranger District, approximately 30 miles south of Tucson, Arizona (Figure 1.1). Activity is proposed on approximately 995 acres of private land owned by Rosemont Copper, 3,670 acres of National Forest System land, 15 acres of BLM-administered land, and 75 acres of Arizona State land administered as a State Trust. The mine life, including construction, operation/reclamation, and closure, is approximately 25 years and involves significant beneficial and adverse impacts on people and their environment.

Three federal agencies have authority regarding the PPO approval and permitting process: the Forest Service, BLM, and U.S. Army Corps of Engineers (USACE). The Forest Service is the lead agency. There are 17 cooperating federal, state, and local agencies with jurisdiction or special expertise related to aspects of the PPO, including the BLM and USACE. Several cooperating agencies contributed to preparation of this DEIS.

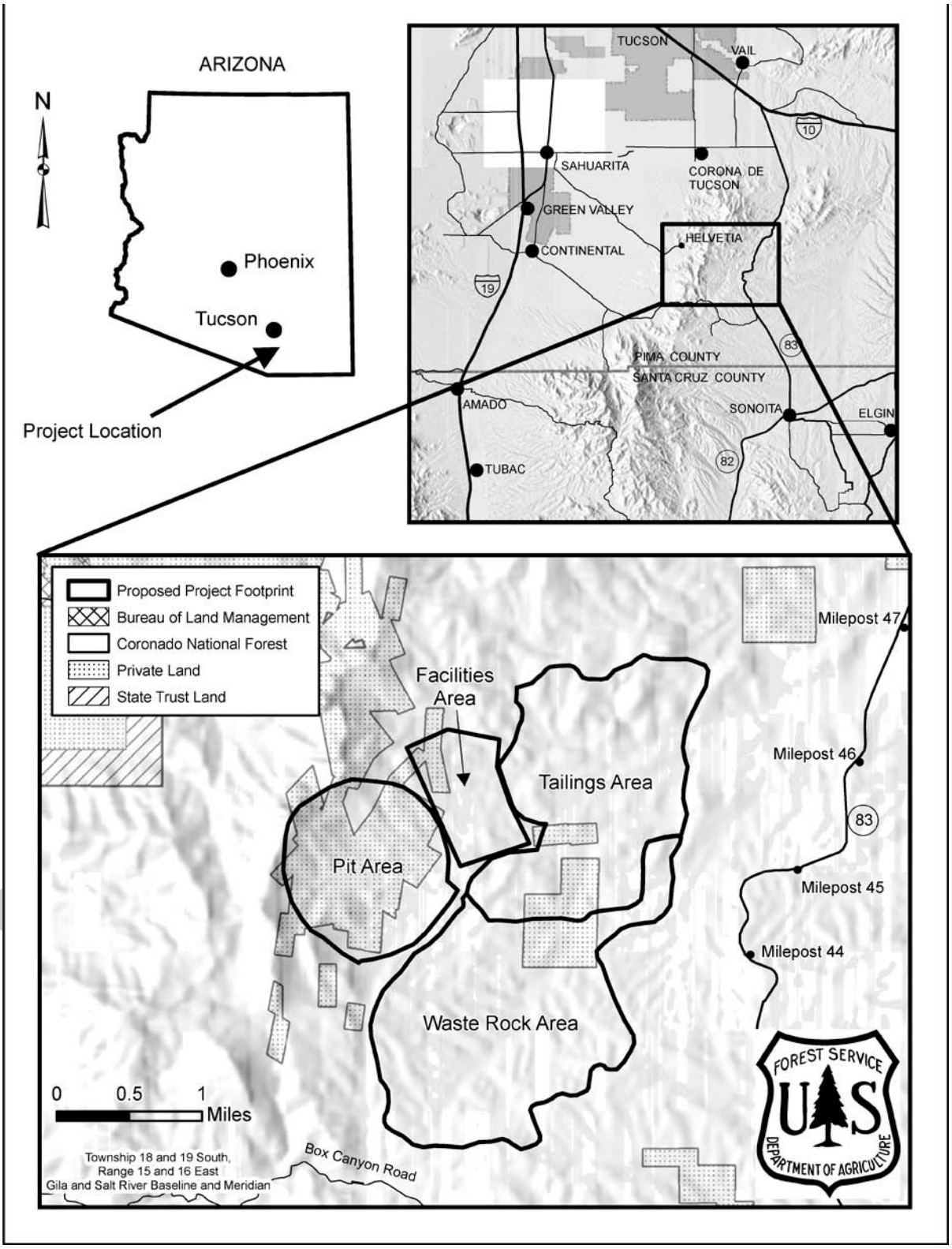

Figure 1.1. Project location.

DOCUMENT STRUCTURE

The Coronado National Forest prepared this document in compliance with the National Environmental Policy Act (NEPA) and other relevant laws, regulations, and policies. This document discloses the direct, indirect, and cumulative environmental consequences that would result from the Coronado and BLM approval of the PPO and alternatives to it. This document considers necessary amendments to the *Coronado National Forest Land and Resource Management Plan*, as amended (Forest Plan) (Forest Service 1986), which governs overall management of the Coronado National Forest. This document also considers necessary amendments to the *Phoenix Resource Management Plan and Record of Decision* (Resource Management Plan) (BLM 1989), which directs land uses and other special uses of BLM-administered land.

This document is organized into eight chapters with associated appendices.

- *Chapter 1. Purpose of and Need for Action:* Chapter 1 focuses on the underlying need to which the agency is responding in proposing the action and alternatives, the framework in which decisions will be made by the three responsible federal agencies, and the significant issues associated with the Proposed Action.
- *Chapter 2. Alternatives, Including the Proposed Action:* Chapter 2 describes the Proposed Action along with the alternatives considered in detail. Action alternatives were developed based on significant issues raised by the public, Coronado resource specialists, and other agencies. The No Action Alternative is included in the range of alternatives considered in detail. Chapter 2 also provides a comparison summary based on each alternative's environmental consequences presented in Chapter 3. This chapter identifies the Coronado's and BLM's preferred alternative as well as alternatives considered but eliminated from detailed study.
- *Chapter 3. Affected Environment and Environmental Consequences:* Chapter 3 describes the affected environment and the environmental consequences associated with the Proposed Action and the alternatives considered in detail. The affected environment information provides the baseline conditions, incorporating past and present actions, for determining potential impacts. Reasonably foreseeable actions are also identified for consideration of potential cumulative effects. The presentation of information is organized by groupings of elements within the physical, biological, and socioeconomic environments. The following additional disclosures are made at the end of the chapter: short-term uses and long-term productivity; unavoidable adverse effects; irreversible and irretrievable commitments of resources; and other required disclosures. This chapter provides the analyses for the comparison summary presented in Chapter 2.
- *Chapter 4. Cooperating Agencies and Consultation:* Chapter 4 addresses the cooperating agencies and consulting agencies, including tribal governments, involved during the development of this document.
- *Chapter 5. List of Preparers:* Chapter 5 identifies the individuals responsible for the development of this document.
- *Chapter 6. Literature Cited:* Chapter 6 provides a list of literature cited in this document.

- *Chapter 7. Glossary:* The Glossary provides acronyms, abbreviations, and definitions of terms used in this document.
- *Chapter 8. Index:* The Index provides page numbers by topic within this document.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in this document, including public involvement. The appendices include the following:

  U.S. Army Corps of Engineers' Section 404(b)(1) Alternative Analysis

  {Insert list of Appendices when finalized}

The analyses conducted for this project reflect the best available science. Supporting documentation, including more detailed analyses of baseline conditions and potential effects, may be found in the project record, located at the Coronado Supervisor's Office (Tucson, Arizona) and Nogales Ranger District (Nogales, Arizona). Key materials may also be found on the project website at http://www.RosemontEIS.us.

The information furnished in this document is intended to provide adequate site-specific information for the responsible federal officials to make reasoned decisions. Published documents are incorporated by reference. Impacts are discussed in proportion to their significance with items deemed most useful to decision-makers and the public emphasized.

BACKGROUND

The current PPO is the latest in an extensive history of copper prospecting and development in Southern Arizona. Copper production in the Santa Rita Mountains began in the 1880s and continued until the 1950s. Previous mining activity on the east side of the Santa Rita Mountains supported operation of the Rosemont Smelter in the Rosemont Mining District. Previous mining activity on the west side of the Santa Rita Mountains supported operation of the Columbia Smelter at Helvetia in the Helvetia Mining District. Although several exploration projects have been undertaken, there has been no recent production of copper. The increased value of copper over the past several years has made mining of certain claims in the area economically viable.

In July 2007, Rosemont Copper submitted a PPO to the Coronado, requesting approval to construct, operate/reclaim, and close an open-pit mine on and adjacent to National Forest System lands administered by the Coronado for development of the Rosemont mineral deposit. The Forest's review identified the need for additional information. In February 2008, the supplemented PPO was accepted for environmental review by the Coronado .

In July 2007, Rosemont Copper also submitted the PPO to the BLM, requesting approval of the PPO because it includes an electrical transmission line, water pipeline, and access road that would cross BLM-administered lands. In March 2008, the PPO was accepted by BLM after Rosemont Copper submitted requested supplemental information.

At the request of the Rosemont Copper, USACE reviewed a Preliminary Jurisdictional Delineation for Waters of the United States[1] (WUS) submitted in accordance with Regulatory Guidance Letter No. 08-02. USACE has determined that WUS are present.

PURPOSE OF AND NEED FOR ACTION

Purpose of the Proposal

Pursuant to federal mining laws, the Forest Service and BLM are required to respond to a PPO for the conduct of mining operations. Under 36 Code of Federal Regulations (CFR) 228.5, the Forest Service must determine whether to approve the PPO submitted by Rosemont Copper or to require changes or additions deemed necessary to meet the requirements of the regulations for environmental protection set forth in 36 CFR 228.8. *{Insert parallel Secretary of Interior BLM statement here}*

Under regulations of the Secretary of Agriculture, Rosemont Copper must conduct mining operations in accordance with the regulations at 36 CFR 228A under a Forest Service approved PPO . *{Insert parallel Secretary of. Interior BLM statement here}*

Need for Action

The Coronado National Forest is proposing this project at this time in order to comply with its statutory obligation to respond to Rosemont Copper's PPO in a timely manner. The actions proposed in this DEIS are for the orderly development of the Rosemont mineral deposit claimed by Rosemont Copper in a manner that complies with federal, state, and local laws and regulations in a manner that reduces adverse environmental impacts on Forest Service-administered lands and without undue or unnecessary degradation[2] of BLM-

[1] Under 33 CFR 328.3(a), Waters of the United States are defined as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposed; or
    b. From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used for industrial purposed by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition
5. Tributaries of waters identified in paragraph(s) (1) through (4) of the section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraph(s) (1) through (6) of this section.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

2. Unnecessary or undue degradation of the environment is defined as surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and prioficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those

administered lands, in consideration of impacts to Waters of the United States. Rosemont Copper is entitled to conduct operations that are reasonably incidental to exploration and development of mineral deposits on its mining claims pursuant to U.S. mining laws.

The purpose of and need for action is based on statutes and policy that govern mining on National Forest System land and BLM-administered land:

- The General Mining Act of 1872 conferred a statutory right for claimants to enter upon public lands open to location, to stake mining claims in pursuit of locatable minerals, and to conduct mining activities, in compliance with federal and state statutes and regulations.
- The 1897 Organic Administration Act grants the Secretary of Agriculture the authority to regulate the occupancy and use of National Forest System lands. It provides the public with continuing rights to conduct mining activities under general mining laws and in compliance with rules and regulations applicable to National Forest System lands. It also recognizes the rights of miners and prospectors to access National Forest System lands for prospecting, locating, and developing mineral resources.
- The Multiple-Use Mining Act of 1955 confirms the ability to conduct mining activities on public lands, locate necessary facilities, and conduct reasonable and incidental uses to mining on public lands, including National Forest System lands. Forest Service mining regulations at 36 CFR 228A correspondingly recognize the rights of mining claimants.
- The Multiple-Use Sustained-Yield Act of 1960 requires that National Forest System lands be administered in a manner that includes consideration of relative values of various resources as part of management decisions. Furthermore, it specifies that nothing in the Act be construed to affect the use of mineral resources on National Forest System lands.
- The 1970 Mining and Minerals Policy Act established the federal government's policy for mineral development "to foster and encourage private enterprise in the development of economically sound and stable industries and in the orderly development of domestic resources to help assure satisfaction of industrial, security, and environmental needs."

The proposal is consistent with the Coronado's Forest Plan goal to: "Support environmentally sound energy and minerals development and reclamation." (Forest Plan, p. 11). However, an initial assessment indicates that the PPO is inconsistent with various Forest Plan directions. Project-specific amendment(s) to the Forest Plan would be needed to ensure Forest Plan consistency should the PPO be selected.

The proposed electrical transmission line, water pipeline, and access road on lands administered by the BLM are in an area that provides for mineral exploration and development under the regulations at 43 CFR 3809 (Resource Management Plan, p. _).

resources and uses outside the area of operations [43 CFR 3809.5].

PROPOSED ACTION IN BRIEF

The Proposed Action is to approve the PPO on record with the Coronado for construction, operation with concurrent reclamation, and closure of an open-pit copper, molybdenum, and silver mine. The following elements integral to the project are also included:

- Ore transportation systems
- Ore processing facilities
- Waste rock and mill tailings areas
- Leach facilities
- Road construction
- Road maintenance
- Electrical and water transmission lines
- Various buildings
- Mitigation to minimize environmental impacts
- Resource monitoring during construction, operation/reclamation, and closure
- Labor requirements for construction, operation/reclamation, and closure.

Production estimates include 234 million pounds of copper, 4.5 million pounds of molybdenum, and 2.7 million ounces of silver annually over a period of approximately 25 years.

A detailed summary of the Proposed Action is presented in Chapter 2, commensurate with the other action alternatives considered in detail.

DECISION FRAMEWORK

The Forest Service is the lead agency in the preparation of this document, in accordance with the Council on Environmental Quality regulations for implementing the National Environmental Policy Act at 40 CFR 1501.5. The BLM and USACE are federal cooperating agencies with decisions to be made from this planning effort.

Forest Service

The Forest Supervisor of the Coronado, as the lead Responsible Official for this project, determined that preparation of an environmental impact statement was required because approving a PPO could have significant impacts on the human environment [40 CFR 1500]. The Forest Supervisor will consider the beneficial and adverse impacts of each alternative in determining reasonable measures to impose on the mining plan for the protection of the Coronado National Forest surface resources. However, the Forest Supervisor's decision space is limited by the regulations governing locatable mineral activities on National Forest System lands [36 CFR 228A] and other laws and regulations discussed previously.

The Forest Service may reasonably regulate mining activities to protect surface resources, but there are statutory and constitutional limits to its discretion when reviewing and approving a Plan of Operations. The Forest Service may reject an unreasonable or illegal Plan of Operations, but cannot categorically prohibit mining activity or deny reasonable and legal mineral operations under the mining laws.

The Forest Supervisor will select the Proposed Action or an alternative that allows for orderly development of the mineral resource while reducing environmental impacts. Measures to reduce environmental impacts will be evaluated to ensure they have reasonable monetary costs and are practicable, effective, and necessary. Using the analysis in the Final Environmental Impact Statement (FEIS) and supporting documentation, the Forest Supervisor will make the following decisions regarding National Forest System Lands:

1. Whether to approve the PPO as submitted by Rosemont Copper or an alternative considered in detail in the FEIS. The final decision may include a blend of components within the range of alternatives considered.
2. Which design features or mitigation are necessary to reduce or eliminate adverse environmental impacts. The alternatives will be evaluated on how well they reduce impacts while allowing reasonable mining operations to proceed.
3. Whether to amend the Forest Plan in the area impacted by the mine. The alternatives will be evaluated based on their consistency with current management direction in the Forest Plan.
4. What monitoring activities are necessary to ensure proper use of public lands and adequate reclamation.

Prior to approval of a Plan of Operations, the Forest Supervisor would require financial assurance or a reclamation bond to ensure that National Forest System lands involved with the mining operation are reclaimed in accordance with the approved Plan of Operations and reclamation requirements [36 CFR 228.8 and 228.13].

Following issuance of this DEIS, comments will be accepted on it that will be considered in producing a FEIS. Following or concurrent with issuance of the FEIS, the Forest Supervisor will issue a Record of Decision. The Record of Decision may contain changes or additions to the PPO necessary to reduce or eliminate adverse environmental impacts from the proposed mineral development on National Forest System lands, as well as any required amendments to the Forest Plan. This decision will be subject to administrative appeal. Rosemont Copper may appeal the decision pursuant to 36 CFR 215 or 251. Other parties who commented on the DEIS may appeal the decision pursuant to 36 CFR 215.

Following resolution of any appeal, Rosemont Copper must change their PPO to that described in the Record of Decision and resubmit it to the Forest Service, along with the required reclamation bond or other specified financial assurance. Once the Forest Service determines that the PPO has been changed as required, and that the bond or financial assurance instrument is acceptable, it will notify Rosemont Copper that its Plan of Operations is approved.

Bureau of Land Management

Approximately 15 acres of BLM-administered lands are potentially affected by an electrical transmission line, water pipeline, and access road associated with the PPO. Under 43 CFR 3809, for surface management, and 43 CFR 3715, for surface occupancy, BLM has regulatory oversight responsibilities of federal lands under its jurisdiction. BLM must consider land status, affected resources, resource values, environmental conditions, and the

concerns of various interested parties in accordance with BLM Manual and Handbook 1790-1 and Departmental Guidance (516 DM 1-7). Using the analysis in the FEIS and supporting documentation, the District Manager, as Responsible Official for the BLM, will make the following decisions regarding BLM_administered lands:

1. Whether to approve the PPO as submitted by Rosemont Copper or an alternative considered in detail in the EIS to avoid unnecessary or undue degradation of the environment on BLM-administered lands, under 43 CFR 3809 and 3715.
2. Whether to amend the Resource Management Plan in the area impacted by the mine. The alternatives will be evaluated based on their consistency with current management direction in the Resource Management Plan.
3. Whether to select the No-Action Alternative if the analysis shows that unnecessary or undue degradation of the environment would occur from all action alternatives.

Following issuance of this DEIS, comments will be accepted on it that will be considered in producing a FEIS. Following or concurrent with issuance of the FEIS, the BLM will issue a Record of Decision. The Record of Decision may contain changes or additions to the PPO needed to avoid unnecessary or undue degradation of the environment on BLM-administered lands, as well as any required amendments to the Resource Management Plan. This decision may be subject to administrative review by BLM's State Director or an Administrative Law Judge, the decisions of which may be appealed to the Interior Board of Land Appeals, pursuant to 43 CFR 4.

U.S. Army Corps of Engineers

The USACE is a cooperating federal agency which regulates the discharge of dredged and fill material into Waters of the United States (WUS), including wetlands, under Section 404 of the Clean Water Act (CWA).

An individual Section 404 CWA permit is required for the discharge of dredged and/or fill material into WUS [33 CFR 323], regardless of whether the activity is on public or private lands. In accordance with CWA, Section 404(b)(1) guidelines [40 CFR 230], USACE may only permit the least environmentally damaging, practicable alternative in light of cost, logistics, and technology.

For purposes of the Section 404(b)(1) alternatives analysis, the basic project purpose is to mine copper using conventional open-pit mining, and sulfide (mill and concentrate) and oxide (leach and SX/EW) ore processing for the purpose of producing copper and/or copper precursors, silver, and molybdenum.

In addition to the alternatives considered in detail in the body of this EIS, an alternative analysis that addresses CWA Section 404(b)(1) guidelines is included in *Appendix _ U.S. Army Corps of Engineers' Section 404(b)(1) Alternatives Analysis*.

Using the analysis in the FEIS and supporting documentation, the Los Angeles District Commander will make the following decisions:

1. Whether to issue Rosemont Copper an Individual CWA Section 404(b)(1) permit for the discharge of dredged or fill material into WUS for the PPO or an alternative which has

been determined to be the least environmentally damaging, practicable alternative by the USACE.

2. Whether to prohibit the specification of any defined area as a disposal site.

3. Whether to deny or restrict the use of any defined area for specification as a disposal site if discharge of such materials is determined to have an unacceptable adverse effect on the aquatic ecosystem.

Following issuance of this DEIS, comments will be accepted on it that will be considered in producing a FEIS. The Coronado's solicitation of comments, including public hearings, will be used to meet USACE's public interest review. Following or concurrent with issuance of the FEIS, USACE will issue a permit decision. This decision may be subject to administrative review.

PUBLIC INVOLVEMENT

Public involvement for preparing an environmental impact statement begins with publication in the *Federal Register* of a Notice of Intent to Prepare an Environmental Impact Statement.

On March 13, 2008, the Coronado began soliciting comments on the PPO with publication in the *Federal Register* of a Notice of Intent to Prepare an Environmental Impact Statement (73[50]13527–13529). Six open house public meetings were held: March 18, 2008 (Tucson, Arizona); March 19, 2008 (Green Valley, Arizona); March 20, 2008 (Patagonia, Arizona); April 5, 2008 (Vail, Arizona); April 22, 2008 (Sahuarita, Arizona); and April 23, 2008 (Elgin, Arizona). About 1,000 people attended the open houses. Oral and written comments were solicited at the meetings and accepted by mail, hand delivery, facsimile, and electronic mail throughout the scoping period.

On April 29, 2008, a Revised Notice of Intent to Prepare an Environmental Impact Statement was published in the *Federal Register* (73[83]:23181). This notice announced a change in the duration of the scoping comment period and provided information regarding three public hearings. The scoping comment period was extended to July 14, 2008, for a total scoping comment period of 120 days. The public hearings were held: May 12, 2008 (Elgin, Arizona); June 7, 2008 (Sahuarita, Arizona); and June 30, 2008 (Tucson, Arizona). Both oral testimony and written comments were taken at the public hearings. Oral testimony was professionally audio-recorded and documented by a court reporter. A total of 860 individuals signed in at the public hearings, with 169 individuals presenting formal oral comments.

On June 27, 2008, in response to public concerns about constraints limiting hearing attendance and participation, the Coronado hosted a toll-free phone hotline for use by the public to provide comments. A total of 302 people left recorded comments, which were transcribed for the record.

The Coronado's efforts to solicit comments on the proposal and the corresponding public participation are described further in *Scoping Summary Report #1, Extent of Public Participation* (SWCA Environmental Consultants [SWCA] 2009).

Comments were received from members of Congress and tribal governments; federal, state, and local agencies; organized interest groups; businesses; and individuals. The Coronado

received 11,082 comment submittals during the scoping comment period, consisting of about 70 percent postcards, petitions, and duplicate submittals. About 16,000 discrete comments were identified in the scoping submittals. Scoping submittals received from March 13, 2008, through August 1, 2008, were documented and analyzed. A systematic process referred to as content analysis was used to sort the contents of the submittals (over 16,000 comments). Detailed records about this process are on file.

Content analysis resulted in the identification of 11 significant issues that drove development of action alternatives and are the focus of this DEIS. Some public concerns were determined to be outside the scope of this DEIS because they did not reflect a legitimate cause and effect relationship supported by scientific evidence; they were not relevant to the decision to be made; they were outside Forest Service, BLM, or USACE authority; or they were already decided by law, regulation, or policy.

Public concerns addressed through required plan and permit approval processes and routine disclosures (see Chapter 3) were not considered significant issues. For instance, cumulative effects analysis is required for all resource areas (see Chapter 3), so "cumulative effects analysis" is not in and of itself considered a significant issue. Many public comments submitted during the scoping period suggested alternative components that were either considered in detail or dismissed from detailed analysis (see Chapter 2).

ISSUES

Using the comments from tribes, agencies, organizations, and the public, the Forest Service interdisciplinary team developed a list of significant issues to address in the environmental analysis. Issues are defined as a point of discussion, debate, or dispute about environmental effects. Issues were separated into two groups: significant issues and non-significant issues. The CEQ regulations specify only significant issues be analyzed. Issues determined not to be significant or that have been covered by prior environmental review are discussed only briefly or eliminated from detailed study [40 CFR 1500.1(b), 1500.2(b), 1500.4(c), 1501.7(3), 1502.2(b), 1506.3]. Significant issues are issues used to formulate alternatives to the proposed action, prescribe mitigation measures, or analyze environmental effects. The significant issues for this project are summarized below.

Issue 1: Impact on Land Stability and Soil Productivity

Issue 1: Ground disturbance from clearing vegetation, grading, and stockpiling soils may accelerate erosion and reduce soil productivity. The tailings and waste rock piles may be unstable over time, and reclamation may not adequately result in a stable, revegetated landscape. Geochemical composition of tailings and waste rock piles may not support native vegetation. Soils are non-renewable resources, and loss of the soil resource may result in an irretrievable loss of soil productivity.

Issue 1 Factors for alternative comparison

- Quantitative assessment of long-term stability of tailings and waste piles
- Character of risks to stability through time, including expected results of reclamation

- Area of disturbance leading to lost soil productivity (acres)
- Qualitative assessment of the potential for revegetation, given the predicted geochemical composition of tailings and waste rock piles
- Sediment delivery to Davidson Canyon, Cienega Creek, or other streams and washes, compared with background sediment loading (tons)

Issue 2: Impact on Air Quality

Issue 2: This issue relates to changes in air quality that may occur from the mining operation. Construction, mining, and reclamation activities at the mine and along transportation and utility corridors may increase dust, airborne chemicals, and vehicular emissions in the affected area. Air quality standards may be compromised. The Clean Air Act (CAA) and other laws, regulations, policies, and plans set thresholds for air quality, including Class I wilderness airsheds. The emission of greenhouse gases (GHGs) has been implicated in global climate change, and the policy of the federal government is to reduce these emissions when possible (Executive Order 13514).

Issue 2 Factors for alternative comparison

- Particulate emission estimates, compared with background and threshold ($PM_{2.5}$, PM_{10})
- GHG emission estimates, compared with background (tons)
- Quantitative assessment of the effectiveness of mitigation measures to protect air quality and meet CAA standards for Class I airsheds and elsewhere
- Quantitative assessment of ability to meet air quality standards

Issue 3: Impact on Water Resources

This group of issues relates to the effects of mine construction, operation, and closure on the quality and quantity of water for beneficial uses, wells, and stock watering. The loss of water availability to riparian and other plant and animal habitat is addressed in Issues 4 and 5.

Issue 3A: Eastside Groundwater Availability. The proposed open-pit mine may reduce groundwater availability to private and public wells in the vicinity of the open pit. Household water availability may be reduced.

Issue 3A Factors for alternative comparison

- Degree of change in water table level (feet), including annual average and range, compared with background
- Locations where water resources may be impacted (geographic extent)

Issue 3B: Westside Groundwater Availability. Water needed to run the mine facility might reduce groundwater availability to private and public wells in the Santa Cruz Valley. Household water availability may be reduced.

Issue 3B Factor for alternative comparison

- Water needed for operations from the Santa Cruz Valley, compared with background
- Change in water table level (feet), including annual average and range, compared with background
- Locations where water resources may be impacted(geographic extent)

Issue 3C: Groundwater Quality. Construction and operation of the mine pit, along with tailings, waste rock, and leach facilities, may result in a loss of groundwater quality. The mine pit may fill with water and create a lake that may have an unnatural concentration of chemicals.

Issue 3C Factors for alternative comparison

- Ability to meet State of Arizona aquifer water quality standards
- Ability to demonstrate "Best Available Demonstrated Control Technology" (qualitative assessment of mitigation effectiveness)

Issue 3D: Surface Water Availability. Construction and operation of the pit, waste rock, and tailings facilities may result in changes in surface water discharge to Davidson Canyon and Cienega Creek. The availability of water for stock water tanks may be reduced.

Issue 3D Factor for alternative comparison

- Quantitative assessment of water released and available for beneficial uses
- Stock watering tanks that will be unavailable (number)

Issue 3E: Surface Water Quality. Construction and operation of tailings, waste rock, and leach facilities may result in sediment or other pollutants reaching surface water and degrading water quality, leading to a loss of beneficial uses. Sediment (see soil issue above) may enter streams, increase turbidity, and exceed water quality standards.

Issue 3E Factor for alternative comparison

- Qualitative assessment of the effectiveness of mitigation measures to protect water quality and meet CWA standards

Issue 4: Impact on Springs, Seeps, and Riparian Habitats

Issue 4: This issue relates to the potential impacts on riparian habitat resulting from the alteration of surface and subsurface hydrology from the pit and other operations. Potential impacts may include loss of riparian habitat and fragmentation of riparian habitat and corridors.

Issue 4 Factors for alternative comparison

- Riparian habitat disturbed, unique or uncommon riparian habitat disturbed, and wildlife corridors disturbed (acres)
- Riparian habitat lost, and unique or uncommon riparian habitat lost (acres)
- Seeps and springs degraded or lost (number)

- Qualitative assessment of ability to meet legal and regulatory requirements for riparian areas

Issue 5: Impact on Plants and Animals

This group of issues focuses on effects on plant and animal habitats other than riparian and the viability of populations of species of conservation concern. Many aspects of the mine operations have the potential to affect individuals, populations, and habitat for plants and animals. Species of conservation concern (federally listed, Forest Service and BLM Sensitive, Management Indicator Species [MIS], and migratory birds) may be affected. This issue includes the potential for impacts on wildlife from light, noise, vibration, traffic, and other disturbance from the proposed mining operations.

Issue 5A: Vegetation. The pit, plant, tailings and waste piles, road and utility corridors, and other facilities may result in a permanent change to the vegetation, and reclamation may not restore natural conditions.

Issue 5A Factors for alternative comparison

- Short- and long-term change in vegetation communities (acres)
- Area receiving reclamation measures (acres)
- Qualitative assessment of ability of alternative to meet current ecological conservation policies and designations

Issue 5B: Habitat Loss. The mine and ancillary facilities may result in the loss of habitat, individuals, or populations of botanical species of conservation concern.

Issue 5B Factors for alternative comparison

- Number of individual plants and/or acres of habitat lost, modified, or indirectly impacted, expressed as a proportion of the total range of each botanical species of concern
- Qualitative assessment of effectiveness of mitigation to reduce impacts on botanical species of conservation concern
- Potential for alternative to jeopardize the viability of any species
- Area that would no longer meet Forest Plan management direction for plants (acres)

Issue 5C: Non-Native Species. The mine operations may create conditions conducive to the introduction, establishment, and/or spread of non-native species that may out-compete native vegetation and degrade plant communities. Forest Service and other federal, state, and local laws, regulations, policies, and plans contain management direction for invasive plants.

Issue 5C Factor for alternative comparison

- Qualitative assessment of effectiveness of mitigation to reduce the potential for invasive species introduction, establishment, and spread

Issue 5D: Wildlife Movement. The mine operations may modify and/or fragment the north-south wildlife migration corridor and/or reduce connectivity between habitats. The transportation system and increased traffic could result in more wildlife road kills.

Issue 5D Factors for alternative comparison

- North-south wildlife migration corridors modified and/or lost (acres)
- Qualitative assessment of the change in connections between wildlife habitats
- Quantitative assessment of how increased volume of traffic could result in road kills of various animal species

Issue 5E: Species of Concern. The mine operations may impact habitat for animal species of concern. Species of concern include those afforded protection under the Endangered Species Act, Forest Service and BLM Sensitive species, Forest Service Management Indicator Species (MIS), Migratory Birds, Arizona Game and Fish Department's (AGFD's) Wildlife of Special Concern in Arizona (WSCA), and Sonoran Desert Conservation Plan (SDCP) Priority Vulnerable Species (PVS). The Forest Service is required to maintain population viability of animal species and avoid or minimize adverse impacts on species of concern. The alternatives were developed to reduce impacts on habitats for animal species of concern.

Issue 5E Factors for alternative comparison

- Habitat lost expressed as a proportion of the total amount of habitat for each animal species of concern (acres/percent)
- Qualitative assessment of effectiveness of mitigation in minimizing and/or avoiding impacts on habitat for animal species of concern
- Potential for alternative to jeopardize the population viability of any species
- Area that would no longer meet current Forest Plan management direction for wildlife habitat (acres)

Issue 5F: Animal Behavior (noise, vibration, light). Mine operations, including drilling and blasting, may result in noise and vibrations that impact animal behavior and result in negative impacts on wildlife. Nocturnal and other animals may be adversely affected by the light glow in night skies.

Issue 5F Factors for alternative comparison

- Character of impact on animals from noise, vibration, and light
- Effectiveness of mitigation to reduce noise, vibration and light

Issue 6: Impact on Heritage Resources

This group of issues focuses on the adverse effects of the proposed mining operations on heritage resources. The mine footprint may impact historic properties as well as traditional uses and perceptions of the land for the many communities that have used it over the past hundreds of years. Native Americans claim the area as part of their ancestral homelands. Tribes consulted perceive disruption of the physical world as causing spiritual harm to the earth and to the people here. Ancestral human remains and sacred sites are known to exist, as are traditional resource collecting areas.

Ranching and mining communities have attachments to the area that began in the late nineteenth century up to the present. Historic human burials may yet be found in areas not

519 excavated by previous archaeological investigations of Historic period properties in the
520 alternatives.

521 **Issue 6A: Historic Properties.** Mine construction, operation with concurrent reclamation,
522 and closure may bury, remove, or damage historic properties, including Traditional Cultural
523 Properties (TCPs), archaeological sites, historical structures, districts, or landscapes.
524 Vibrations from blasting and drilling may damage historical structures in the immediate and
525 adjacent areas. This may also result in the loss of or reduction in the future research potential
526 and public interpretation of known and yet-to-be-discovered sites, and the permanent
527 alteration of cultural landscapes important to the ongoing cultural practices of Native
528 American tribes and historic communities.

529 *Issue 6A Factors for alternative comparison*

530 ▪ National Register of Historic Places eligible historic properties, including TCPs and other
531 landscape-scale properties buried, destroyed, or damaged (number and acreage)

532 ▪ Potential for vibrations to damage historic structures in adjacent areas (number of
533 structures)

534 ▪ Qualitative assessment of number of sites yet to be discovered (estimated number)

535 **Issue 6B: Human Remains.** Human remains have been discovered in previous
536 archaeological excavations of prehistoric and historical sites in the Rosemont area.
537 Additional burials are present in previously excavated and unexcavated historic properties,
538 and in undetected historic properties. Native American remains fall under the jurisdiction of
539 the Native American Graves Protection and Repatriation Act (NAGPRA); non-native
540 remains fall under the Advisory Council's Policy on Burial Sites, Human Remains and
541 Funerary Objects on federal lands (February 23, 2007).

542 *Issue 6B Factors for alternative comparison*

543 ▪ Hohokam sites known or likely to have human remains (number and acreage)

544 ▪ Historic period sites likely to have human remains (number and acreage)

545 **Issue 6C: Sacred Sites.** Several federal laws direct federal land management agencies, to the
546 extent permitted by law and not clearly inconsistent with essential agency functions, to
547 accommodate access to and use of Indian sacred sites, to avoid affecting the physical
548 integrity of such sites wherever possible, and to temporarily close National Forest System
549 land for traditional and cultural purposes. Tribal consultation has identified springs, high
550 vision points, and many natural resources in the project area as having sacred ceremonial
551 functions. Mine construction, operation with concurrent reclamation, and closure may
552 preclude access to or destroy or degrade these types of resources.

553 *Issue 6C Factors for alternative comparison*

554 ▪ Traditional resource collection areas impacted (acres)

555 ▪ Sacred springs impacted (number)

556 ▪ Qualitative assessment of the spiritual, cultural, and emotional impact of desecration of
557 land, springs, and burials

Issue 6D: Traditional Resource Collecting Areas. Native Americans as well as the ranching, mining, and Mexican American communities use the Rosemont area to collect and process natural resources for food, medicines, firewood, and traditional crafts. Mine construction, operation with concurrent reclamation, and closure may preclude access to or destroy or degrade these types of resources.

Issue 6D Factors for alternative comparison

- Traditional resource collection areas impacted (acres)

Issue 7: Impact on Visual Resources

Issue 7: This issue focuses on the visual impacts that result from the mining pit, placement of tailings and waste rock piles, and development and use of other facilities. The proposed mine tailings and waste rock piles would create significant changes to the landscape within the mine footprint. The piles may block valued mountain views. The processing plant and transportation and utility corridors may also affect visual resources in the area. The character of the State Highway 83 designated scenic corridor and the views from it may change. The ability for the area to meet assigned visual quality objectives (VQOs) in the Forest Plan may be reduced. Regardless of mitigation measures or reclamation required, the scenic quality of the landscape may be permanently degraded.

Issue 7 Factors for alternative comparison

- Area that would no longer meet current Forest Plan VQO designations (acres)
- Qualitative assessment/degree of change in landscape character from Key Observation Points over time
- Percentage of State Highway 83 that would no longer meet scenic byway criteria

Issue 8: Impact on Dark Skies and Astronomy

Issue 8: This issue relates to the potential for the mining operation and facilities to reduce night sky visibility. Increased light, air particulates, and gases from mine-related facilities, equipment, vehicles, and processes may diminish dark skies. The increased sky glow could reduce visibility of stars, planets, satellites, and other celestial objects. Area residents, recreationists, research and amateur astronomers, and stargazers value the current dark skies in the area. Key Observation Points and the Smithsonian's Fred Lawrence Whipple Astrophysical Observatory may be adversely affected. This issue also relates to the impact of particulate emissions and vibration from blasting and drilling on sensitive astronomy equipment.

Pima County has a night sky lighting code. The PPO is exempt from this code, and some aspects of the operation may not be able to conform to the code (because of worker safety concerns).

Issue 8 Factors for alternative comparison

- Distribution of fractional increase in sky brightness from mine facility and vehicle lighting

- Area that would not meet Pima County lighting code (acres)
- Qualitative assessment of effectiveness of mitigation measures to reduce dust and impact night sky visibility
- Vibration detectable at telescope sites (inches/second peak particle velocity)
- Qualitative assessment of how particulate emissions may damage sensitive astronomy equipment

Issue 9: Impact on Recreation

Issue 9: This issue focuses on the effects of the mining operation on recreational opportunities on National Forest System lands, including loss of access, loss of or reduction in solitude, remoteness, rural setting, and quiet. The mine operation may lead to permanent changes to recreation settings (Recreation Opportunity Spectrum [ROS]) and/or the type of recreation available and may result in increased pressure on public and private lands in other places to compensate for lost opportunities.

Issue 9 Factors for alternative comparison

- Area that would no longer meet current Forest Plan ROS designations (acres)
- Area of the National Forest that would no longer be available for recreational use (acres)
- Potential for noise to reach recreation areas, audio "footprint" (acres)
- Qualitative assessment of impacts to solitude in designated Wilderness and other backcountry areas
- Hunting permits/opportunities modified or lost (quantity)
- Length and number of trails/trailheads that would no longer be available to the public
- Qualitative assessment of increased pressure on other areas
- Qualitative assessment of effectiveness of mitigation to offset recreation losses

Issue 10: Impact on Public Safety

This issue focuses on the impact of increased traffic from the mine site on construction, operation, and maintenance of new and reconstructed roadways and the potential for increased volume of traffic. Oversized vehicles and the transport of personnel, equipment, supplies, and materials related to the mining operation have the potential to increase traffic and reduce public safety. Hazardous materials would be transported, which may increase the risk of a spill or other public safety impact. Another aspect of this issue is human health risks to national forest visitors if they accidentally come near the mine operations, tailings, or waste rock piles. Air quality impacts as a result of the operation may be harmful to public health.

Issue 10 Factors for alternative comparison

- Change in type and pattern of traffic by road and vehicle type
- Trip count per day for all hazardous materials

- Qualitative assessment of transportation conflicts
- Qualitative assessment of public health risk from mine operations and facilities
- Quantitative assessment of ability to meet air quality standards for human health

Issue 11: Socioeconomic Impacts

This issue relates to the socioeconomic impacts of the proposed mining operations. The mine operations may have negative and positive socioeconomic impacts, which may change over time. The socioeconomic stability of the area may be adversely affected. Residents, business owners, and visitors' expectations of national forests and the historic rural landscape may not be met.

Issue 11A: The mine facilities and operation may result in changes over time to local employment, property values, tax base, tourism revenue, and demand and cost for road maintenance and emergency services. There may be costs to the alternative design features and mitigation measures that influence the present net value of the mine operations and thus its economic profile.

Issue 11A Factors for alternative comparison

- Change in type and quantity of employment over time
- Change in property values over time
- Change in tax base per year over time
- Change in demand and cost for road maintenance over time
- Change in demand and cost for emergency services over time
- Change in tourism demand and revenue over time
- Economic outlook of mine operations (present net value)

Issue 11B: Rural Landscapes. The mine operation may not conform to the quality of life expectations as expressed by the Forest Plan and federal, state, and local regulations and ordinances. Concerns have been expressed about modification of rural historic landscapes important to local residents and tourists.

Issue 11B Factor for alternative comparison

- Qualitative assessment of the ability of alternatives to meet rural landscape expectations as expressed by Forest Plan and federal, state, and local regulations and ordinances